

PESTICIDE USAGE IN NORTHERN IRELAND

Survey Report 259

Vegetable Crops

2013

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PESTICIDE USAGE SURVEY REPORT 259

NORTHERN IRELAND VEGETABLE CROPS

2013

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CONTENTS

Summary	2
Definitions and notes	4
Introduction	5
Methods	5
Results and Discussion	
Crops	7
Regional Pesticide Usage	7
Pesticide Usage on Crops	11
Pesticide Usage on Individual crops	
Broccoli	17
Calabrese	23
Brussels Sprout	29
Cabbage crops	36
Autumn Cabbage	37
Spring Cabbage	43
Winter Cabbage	48
Summer Cabbage	55
Savoys	61
Hard Cabbage	67
Red Cabbage	73
Cauliflower	
Autumn Cauliflower	78
Summer Cauliflower	84
Winter Cauliflower	90
Peas	96
Broad Beans	100
Runner Beans	106
Cucuribit	109
Courgettes	109
Pumpkin	110
Carrots	112
Parsnips	119
Turnip and Swedes	126
Turnip	126
Swede	132
Beetroot	137
Bulb Onions	142
Summer Scallions	146

Soup Leeks	151
Table Leeks	156
Lettuce	161
Table Celery	167
Soup Celery	173
Parsley	178
Celeriac	184
Rhubarb	186
Tables	187
Acknowledgements	271
References	271
Appendix1	272

The County Regions of Northern Ireland



SUMMARY

This is the seventh survey of pesticide usage on outdoor vegetable crops in Northern Ireland, providing comparative data to that obtained in the previous surveys in 1991, (Jess *et al.*, 1993), 1995 (Kidd *et al.*, 1998), 1999 (Kearns *et al.*, 2002), 2004 (Kearns *et al.*, 2005), 2007 (Withers *et al.*, 2009) and 2011 (Withers *et al.*, 2012). Information on all aspects of pesticide usage was collected from 61 holdings throughout the province. Quantitative data have been adjusted to provide estimates of total pesticide usage.

The majority of vegetable crops grown in Northern Ireland is related to market influences and is normally grown under contract. In 2013, an estimated 1,396 hectares were grown representing an 11% decrease compared with 2011. There was a 35% decrease in the area of leafy and flowerhead brassica crops grown. The area of turnips and swedes grown decreased by 2% when compared with 2011. The area of carrot crops grown decreased by 5% but, parsnip crops increased by 11%. The total area of celery crops increased by 31% when compared to 2011. However, the area of lettuce crops grown decreased by 8%. The areas of onions, spring onions and parsley crops grown decreased by 55%, 59% and 29% respectively.

A total of 117 products comprising 82 active substances were recorded in use in this survey. Fungicides, applied to 23% of the pesticide-treated area, accounted for 20% of the weight of pesticides applied. Herbicides and desiccants accounted for 42% of the pesticide-treated area and 62% of the total weight of pesticides used. Insecticides, applied to 26% of the pesticide-treated area, accounted for 17% of the total weight of pesticides used. Seed treatments applied to vegetable crops accounted for 8% of the pesticide-treated area, representing less than 1% of the weight of active substances applied. Molluscicides accounted 1% of the total pesticide-treated area and less than 1% of the weight of pesticides applied to vegetable crops. Growth regulators accounted for less than 1% of the pesticide-treated area and 1% of the weight of pesticides applied. Biological controls accounted for less than 1% of both the pesticide-treated area and weight of pesticides applied.

By comparison with 2011, the pesticide-treated area increased by 2%, to 13,821 spray hectares (including 27.67 tpa of adjuvants), whilst the weight of pesticide active substances applied decreased by 18% to 5,989kg (including 19.09kg of adjuvants). The average number of spray applications (2.75) remained similar to that recorded in 2011, 2007, 2004 and 1999. The fungicide-treated area decreased by 9%, whilst the weight of fungicide active ingredients decreased by 23%. Overall, the application area of herbicides and desiccants applied increased by 11% however the weight applied decreased by 18%. The insecticide-treated area and the

weight of insecticide active substances applied decreased by 3% and 5% respectively. The application of chloronicotinyl insecticides, principally to brassicas, increased. Two groups of insecticides, benzoylurea and tetramic acid, were applied for the first time. Insecticides were most frequently applied to control carrot fly (*Psila rosae*) on carrot and parsnip crops. However, they were also frequently used to control aphids principally on brassica crops. The area treated with molluscicides decreased by 6% and the weight applied decreased by 61%. An estimated 1,085 hectares of vegetable crops were sown with treated seed, representing a 3% decrease when compared to 2011. However, the weight of seed treatment active substances decreased by 37%. Growth regulators, applied for the first time in 2011 exclusively to parsnip crops to delay flowering, a decreased by 20% and 34% in treated area and weight of active substances applied, respectively.

Leafy and flowerhead brassica crops received 15% of the weight of fungicides applied to all vegetable crops, representing 22% of the area of vegetable crops treated with fungicides. The single most commonly used fungicide active substance applied to brassicas was difenoconazole. This was primarily for general fungal control. Carrots and parsnips collectively accounted for 55% of both the weight of fungicide active substances applied and the area treated with fungicides. The formulation boscalid/pyraclostrobin was the most frequently applied fungicide, exclusively used for general fungal control.

Herbicide applications to carrot and parsnip crops represented 55% of the herbicide-treated area and 53% of the weight of herbicides applied. Leafy and flowerhead brassicas accounted for 12% of the herbicide-treated area and 13% of the weight of herbicides applied. Linuron was the herbicide active ingredient most frequently applied to vegetable crops, particularly to carrot and parsnip crops for general weed control. Pendimethalin, metazachlor and glyphosate were also frequently applied.

Carrots and parsnips collectively accounted for 65% of the insecticide-treated area, representing 25% of the weight of insecticide active substances applied. Leafy and flowerhead brassicas accounted for 24% and 56% of the insecticide-treated area and weight applied, respectively. Due to the use of garlic extract, turnips and swedes represented 1.9% of the insecticide-treated area and 11% of the weight of pesticides applied. Pyrethroids were the most frequently used insecticide active substances, particularly lambda-cyhalothrin on carrot and parsnip crops.

Applications of the molluscicide ferric phosphate to leafy brassica and turnip crops for slug control, represented 96% of the molluscicide-treated area and 95% of the weight of molluscicides applied. Methiocarb accounted for the remainder of molluscicide applications.

The pesticide formulation cymoxanil/fludioxonil/metalaxyl-M was the most frequently applied seed treatment, accounting for 44% of the area sown with treated seed and 3.4% of the weight of seed treatments applied. An estimated 37% of all seed treatments were applied to carrot crops, 26% to turnip and swede crops and 21% to parsnip crops.

DEFINITIONS AND NOTES

- ‘Basic area’: refers to the actual planted area of crop, which was treated with a given pesticide.
- ‘Treated area’: refers to the total area treated with a pesticide, which includes all repeated applications to the basic area.
- ‘Reasons for use’: the reasons reported for the use of pesticides are the growers stated reason for use and may sometimes be inappropriate.
- ‘Rounding’: due to rounding of figures, there may be slight differences in totals both within and between tables.
- ‘Propagation’: pesticides applied at the propagation stage are normally applied when the plants are indoors and in trays. This should be taken into account when comparing area grown and pesticide-treated area.
- ‘Leafy and flowerhead brassica’: refers to Brussels sprout, calabrese, cauliflower and all cabbage.
- ‘Hard cabbage’: refers to cabbage used for coleslaw, the majority of which is classified as summer cabbage for comparison purposes.
- ‘Sealer’. This refers to the application of herbicides to the crop, usually during sowing, to kill weed seedlings as they emerge.

INTRODUCTION

As a participant of the UK Working Party on Pesticide Usage Surveys, the Agri-Food Bioscience Institute (AFBINI) on behalf of the Department of Agriculture and Rural Development for Northern Ireland (DARD), conducts a programme of surveys to examine pesticide usage in all sectors of the agricultural and horticultural industry. Principally, the data collected provides information for consideration by the Advisory Committee on Pesticides. In addition, the information may be used by those involved in residue testing, for public information and to evaluate the impact of policy and trends in pesticide usage.

This is the seventh survey examining pesticide usage practices on vegetable crops grown in Northern Ireland. Summary results from the previous surveys conducted in 1991 (Jess *et al.*, 1993), 1995 (Kidd *et al.*, 1998), 1999 (Kearns *et al.*, 2002) and 2004 (Kearns *et al.*, 2005), 2007 (Withers *et al.*, 2009) and 2011 (Withers *et al.*, 2012) are included in the report for comparative purposes.

A list of published Northern Ireland Pesticide Usage Survey reports is included in Appendix 1.

METHODS

The sample of holdings to be surveyed was selected from each of the six counties, on the basis of the total area of vegetable crops grown, using data from the Northern Ireland Agricultural Census, June 2012 (Anon., 2013). However, due to sampling procedures and the distribution of vegetable production in Northern Ireland, no holdings were selected from County Fermanagh.

The sample was stratified into four size groups, according to the total area of vegetable crops grown in each region. Holdings were selected at random within each of the size groups and the number of holdings selected was proportional to the total area of vegetable crops grown.

The purpose of the survey was explained to the occupiers of selected holdings in preliminary correspondence. A total of 51 holdings were visited during the period January 2014 to April 2014 and data collected by personal interview. The data collected included; the area of crops grown, area treated, target crop, pesticide used and number of treatments applied. The grower's stated reasons for pesticide use were also included but may not always seem appropriate. Holdings selected in the original sample unable to provide data were replaced with those from the same county and size group held on a reserve list. The total number of farms in each size group and the number of farms sampled are shown in Table 1. The collected data were entered

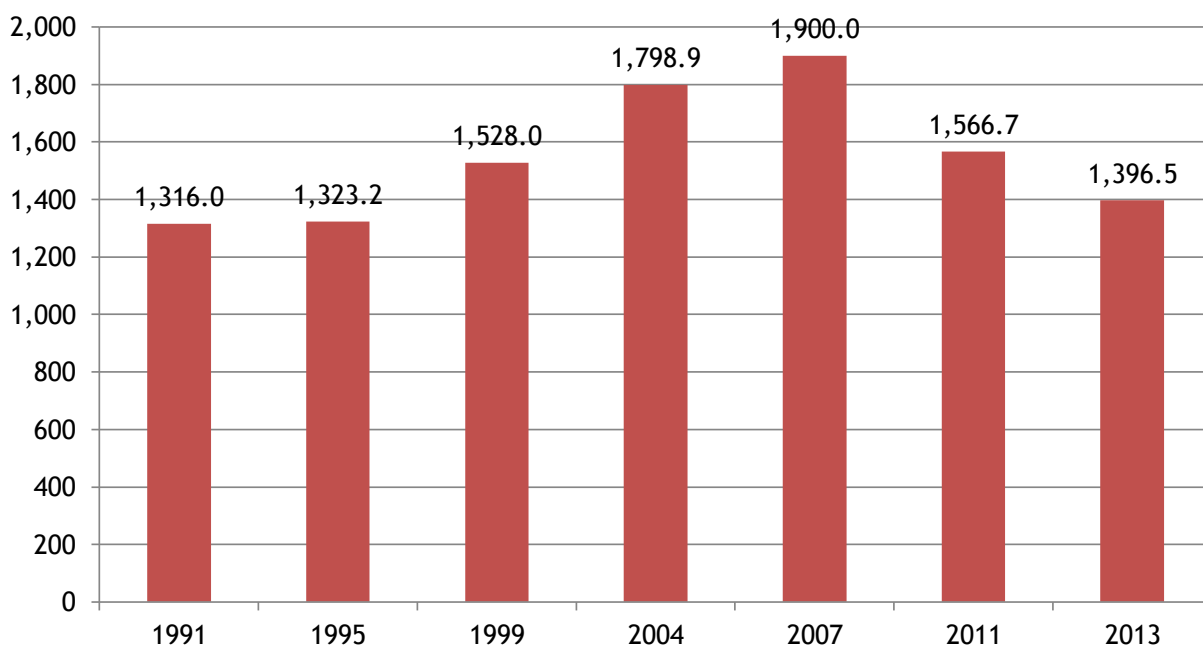
using Oracle, a relational database programme. Validated data were downloaded for analysis using SPSS software.

CROPS

The number and areas of crops surveyed are shown in Table 2. Data from 51 farms provided information on 340 examples of 33 crop types. Crops included, Brussels sprouts, cabbage, cauliflower, calabrese, turnips and swedes, beans, peas, table leeks, soup leeks, onions, spring onions, carrots, parsnips, soup celery, table celery, parsley, lettuce, beetroot and celeriac. The total area of crops sampled in the survey was representative of the area of vegetable crops grown in Northern Ireland in 2013.

Leafy and flowerhead brassicas were grown on an estimated 22% of the total area of vegetable crops grown. Savoy cabbage and broccoli/calabrese accounted for 8% and 4% of the area of brassicas grown respectively. Carrots and parsnips collectively represented 37% of the vegetable growing area, while turnips/swedes accounted for 18% of the total area grown. Alliums including leeks, scallions and onions, collectively accounted for 9% of the total area of outdoor vegetable crops grown in Northern Ireland in 2011 (Table 3, Figure 2).

Figure 1: Comparison of the areas of vegetable crops grown in Northern Ireland (ha), 1991 - 2013.



REGIONAL PESTICIDE USAGE (Table 4, Figure 3)

County Down was the largest producer of vegetable crops in Northern Ireland during 2013, accounting for 69% of the area of vegetables grown and 71% of the total pesticide-treated area. Overall, 74% of herbicides, 71% of fungicides, 65% of insecticides, 97% of molluscicides, 75% of growth regulators and 73% of seed treatments were applied to vegetables in this county. County Armagh accounted for 20% of the pesticide-treated area (19% of the area of vegetables grown), County Londonderry 5% (5%), County Antrim 4% (3%) and County Tyrone 3% (2%).

Figure 2: Regional distribution of vegetable crops grown in Northern Ireland (ha), 2013.

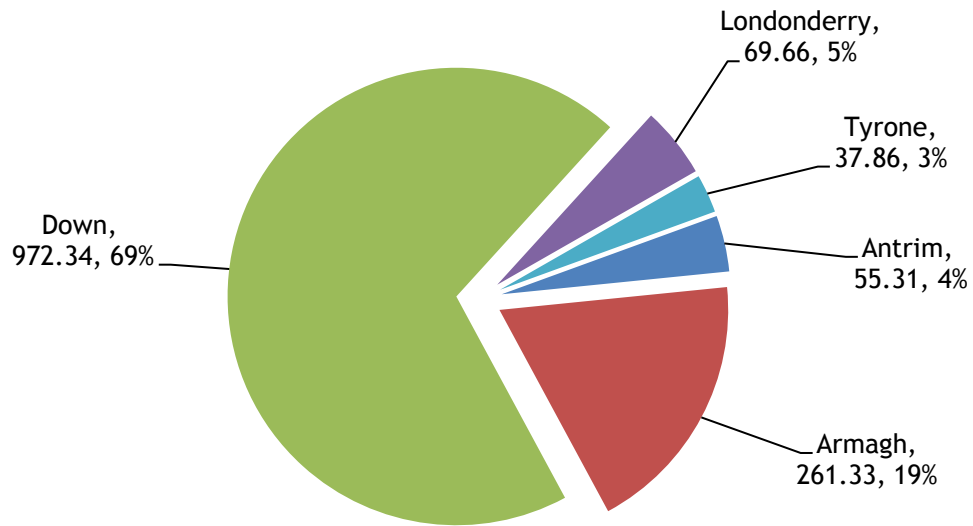


Figure 3: Regional distribution of individual vegetable crops grown in Northern Ireland (ha), 2013.

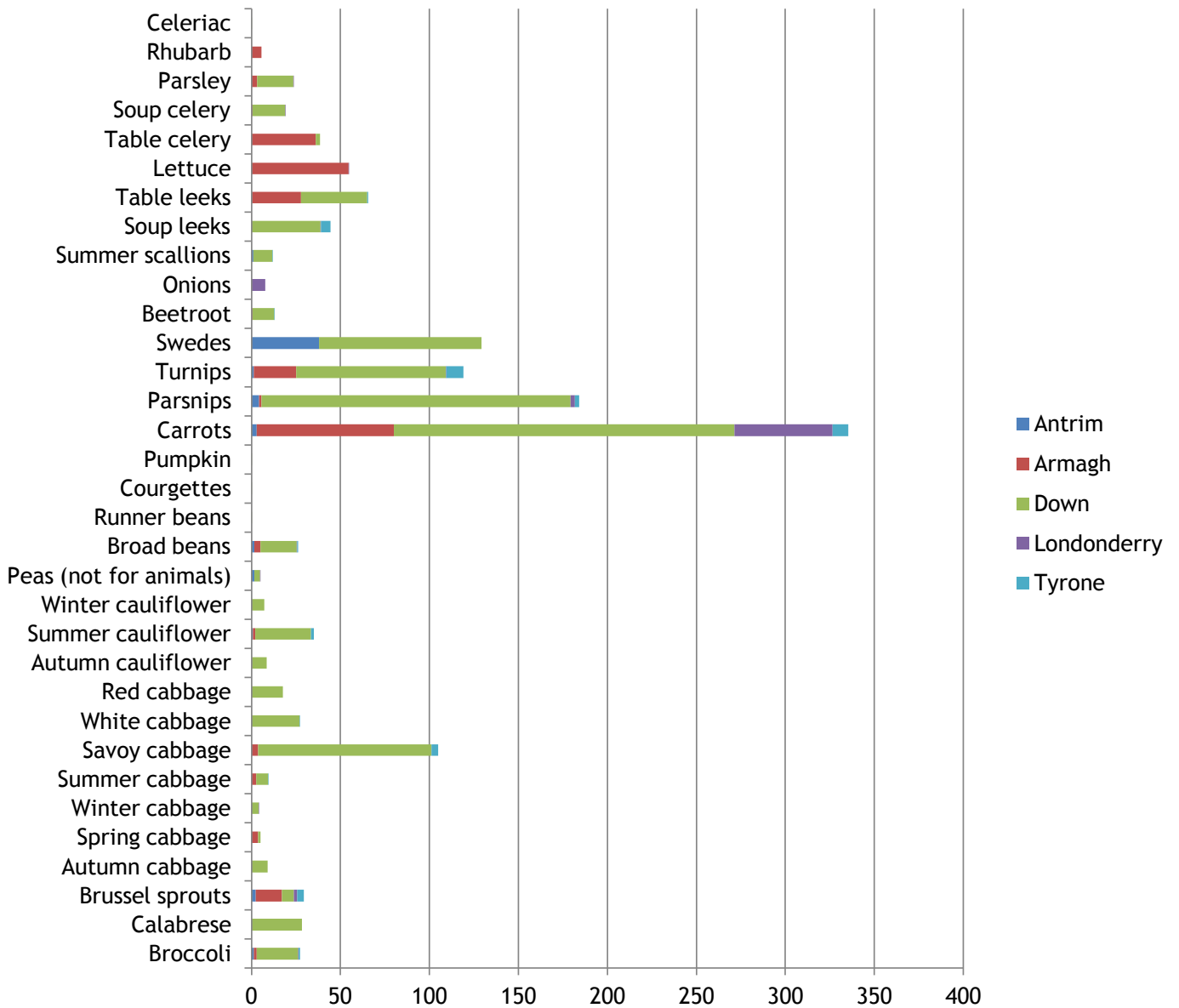


Figure 4: Comparison of the areas of leafy & flowerhead brassica crops grown in Northern Ireland (ha), 1991 - 2013.

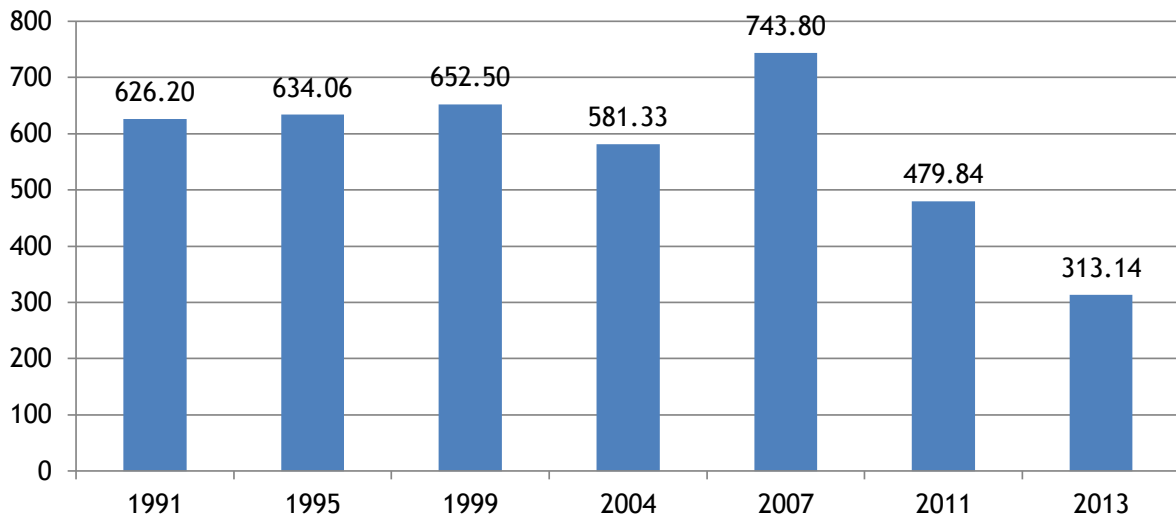


Figure 5: Regional distribution of leafy & flowerhead brassica crops grown in Northern Ireland (ha), 2013.

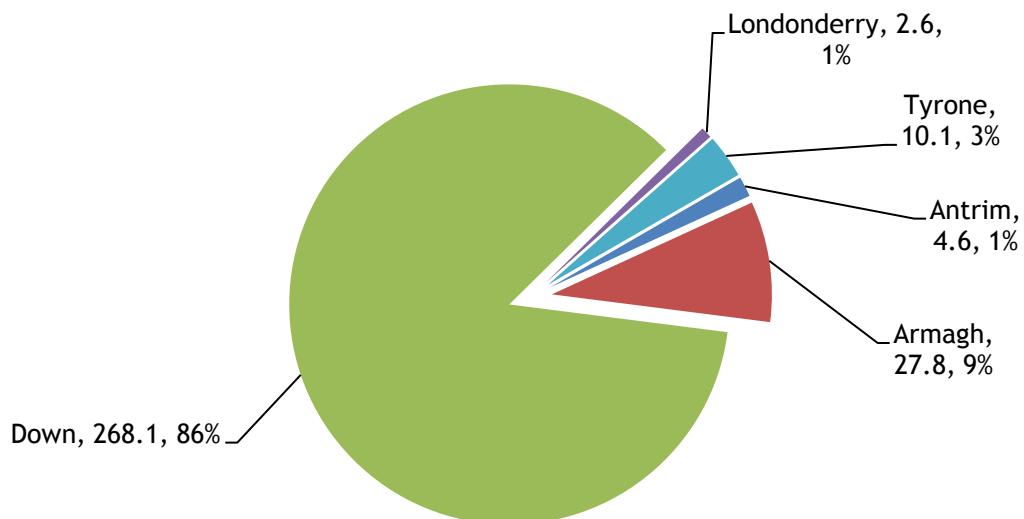


Figure 6: Comparison of the areas of allium crops grown in Northern Ireland (ha), 1991 - 2013.

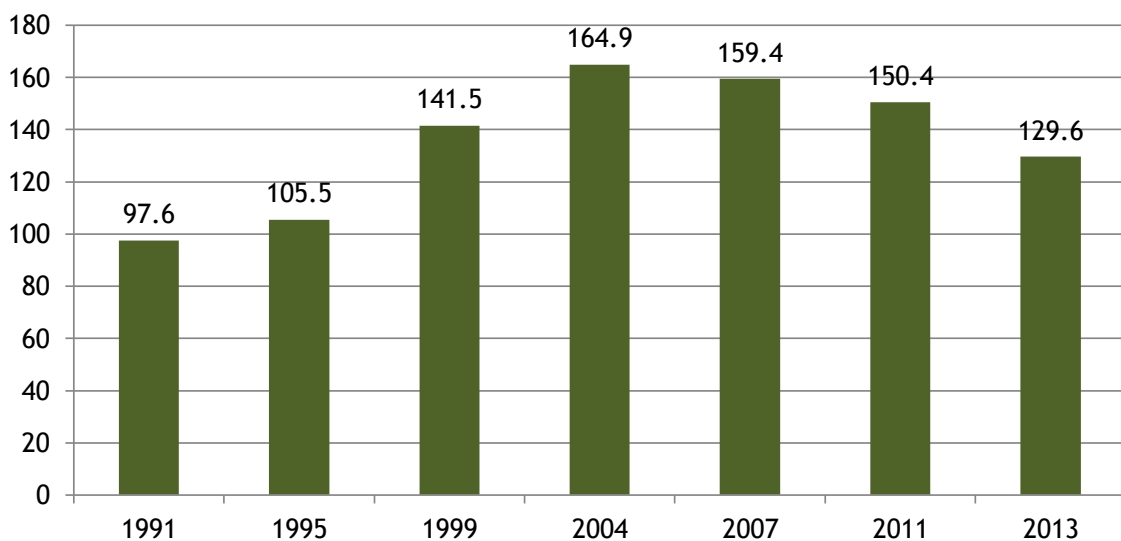
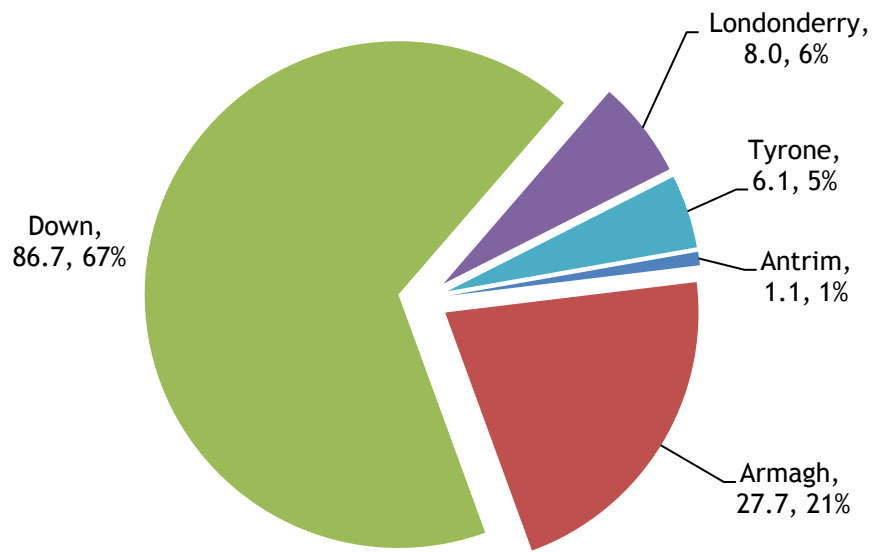


Figure 7: Regional distribution of allium crops grown in Northern Ireland (ha), 2013.



Pesticide Usage

Figure 8: Comparison of the areas of vegetable crops treated in Northern Ireland (spha), 1991 - 2013.

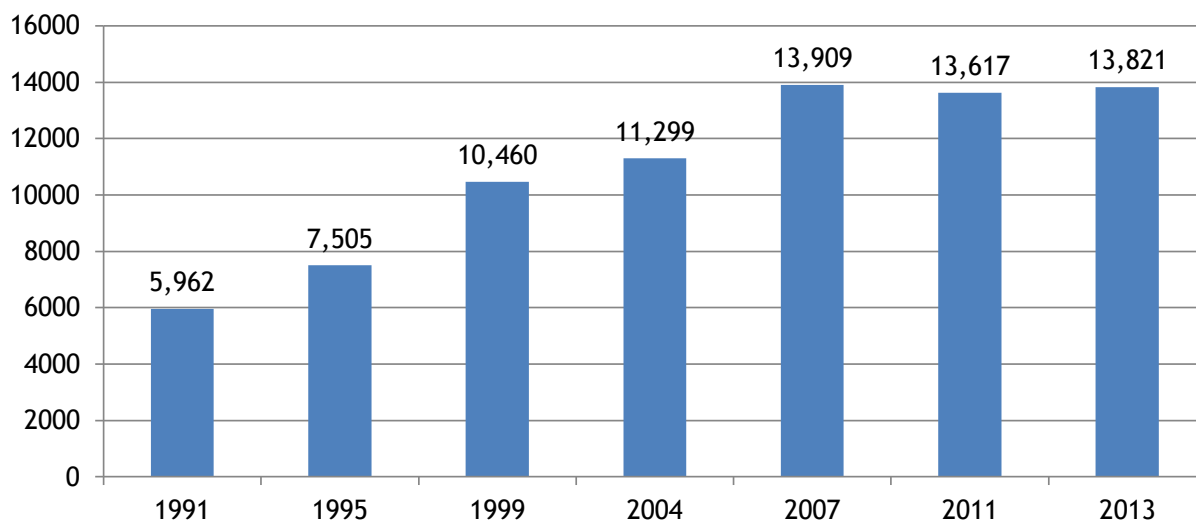


Figure 9: Pesticide usage on vegetable crops in Northern Ireland (spha), 2013.

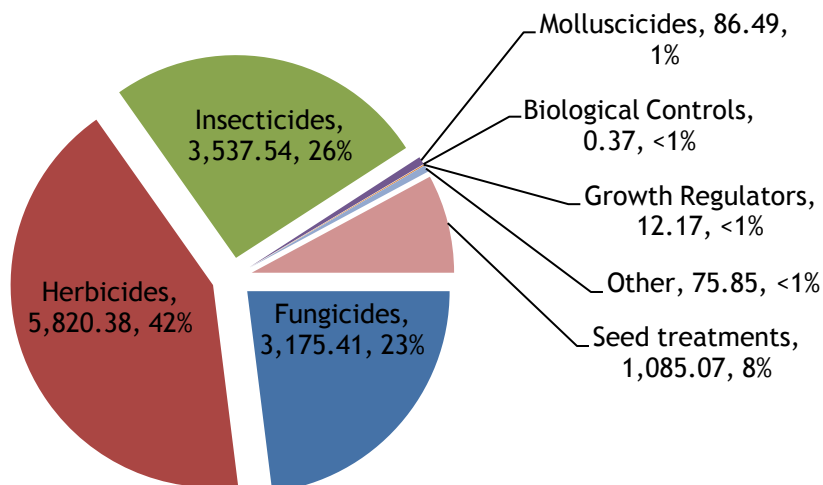


Figure 10: Comparison of the weight of pesticides applied to vegetable crops in Northern Ireland (kg), 1991 - 2013.

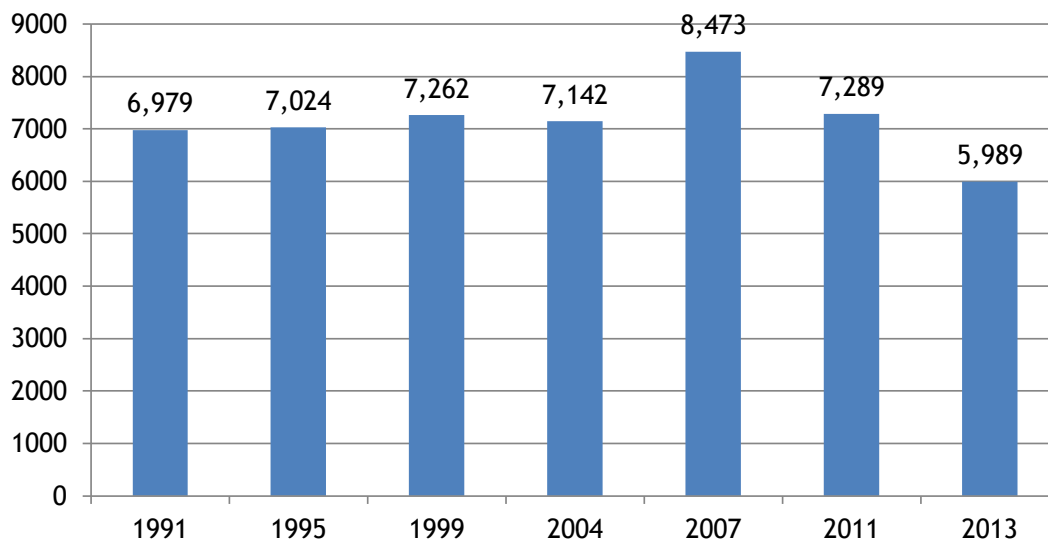


Figure 11: Weight of pesticides applied to vegetable crops in Northern Ireland (kg), 2013.

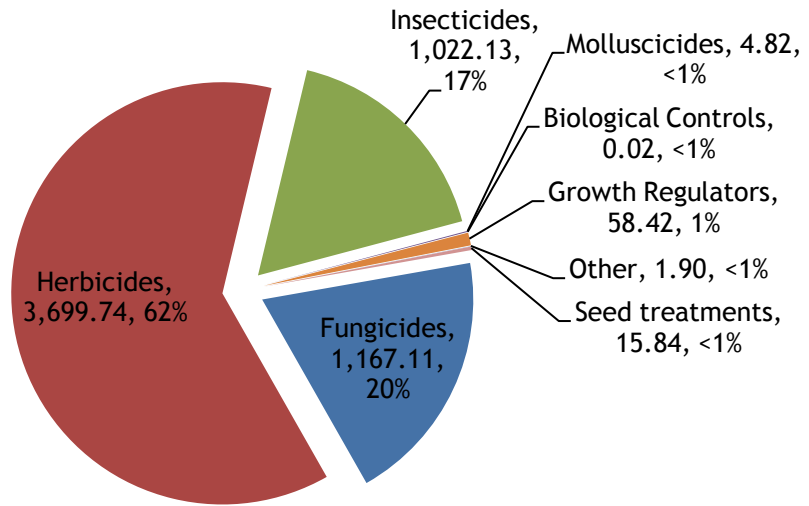


Figure 12: Area of vegetable crops treated with each pesticide type in Northern Ireland (spha), 2013, by region

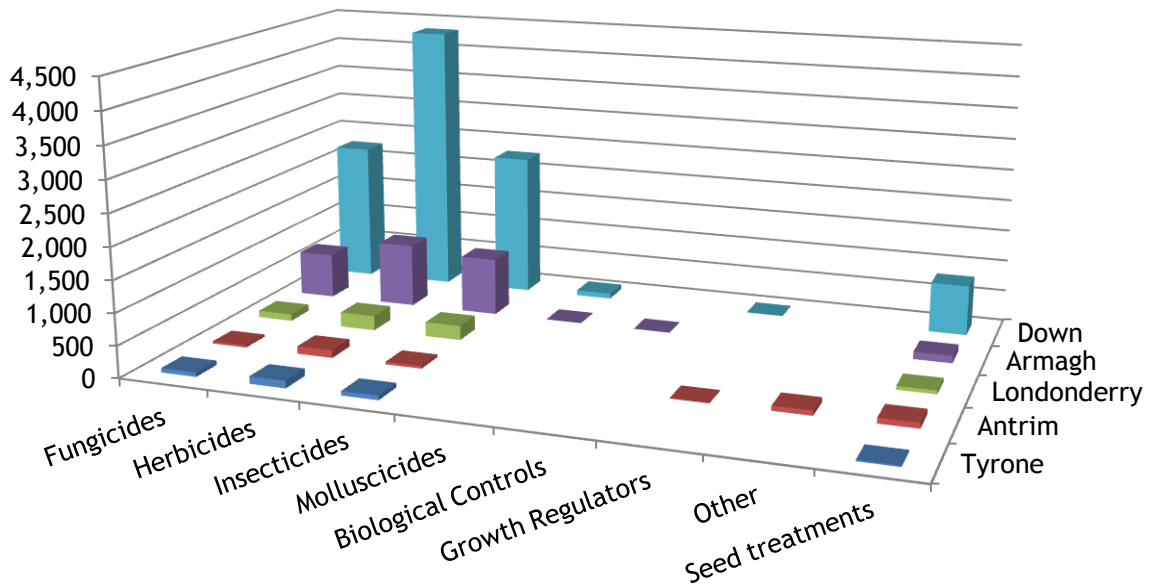


Figure 13: Weight of each pesticide type applied to vegetable crops in Northern Ireland (kg), 2013, by region

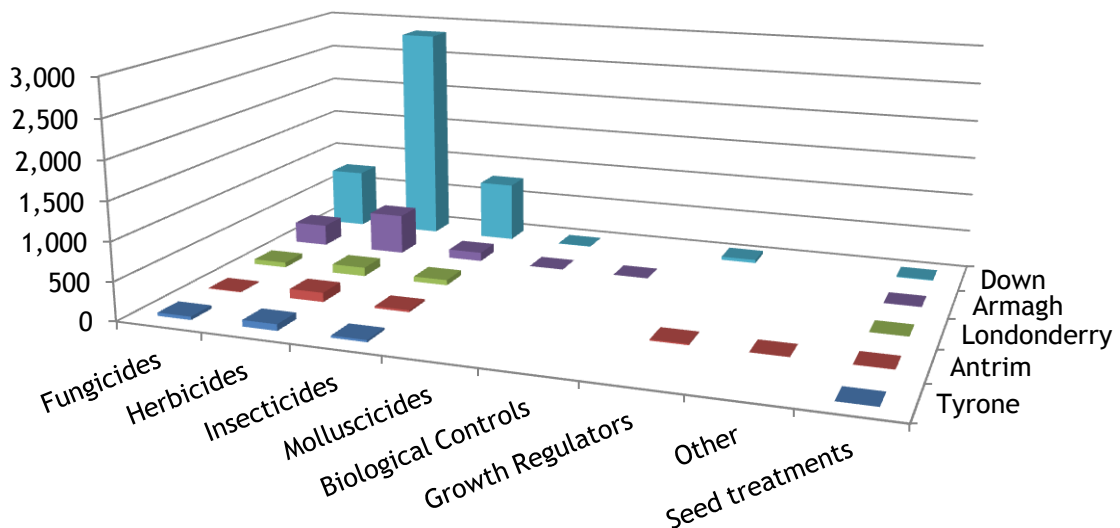


Figure 14: Comparison of the areas of vegetable crops treated with fungicides in Northern Ireland (spha), 1991 - 2013.

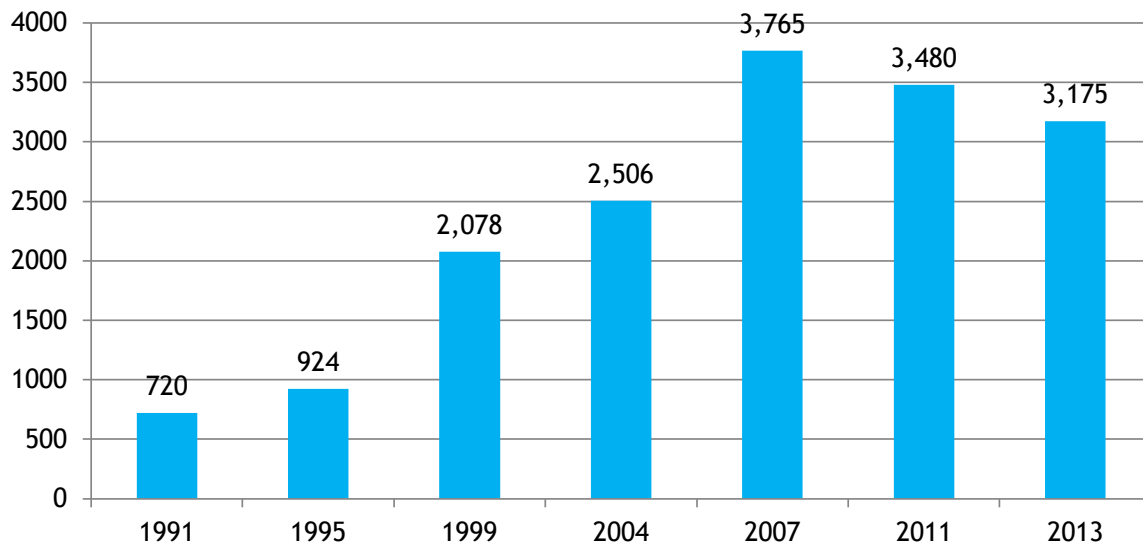


Figure 15: Comparison of the weight of fungicides applied to vegetable crops in Northern Ireland (kg), 1991 - 2013.

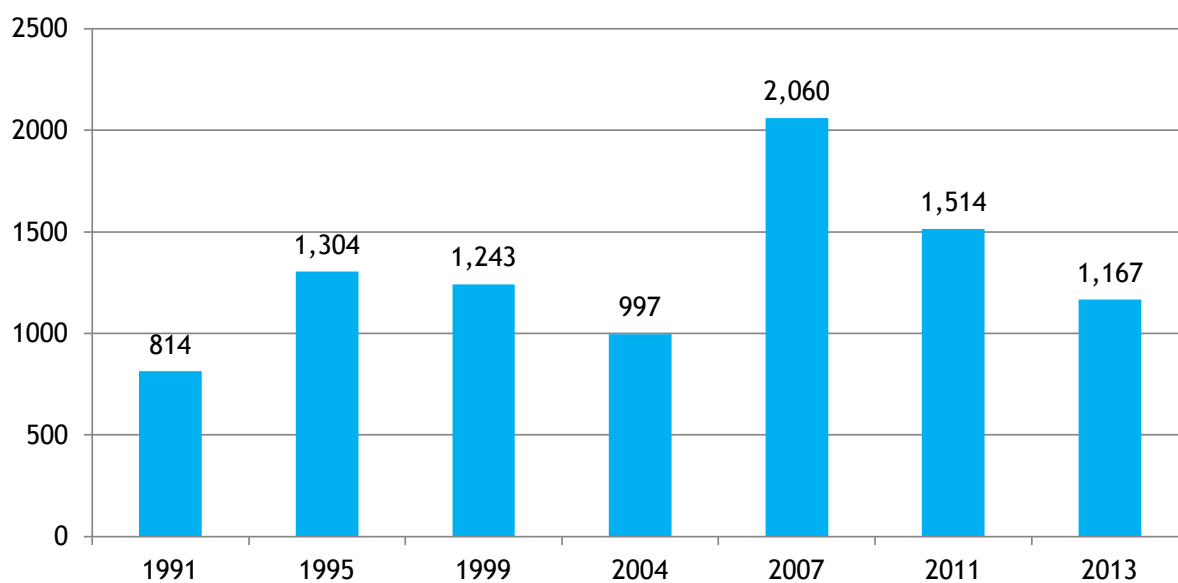


Figure 16: Comparison of the areas of vegetable crops treated with herbicides & desiccants in Northern Ireland (spha), 1991 - 2013.

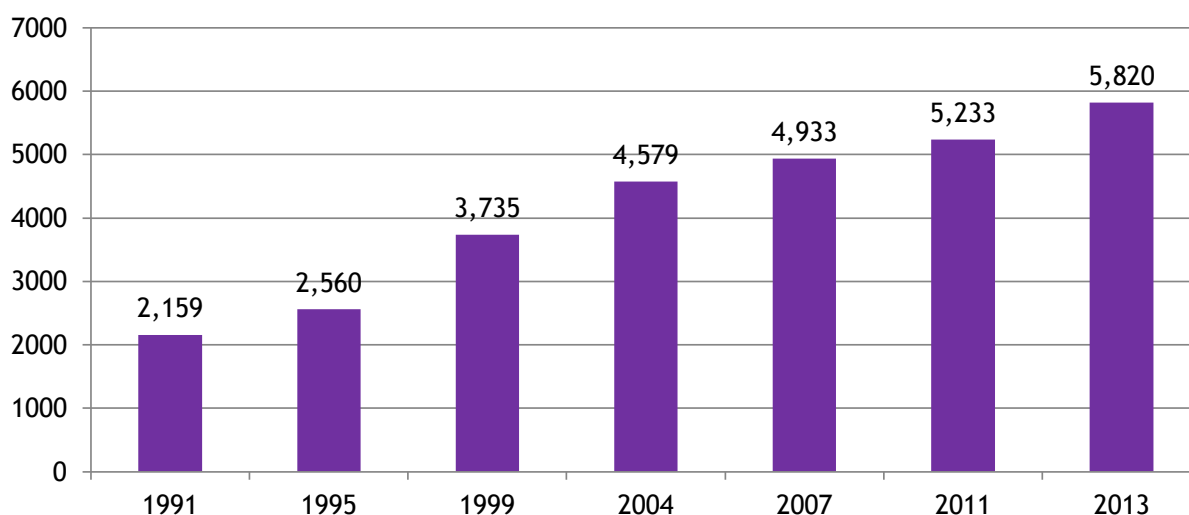


Figure 17: Comparison of the weight of herbicides & desiccants applied to vegetable crops in Northern Ireland (kg), 1991 - 2013.

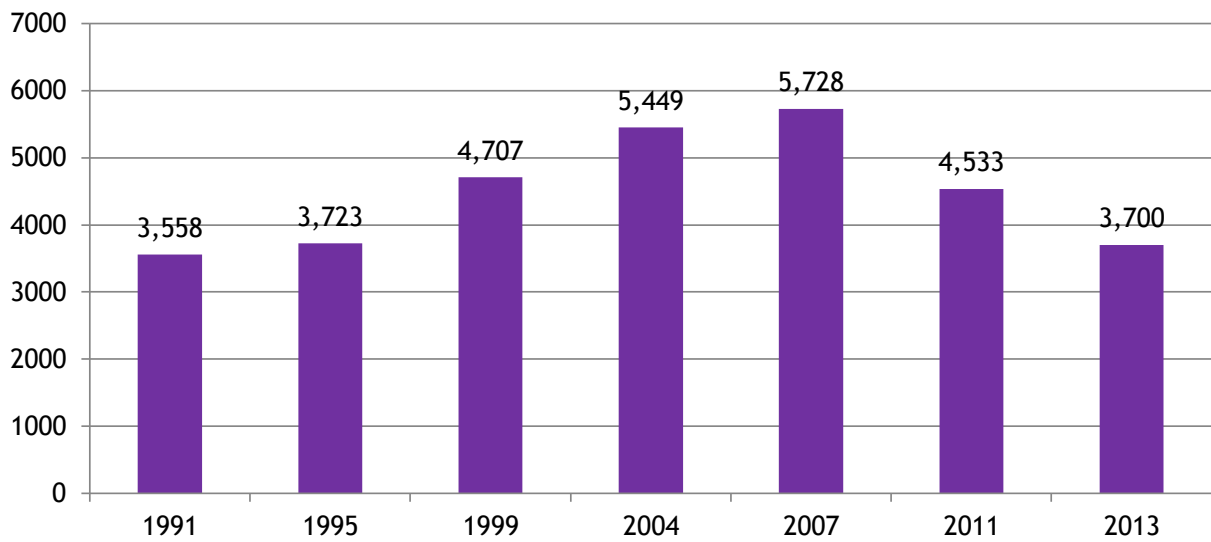


Figure 18: Comparison of the areas of vegetable crops treated with insecticides in Northern Ireland (spha), 1991 - 2013.

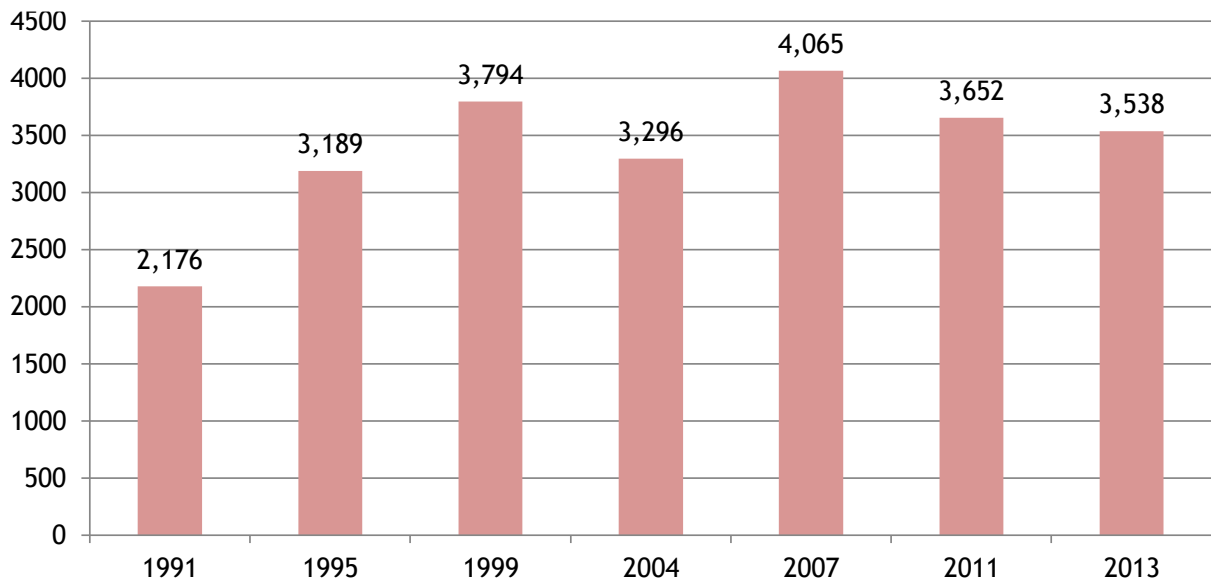


Figure 19: Comparison of the weight of insecticides applied to vegetable crops in Northern Ireland (kg), 1991 - 2013.

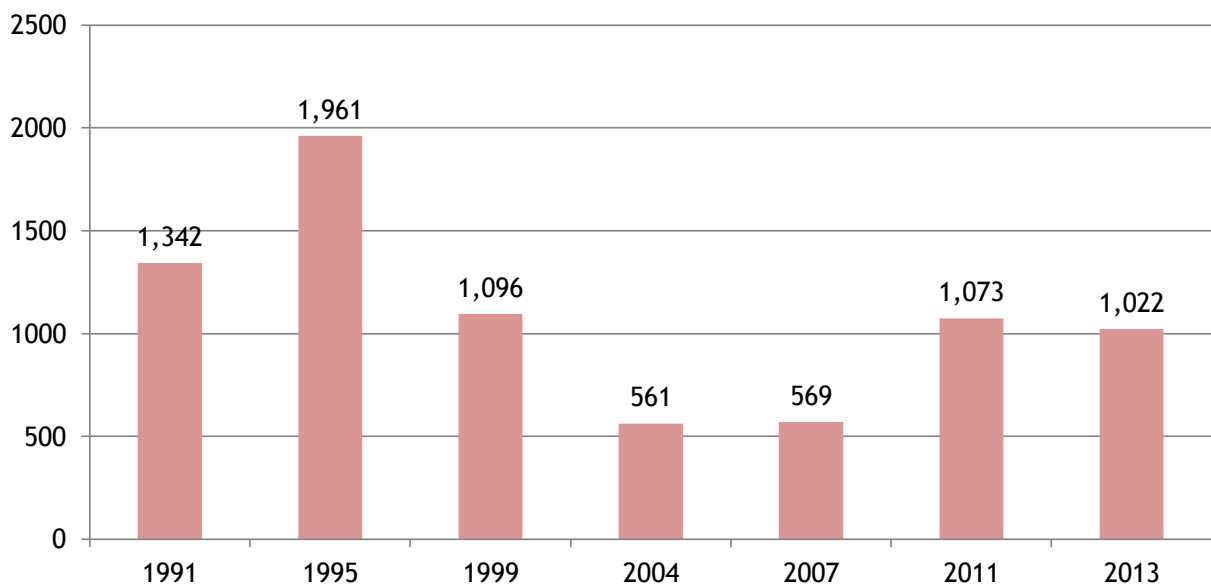


Figure 20: Comparison of the areas of vegetable crops treated with molluscicides in Northern Ireland (spha), 1991 - 2013.

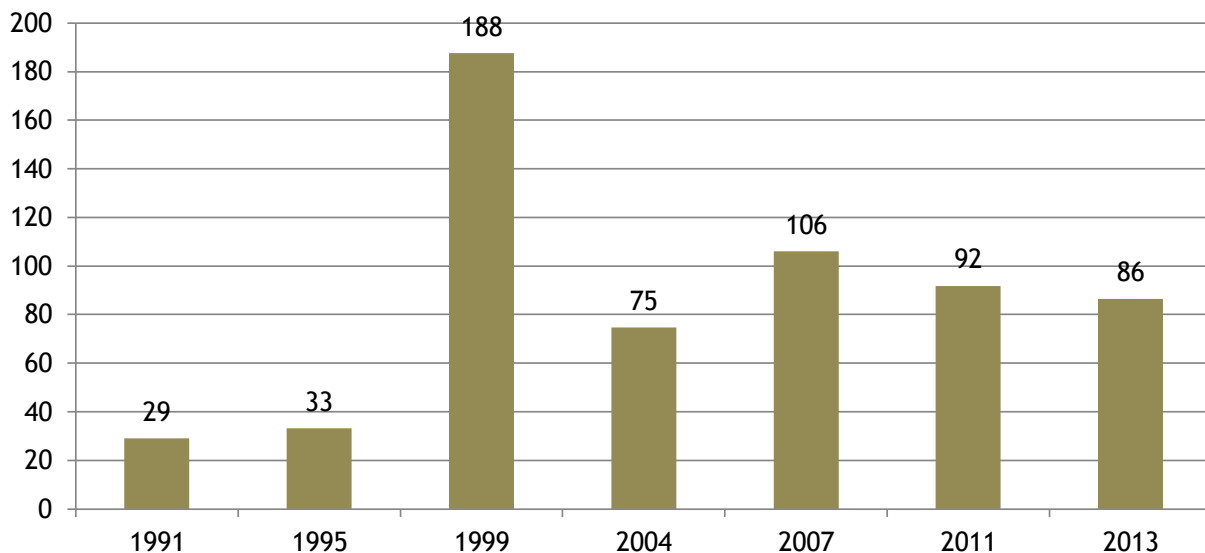


Figure 21: Comparison of the weight of molluscicides applied to vegetable crops in Northern Ireland (kg), 1991 - 2013.

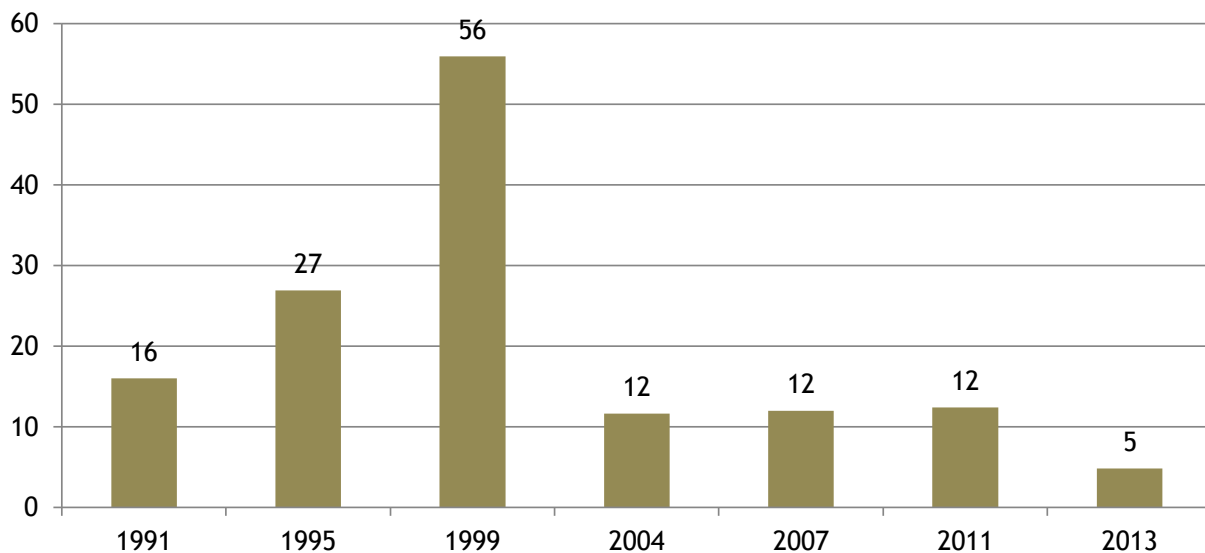


Figure 22: Comparison of the areas of vegetable crops treated with growth regulators in Northern Ireland (spha), 1991 - 2013.

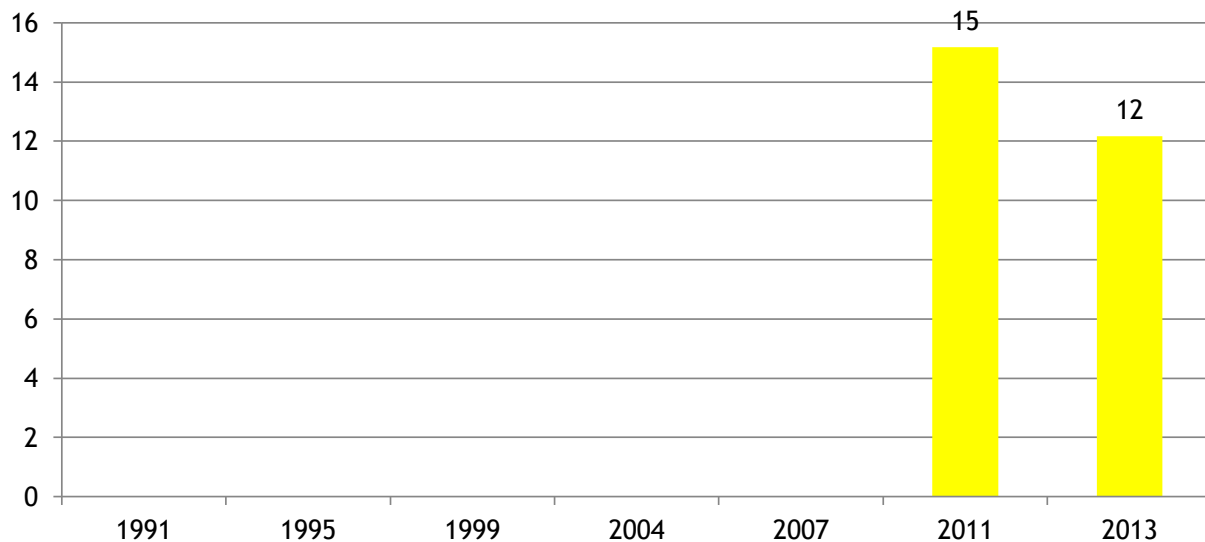


Figure 23: Comparison of the weight of growth regulators applied to vegetable crops in Northern Ireland (kg), 1991 - 2013.

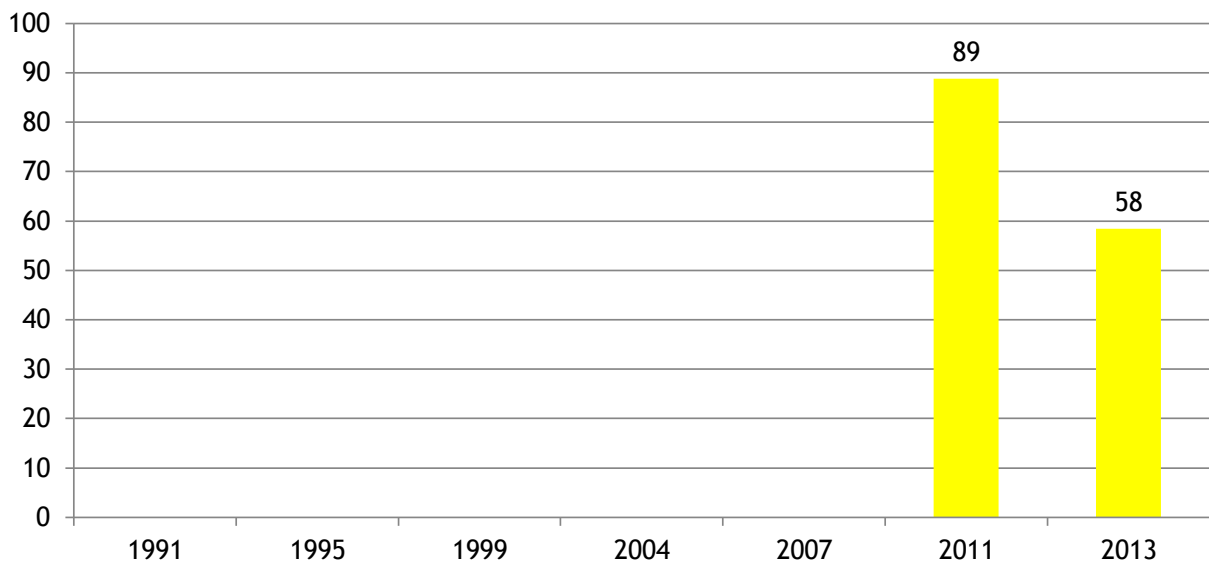


Figure 24: Comparison of the areas of vegetable crops sown with treated seed in Northern Ireland (ha), 1991 - 2013.

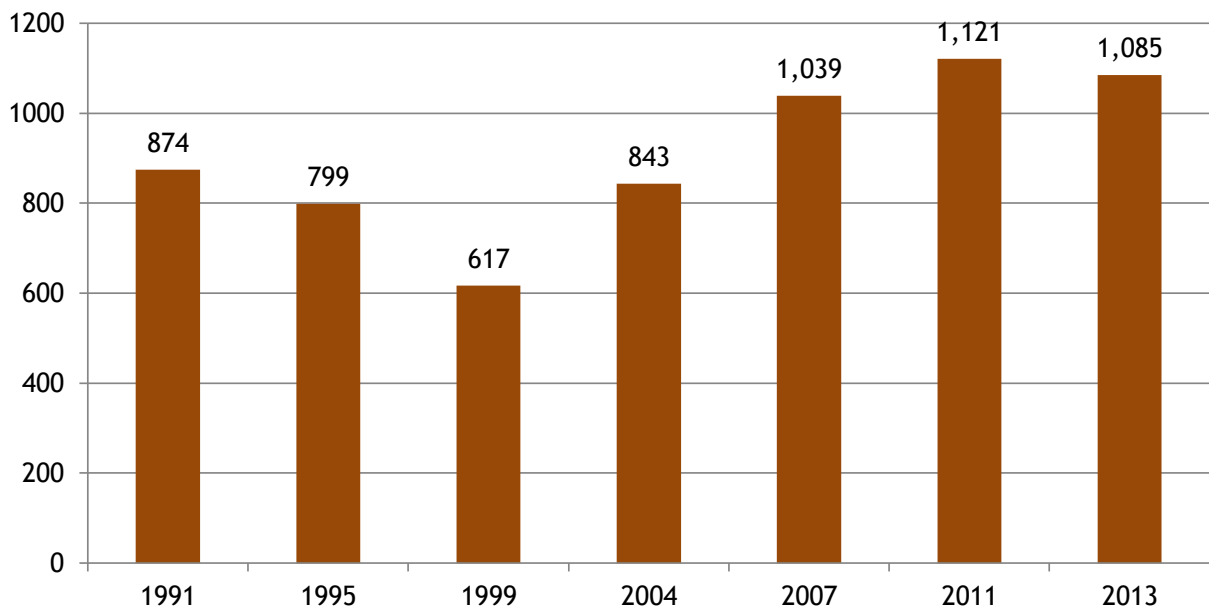
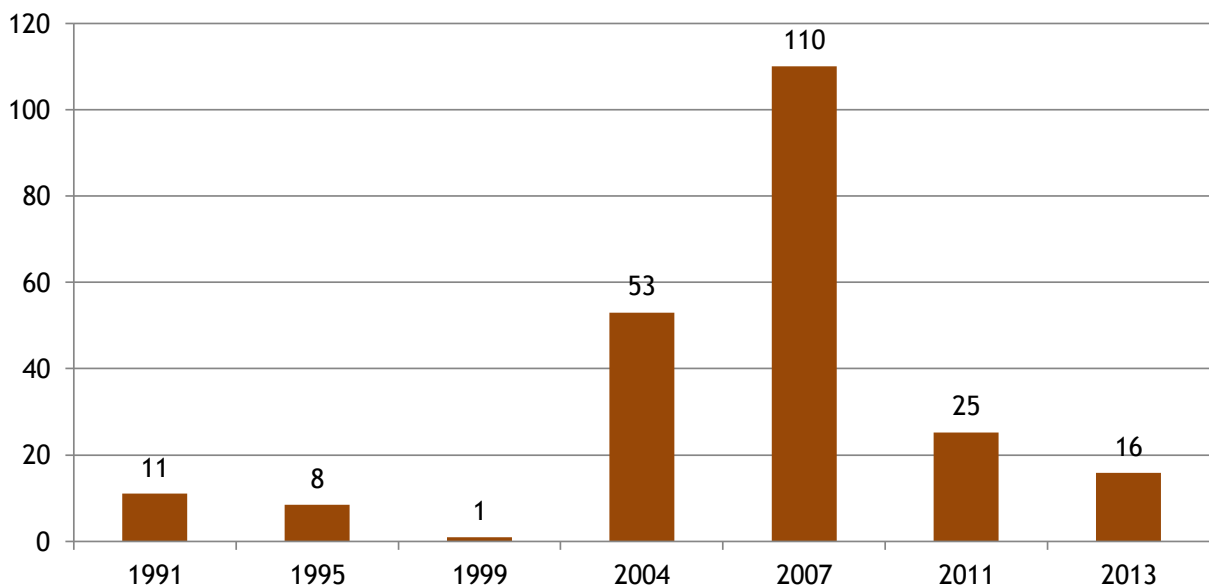
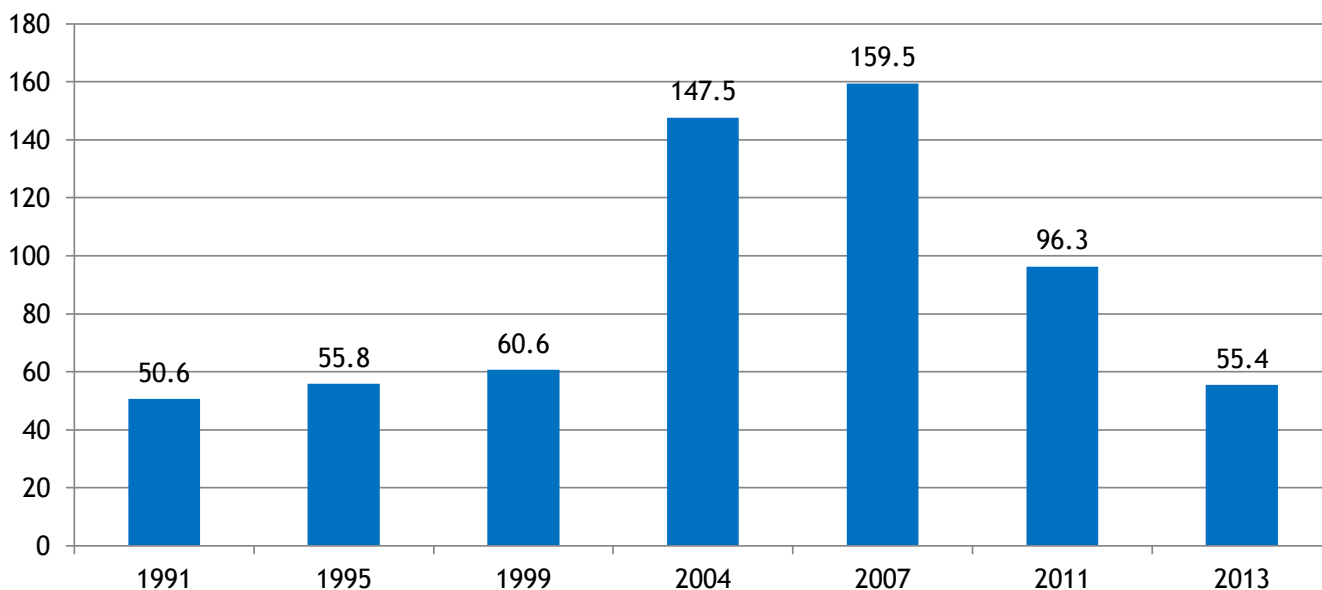


Figure 25: Comparison of the weight of seed treatments applied to vegetable crops in Northern Ireland (kg), 1991 - 2013.



Broccoli & calabrese crops

Figure 26: Comparison of the area of broccoli & calabrese crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on broccoli crops:

27.20 hectares of broccoli crops grown in Northern Ireland

169.58 treated hectares

55.13kg applied

98.5% of crops received at least one treatment

Broccoli crops received on average 1.68 fungicide, 1.81 herbicide, 2.17 insecticide and 2.0 seed treatment applications.

Figure 27: Regional distribution of broccoli crops grown in Northern Ireland (ha), 2013.

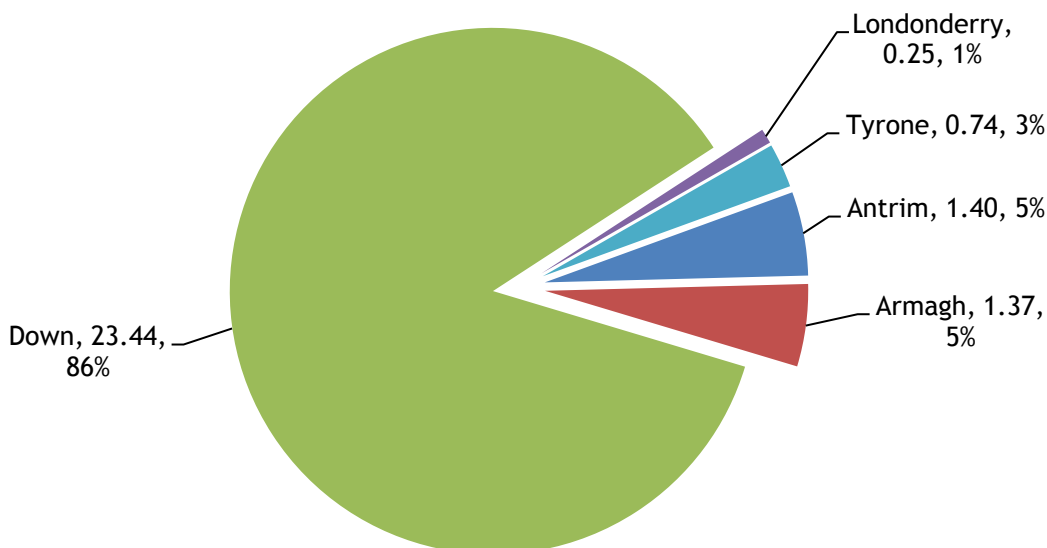


Figure 28: Pesticide usage on broccoli crops in Northern Ireland (spha), 2013.

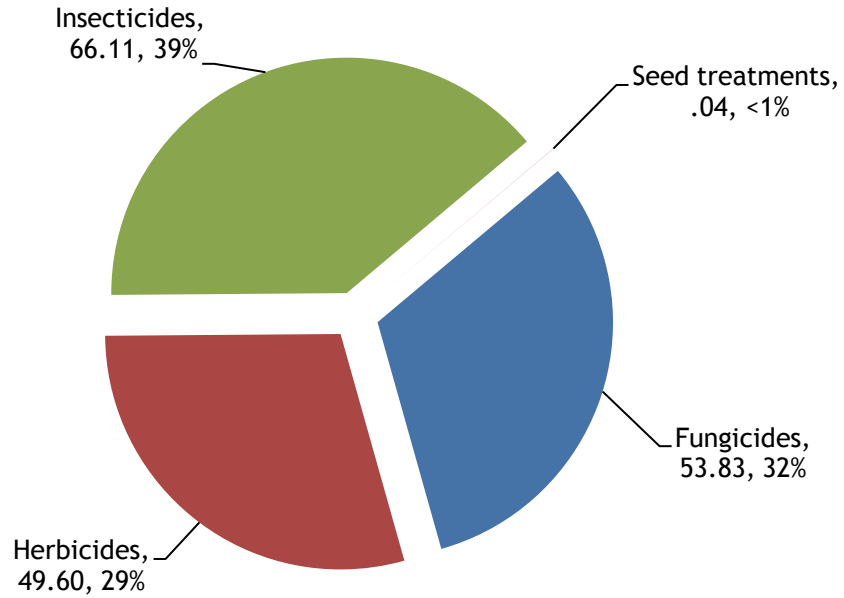


Figure 29: Weight of pesticides applied to broccoli & calabrese crops in Northern Ireland (kg), 2013.

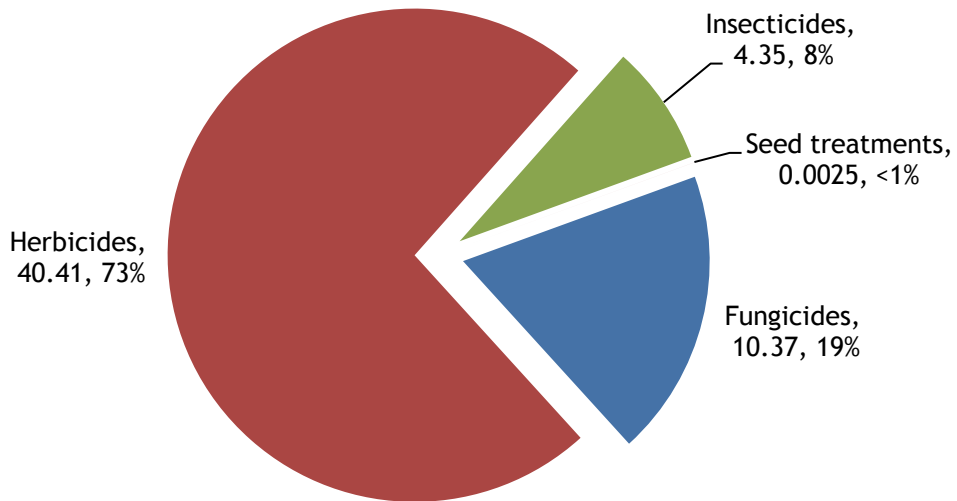
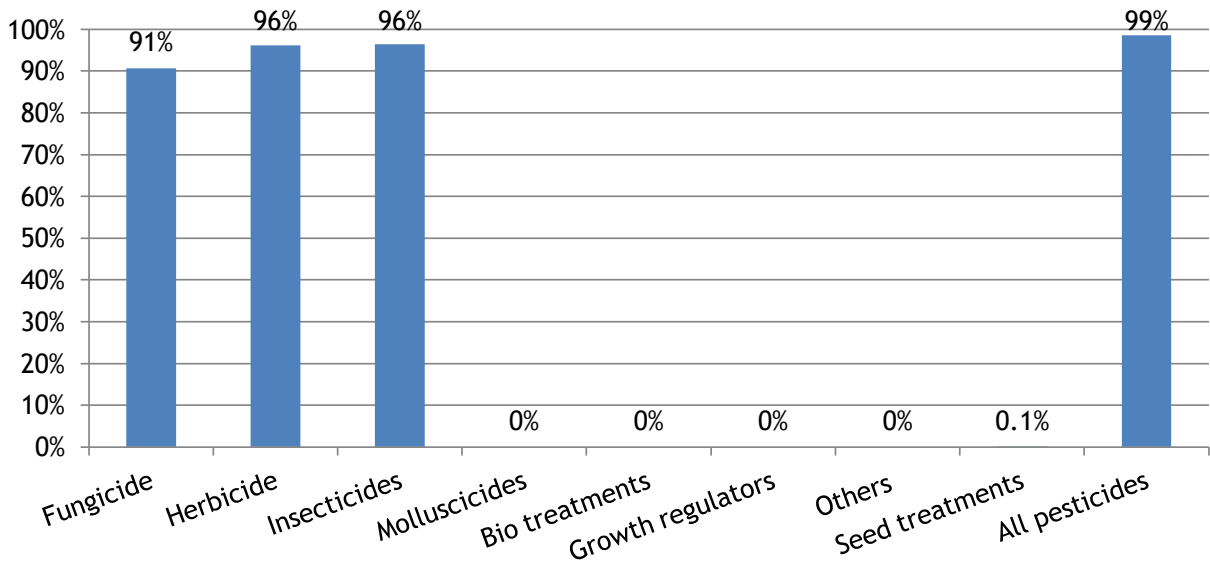


Figure 30: Proportional area of broccoli & calabrese crops treated with each pesticide group in Northern Ireland (kg), 2013.



Fungicides - broccoli

Basic area treated: 24.66 hectares

Area treated: 53.83 spray hectares

Weight of active substances applied: 10.37kg

90.7% of the area grown treated with fungicides

All reasons for use were general fungal control

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	30.12	22.44	2.26	55.95
Azoxystrobin/difenoconazole	9.36	9.36	3.04	17.39
Boscalid/pyraclostrobin	7.16	7.16	2.39	13.30
Prothioconazole	7.16	7.16	1.37	13.30
Chlorothalonil	0.02	0.02	0.02	0.04

Figure 31: Fungicide active ingredient usage on broccoli crops in Northern Ireland (spha), 2013.

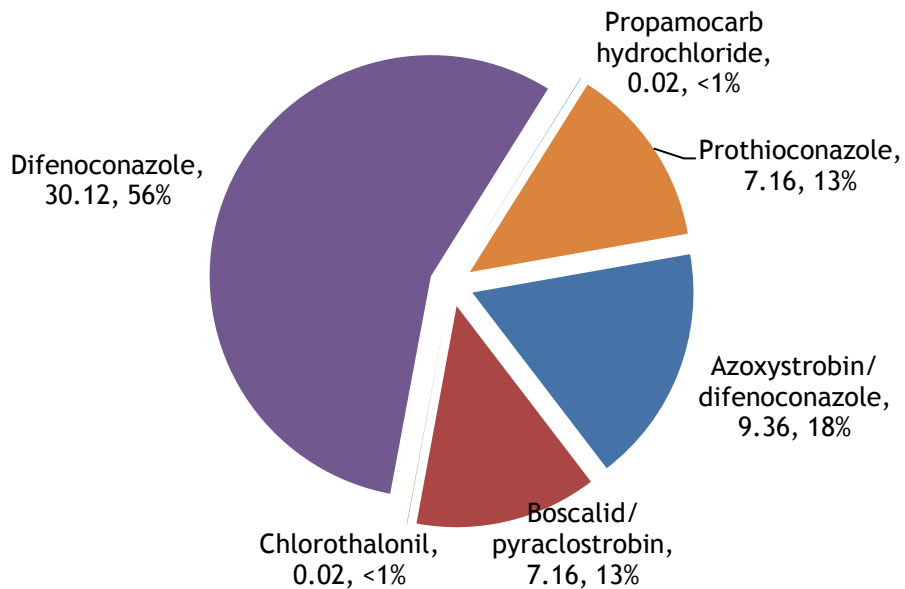
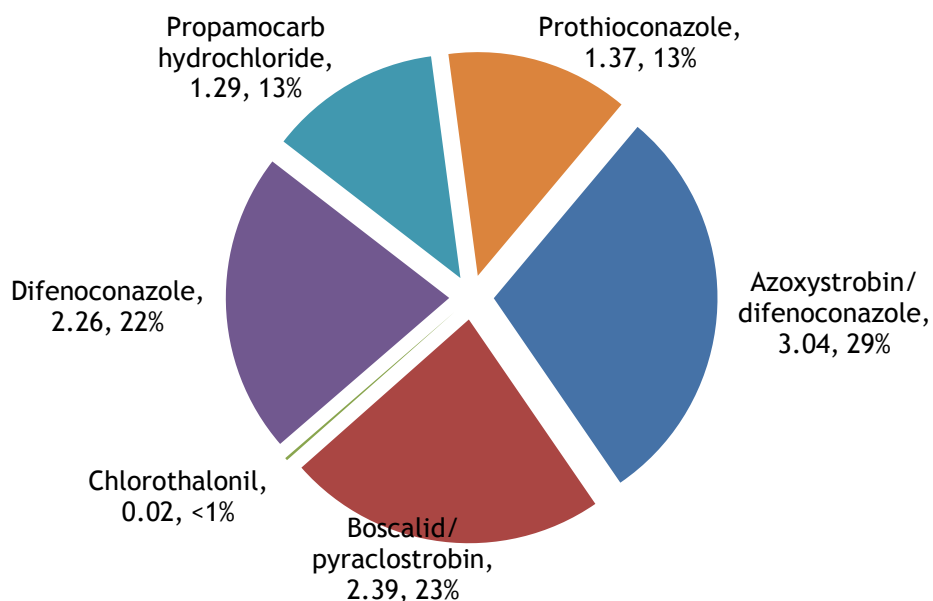


Figure 32: Weight of fungicide active substances applied to broccoli crops in Northern Ireland (kg), 2013.



Herbicides & desiccants - broccoli

Basic area treated: 26.17 hectares

Area treated: 49.60 spray hectares

Weight of active substances applied: 40.41kg

96.2% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	26.17	26.17	19.43	52.76
Glyphosate	8.04	8.04	10.94	16.21
Propyzamide	7.68	7.68	9.52	15.48
Clomazone	7.55	7.55	0.42	15.22
Linuron	0.16	0.16	0.09	0.32

Figure 33: Herbicide & desiccant active substance usage on broccoli crops in Northern Ireland (spha), 2013.

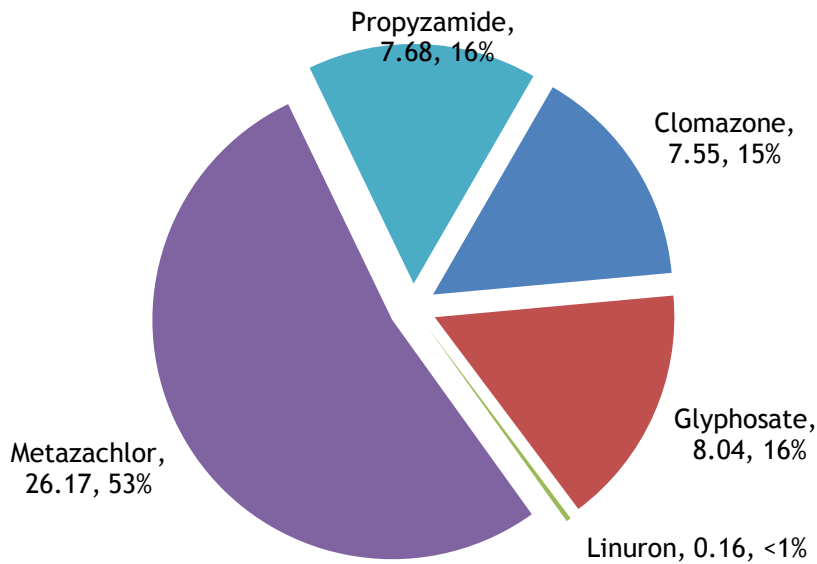


Figure 34: Weight of herbicide & desiccant active substances applied to broccoli crops in Northern Ireland (kg), 2013.

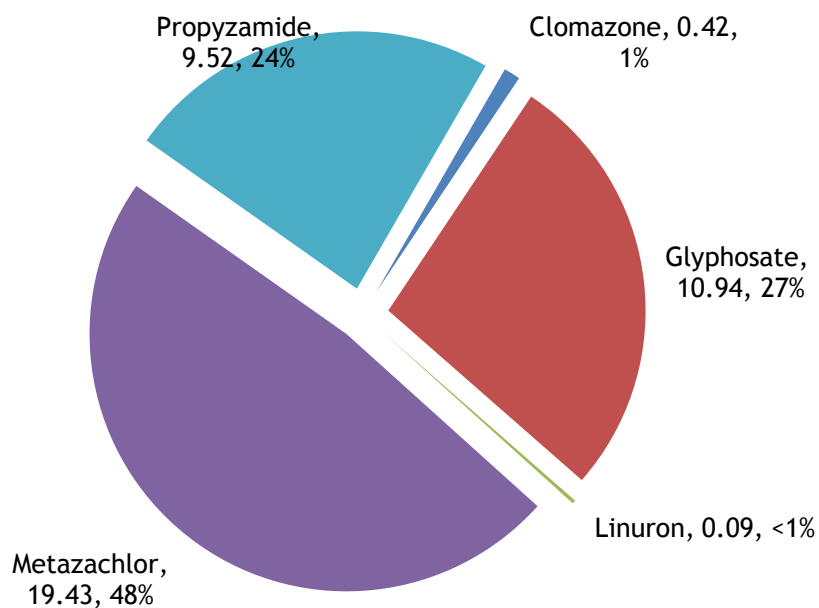


Figure 35: Broccoli: reasons for herbicide & desiccant use (spha).



Insecticides - broccoli

Basic area treated: 26.22 hectares

Area treated: 66.11 spray hectares

Weight of active substances applied: 4.35kg

96.4% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	28.41	19.36	0.3	42.97
Pirimicarb	12.11	10.74	2.36	18.32
Thiacloprid	9.36	9.36	0.9	14.16
Spirotetramat	7.16	7.16	0.54	10.83
Cypermethrin	6.84	6.84	0.2	10.35

Figure 36: Insecticide active substance usage on broccoli crops in Northern Ireland (spha), 2013.

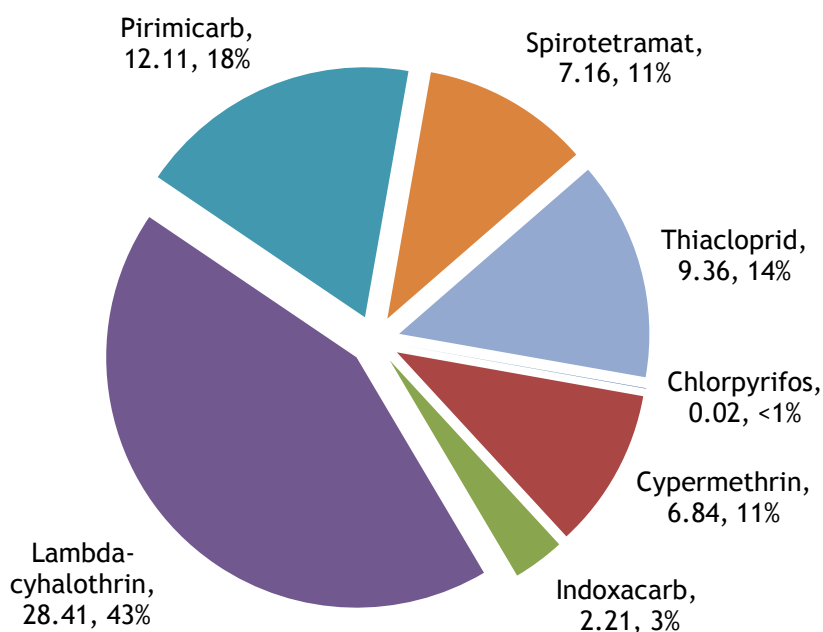


Figure 37: Weight of insecticide active substances applied to broccoli crops in Northern Ireland (kg), 2013.

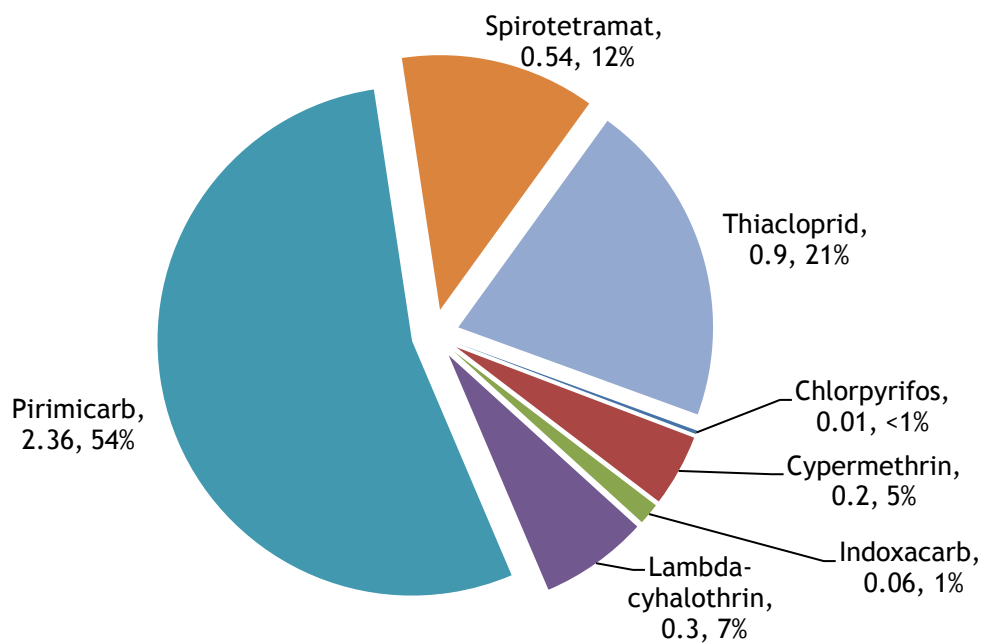
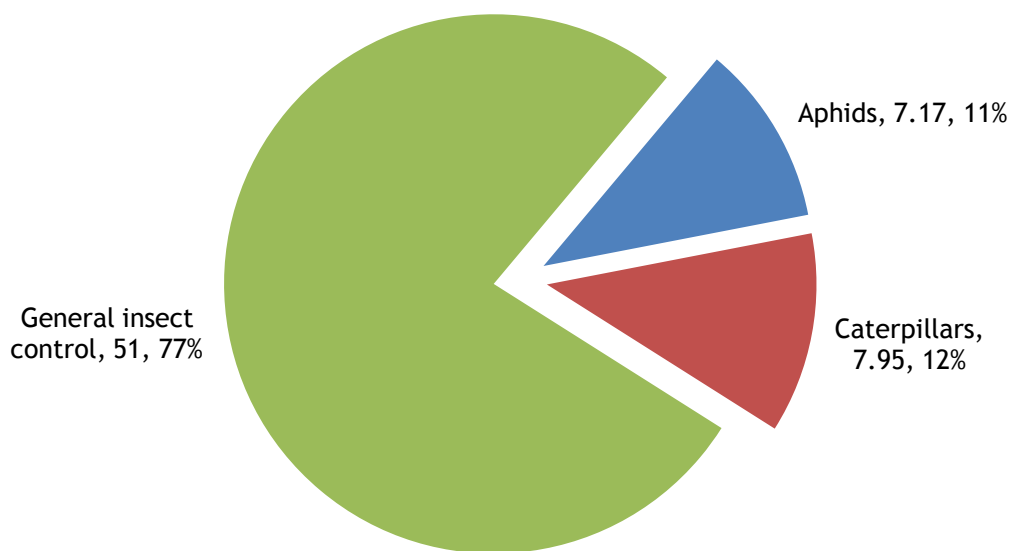


Figure 38: Broccoli: reasons for insecticide use (spha).



Pesticide Usage on calabrese crops:

28.23 hectares of calabrese crops grown in Northern Ireland

170.73 treated hectares

149.93kg applied

100% of crops received at least one treatment

All calabrese crops were grown in County Down

Calabrese crops received on average 4.08 fungicide, 3.0 herbicide and 1.38 insecticide applications.

Figure 39: Pesticide usage on calabrese crops in Northern Ireland (spha), 2013.

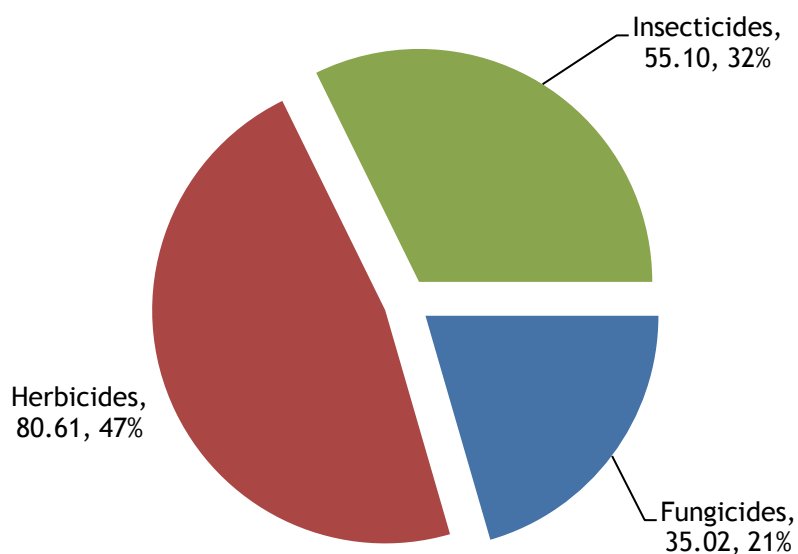


Figure 40: Weight of pesticides applied to calabrese crops in Northern Ireland (kg), 2013.

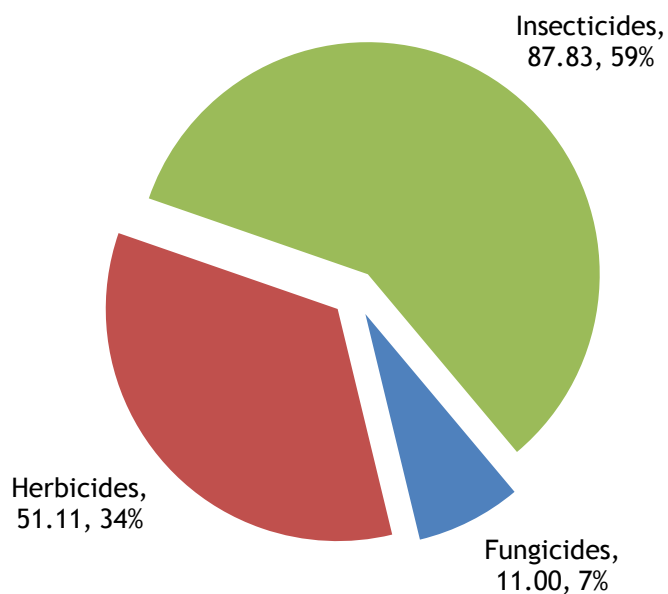
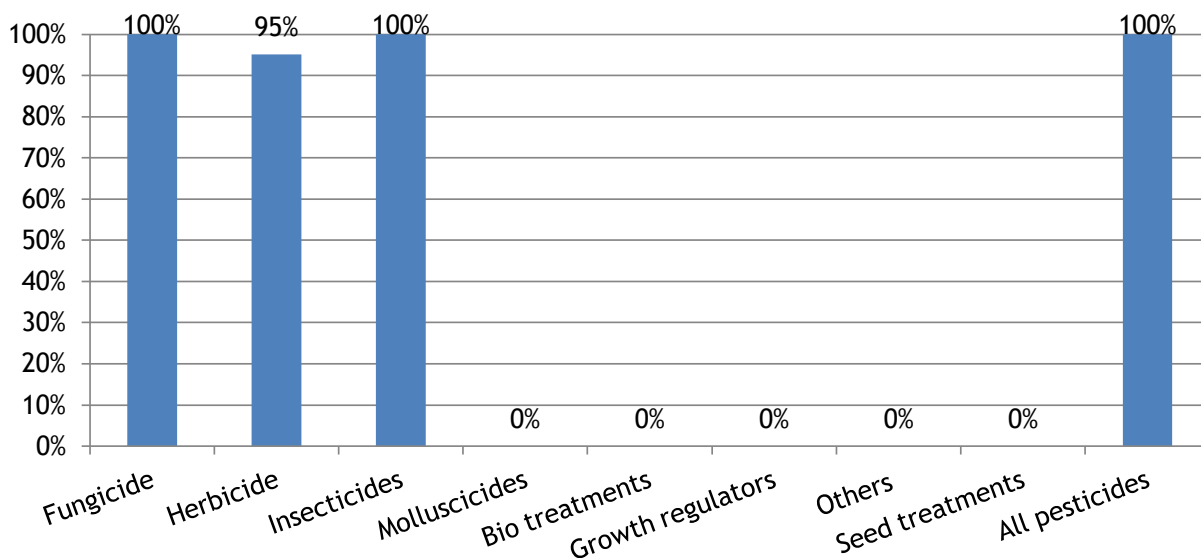


Figure 41: Proportional area of calabrese crops treated with each pesticide group in Northern Ireland (kg), 2013.



Fungicides - calabrese

Basic area treated: 28.23 hectares

Area treated: 35.02 spray hectares

Weight of active substances applied: 11.0kg

100% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	26.87	26.87	2.02	76.73
Cyprodinil/fludioxonil	1.36	1.36	0.68	3.88
Dimethomorph	1.36	1.36	0.24	3.88
Fosetyl-aluminium/propamocarb hydrochloride	1.36	1.36	2.85	3.88
Iprodione	1.36	1.36	0.15	3.88
Propamocarb hydrochloride	1.36	1.36	4.9	3.88
Thiram	1.36	1.36	0.15	3.88
Difenoconazole	26.87	26.87	2.02	76.73

Figure 42: Fungicide active ingredient usage on calabrese crops in Northern Ireland (spha), 2013.

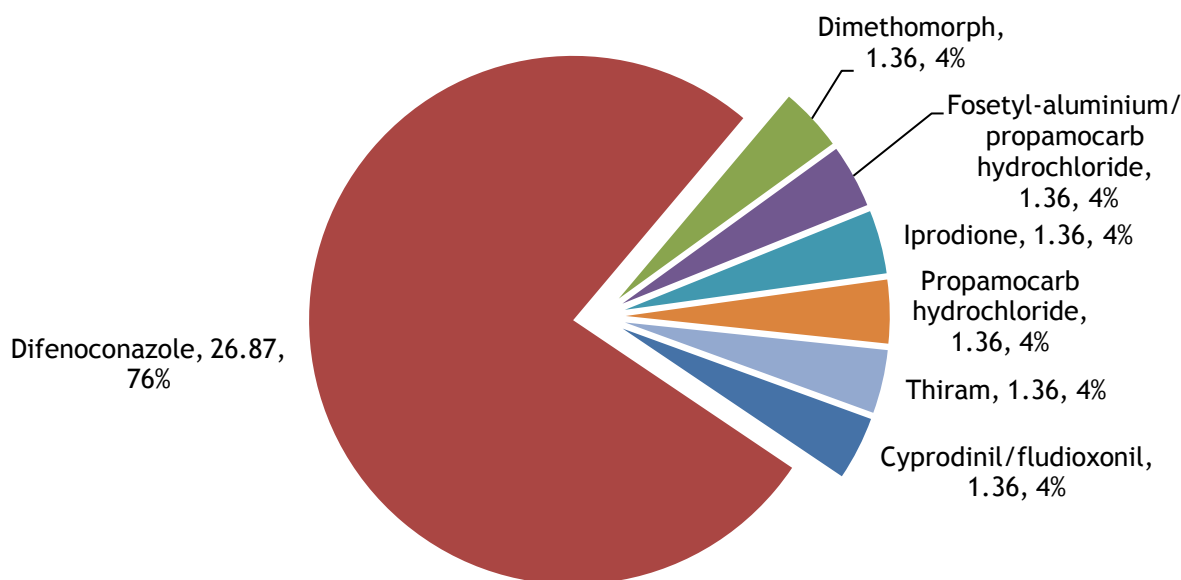


Figure 43: Weight of fungicide active substances applied to calabrese crops in Northern Ireland (kg), 2013.

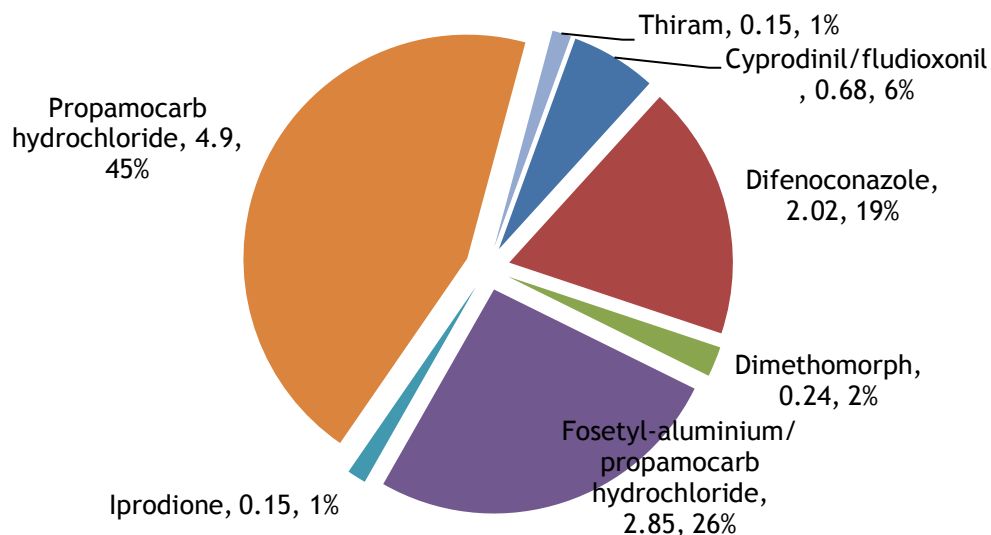
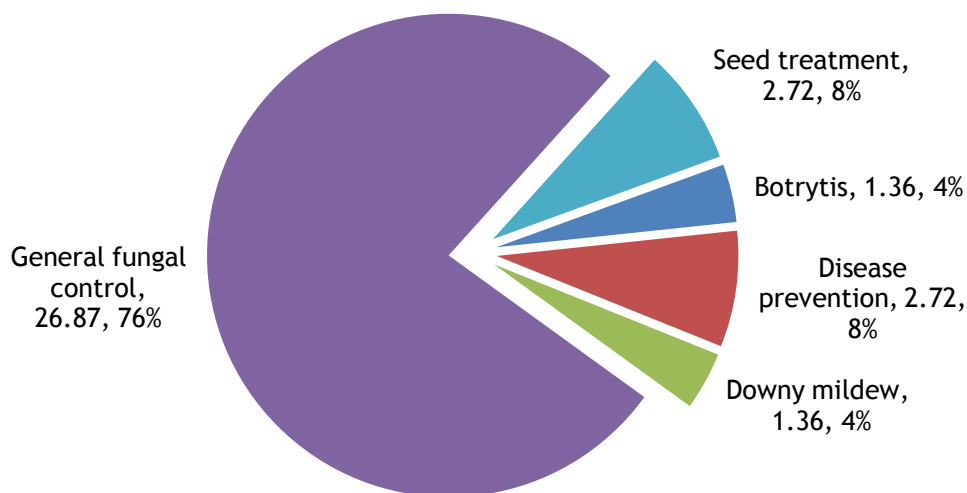


Figure 44: Calabrese: reasons for fungicide use (spha).



Herbicides & desiccants - calabrese

Basic area treated: 26.87 hectares

Area treated: 80.61 spray hectares

Weight of active substances applied: 51.11kg

95.2% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Clomazone	26.87	26.87	1.93	33.33
Glyphosate	26.87	26.87	29.02	33.33
Metazachlor	26.87	26.87	20.15	33.33

Figure 45: Herbicide & desiccant active substance usage on calabrese crops in Northern Ireland (spha), 2013.

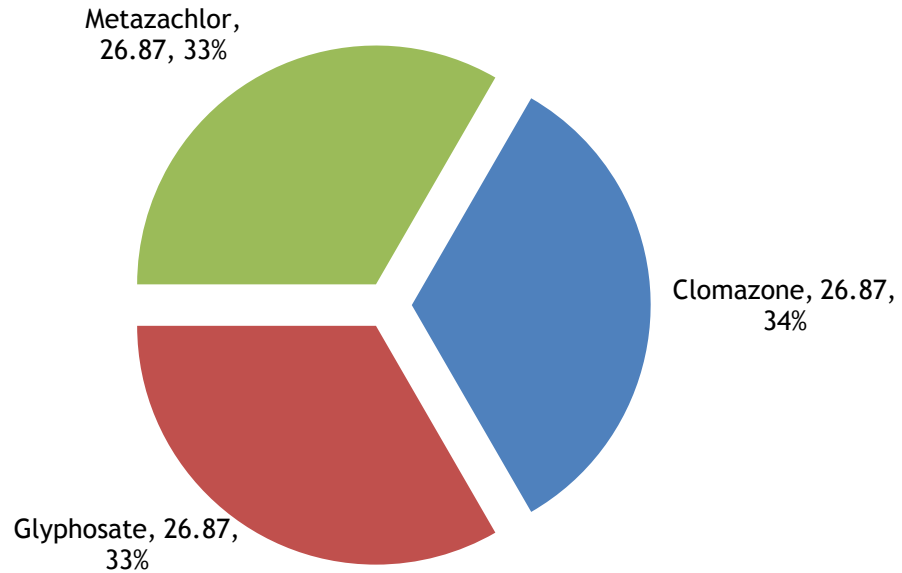


Figure 46: Weight of herbicide & desiccant active substances applied to calabrese crops in Northern Ireland (kg), 2013.

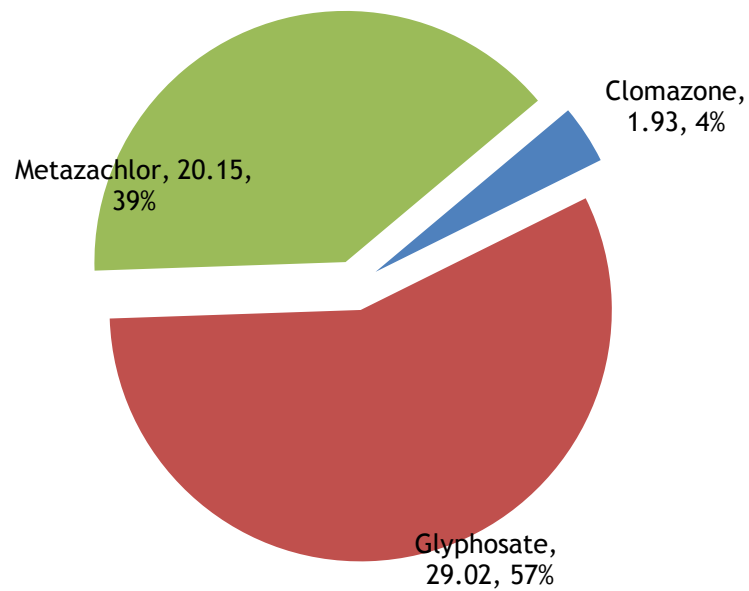
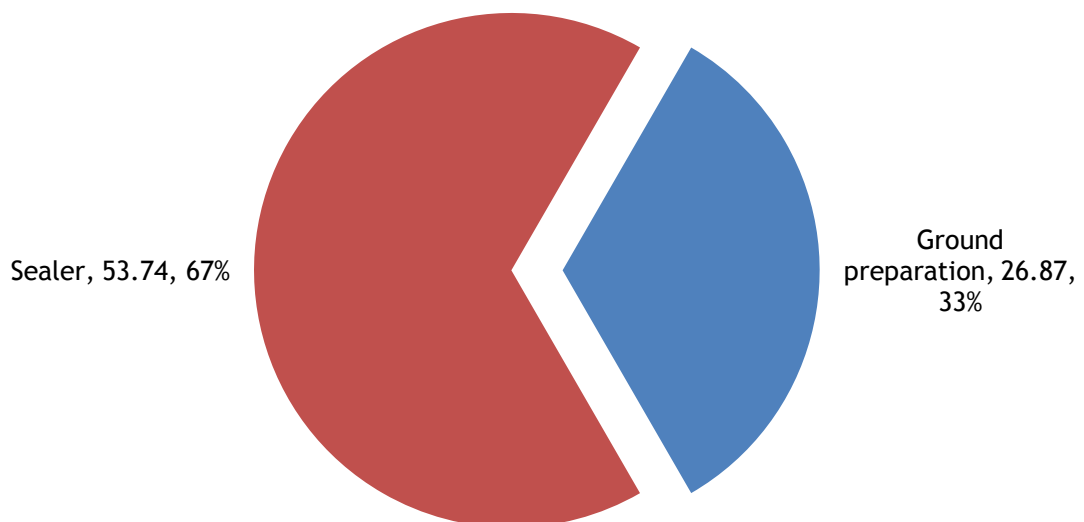


Figure 47: Calabrese: reasons for herbicide & desiccant use (spha).



Insecticides - calabrese

Basic area treated: 28.23 hectares
 Area treated: 55.10 spray hectares
 Weight of active substances applied: 87.83kg
 100% of the area grown treated with insecticides
 The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Cypermethrin	26.87	26.87	0.67	48.77
Pirimicarb	26.87	26.87	5.64	48.77
Chlorpyrifos	1.36	1.36	81.52	2.47

Figure 48: Insecticide active substance usage on calabrese crops in Northern Ireland (spha), 2013.

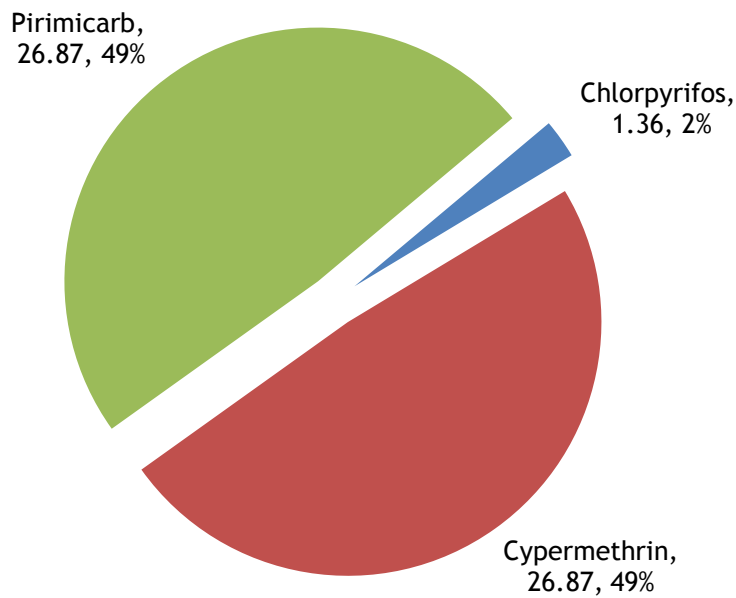


Figure 49: Weight of insecticide active substances applied to calabrese crops in Northern Ireland (kg), 2013.

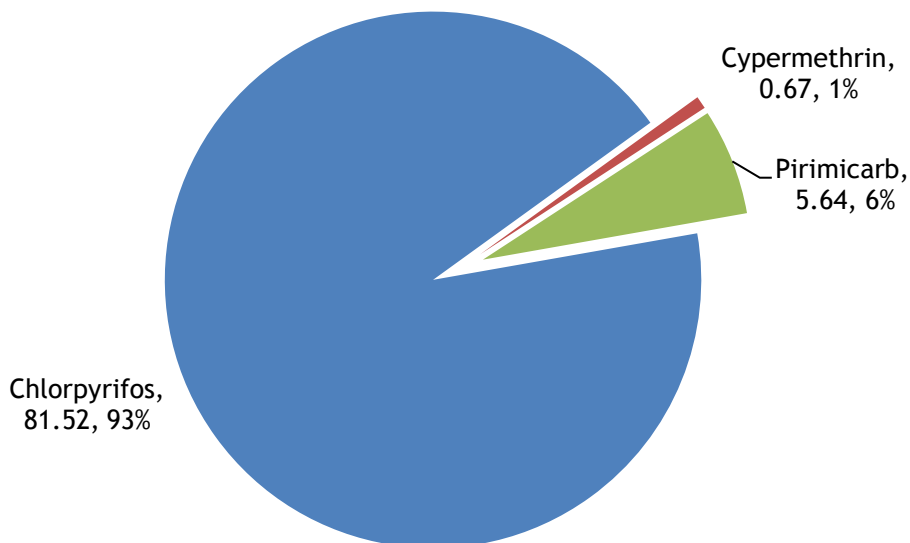
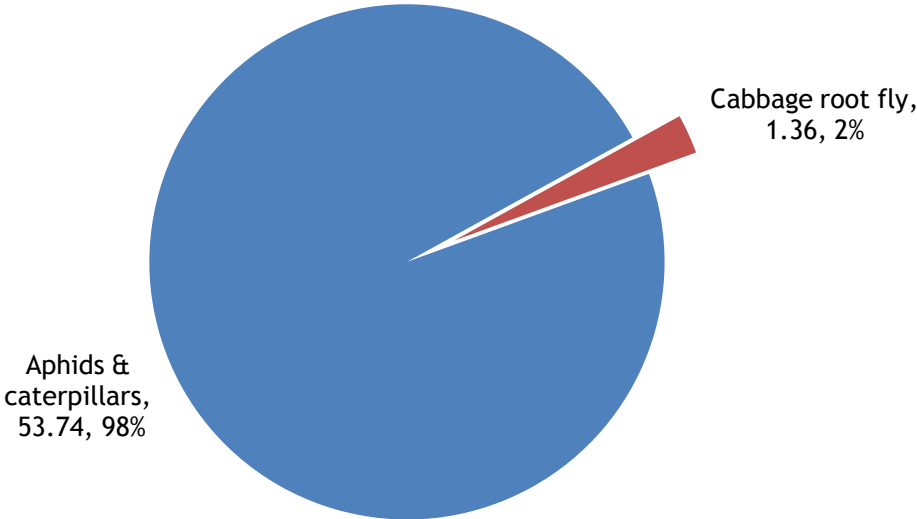
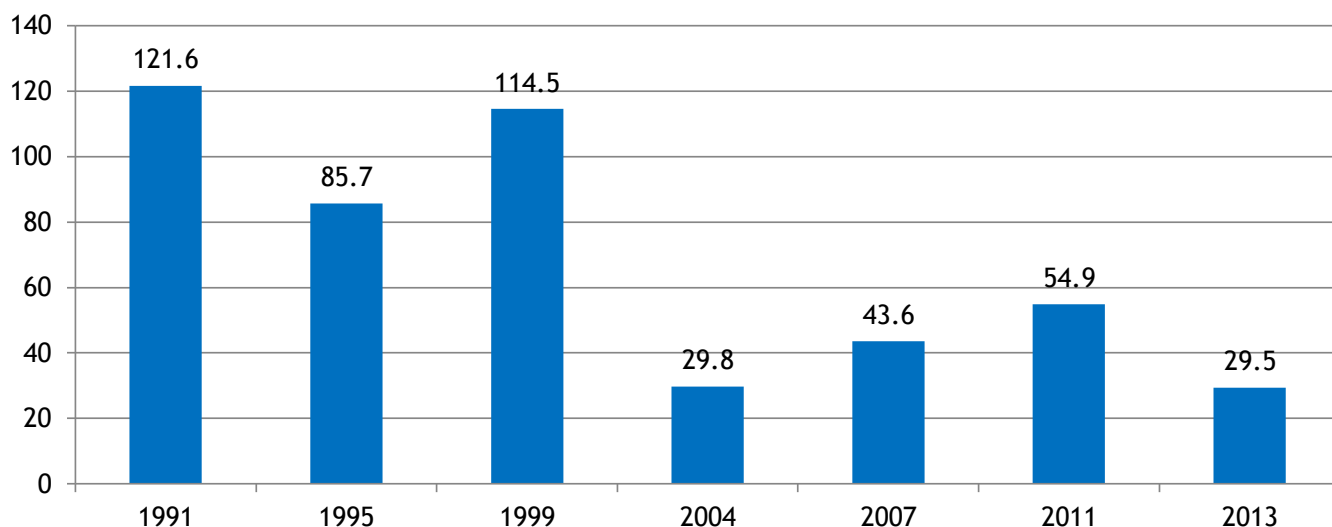


Figure 50: Calabrese: reasons for insecticide use (spha).



Brussels sprout crops

Figure 51: Comparison of the area of Brussels sprout crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on Brussels sprout crops:

29.47 hectares of Brussels sprout crops grown in Northern Ireland

207.32 treated hectares

107.78kg applied

100% of crops received at least one treatment

Brussels sprouts received on average 4.17 fungicide, 1.8 herbicide, 2.68 insecticide, 1.0 molluscicide and 1.62 seed treatment applications.

Figure 52: Regional distribution of Brussels sprout crops grown in Northern Ireland (ha), 2013.

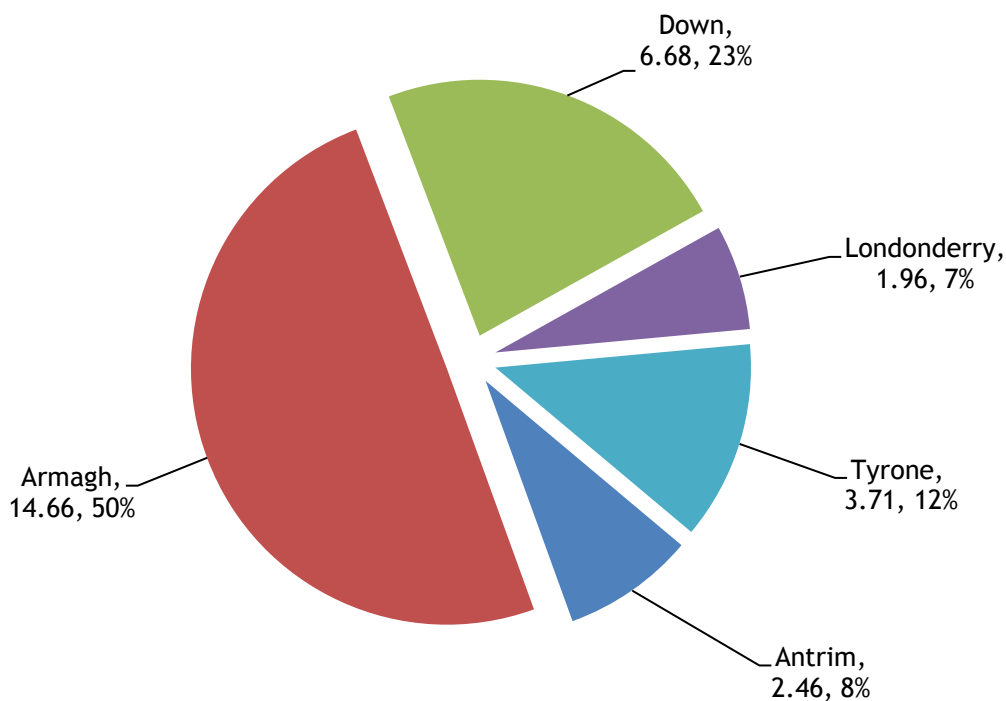


Figure 53: Pesticide usage on Brussels sprout crops in Northern Ireland (spha), 2013.

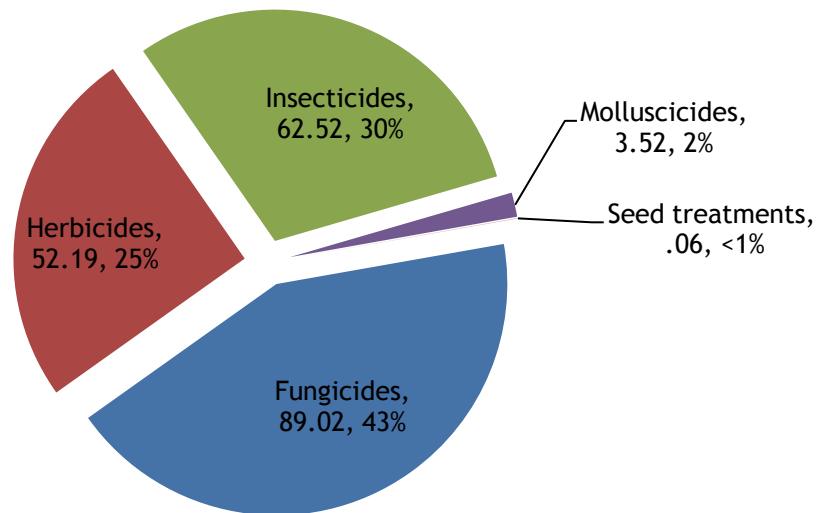


Figure 54: Weight of pesticides applied to Brussels sprout crops in Northern Ireland (kg), 2013.

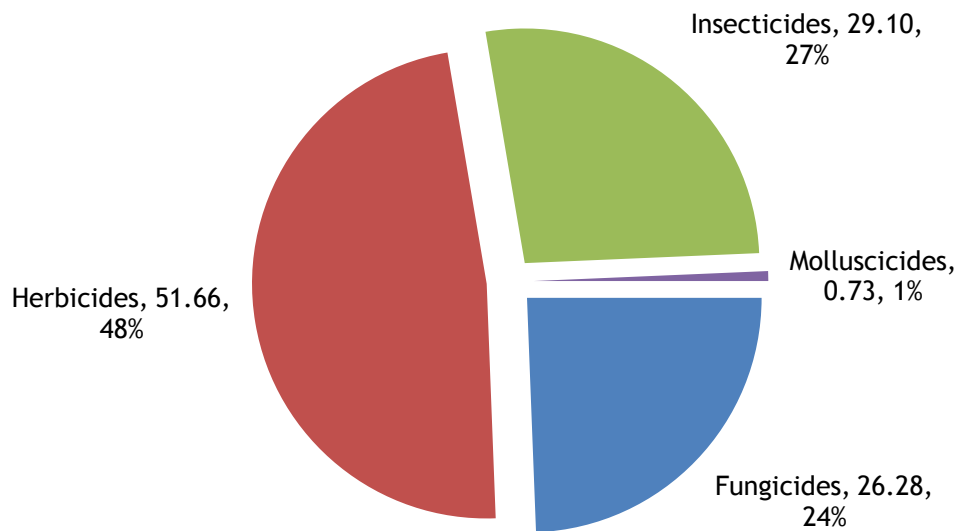
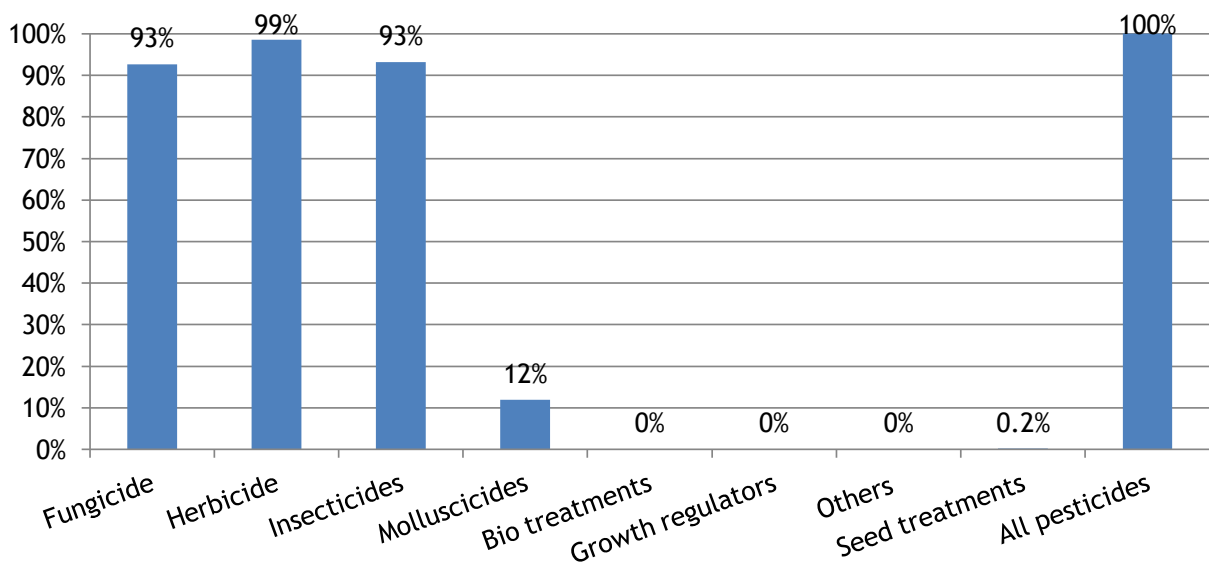


Figure 55: Proportional area of Brussels sprout crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - Brussels sprout

Basic area treated: 27.31 hectares

Area treated: 89.02 spray hectares

Weight of active substances applied: 26.28kg

92.7% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	30.18	13.87	2.26	33.90
Chlorothalonil/metalaxyl-M	27.96	14.91	16.03	31.41
Azoxystrobin	13.05	13.05	1.63	14.66
Prothioconazole	10.76	5.38	2.07	12.09
Tebuconazole	3.99	3.23	1	4.48

Figure 56: Fungicide active substance usage on Brussels sprout crops in Northern Ireland (spha), 2013.

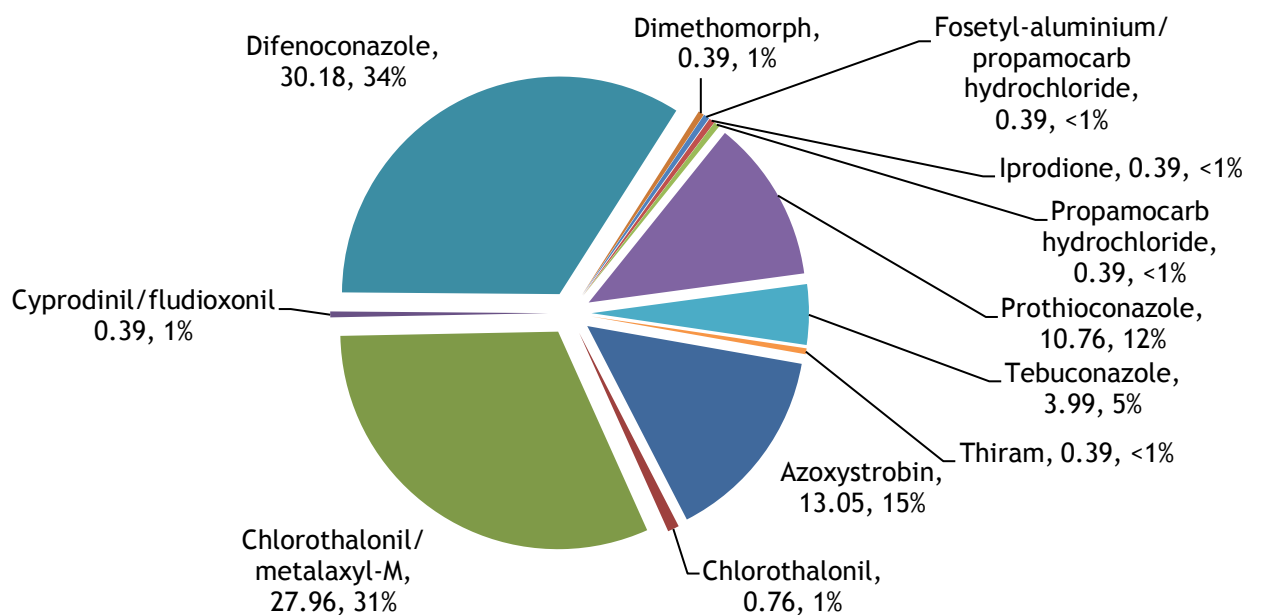


Figure 57: Weight of fungicide active substances applied to Brussels sprout crops in Northern Ireland (kg), 2013.

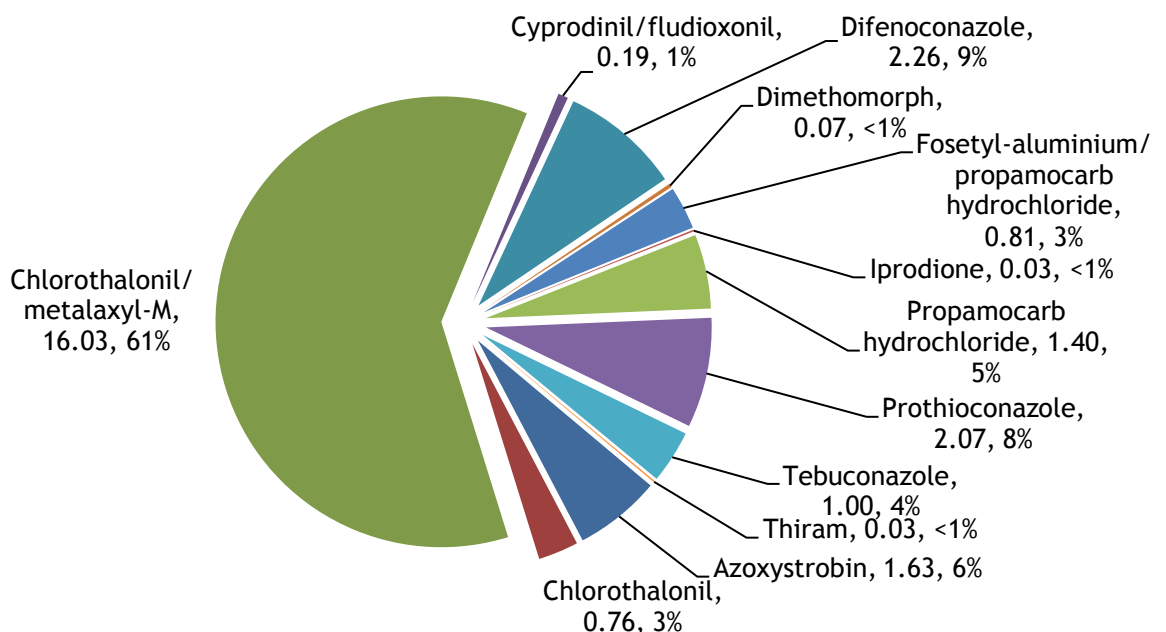
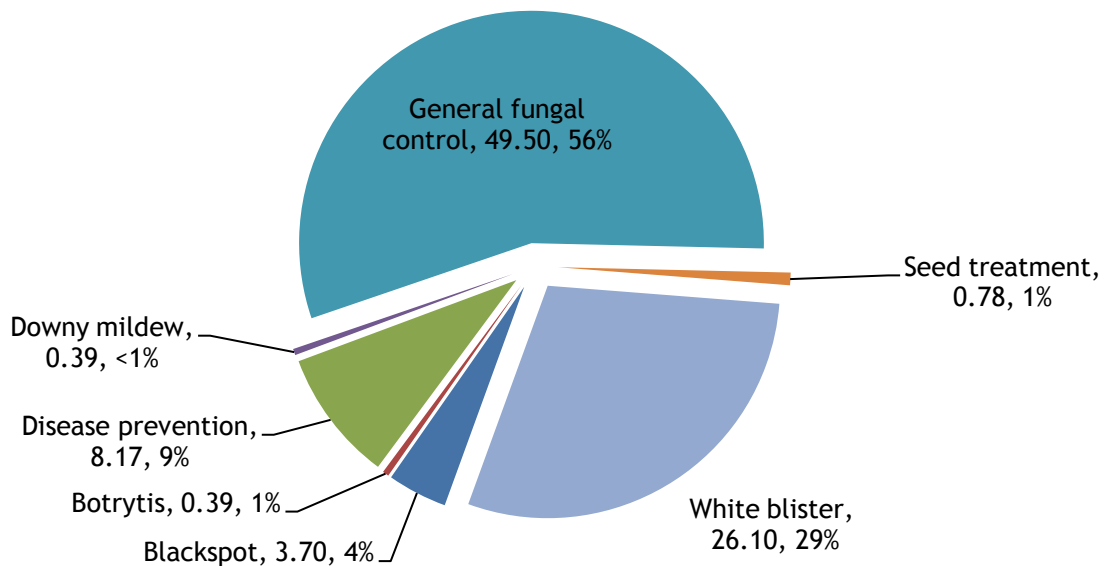


Figure 58: Brussels sprout: reasons for fungicide use (spha).



Herbicides & desiccants - Brussels sprout

Basic area treated: 29.03 hectares

Area treated: 52.19 spray hectares

Weight of active substances applied: 51.6kg

98.5% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	22.87	22.87	17.15	43.82
Glyphosate	21.15	21.15	29.32	40.53
Pyridate	6.16	6.16	4.93	11.80
Clomazone	1.86	1.86	0.17	3.56
Linuron	0.16	0.16	0.09	0.31

Figure 59: Herbicide & desiccant active substance usage on Brussels sprout crops in Northern Ireland (spha), 2013.

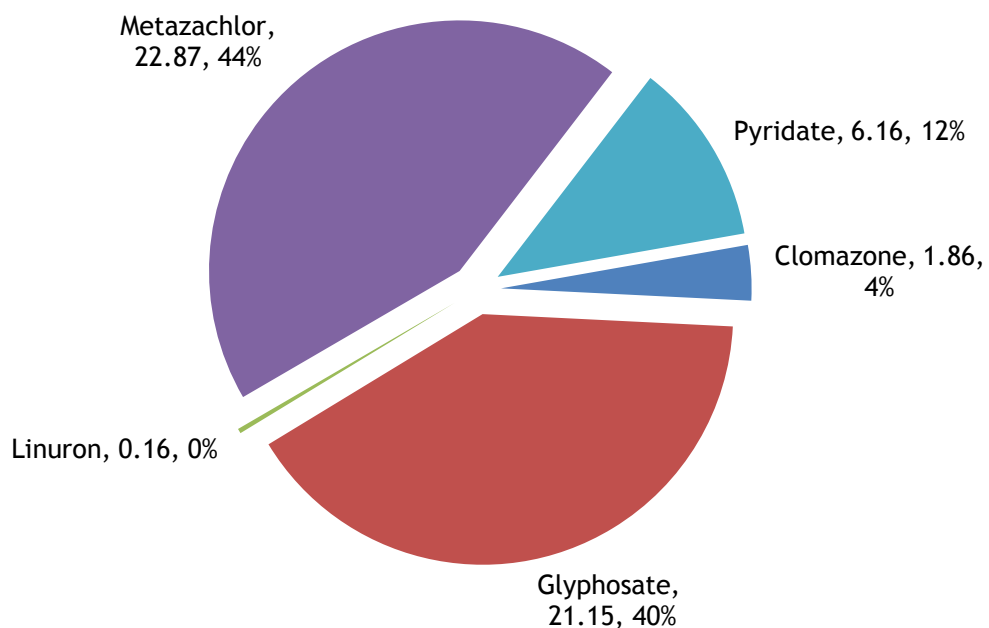


Figure 60: Weight of herbicide & desiccant active substances applied to Brussels sprout crops in Northern Ireland (kg), 2013.

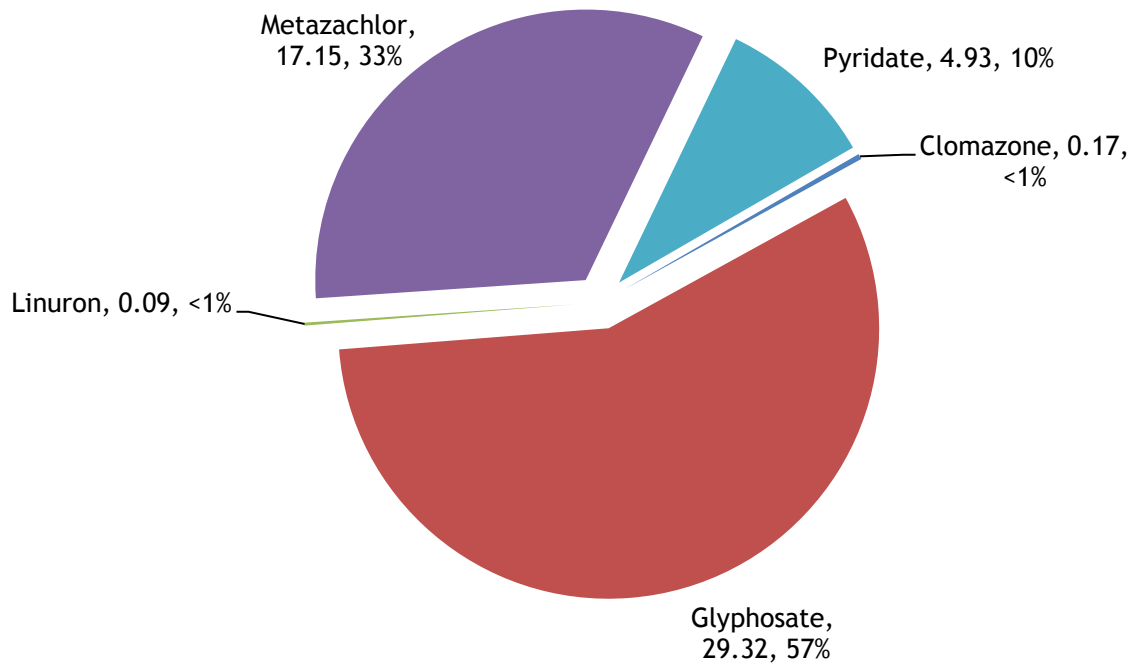
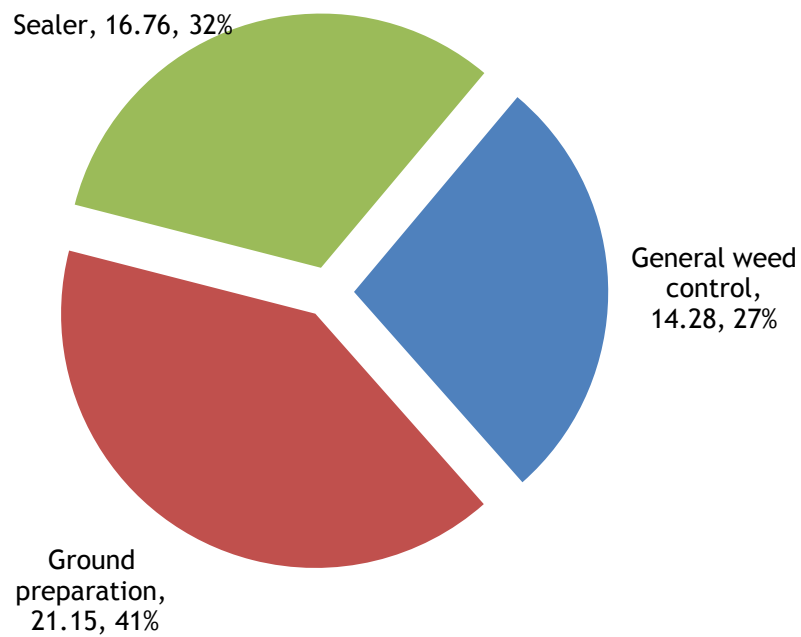


Figure 61: Brussels sprout: reasons for herbicide & desiccant use (spha).



Insecticides - Brussels sprout

Basic area treated: 27.46 hectares

Area treated: 62.52 spray hectares

Weight of active substances applied: 29.10kg

93.2% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Pirimicarb	17.76	14.62	2.36	28.41
Lambda-cyhalothrin	16.99	7.86	0.17	27.18
Thiacloprid	14.61	7.22	1.4	23.37
Spirotetramat	3.52	3.52	0.26	5.63
Chlorpyrifos	2.85	2.85	23.46	4.56

Figure 62: Insecticide active substance usage on Brussels sprout crops in Northern Ireland (spha), 2013.

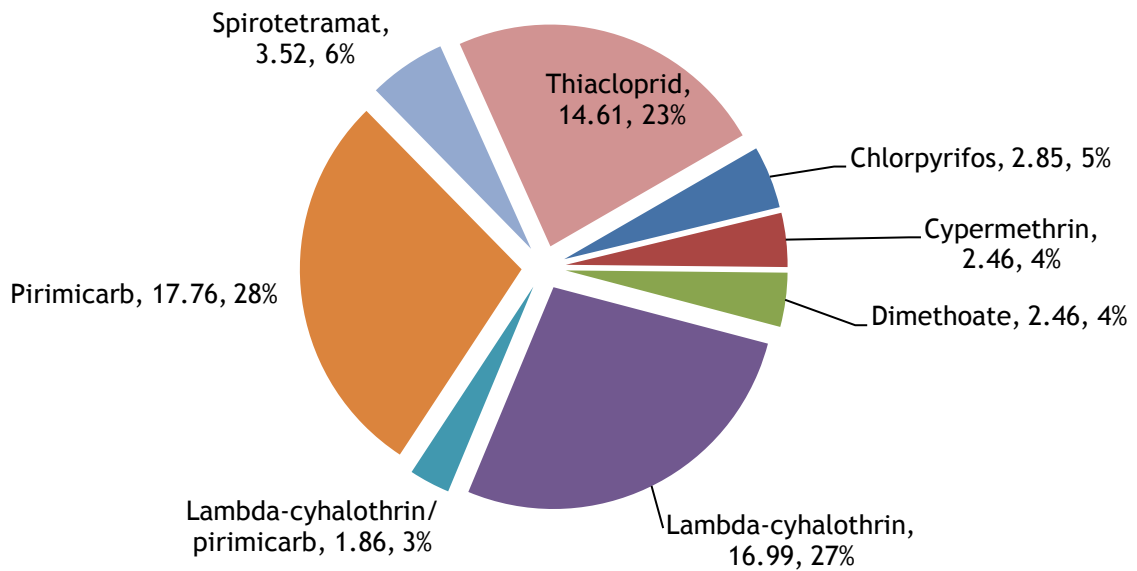


Figure 63: Weight of insecticide active substances applied to Brussels sprouts crops in Northern Ireland (kg), 2013.

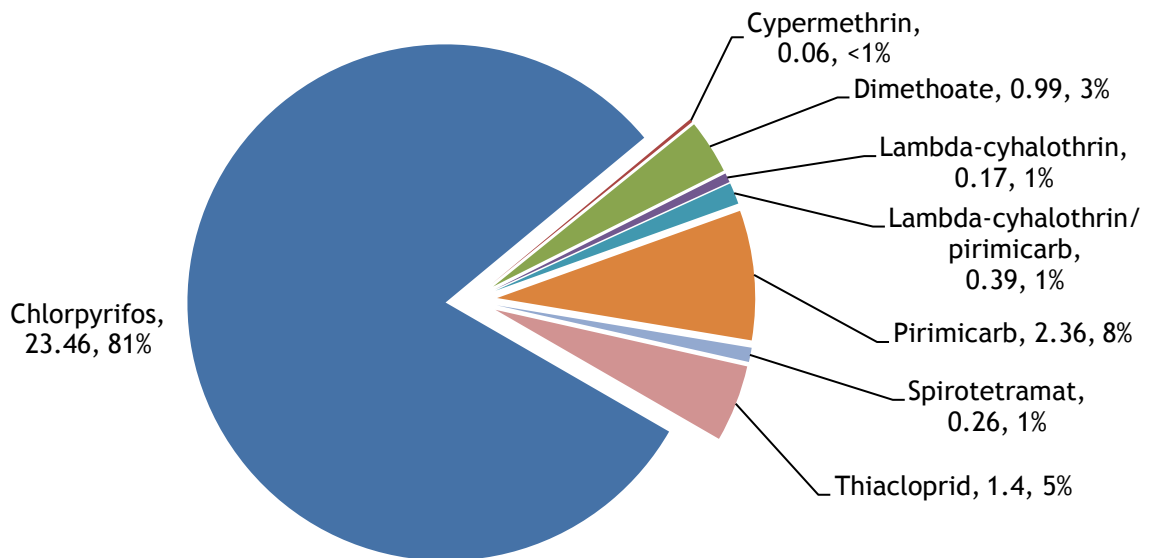
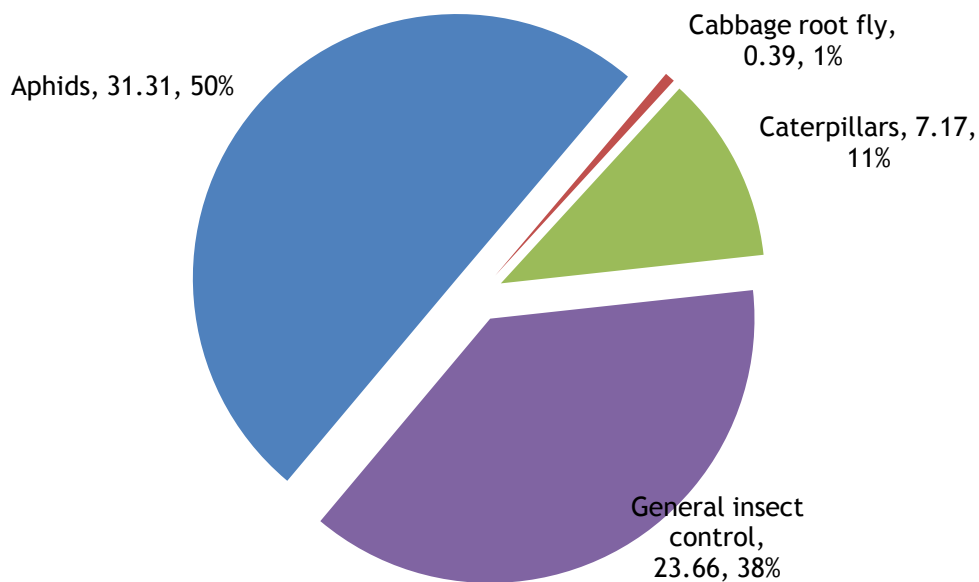


Figure 64: Brussels sprout: reasons for insecticide use (spha).



Molluscicides - Brussels sprout

Basic area treated: 3.52 hectares

Area treated: 3.52 spray hectares

Weight of active substances applied: 0.73kg

12% of the area grown treated with molluscicides

All applications were to control slugs

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Ferric phosphate	3.52	3.52	0.73	100%

Cabbage crops:

Figure 65: Comparison of the area of summer & autumn cabbage crops grown in Northern Ireland (ha), 1991 - 2013.

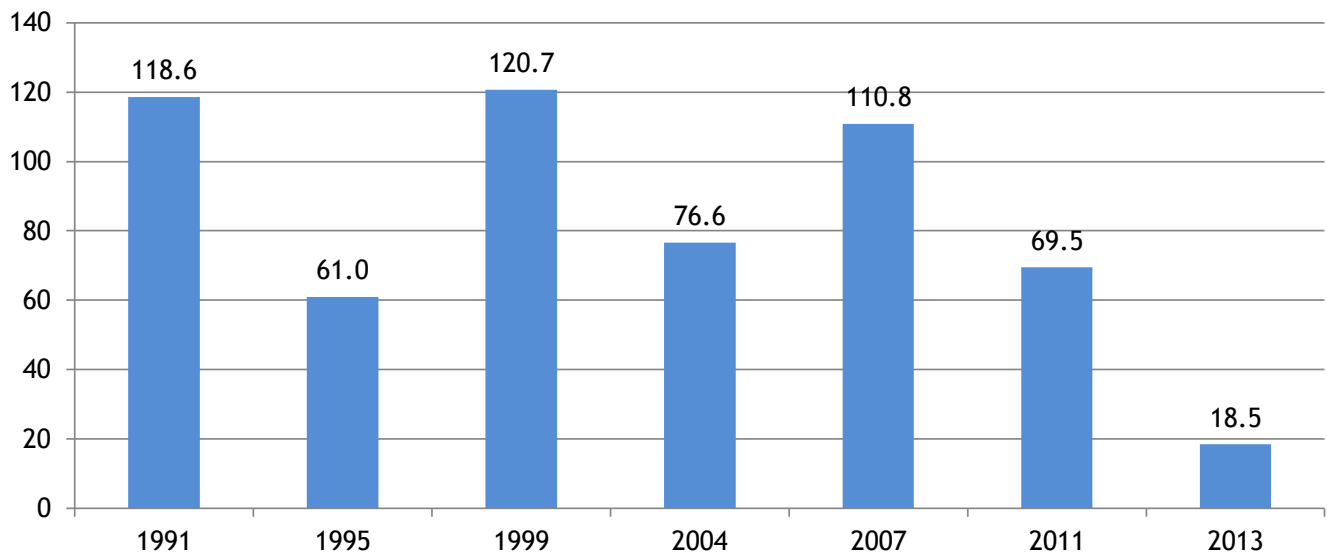
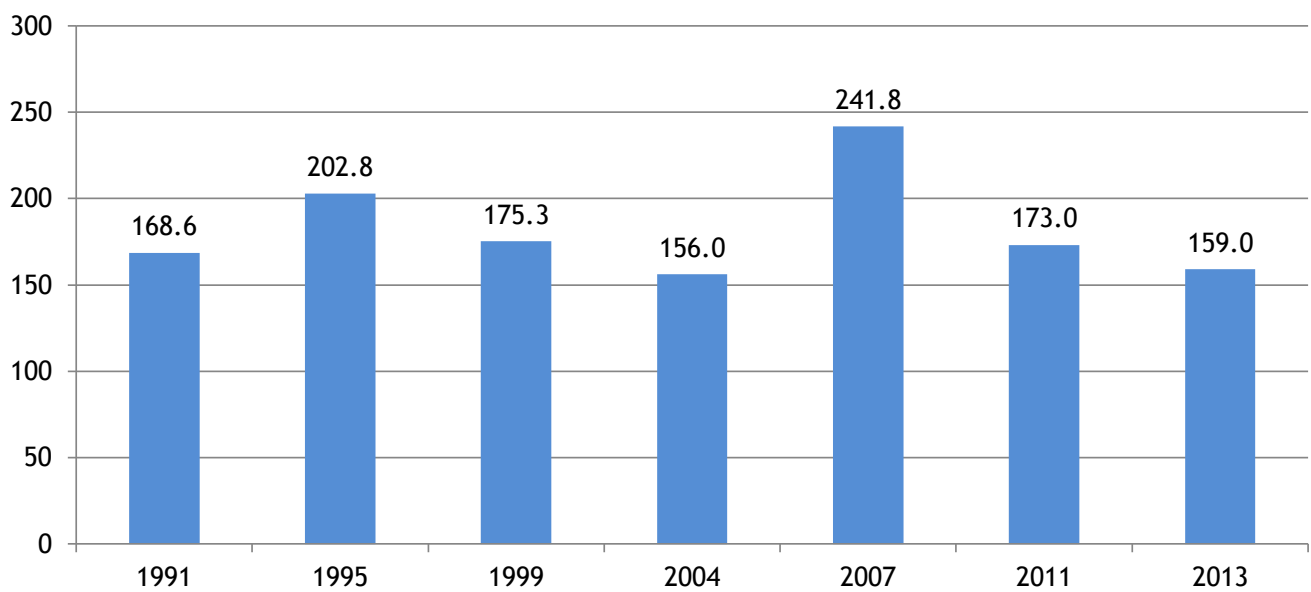


Figure 66: Comparison of the area of 'other' cabbage crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on autumn cabbage crops:

8.97 hectares of autumn cabbage crops grown in Northern Ireland all of which grown in Co Down

89.61 treated hectares

33.63kg applied

100% of crops received at least one treatment

Autumn cabbage received on average 5.4 fungicide, 2.0 herbicide and 1.9 insecticide applications.

Figure 67: Pesticide usage on autumn cabbage crops in Northern Ireland (spha), 2013.

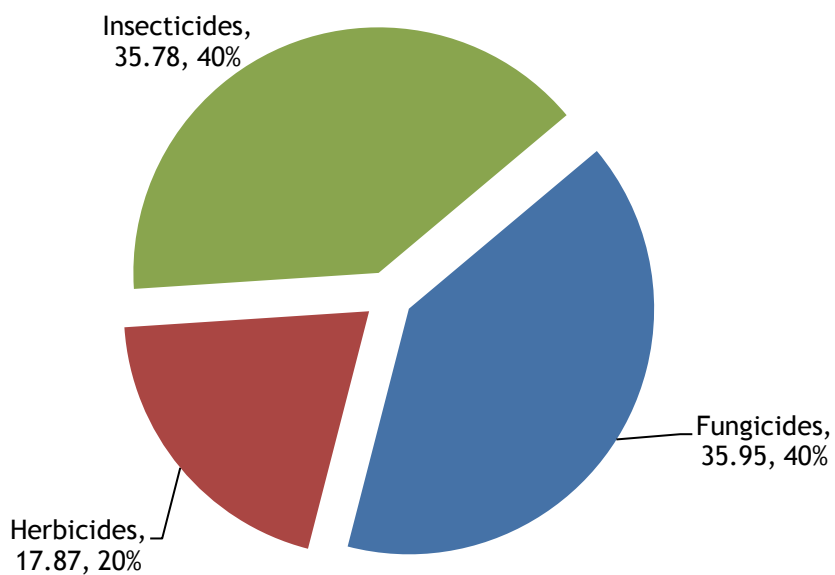


Figure 68: Weight of pesticides applied to autumn cabbage crops in Northern Ireland (kg), 2013.

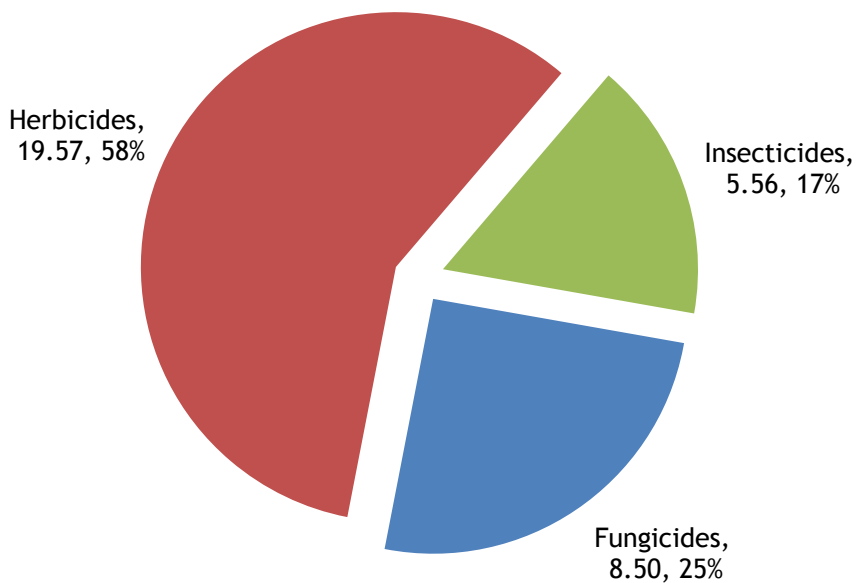
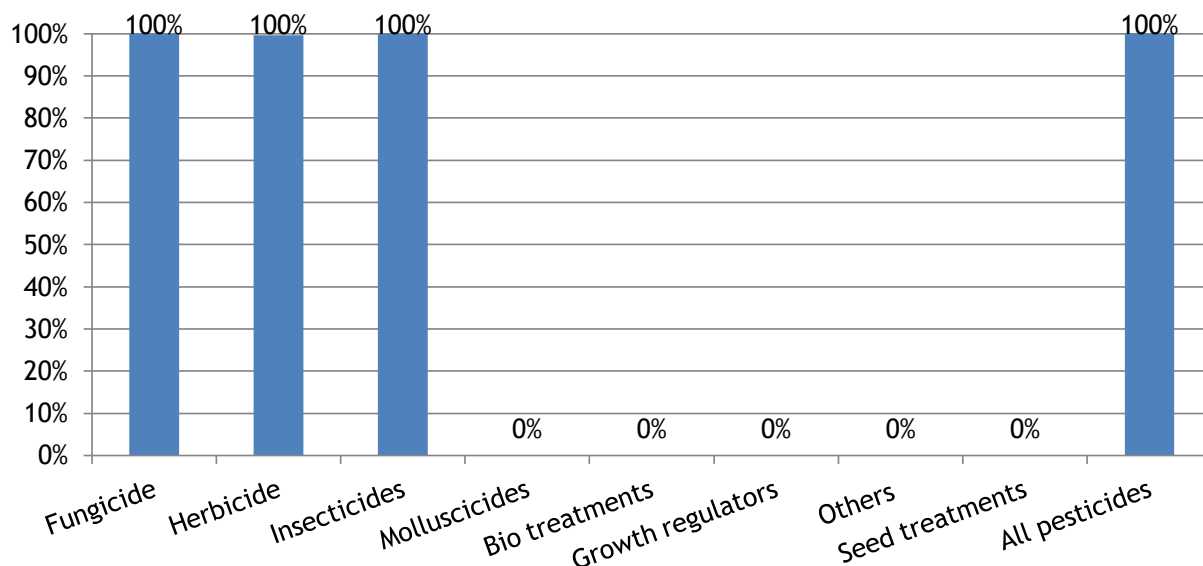


Figure 69: Proportional area of autumn cabbage crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - autumn cabbage

Basic area treated: 8.97 hectares

Area treated: 35.95 spray hectares

Weight of active substances applied: 8.50kg

100% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin/difenoconazole	8.94	8.94	2.9	24.87
Boscalid/pyraclostrobin	8.94	8.94	2.98	24.87
Difenoconazole	8.94	8.94	0.67	24.87
Prothioconazole	8.94	8.94	1.72	24.87

Figure 70: Fungicide active substance usage on autumn cabbage crops in Northern Ireland (spha), 2013.

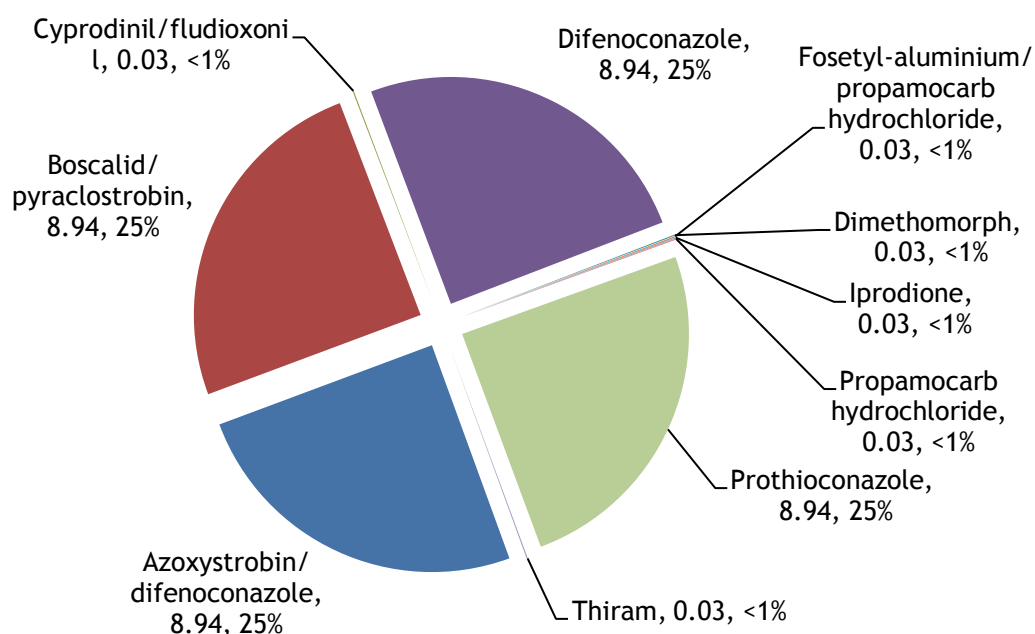


Figure 71: Weight of fungicide active substances applied to autumn cabbage crops in Northern Ireland (kg), 2013.

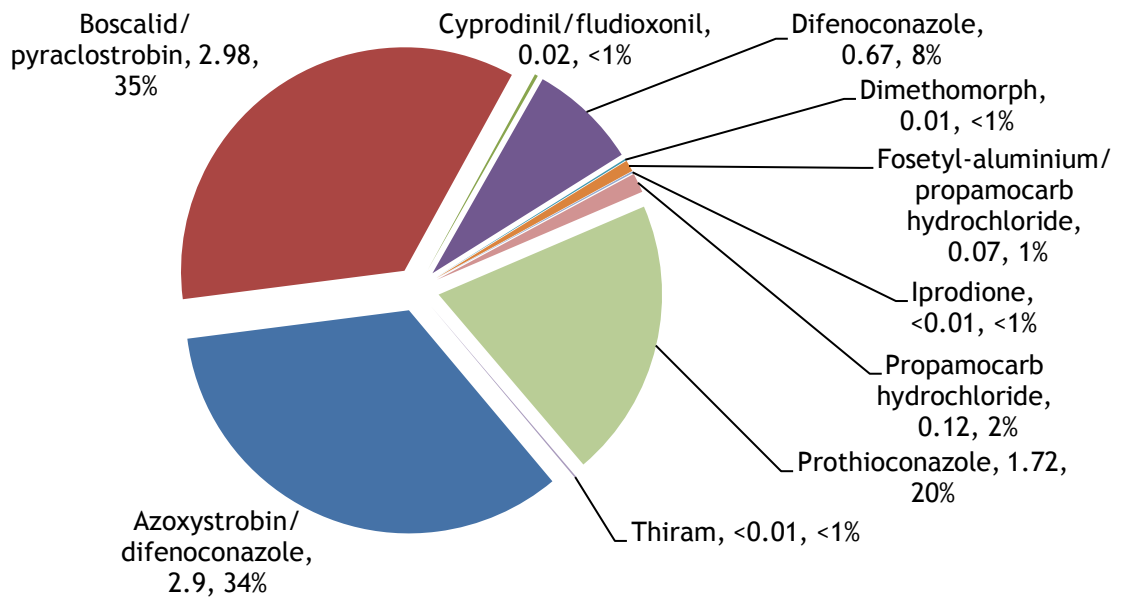
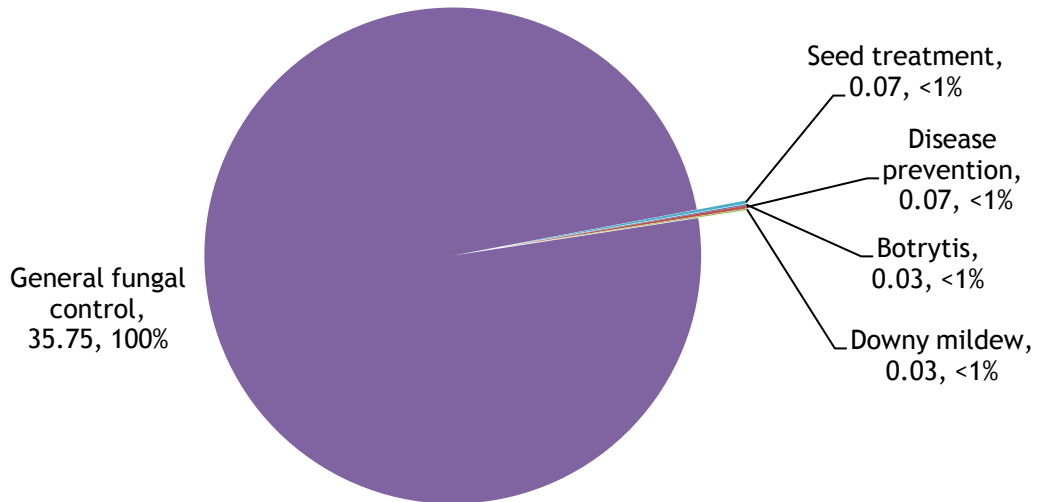


Figure 72: Autumn cabbage: reasons for fungicide use (spha).



Herbicides & desiccants - autumn cabbage

Basic area treated: 8.94 hectares

Area treated: 17.87 spray hectares

Weight of active substances applied: 19.57kg

99.6% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Glyphosate	8.94	8.94	12.87	50
Metazachlor	8.94	8.94	6.7	50

Figure 73: Herbicide & desiccant active substance usage on autumn cabbage crops in Northern Ireland (spha), 2013.

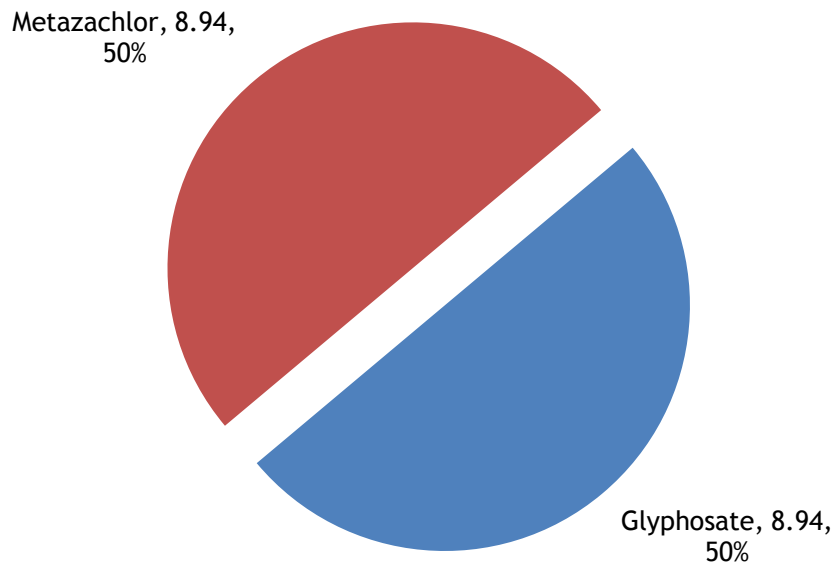


Figure 74: Weight of herbicide & desiccant active substances applied to autumn cabbage crops in Northern Ireland (kg), 2013.

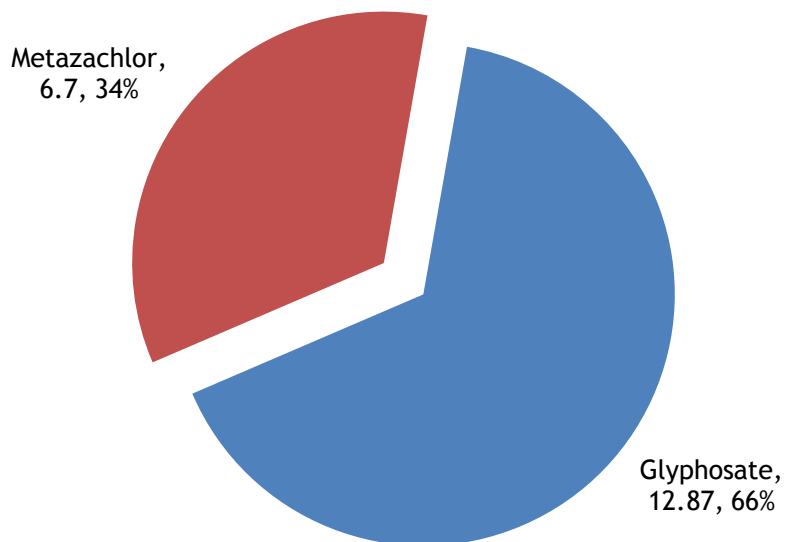
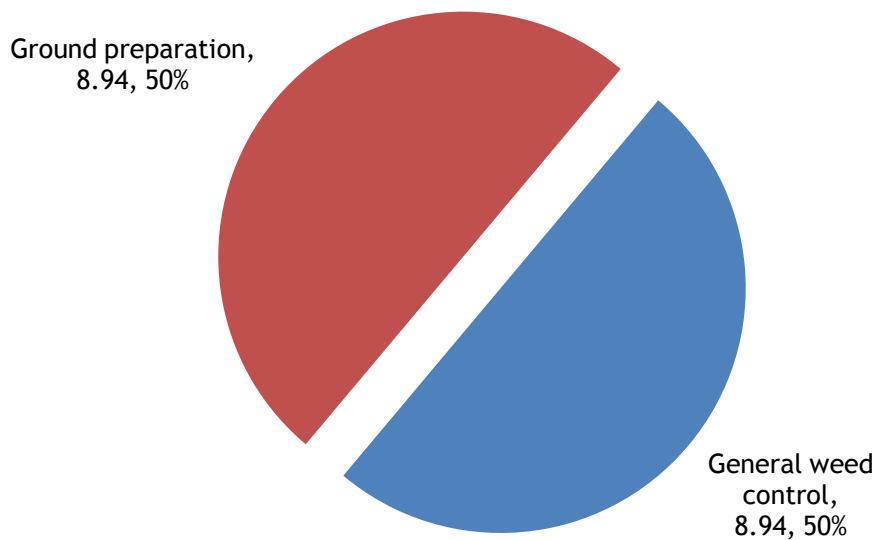


Figure 75: Autumn cabbage: reasons for herbicide & desiccant use (spha).



Insecticides - autumn cabbage

Basic area treated: 8.97 hectares

Area treated: 35.78 spray hectares

Weight of active substances applied: 5.56kg

100% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	8.94	8.94	0.09	24.99
Pirimicarb	8.94	8.94	1.88	24.99
Spirotetramat	8.94	8.94	0.67	24.99
Thiacloprid	8.94	8.94	0.86	24.99
Chlorpyrifos	0.03	0.03	2.06	0.08

Figure 76: Insecticide active substance usage on autumn cabbage crops in Northern Ireland (spha), 2013.

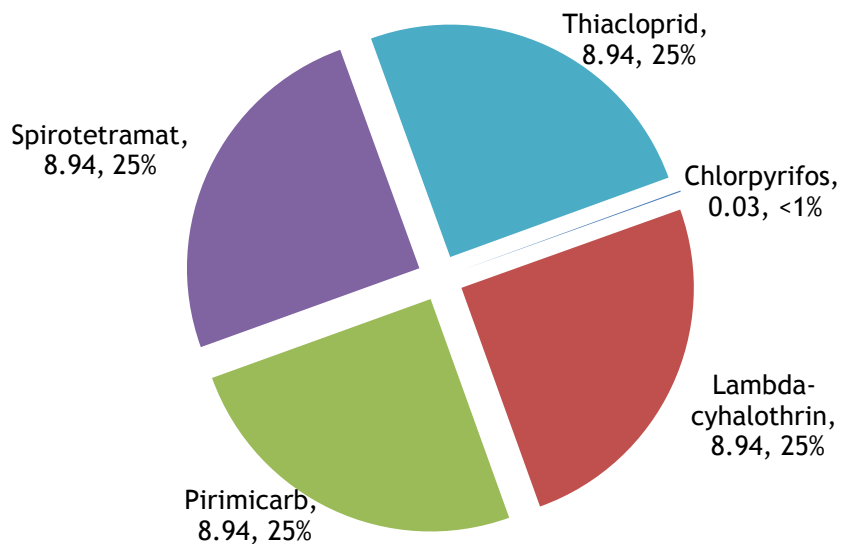


Figure 77: Weight of insecticide active substances applied to autumn cabbage crops in Northern Ireland (kg), 2013.

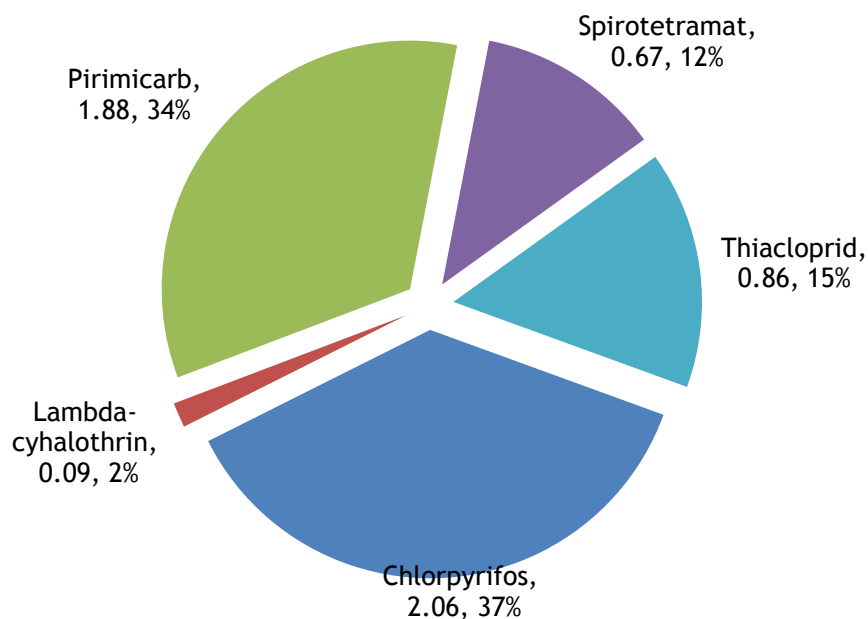
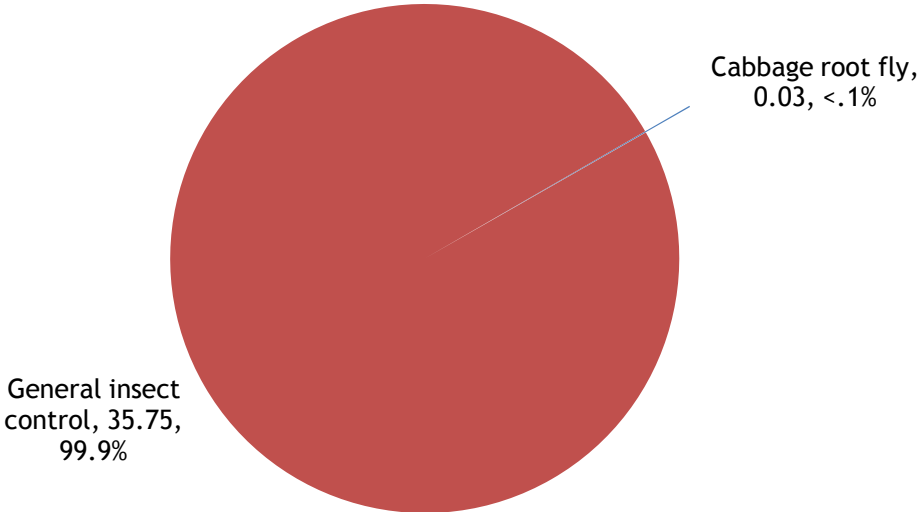


Figure 78: Autumn cabbage: reasons for insecticide use (spha).



Pesticide Usage on spring cabbage crops:

4.95 hectares of spring cabbage crops grown in Northern Ireland

11.78 treated hectares

20.49kg applied

100% of crops received at least one treatment

Spring cabbage received on average 3.5 fungicide, 1.38 herbicide, 1.0 insecticide, 1.0 molluscicide and 1.0 seed treatment applications.

Figure 79: Regional distribution of spring cabbage crops grown in Northern Ireland (ha), 2013.

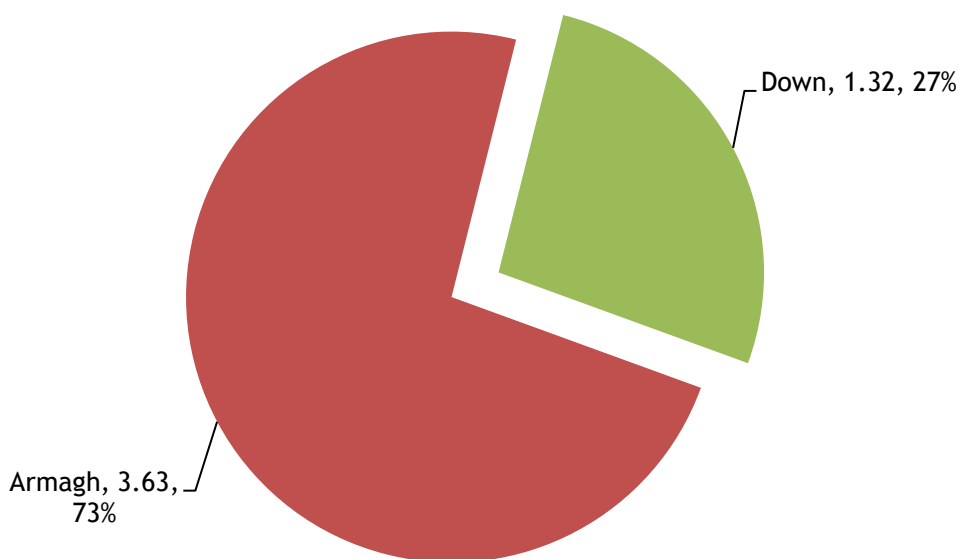


Figure 80: Pesticide usage on spring cabbage crops in Northern Ireland (spha), 2013.

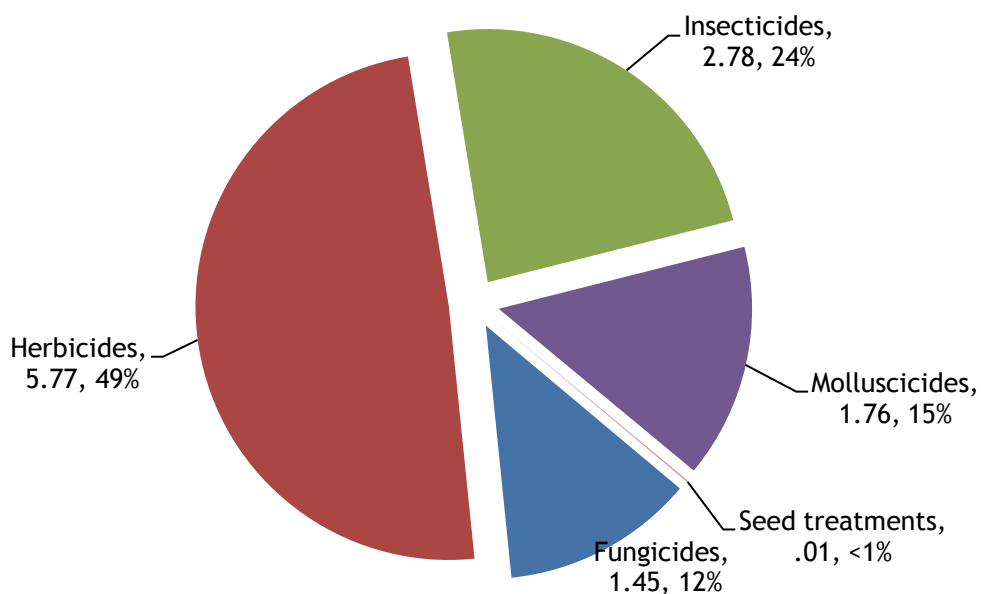


Figure 81: Weight of pesticides applied to spring cabbage crops in Northern Ireland (kg), 2013.

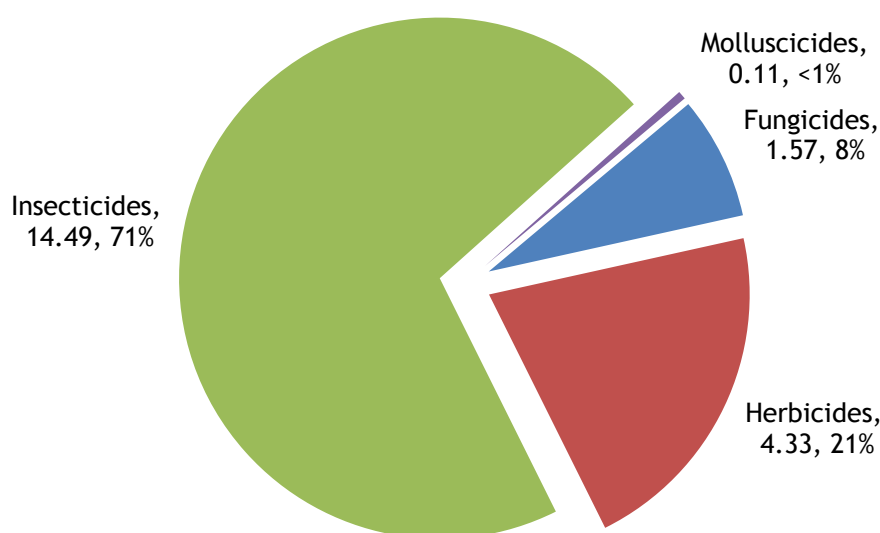
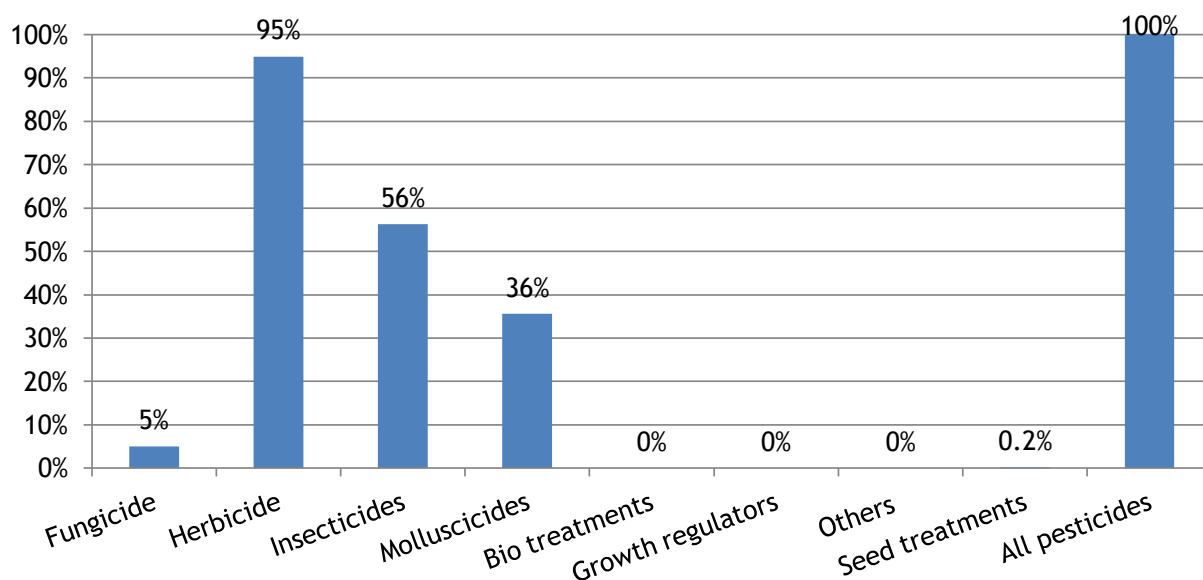


Figure 82: Proportional area of spring cabbage crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - spring cabbage

Basic area treated: 0.25 hectares

Area treated: 1.45 spray hectares

Weight of active substances applied: 1.57kg

5.1% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Iprodione	0.25	0.25	0.02	17.24
Cyprodinil/fludioxonil	0.24	0.24	0.12	16.55
Dimethomorph	0.24	0.24	0.04	16.55
Fosetyl-aluminium/propamocarb hydrochloride	0.24	0.24	0.5	16.55
Propamocarb hydrochloride	0.24	0.24	0.86	16.55
Thiram	0.24	0.24	0.02	16.55

Figure 83: Fungicide active substance usage on spring cabbage crops in Northern Ireland (spha), 2013.

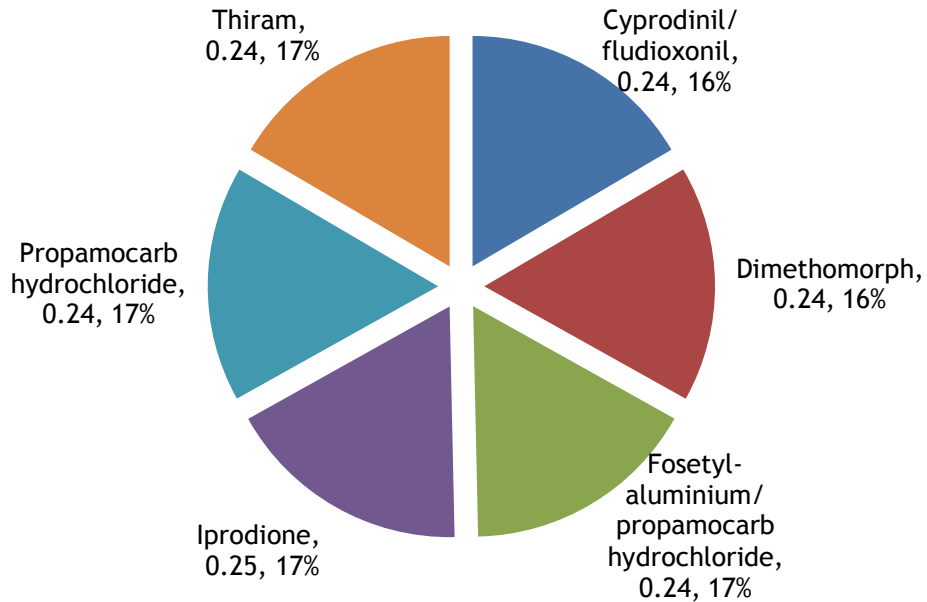


Figure 84: Weight of fungicide active substances applied to spring cabbage crops in Northern Ireland (kg), 2013.

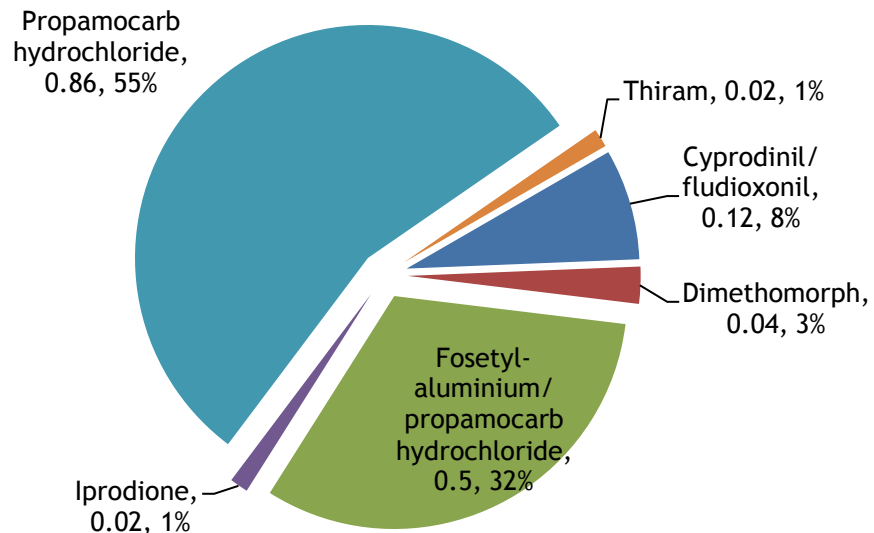
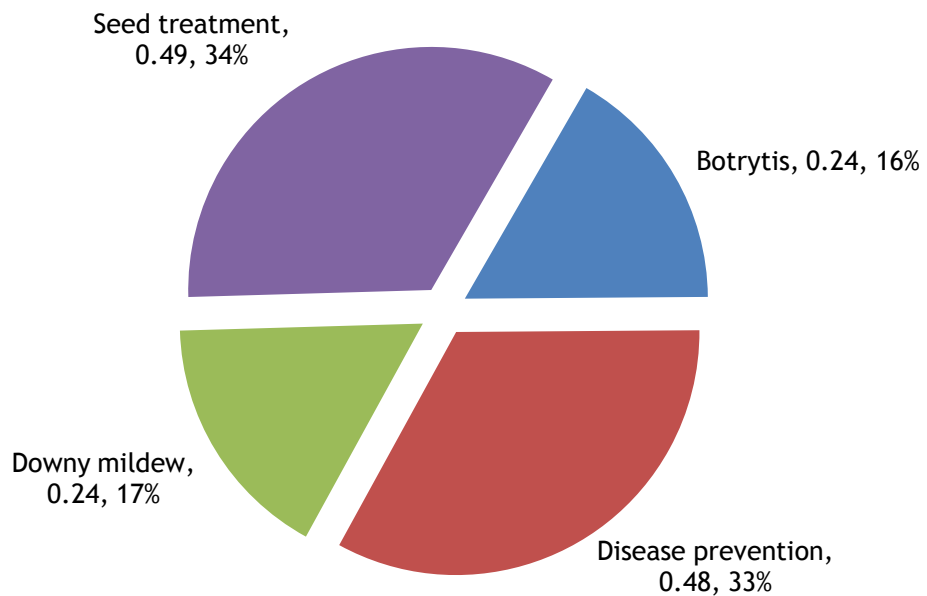


Figure 85: Spring cabbage: reasons for fungicide use (spha).



Herbicides & desiccants - spring cabbage

Basic area treated: 4.7 hectares

Area treated: 5.77 spray hectares

Weight of active substances applied: 4.33kg

94.9% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	2.84	2.84	2.09	49.22
Glyphosate	2.64	2.64	2.21	45.75
Clomazone	0.29	0.29	0.02	5.03

Figure 85: Herbicide & desiccant active substance usage on spring cabbage crops in Northern Ireland (spha), 2013.

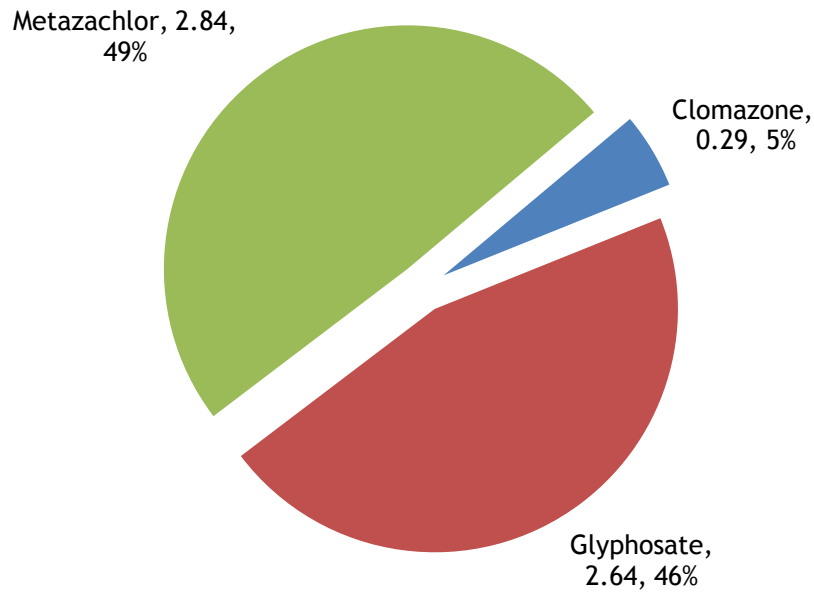


Figure 86: Weight of herbicide & desiccant active substances applied to spring cabbage crops in Northern Ireland (kg), 2013.

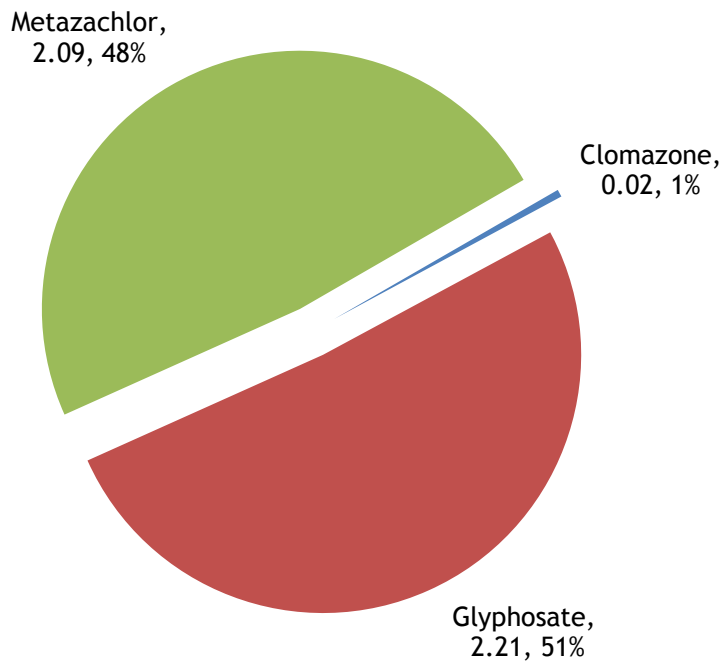
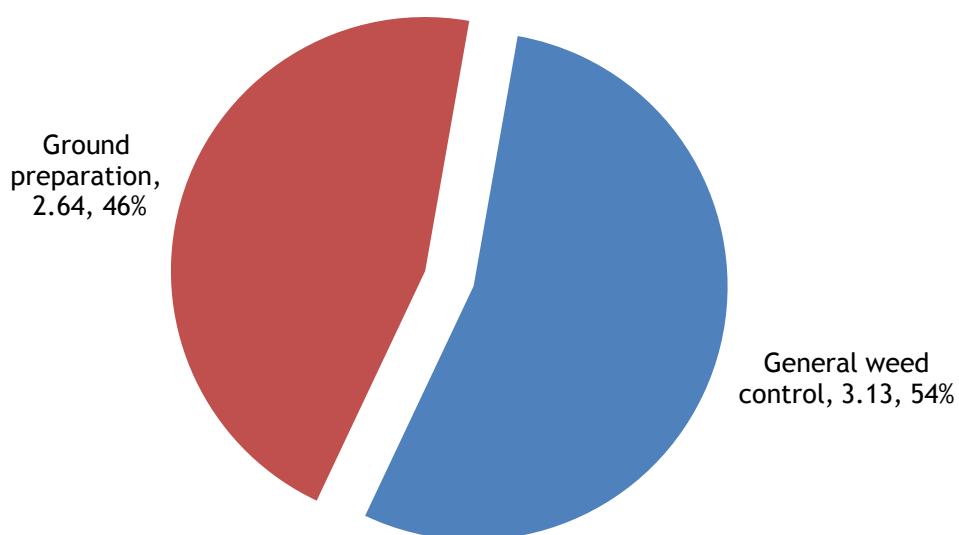


Figure 87: Spring cabbage: reasons for herbicide & desiccant use (spha).



Insecticides - spring cabbage

Basic area treated: 2.78 hectares

Area treated: 2.78 spray hectares

Weight of active substances applied: 14.49kg

56.3% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Cypermethrin	1.76	1.76	0.04	63.31
Pirimicarb	0.78	0.78	0.1	28.06
Chlorpyrifos	0.24	0.24	14.35	8.63

Figure 88: Insecticide active substance usage on spring cabbage crops in Northern Ireland (spha), 2013.

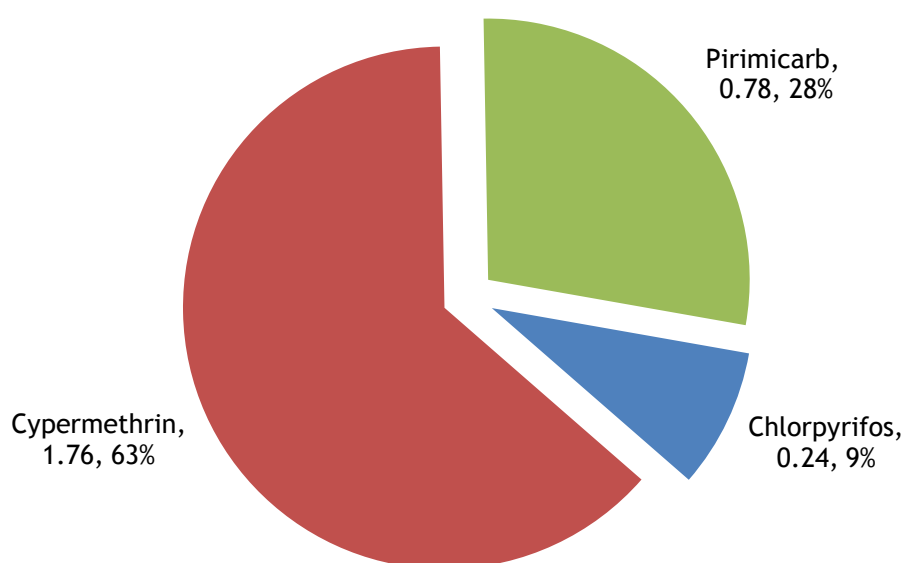


Figure 89: Weight of insecticide active substances applied to spring cabbage crops in Northern Ireland (kg), 2013.

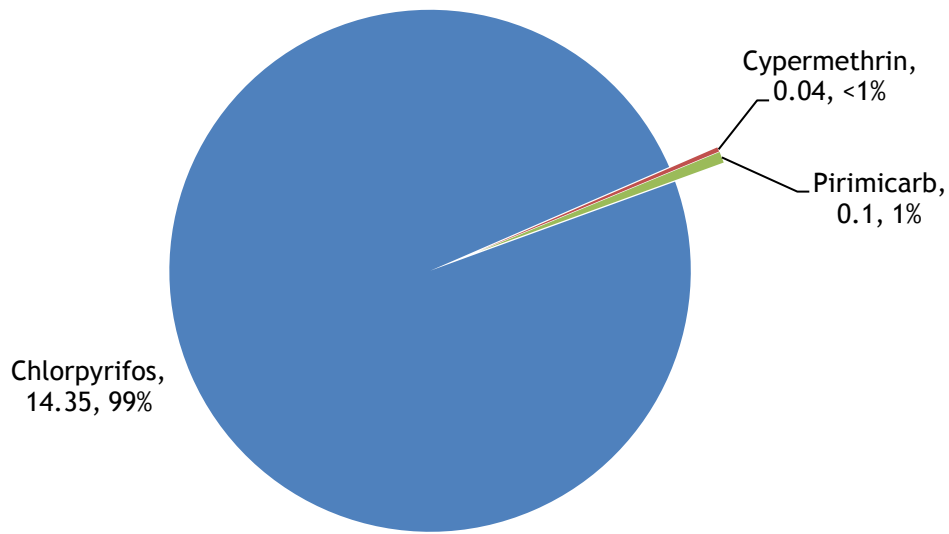
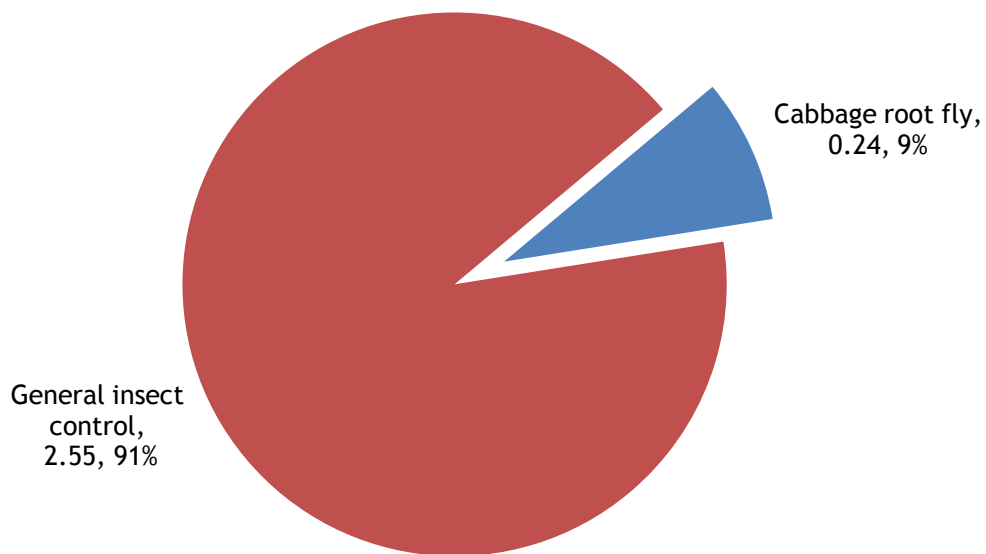


Figure 90: Spring cabbage: reasons for insecticide use (spha).



Molluscicides - spring cabbage

Basic area treated: 1.76 hectares
 Area treated: 1.76 spray hectares
 Weight of active substances applied: 0.11kg
 35.6% of the area grown treated with molluscicides
 All applications were for slug control
 The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Methiocarb	1.76	1.76	0.11	100

Pesticide Usage on winter cabbage crops:

4.33 hectares of winter cabbage crops grown in Northern Ireland

116.96 treated hectares

65.07kg applied

100% of crops received at least one treatment

Winter cabbage received on average 4.5 fungicide, 2.7 herbicide, 2.0 insecticide, 1.0 biological control applications.

Figure 91: Regional distribution of winter cabbage crops grown in Northern Ireland (ha), 2013.

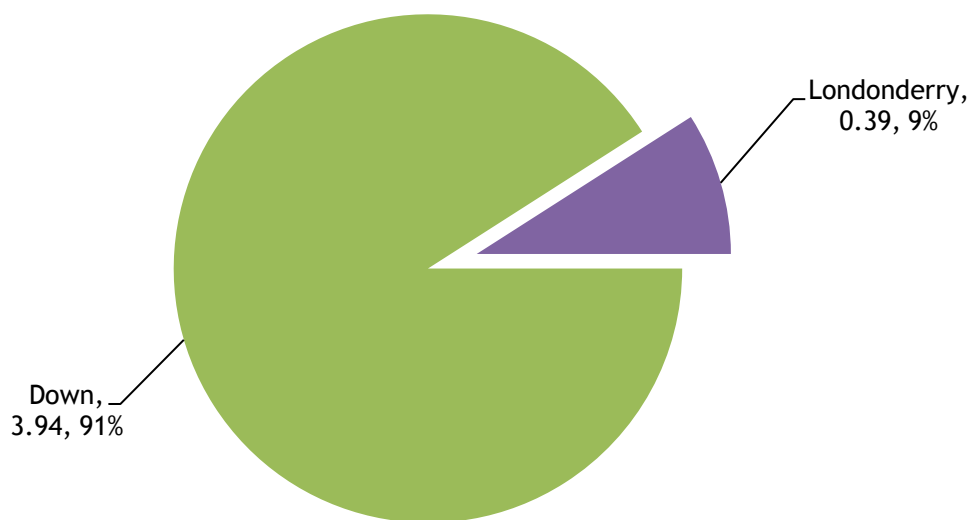


Figure 92: Pesticide usage on winter cabbage crops in Northern Ireland (spha), 2013.

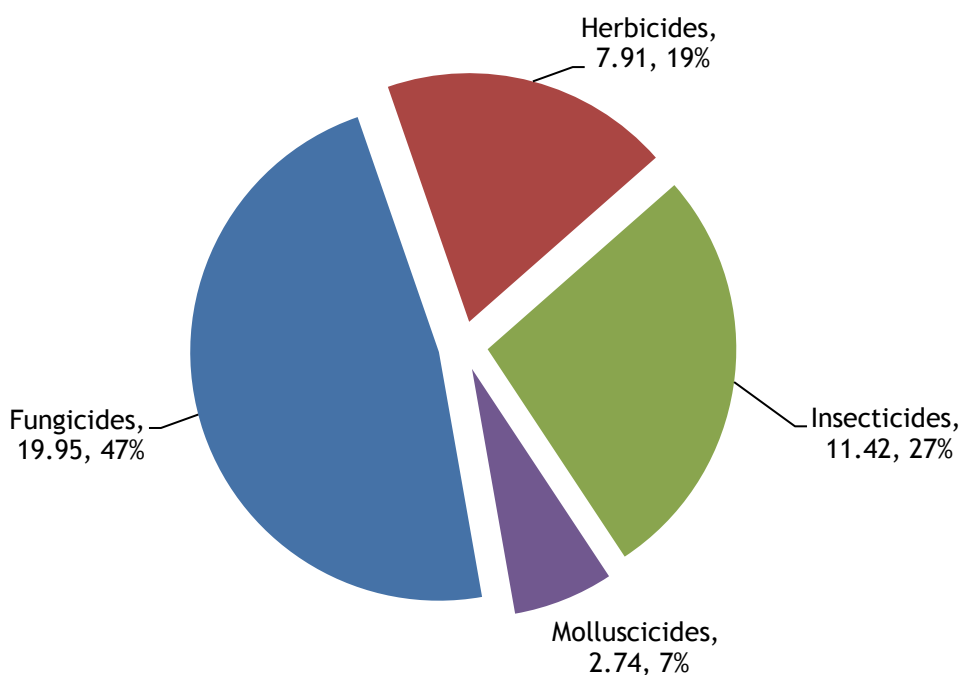


Figure 93: Weight of pesticides applied to winter cabbage crops in Northern Ireland (kg), 2013.

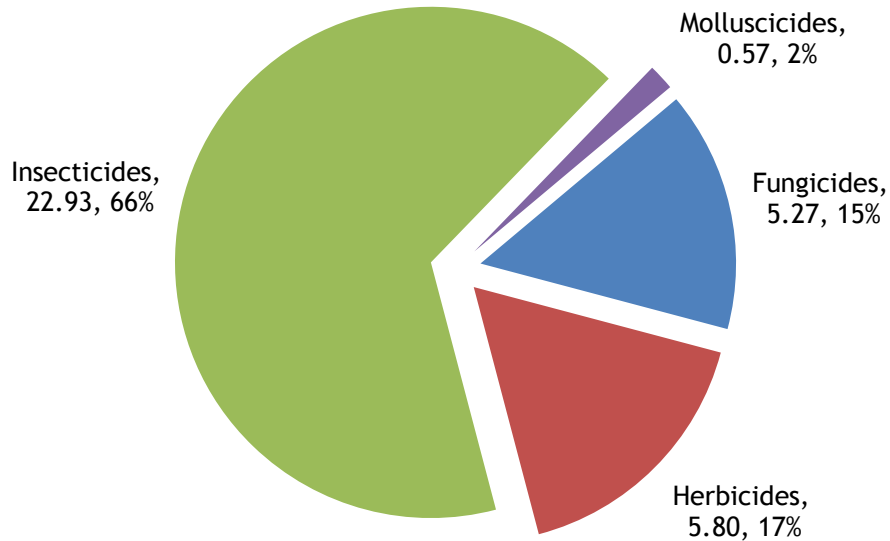
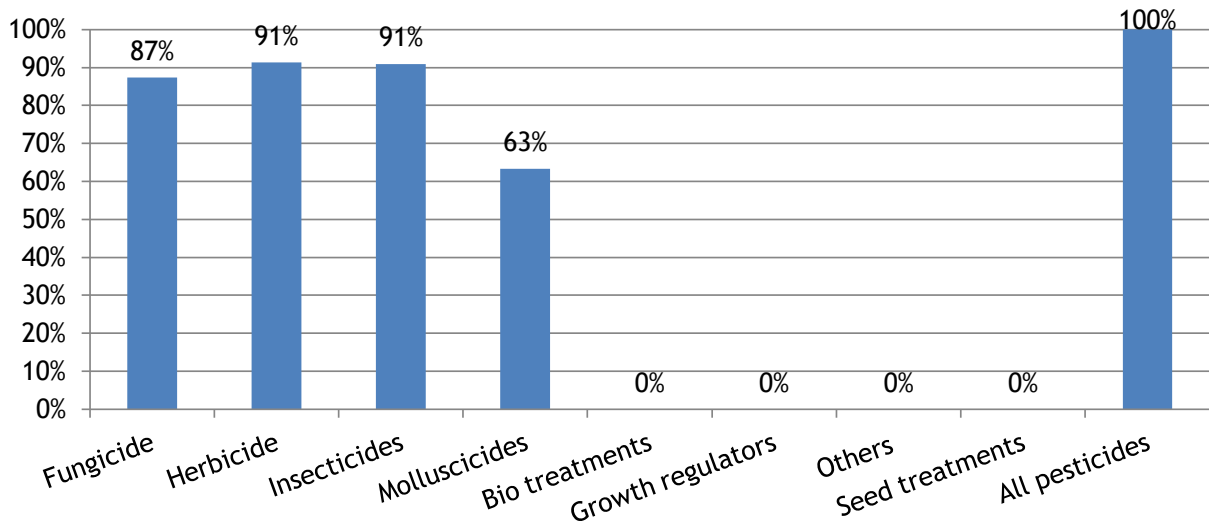


Figure 94: Proportional area of winter cabbage crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - winter cabbage

Basic area treated: 3.78 hectares

Area treated: 19.95 spray hectares

Weight of active substances applied: 5.27kg

87.4% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	10.23	3.41	0.77	51.28
Prothioconazole	5.48	2.74	1.05	27.47
Tebuconazole	1.34	0.67	0.33	6.72
Chlorothalonil	0.67	0.67	0.67	3.36

Figure 95: Fungicide active substance usage on winter cabbage crops in Northern Ireland (spha), 2013.

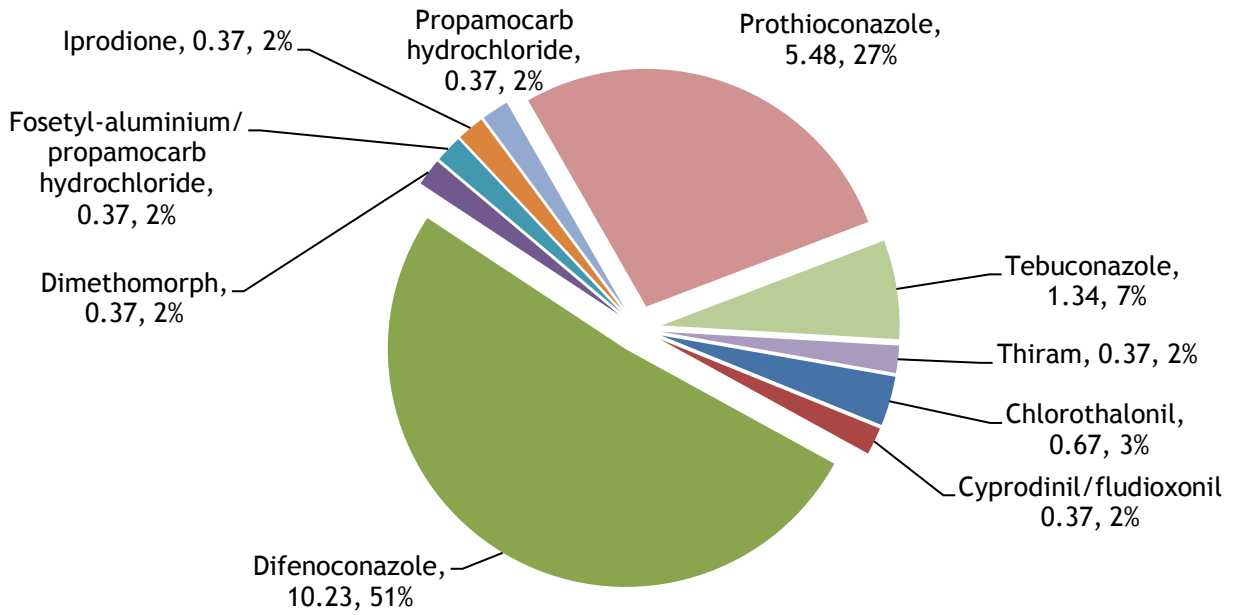


Figure 96: Weight of fungicide active substances applied to winter cabbage crops in Northern Ireland (kg), 2013.

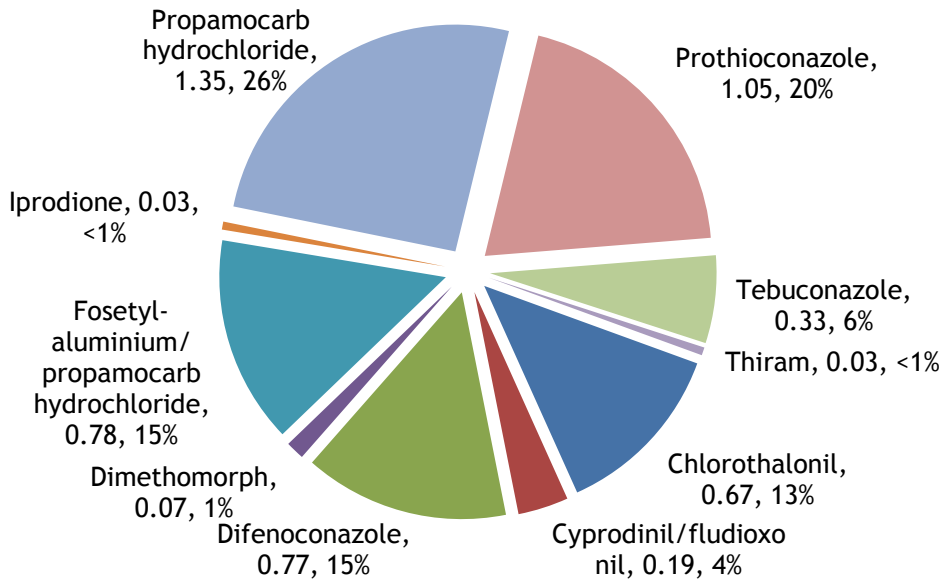
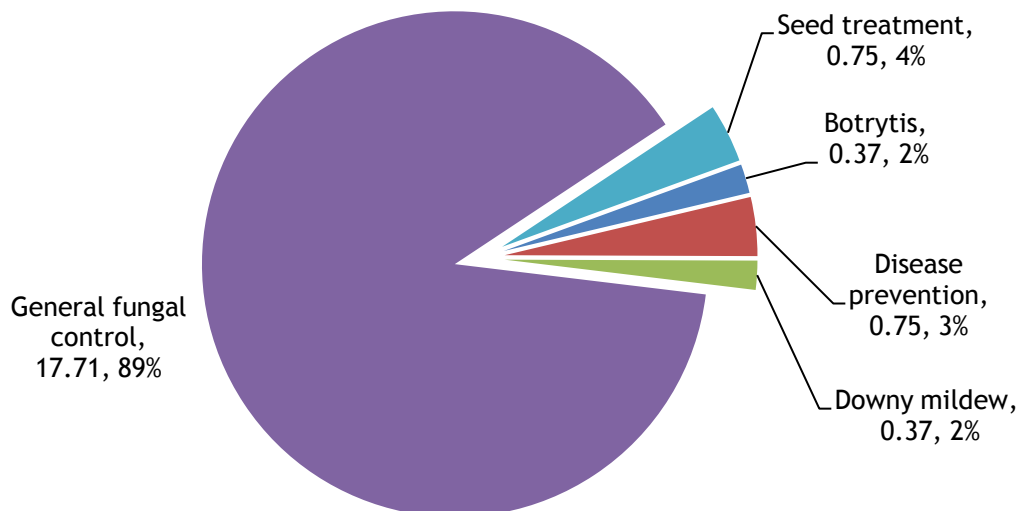


Figure 97: Winter cabbage: reasons for fungicide use (spha).



Herbicides & desiccants - winter cabbage

Basic area treated: 3.96 hectares

Area treated: 7.91 spray hectares

Weight of active substances applied: 5.80kg

91.4% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	3.96	3.96	2.97	50.06
Glyphosate	3.8	3.8	2.74	48.04
Linuron	0.16	0.16	0.09	2.02

Figure 98: Herbicide & desiccant active substance usage on winter cabbage crops in Northern Ireland (spha), 2013.

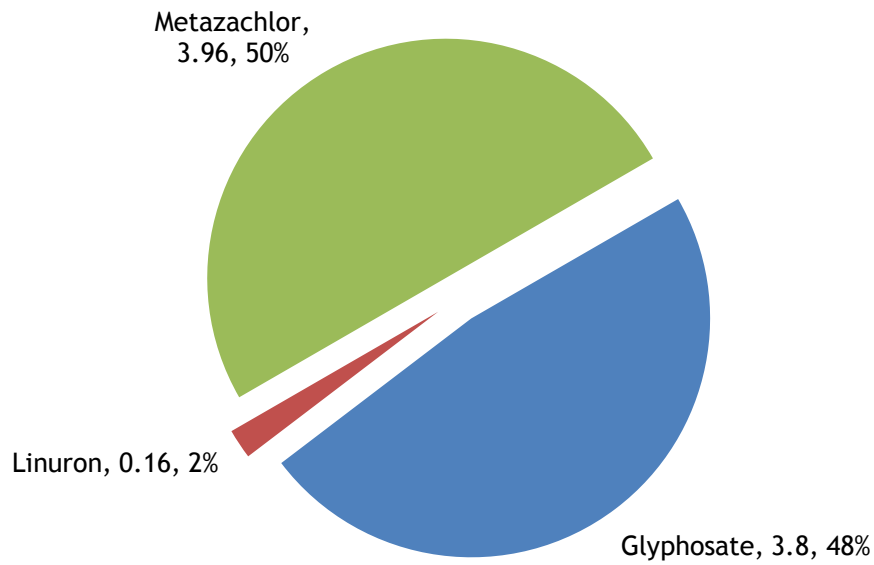


Figure 99: Weight of herbicide & desiccant active substances applied to winter cabbage crops in Northern Ireland (kg), 2013.

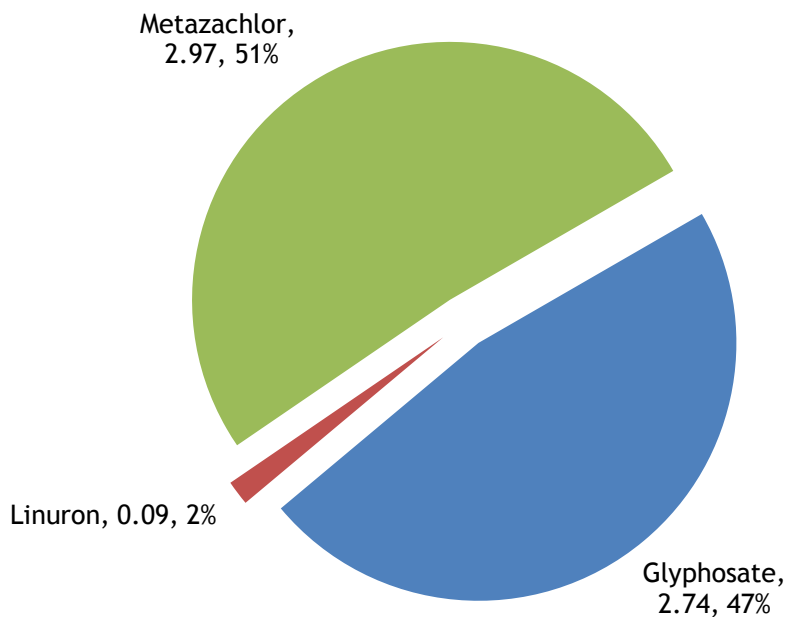
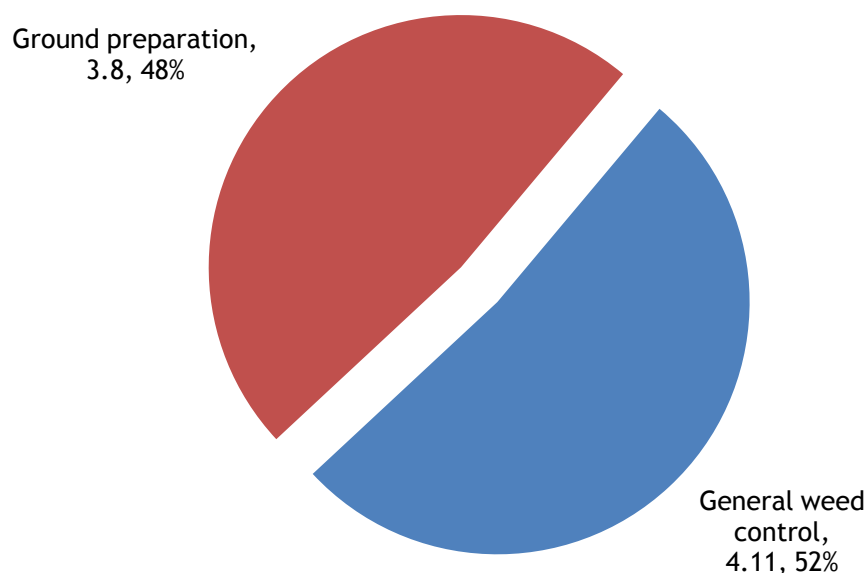


Figure 100: Winter cabbage: reasons for herbicide & desiccant use (spha).



Insecticides - winter cabbage

Basic area treated: 3.94 hectares

Area treated: 11.42 spray hectares

Weight of active substances applied: 22.93kg

90.9% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	5.57	3.56	0.06	48.77
Spirotetramat	2.74	2.74	0.21	23.99
Thiacloprid	2.74	2.74	0.26	23.99
Chlorpyrifos	0.37	0.37	22.4	3.24

Figure 101: Insecticide active substance usage on winter cabbage crops in Northern Ireland (spha), 2013.

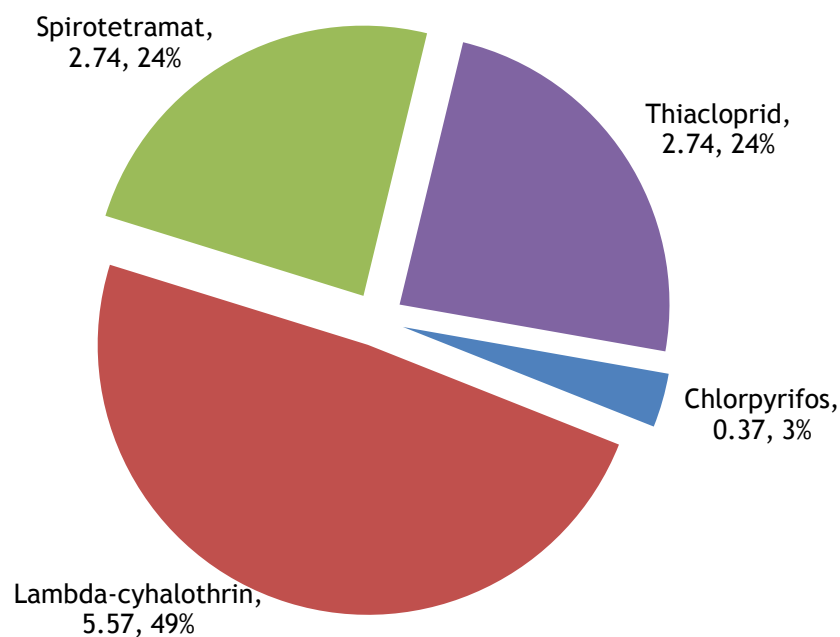


Figure 102: Weight of insecticide active substances applied to winter cabbage crops in Northern Ireland (kg), 2013.

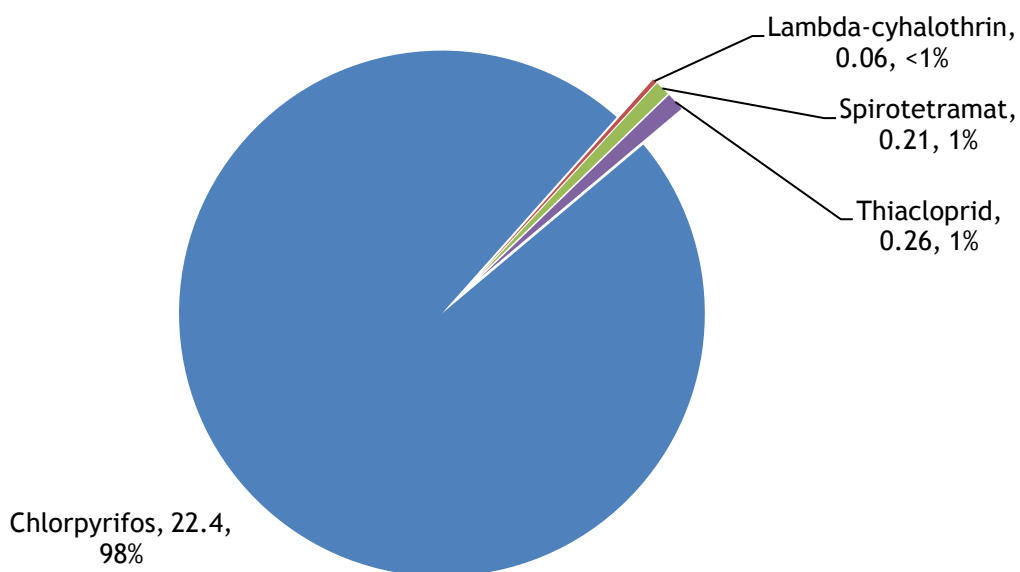
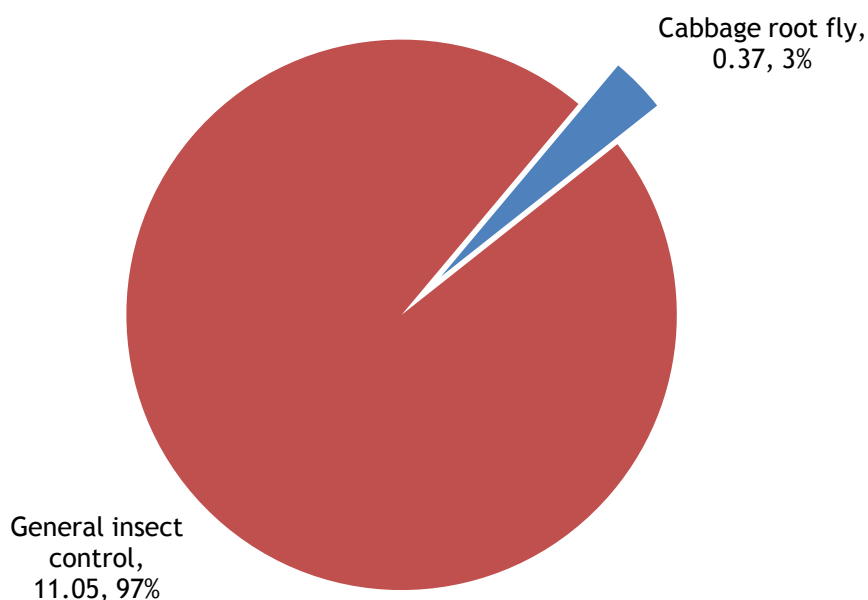


Figure 103: Winter cabbage: reasons for insecticide use (spha).



Molluscicides - winter cabbage

Basic area treated: 2.74 hectares

Area treated: 2.74 spray hectares

Weight of active substances applied: 0.57kg

63.3% of the area grown treated with molluscicides

All applications were for slug control

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Ferric phosphate	2.74	2.74	0.57	100

Pesticide Usage on summer cabbage crops:

9.52 hectares of summer cabbage crops grown in Northern Ireland

59.09 treated hectares

30.68kg applied

98.4% of crops received at least one treatment

Summer cabbage received on average 3.11 fungicide, 2.09 herbicide, 2.43 insecticide and 1.0 molluscicide applications.

Figure 104: Regional distribution of summer cabbage crops grown in Northern Ireland (ha), 2013.

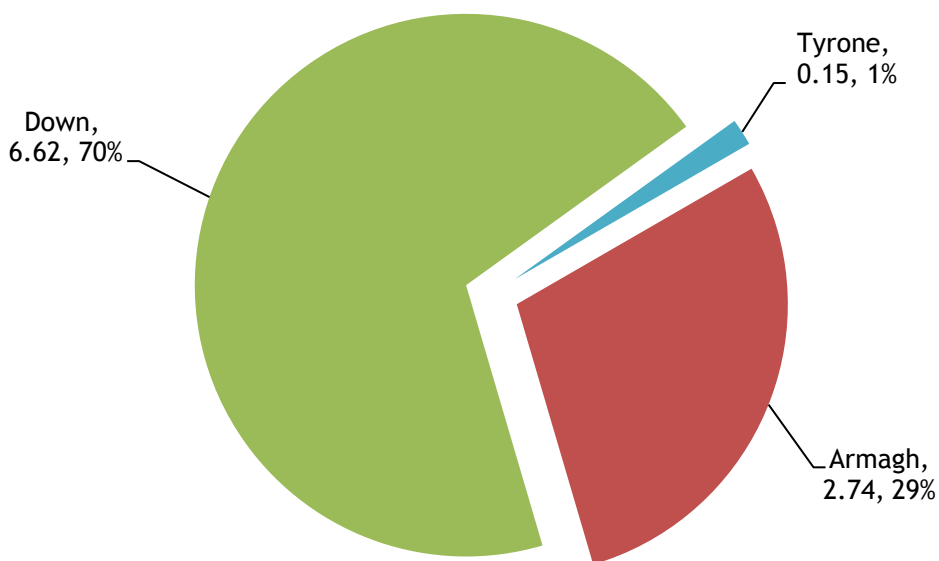


Figure 105: Pesticide usage on summer cabbage crops in Northern Ireland (spha), 2013.

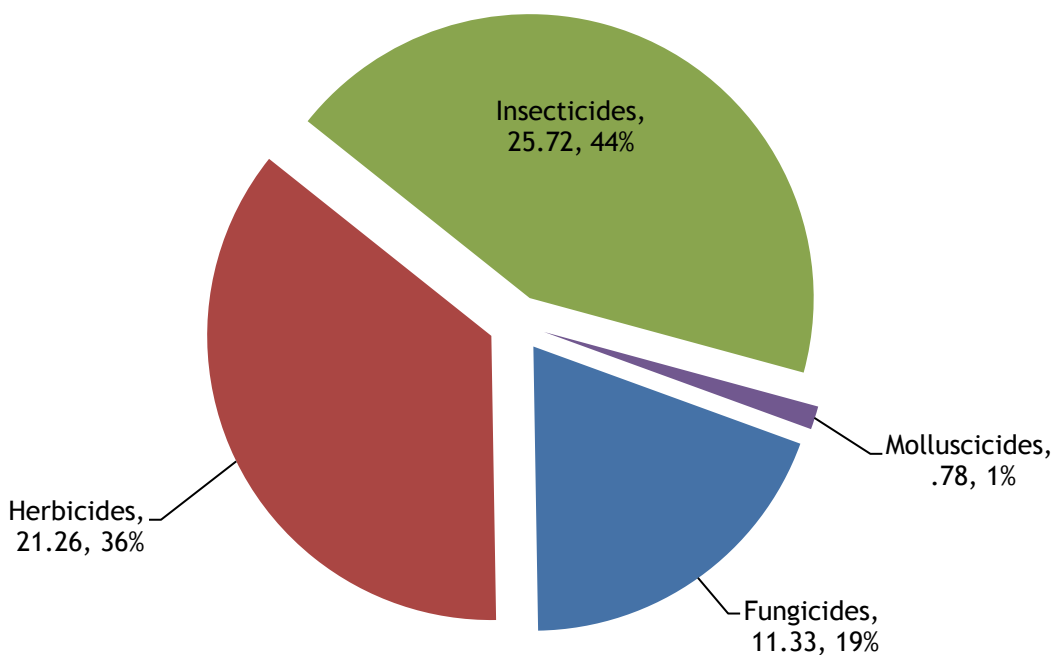


Figure 106: Weight of pesticides applied to summer cabbage crops in Northern Ireland (kg), 2013.

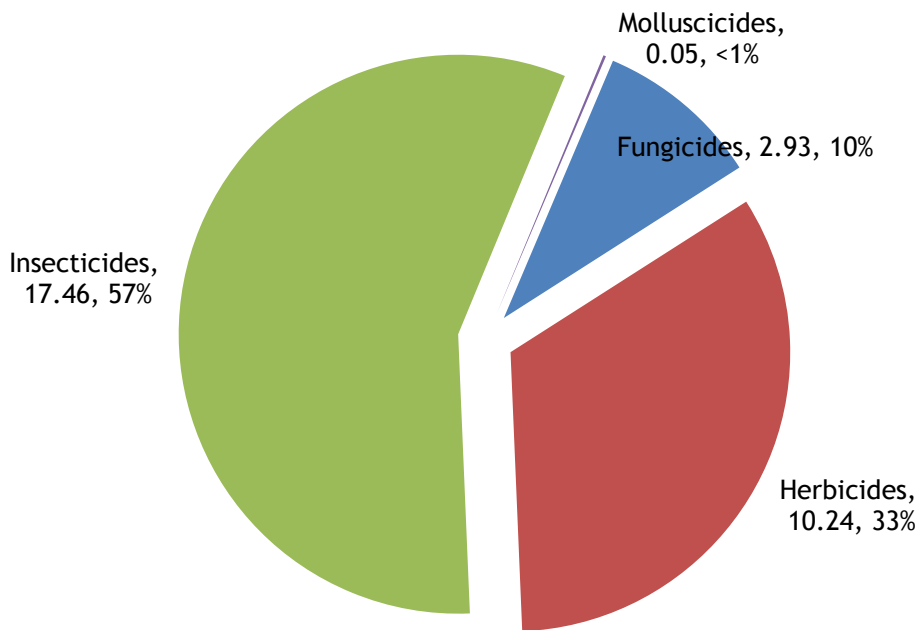
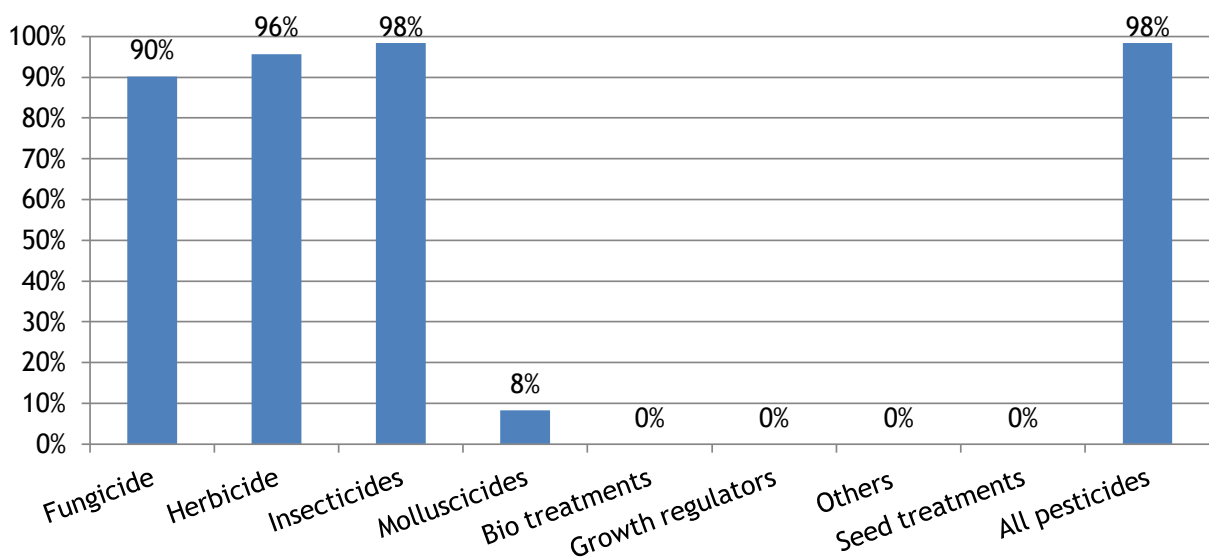


Figure 107: Proportional area of summer cabbage crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - summer cabbage

Basic area treated: 8.58 hectares

Area treated: 11.33 spray hectares

Weight of active substances applied: 2.93kg

90.2% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	6.26	6.26	0.42	55.25
Azoxystrobin	1.47	1.47	0.37	12.97
Prothioconazole	1.47	1.47	0.28	12.97
Azoxystrobin/difenoconazole	0.59	0.59	0.19	5.21

Figure 108: Fungicide active substance usage on summer cabbage crops in Northern Ireland (spha), 2013.

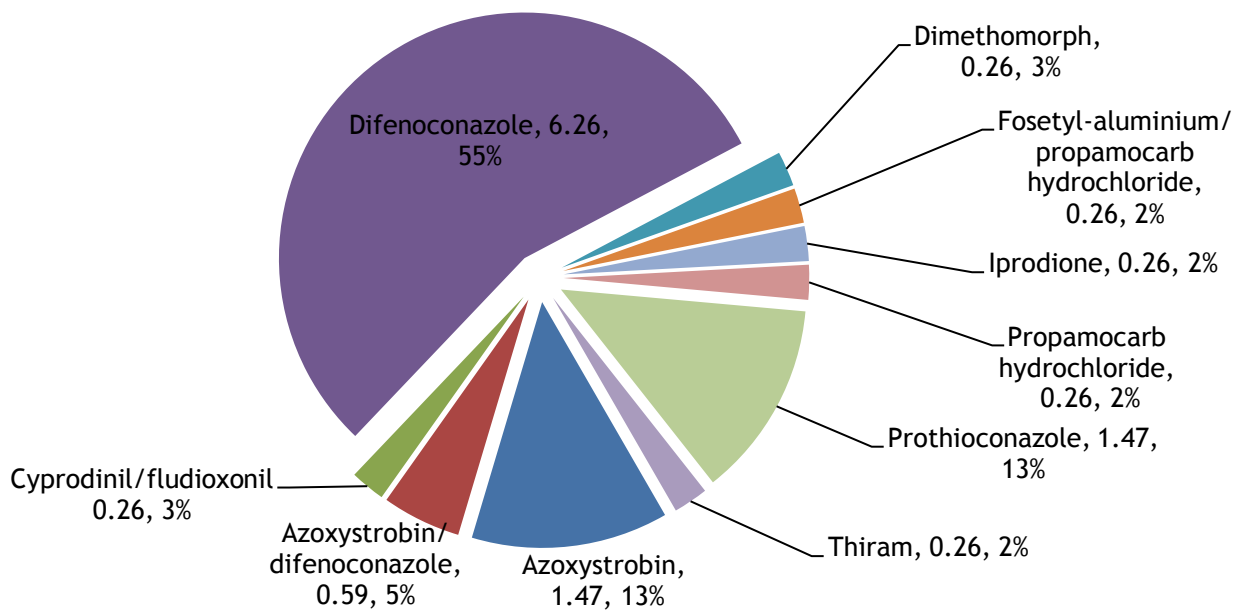


Figure 109: Weight of fungicide active substances applied to summer cabbage crops in Northern Ireland (kg), 2013.

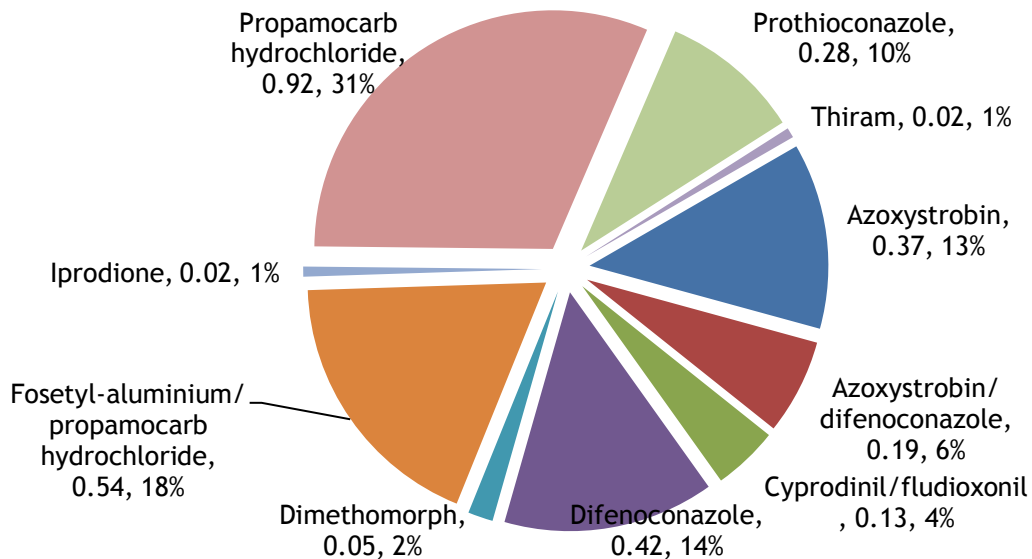
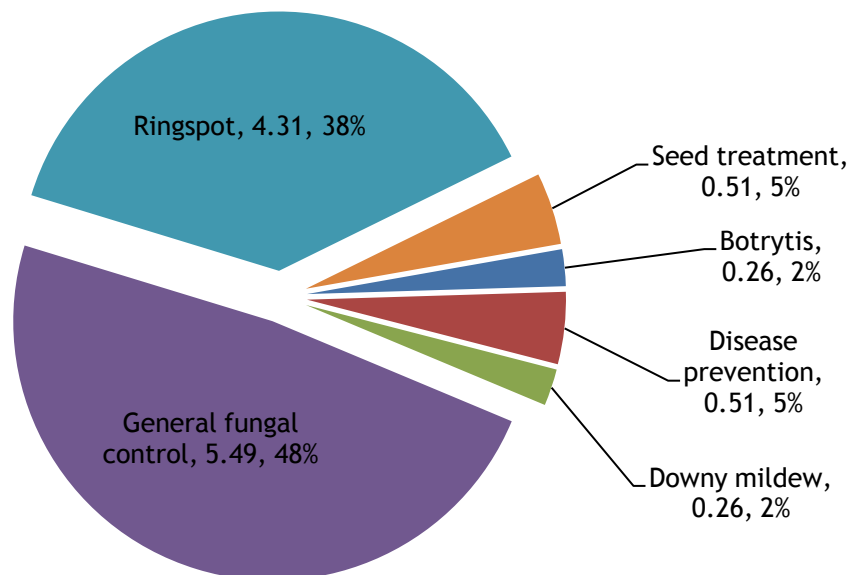


Figure 110: Summer cabbage: reasons for fungicide use (spha).



Herbicides & desiccants - summer cabbage

Basic area treated: 9.11 hectares

Area treated: 21.26 spray hectares

Weight of active substances applied: 10.24kg

95.7% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	9.11	9.11	5.75	42.85
Clomazone	6.37	6.37	0.33	29.96
Glyphosate	5.78	5.78	4.16	27.19

Figure 111: Herbicide & desiccant active substance usage on summer cabbage crops in Northern Ireland (spha), 2013.

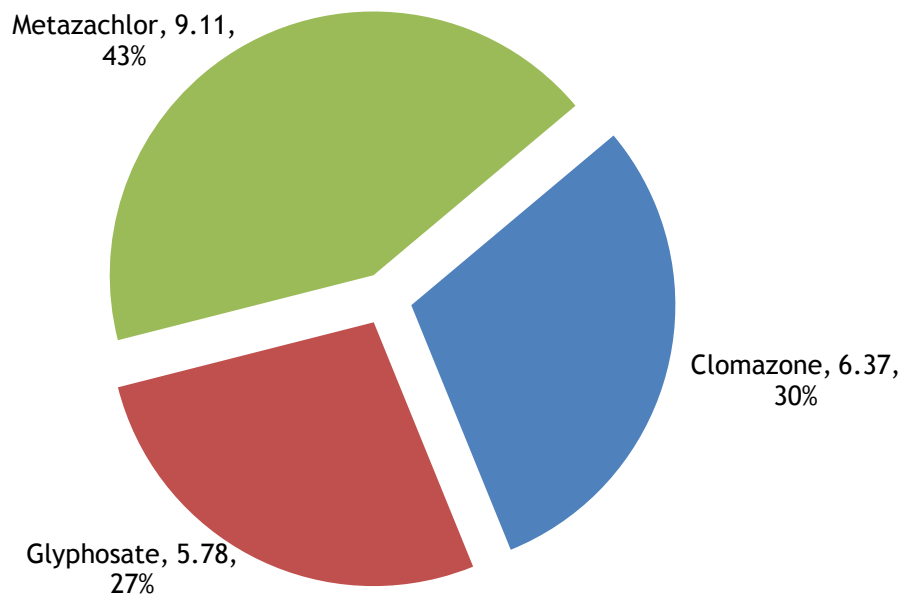


Figure 112: Weight of herbicide & desiccant active substances applied to summer cabbage crops in Northern Ireland (kg), 2013.

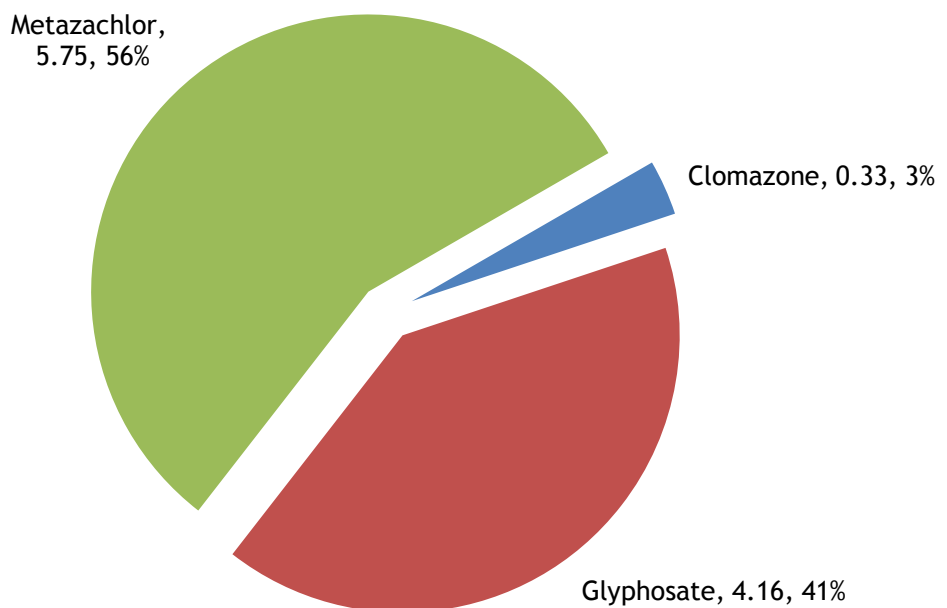
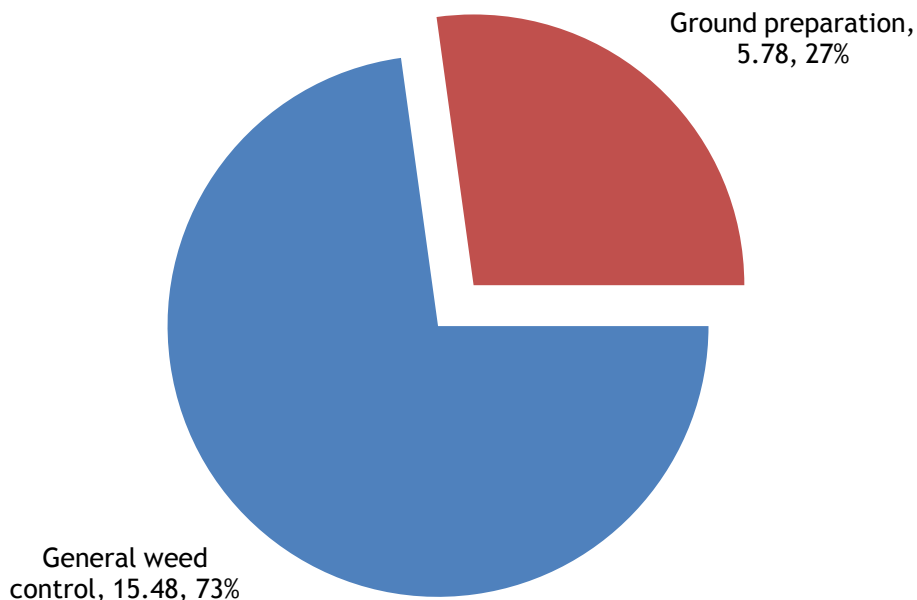


Figure 113: Summer cabbage: reasons for herbicide & desiccant use (spha).



Insecticides - summer cabbage

Basic area treated: 9.36 hectares

Area treated: 25.72 spray hectares

Weight of active substances applied: 17.46kg

98.4% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Pirimicarb	10.28	8.32	1.72	39.97
Lambda-cyhalothrin	8.81	6.85	0.08	34.25
Indoxacarb	2.06	2.06	0.05	8.01
Thiacloprid	2.06	2.06	0.2	8.01
Deltamethrin	1.47	1.47	0.01	5.72

Figure 114: Insecticide active substance usage on summer cabbage crops in Northern Ireland (spha), 2013.

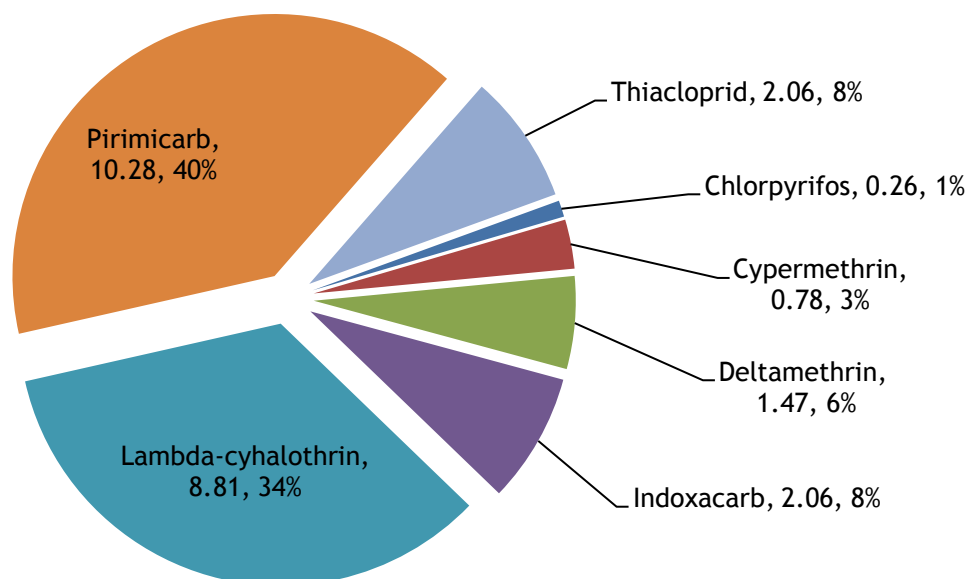


Figure 115: Weight of insecticide active substances applied to summer cabbage crops in Northern Ireland (kg), 2013.

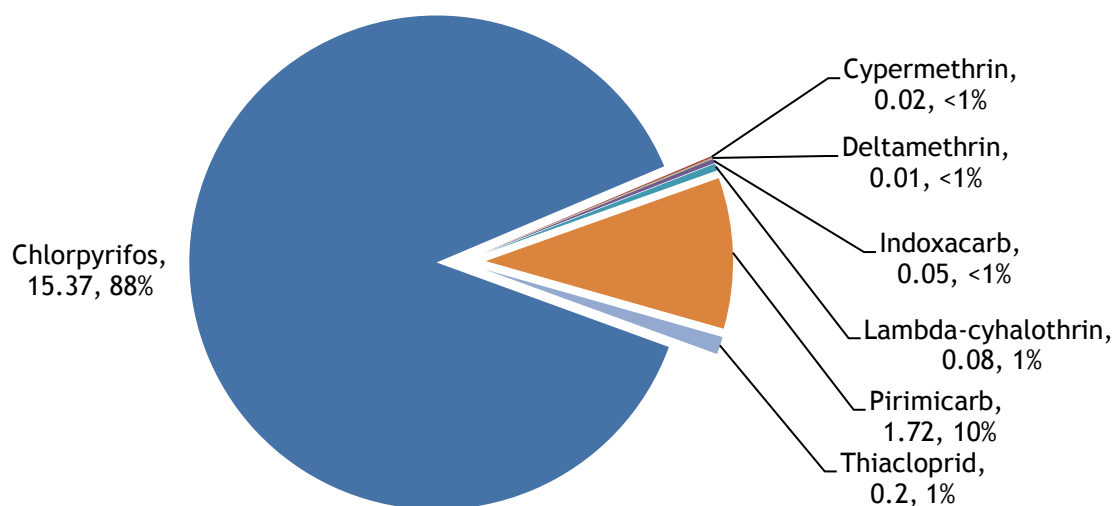
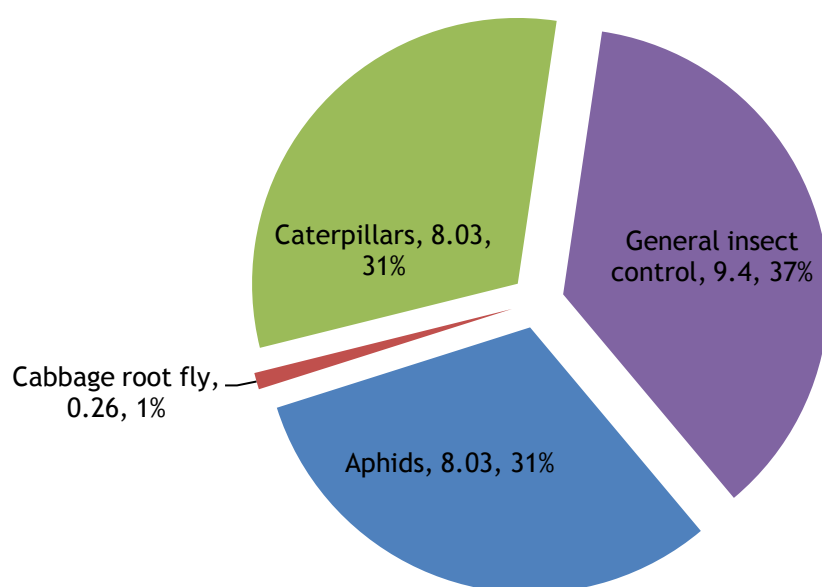


Figure 116: Summer cabbage: reasons for insecticide use (spha).



Molluscicides - summer cabbage

Basic area treated: 0.78 hectares

Area treated: 0.78 spray hectares

Weight of active substances applied: 0.05kg

8.2% of the area grown treated with molluscicides

All applications were for slug control

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Methiocarb	0.78	0.78	0.05	100

Pesticide Usage on savoy cabbage crops:

104.89 hectares of savoy cabbage crops grown in Northern Ireland

812.16 treated hectares

340.55kg applied

100% of crops received at least one treatment

Savoy cabbage received on average 2.81 fungicide, 1.81 herbicide, 2.52 insecticide, 1.0 molluscicide and 1.55 seed treatment applications.

Figure 117: Regional distribution of savoy cabbage crops grown in Northern Ireland (ha), 2013.

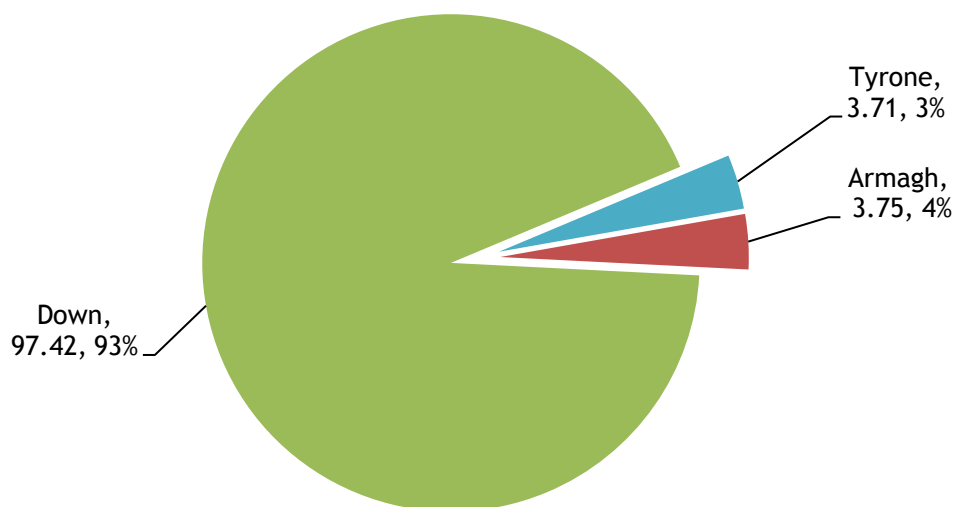


Figure 118: Pesticide usage on savoy cabbage crops in Northern Ireland (spha), 2013.

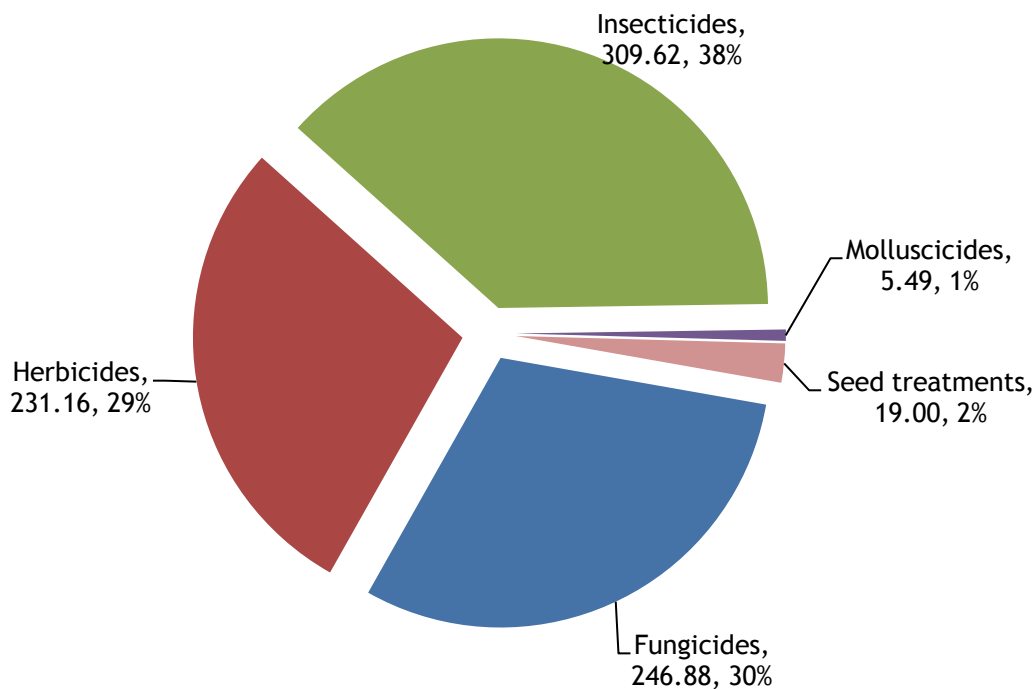


Figure 119: Weight of pesticides applied to savoy cabbage crops in Northern Ireland (kg), 2013.

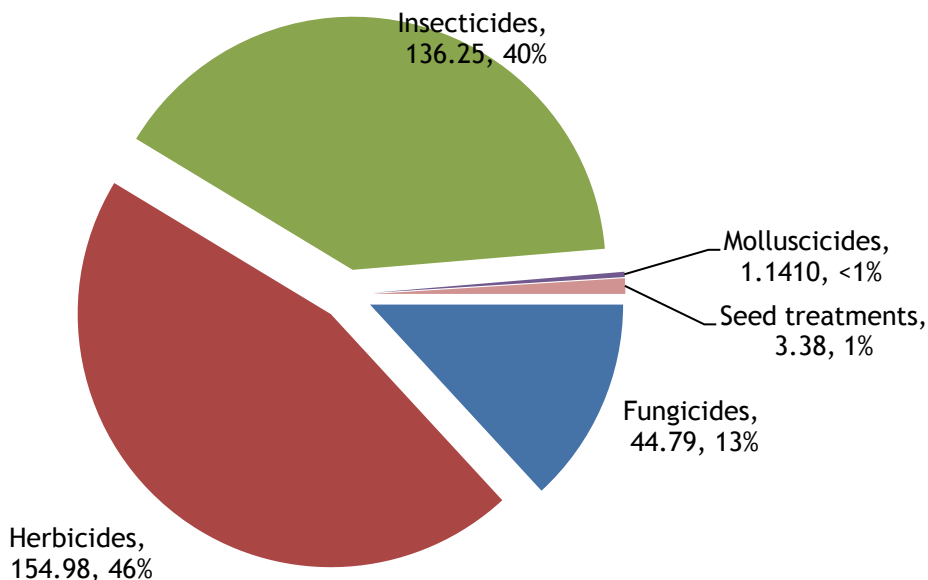
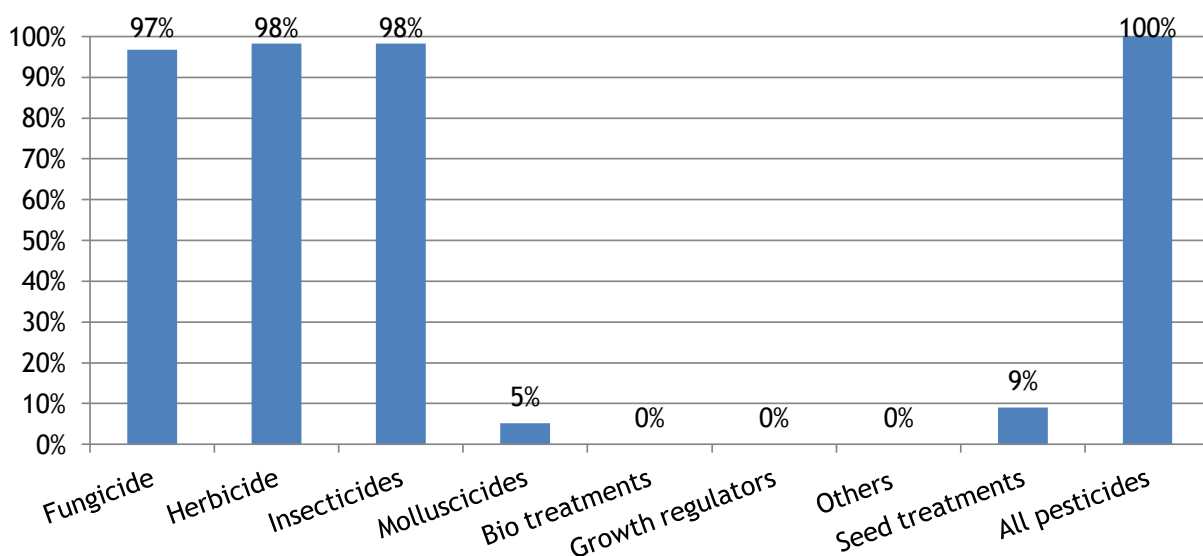


Figure 120: Proportional area of savoy cabbage crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - savoy cabbage

Basic area treated: 101.46 hectares

Area treated: 246.88 spray hectares

Weight of active substances applied: 44.79kg

96.7% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	166.91	91.81	12.46	67.61
Azoxystrobin/difenoconazole	26.7	24.35	8.68	10.81
Prothioconazole	25.88	20.39	4.97	10.48
Boscalid/pyraclostrobin	14.9	14.9	4.98	6.04
Propamocarb hydrochloride	1.76	1.76	7.58	0.71

Figure 121: Fungicide active substance usage on savoy cabbage crops in Northern Ireland (spha), 2013.

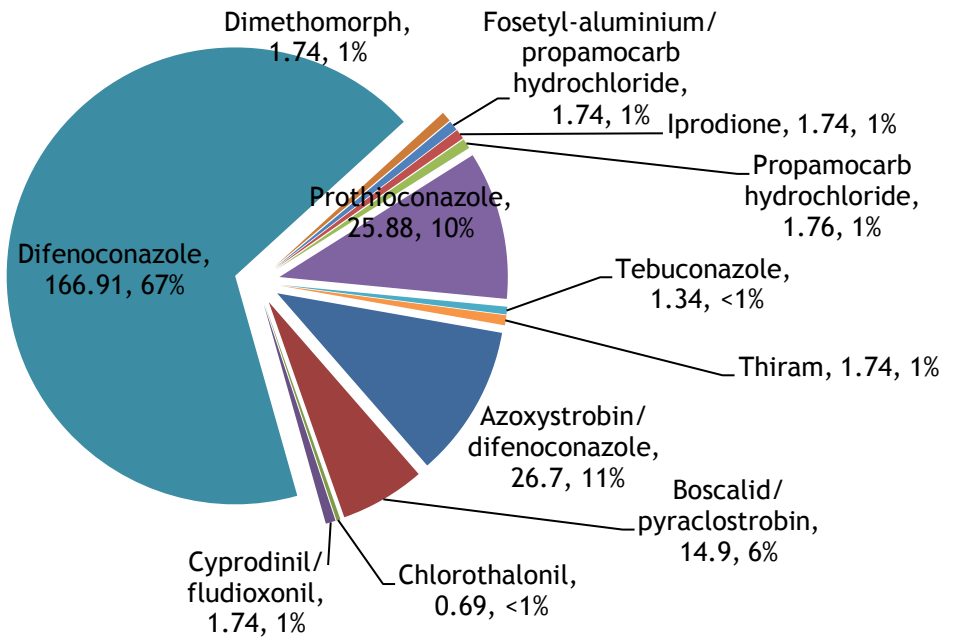


Figure 122: Weight of fungicide active substances applied to savoy cabbage crops in Northern Ireland (kg), 2013.

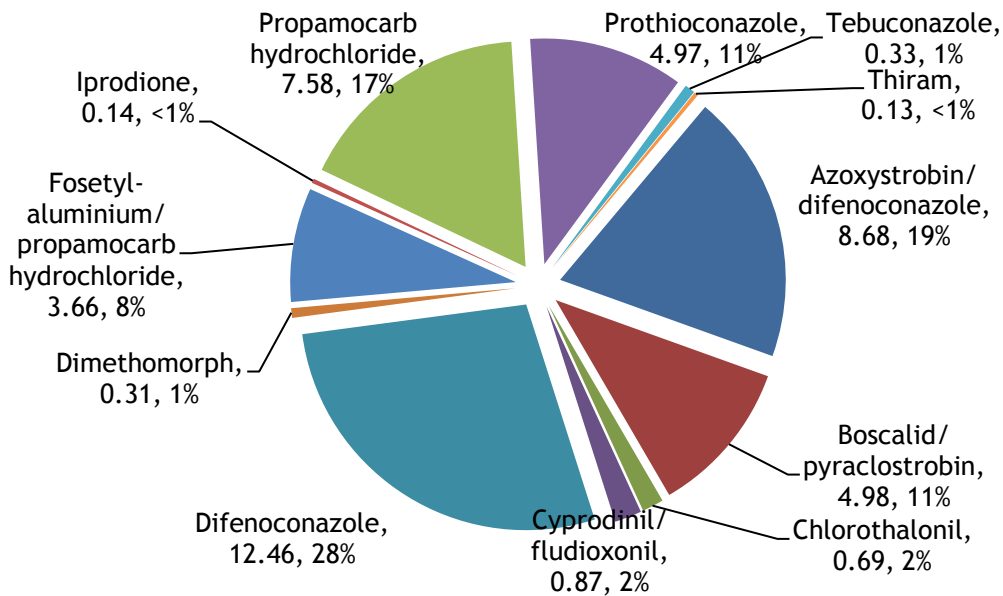
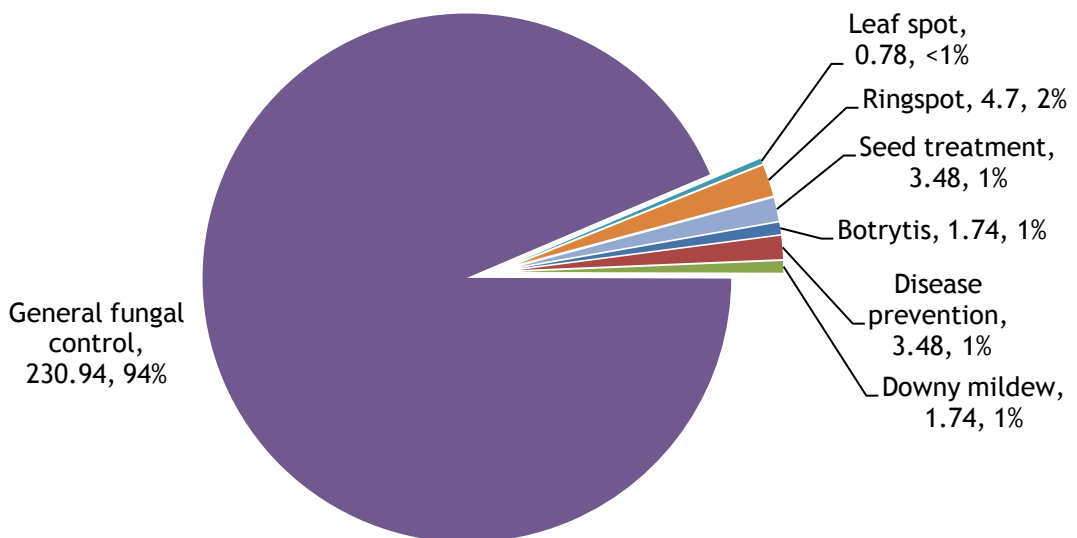


Figure 123: Savoy cabbage: reasons for fungicide use (spha).



Herbicides & desiccants - savoy cabbage

Basic area treated: 103.13 hectares

Area treated: 231.16 spray hectares

Weight of active substances applied: 154.98kg

98.3% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	133.8	102.73	100.12	57.88
Clomazone	51.05	48.84	3.12	22.08
Glyphosate	38.47	38.47	42.12	16.64
Propyzamide	7.68	7.68	9.52	3.32
Linuron	0.16	0.16	0.09	0.07

Figure 124: Herbicide & desiccant active substance usage on savoy cabbage crops in Northern Ireland (spha), 2013.

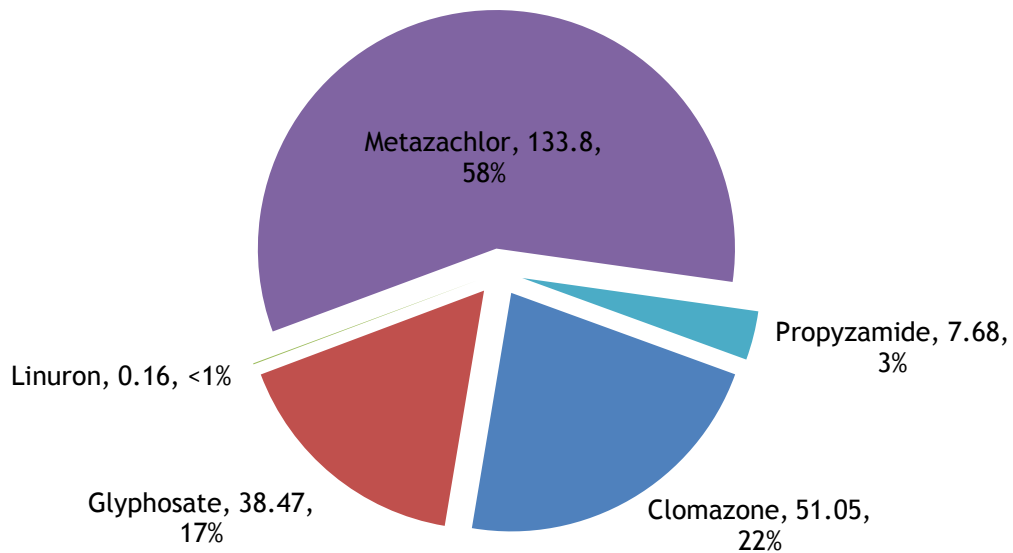


Figure 125: Weight of herbicide & desiccant active substances applied to savoy cabbage crops in Northern Ireland (kg), 2013.

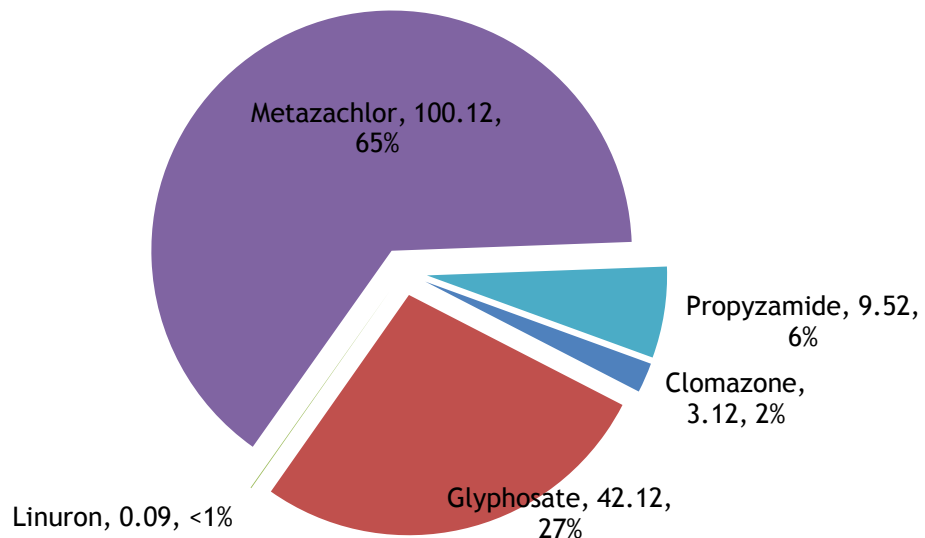
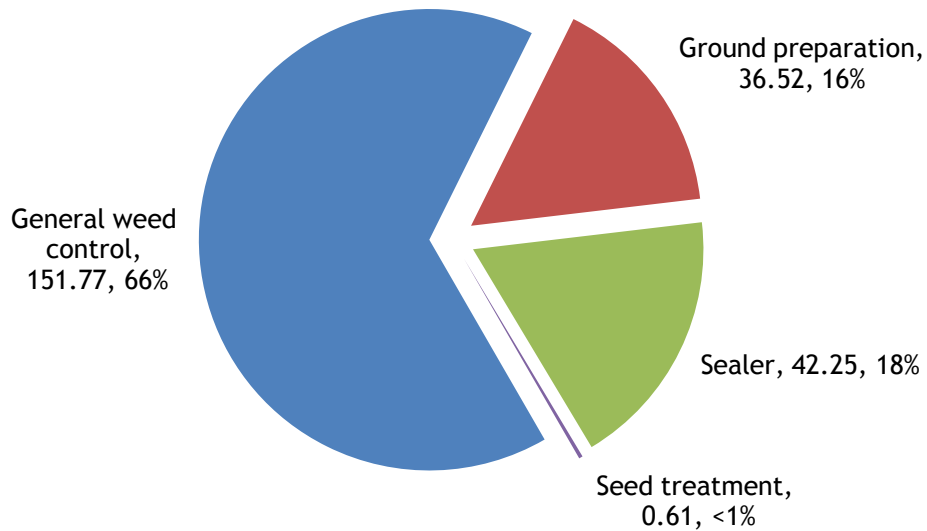


Figure 126: Savoy cabbage: reasons for herbicide & desiccant use (spha).



Insecticides - savoy cabbage

Basic area treated: 103.12 hectares

Area treated: 309.62 spray hectares

Weight of active substances applied: 136.25kg

98.32% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Pirimicarb	80.93	41.65	16.26	26.14
Cypermethrin	79.54	45.75	2.13	25.69
Lambda-cyhalothrin	60.66	46.66	0.62	19.59
Spirotetramat	39.35	29.87	2.95	12.71
Thiacloprid	33.84	33.84	3.25	10.93

Figure 127: Insecticide active substance usage on savoy cabbage crops in Northern Ireland (spha), 2013.

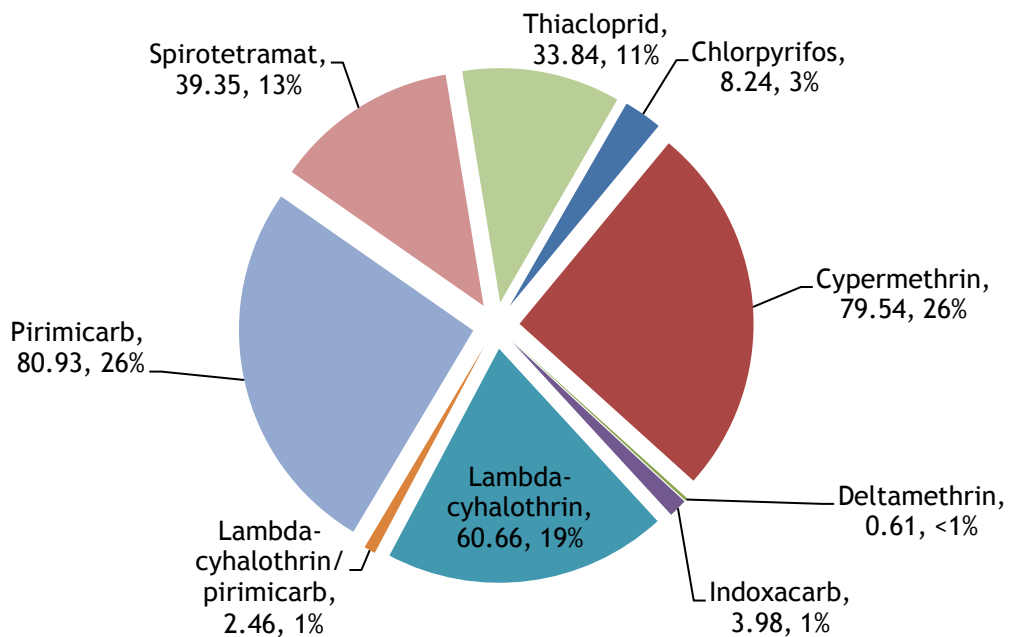


Figure 128: Weight of insecticide active substances applied to savoy cabbage crops in Northern Ireland (kg), 2013.

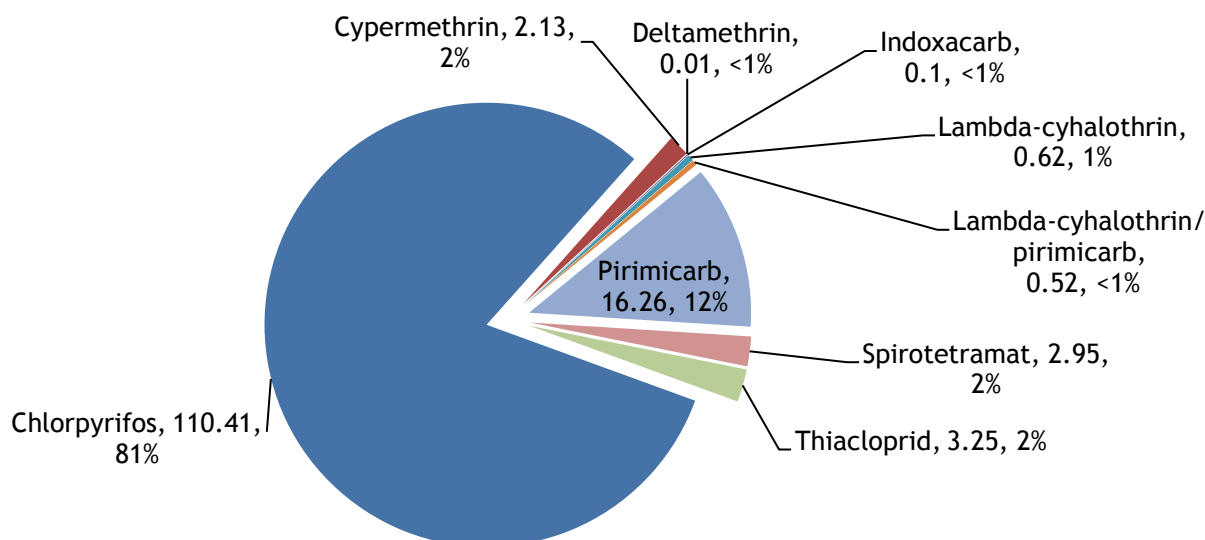
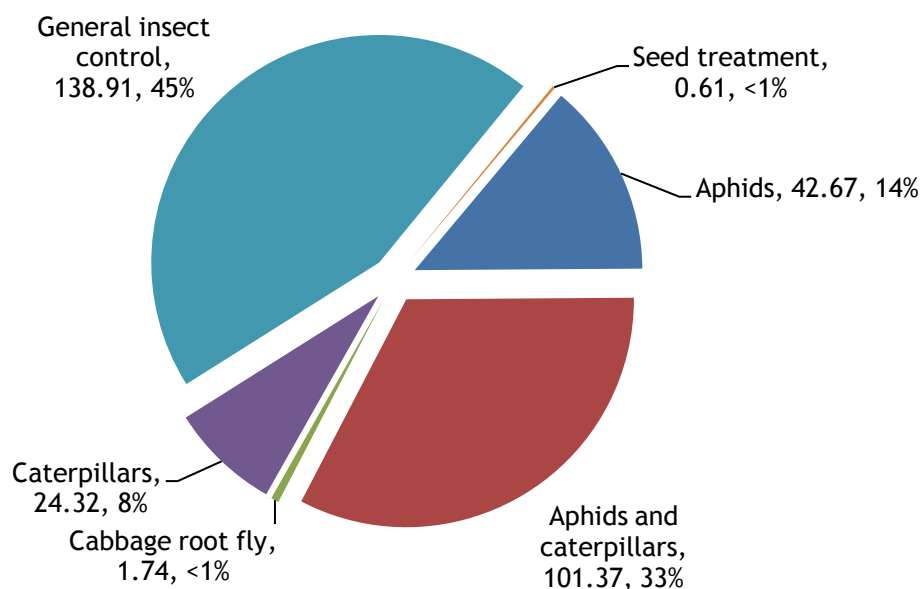


Figure 129: Savoy cabbage: reasons for insecticide use (spha).



Molluscicides - savoy cabbage

Basic area treated: 5.49 hectares

Area treated: 5.49 spray hectares

Weight of active substances applied: 1.14kg

5.23% of the area grown treated molluscicides

All applications were for slugs

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Ferric phosphate	5.49	5.49	1.14	100

Pesticide Usage on white cabbage crops:

27.08 hectares of white cabbage crops grown in Northern Ireland

271.10 treated hectares

99.27kg applied

100% of crops received at least one treatment

White cabbage received on average 3.34 fungicide, 2.21 herbicide, 4.12 insecticide and 2.0 seed treatment applications.

Figure 130: Regional distribution of white cabbage crops grown in Northern Ireland (ha), 2013.

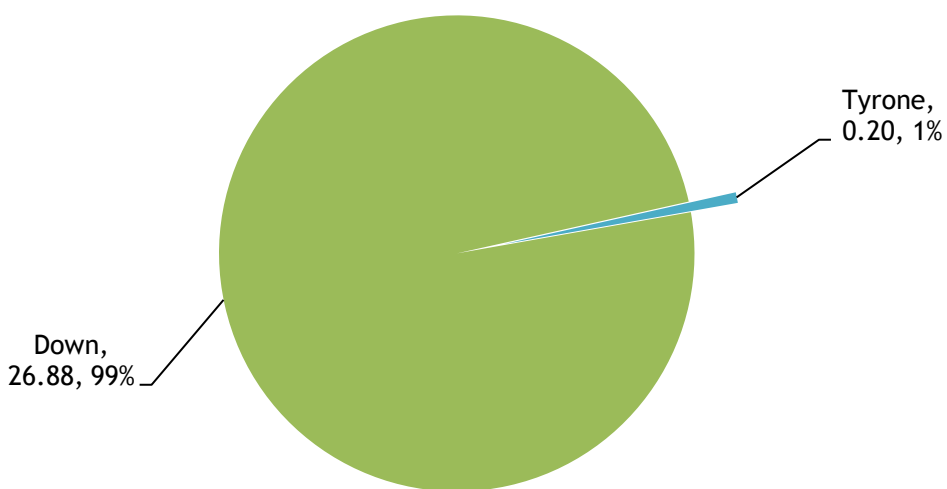


Figure 131: Pesticide usage on white cabbage crops in Northern Ireland (spha), 2013.

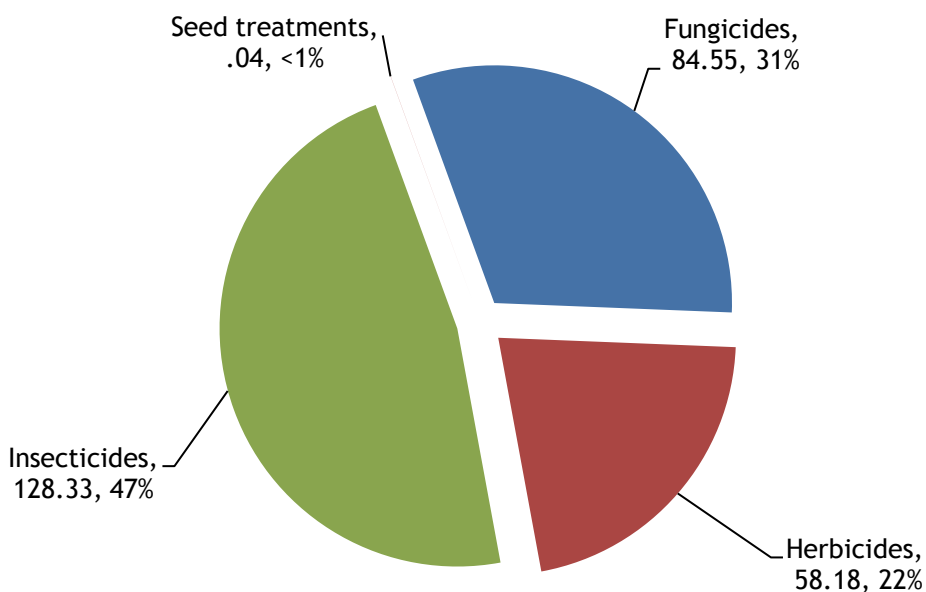


Figure 132: Weight of pesticides applied to white cabbage crops in Northern Ireland (kg), 2013.

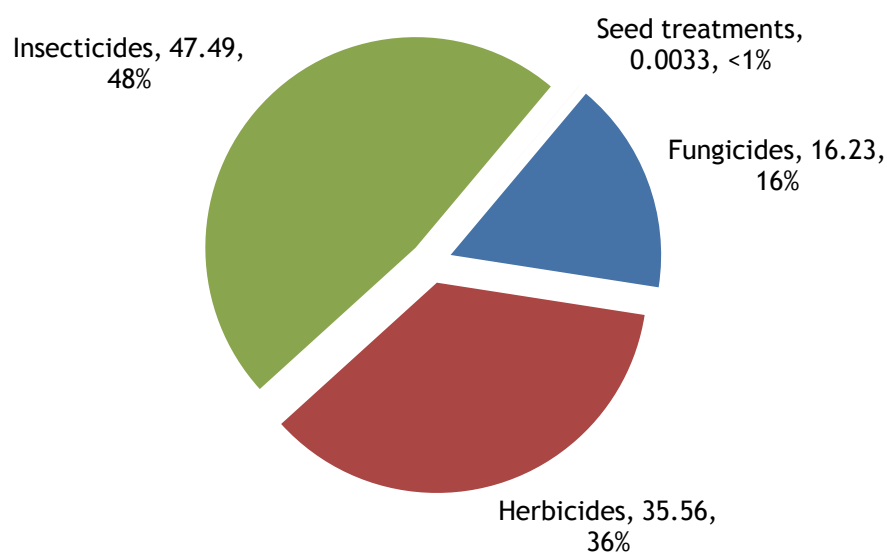
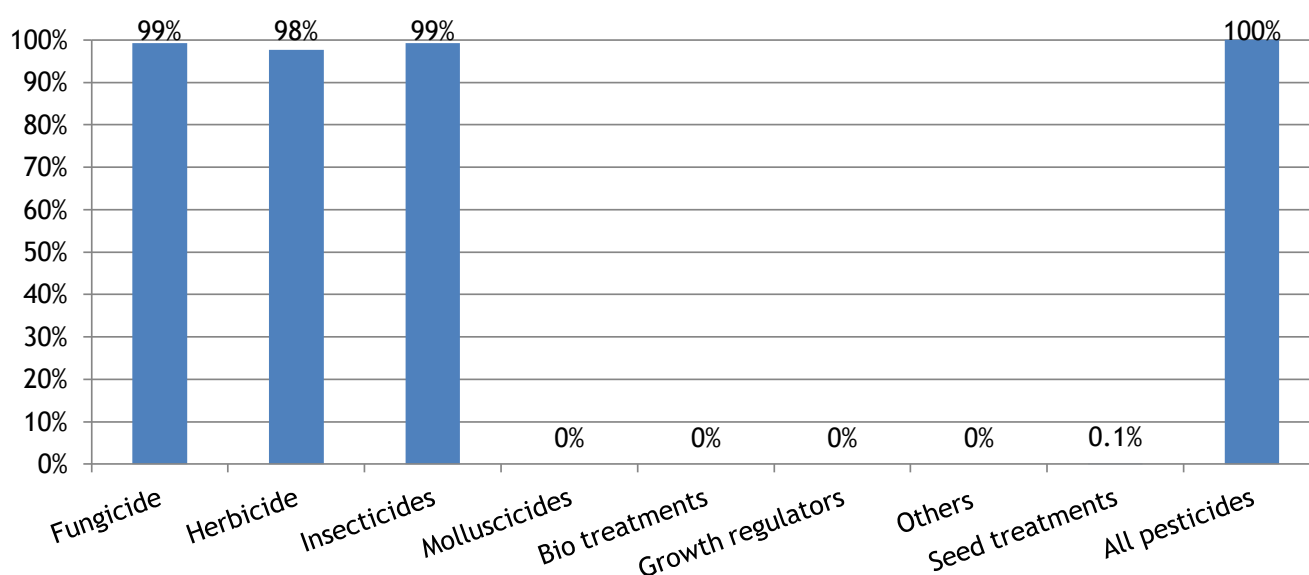


Figure 133: Proportional area of white cabbage crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - white cabbage

Basic area treated: 26.88 hectares

Area treated: 84.55 spray hectares

Weight of active substances applied: 16.23kg

99.3% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	50.68	19.96	3.8	59.94
Prothioconazole	15.46	13.84	2.97	18.29
Azoxystrobin/difenoconazole	6.28	6.28	2.04	7.43
Tebuconazole	3.83	3.83	0.77	4.53
Tebuconazole/trifloxystrobin	3.09	3.09	0.7	3.65

Figure 134: Fungicide active substance usage on white cabbage crops in Northern Ireland (spha), 2013.

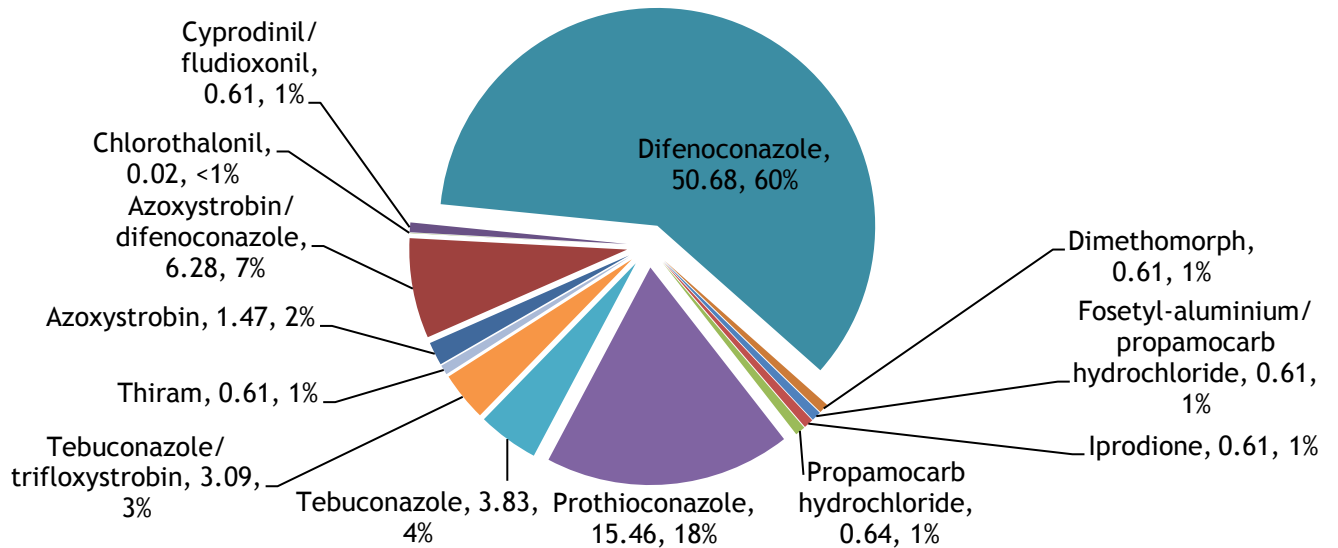


Figure 135: Weight of fungicide active substances applied to white cabbage crops in Northern Ireland (kg), 2013.

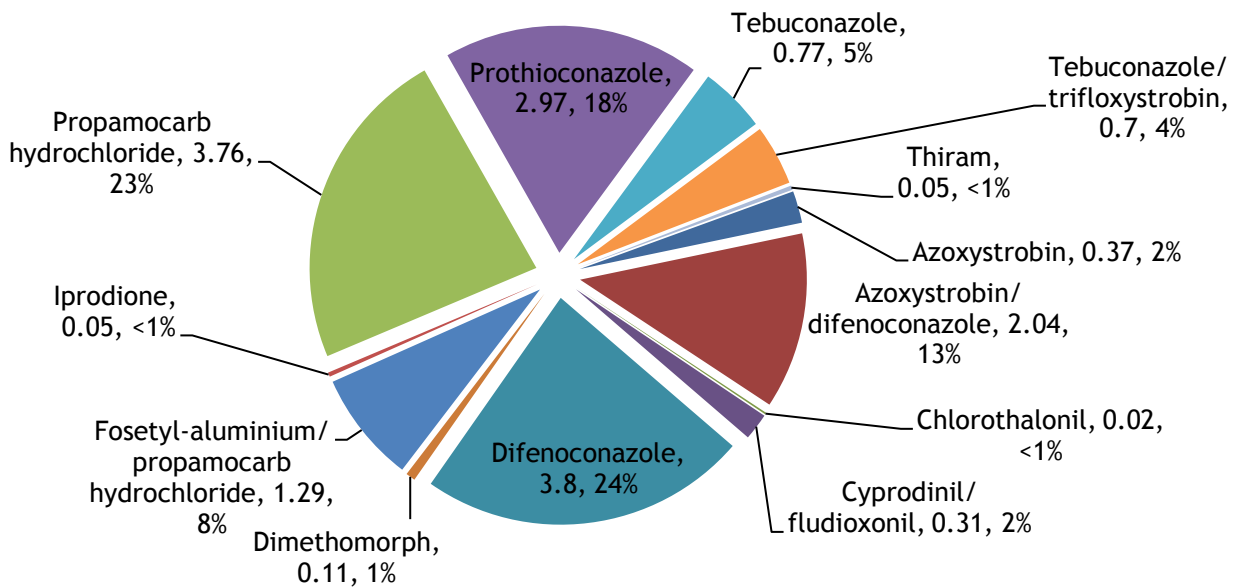
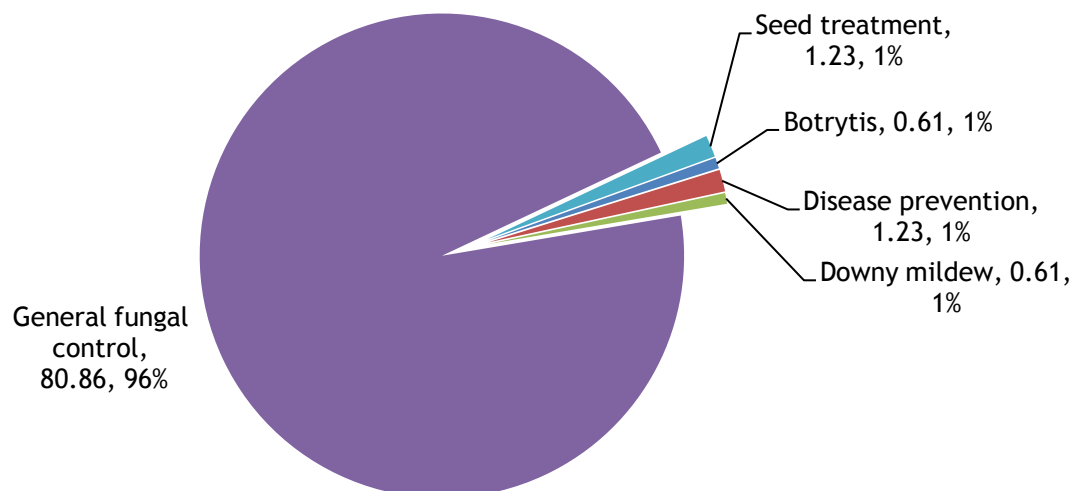


Figure 136: White cabbage: reasons for fungicide use (spha).



Herbicides & desiccants - white cabbage

Basic area treated: 26.44 hectares

Area treated: 58.18 spray hectares

Weight of active substances applied: 35.56kg

97.7% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	28.26	26.05	21.19	48.57
Clomazone	18.85	16.64	1.32	32.40
Propyzamide	9.21	9.21	11.42	15.83
Glyphosate	1.86	1.86	1.62	3.20

Figure 137: Herbicide & desiccant active substance usage on white cabbage crops in Northern Ireland (spha), 2013.

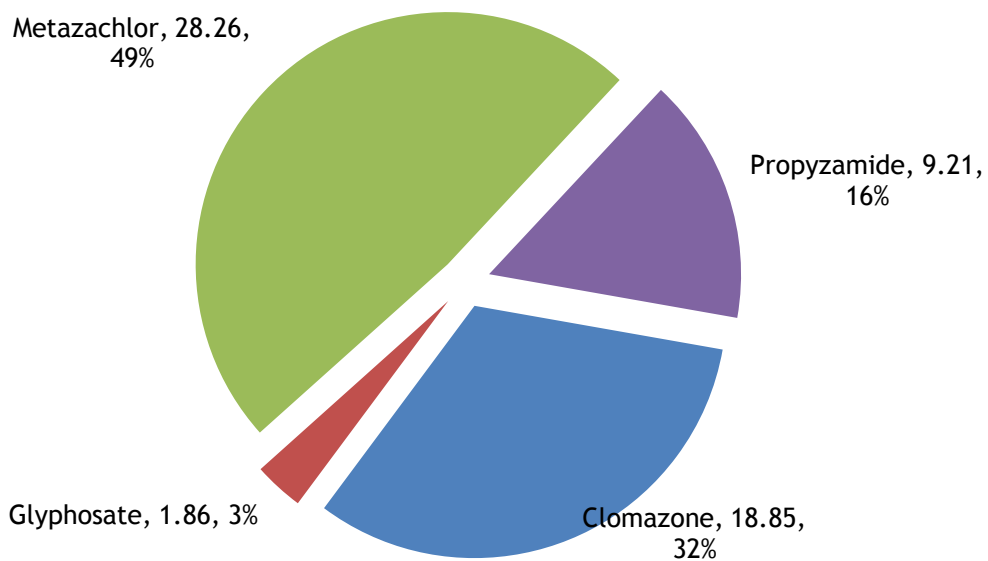


Figure 138: Weight of herbicide & desiccant active substances applied to white cabbage crops in Northern Ireland (kg), 2013.

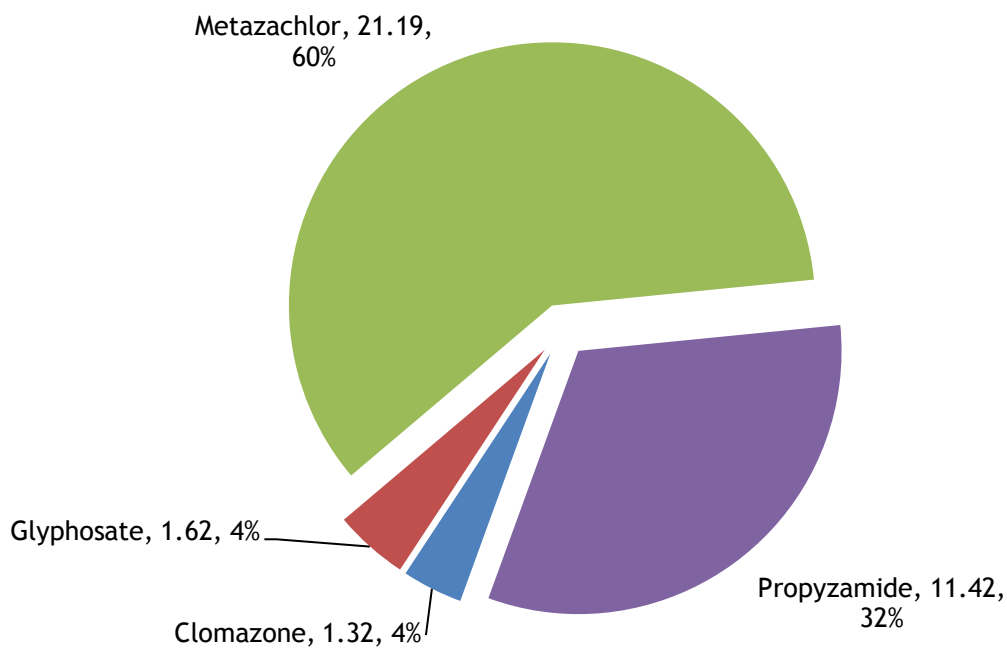
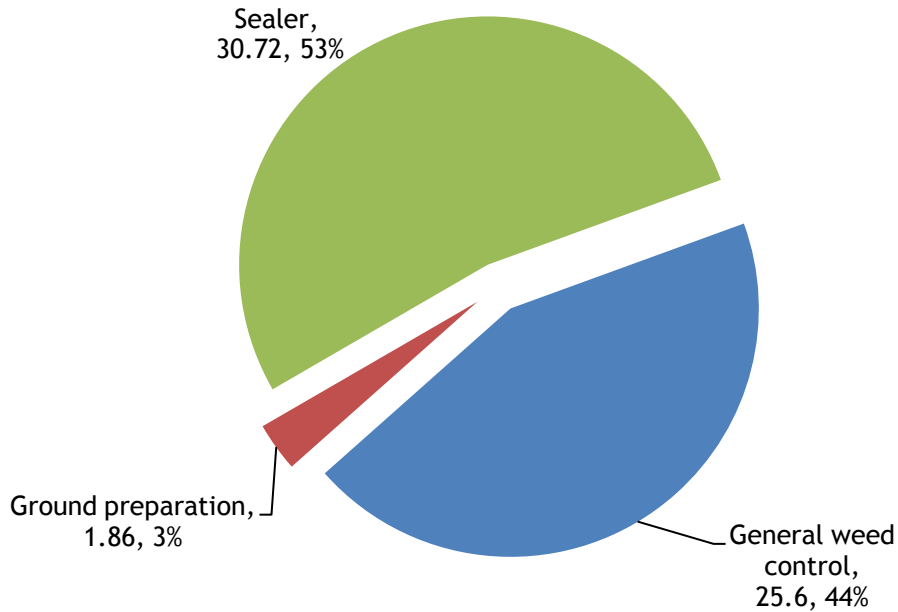


Figure 139: White cabbage: reasons for herbicide & desiccant use (spha).



Insecticides - white cabbage

Basic area treated: 26.88 hectares
 Area treated: 128.33 spray hectares
 Weight of active substances applied: 47.49kg
 99.28% of the area grown treated with insecticides
 The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Pirimicarb	38.54	17.03	7.59	30.03
Cypermethrin	32.25	10.75	0.81	25.13
Lambda-cyhalothrin	28.19	15.49	0.26	21.97
Indoxacarb	9.72	5.89	0.25	7.57
Thiacloprid	8.98	5.89	0.86	7.00

Figure 140: Insecticide active substance usage on white cabbage crops in Northern Ireland (spha), 2013.

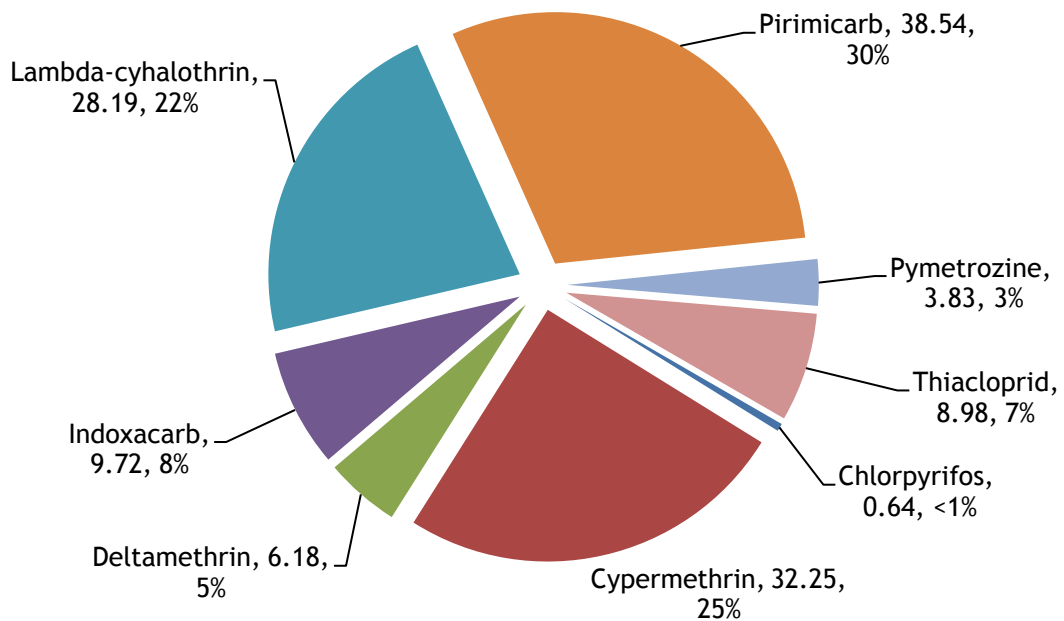


Figure 141: Weight of insecticide active substances applied to white cabbage crops in Northern Ireland (kg), 2013.

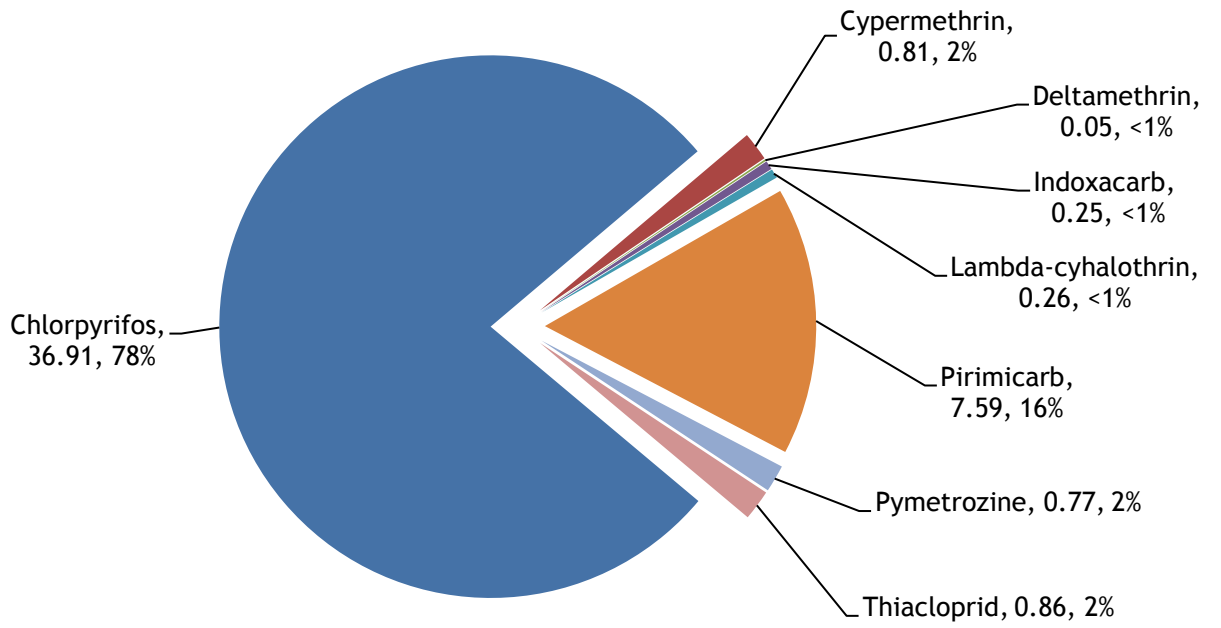
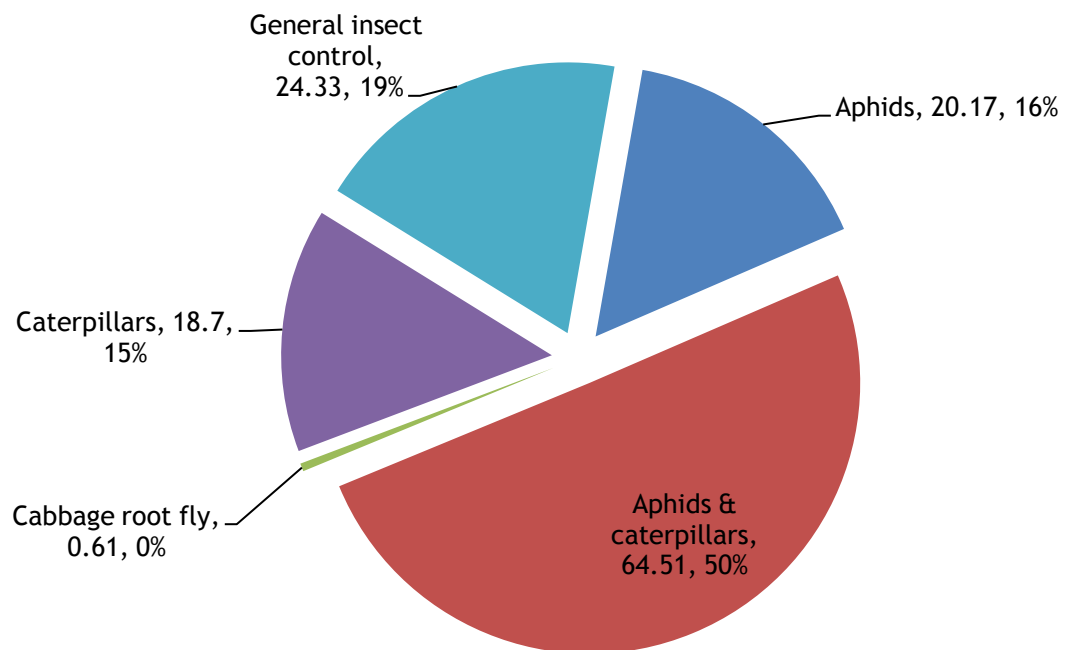


Figure 142: White cabbage: reasons for insecticide use (spha).



Pesticide Usage on red cabbage crops:

17.71 hectares of red cabbage crops grown in Northern Ireland

82.88 treated hectares

41.86kg applied

100% of crops received at least one treatment

All crops were grown in County Down.

Red cabbage received on average 3.63 fungicide, 2.75 herbicide and 3.57 insecticide applications.

Figure 143: Pesticide usage on red cabbage crops in Northern Ireland (spha), 2013.

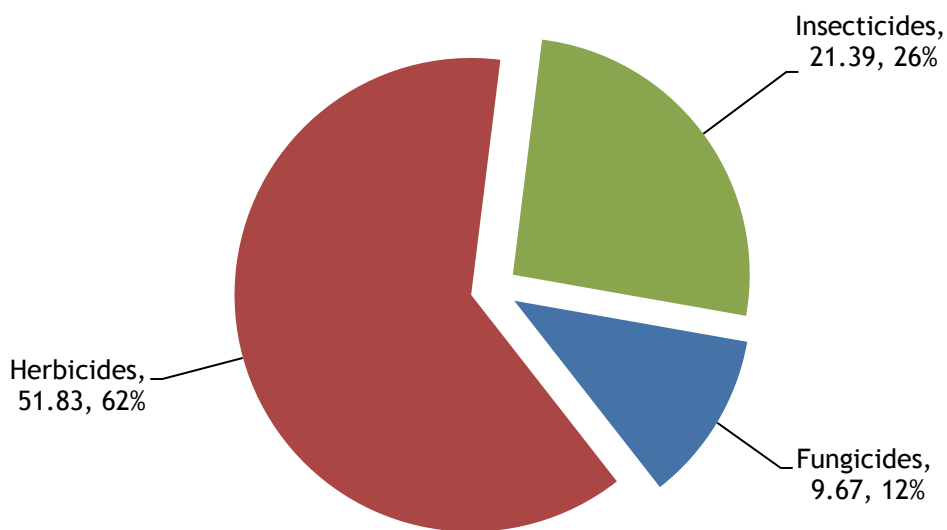


Figure 144: Weight of pesticides applied to red cabbage crops in Northern Ireland (kg), 2013.

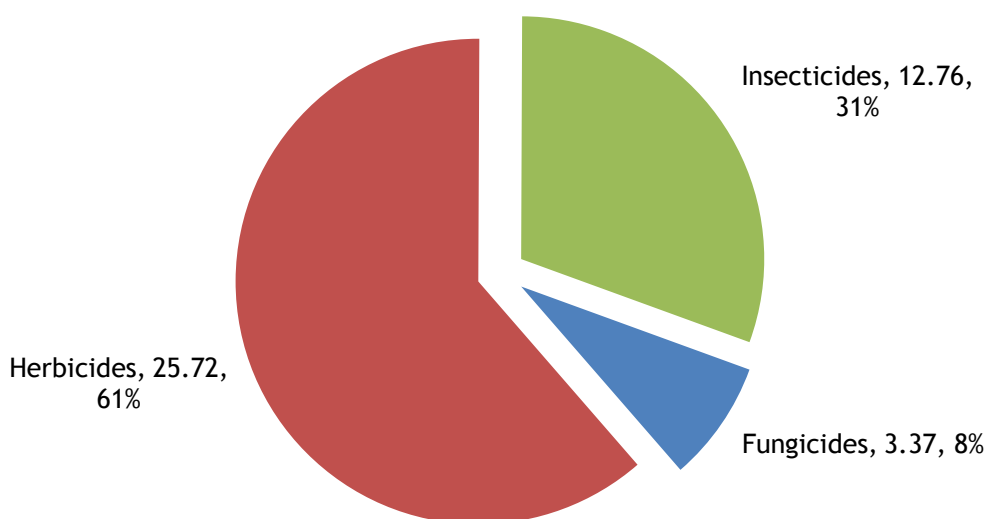
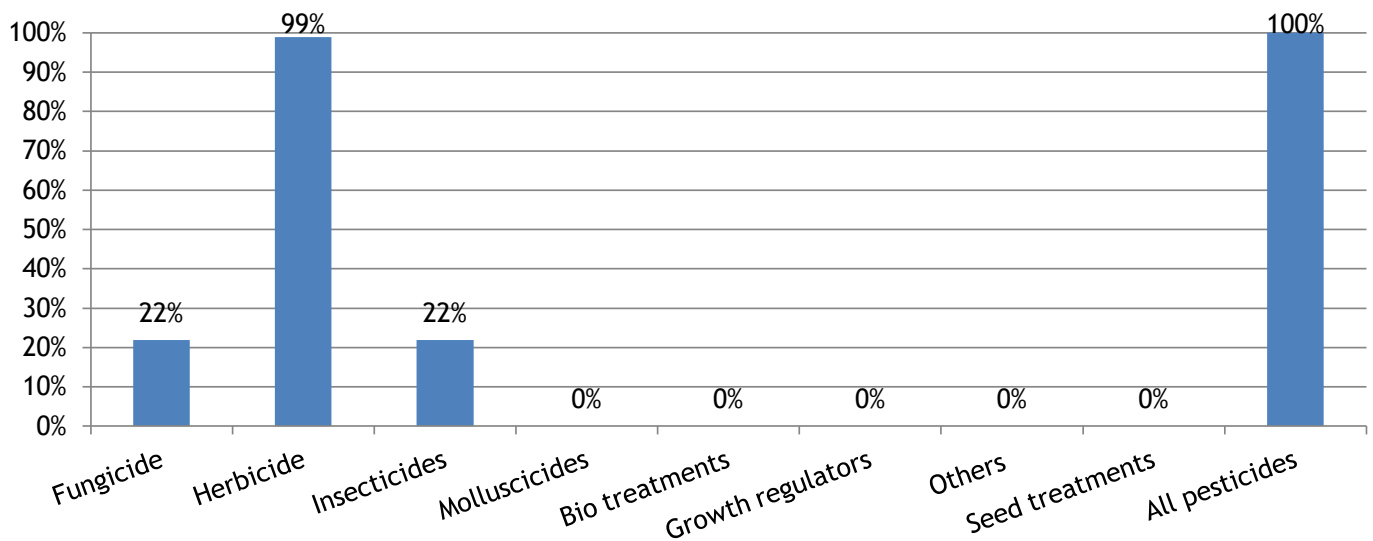


Figure 145: Proportional area of red cabbage crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - red cabbage

Basic area treated: 3.87 hectares

Area treated: 9.67 spray hectares

Weight of active substances applied: 3.37kg

21.8% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin/difenoconazole	3.68	3.68	1.2	38.06
Prothioconazole	3.24	1.62	0.62	33.51
Tebuconazole	1.62	1.62	0.32	16.75

Figure 146: Fungicide active substance usage on red cabbage crops in Northern Ireland (spha), 2013.

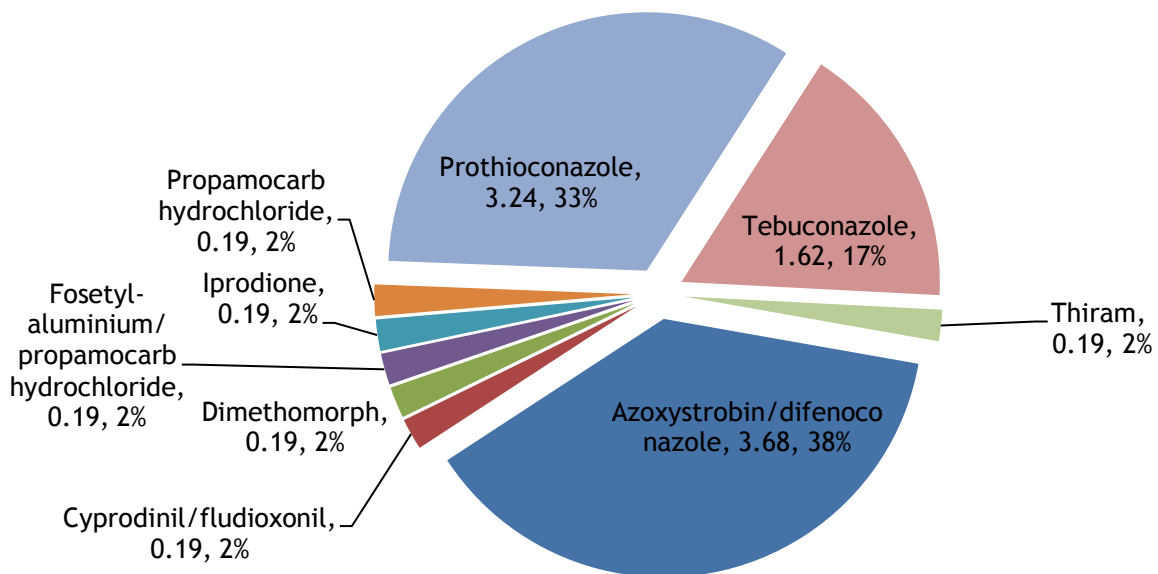


Figure 147: Weight of fungicide active substances applied to red cabbage crops in Northern Ireland (kg), 2013.

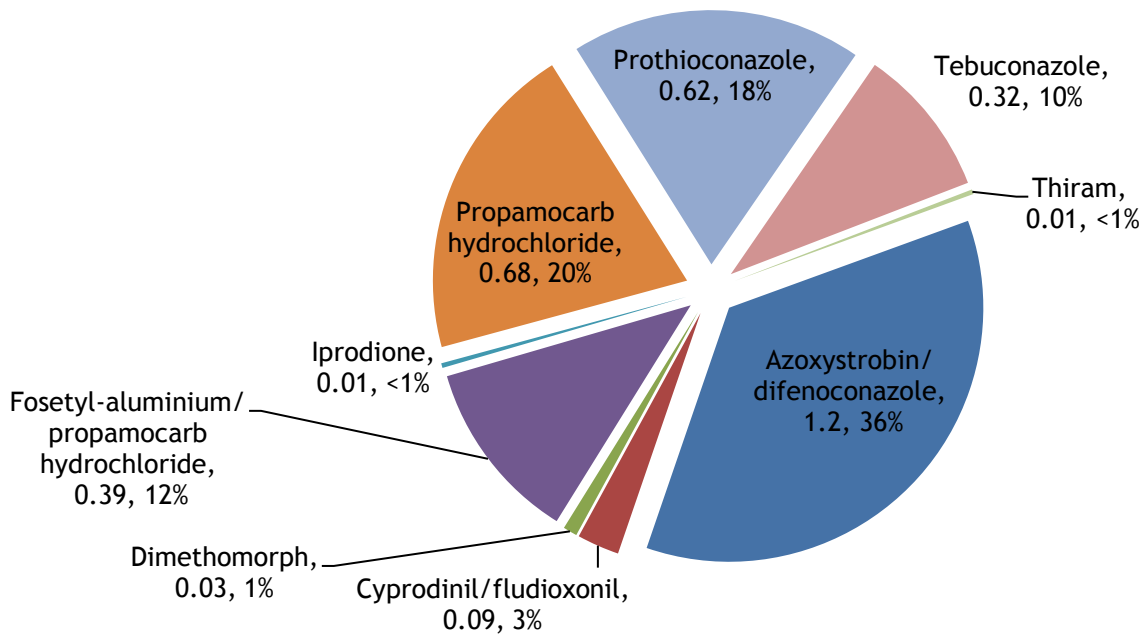
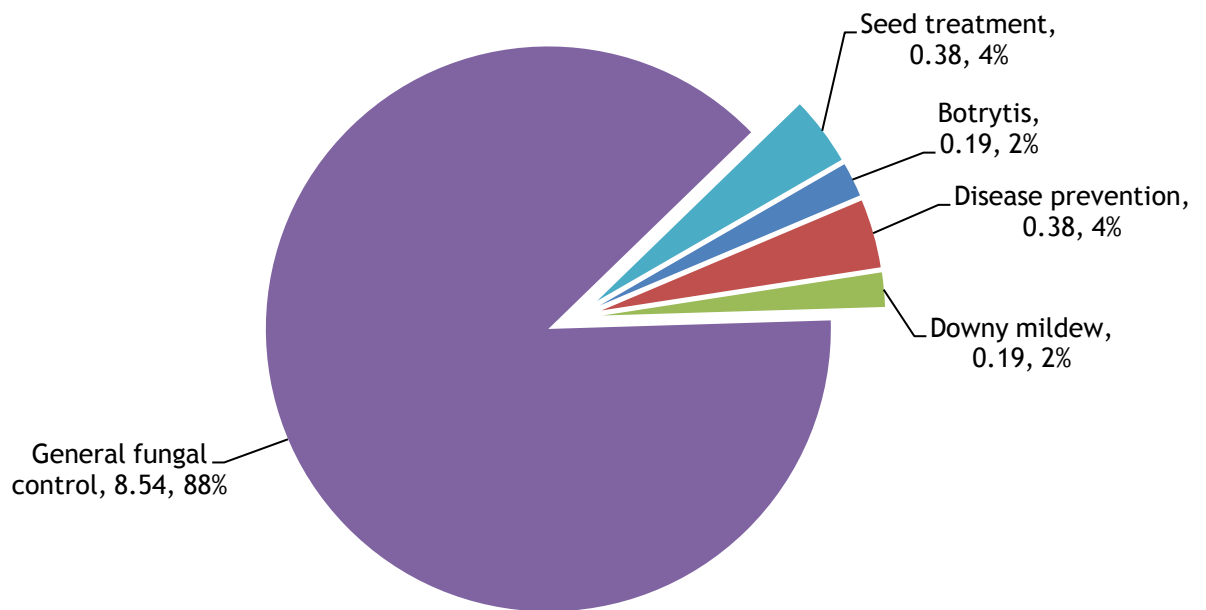


Figure 148: Red cabbage: reasons for fungicide use (spha).



Herbicides & desiccants - red cabbage

Basic area treated: 17.52 hectares

Area treated: 51.83 spray hectares

Weight of active substances applied: 25.72kg

98.9% of the area grown treated with herbicides & desiccants

All applications were for general weed control

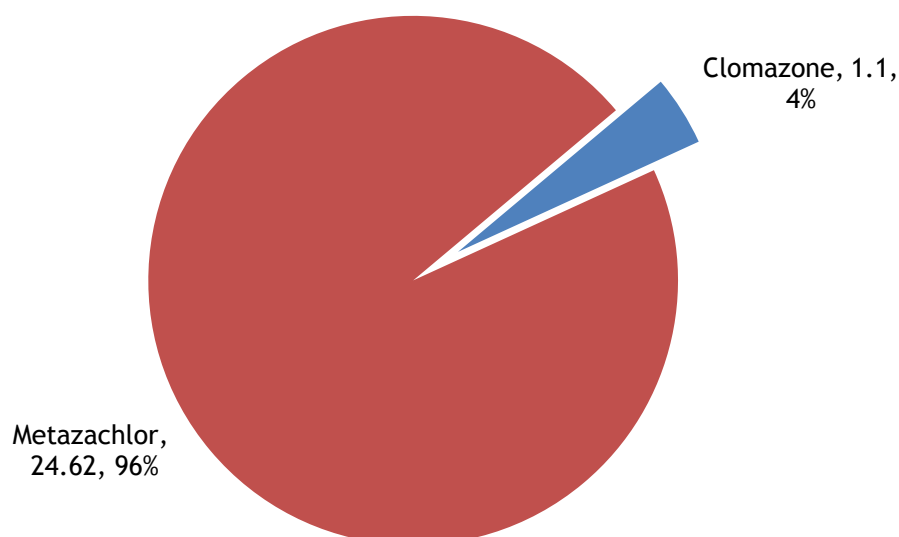
The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	32.83	17.52	24.62	63.34
Clomazone	18.99	17.52	1.1	36.64

Figure 149: Herbicide & desiccant active substance usage on red cabbage crops in Northern Ireland (spha), 2013.



Figure 150: Weight of herbicide & desiccant active substances applied to red cabbage crops in Northern Ireland (kg), 2013.



Insecticides - red cabbage

Basic area treated: 3.87 hectares

Area treated: 21.39 spray hectares

Weight of active substances applied: 12.76kg

21.85% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Indoxacarb	5.3	3.68	0.14	24.78
Thiacloprid	5.3	3.68	0.51	24.78
Lambda-cyhalothrin	3.68	3.68	0.04	17.20
Pirimicarb	3.68	3.68	0.46	17.20
Deltamethrin	1.62	1.62	0.01	7.57
Pymetrozine	1.62	1.62	0.32	7.57

Figure 151: Insecticide active substance usage on red cabbage crops in Northern Ireland (spha), 2013.

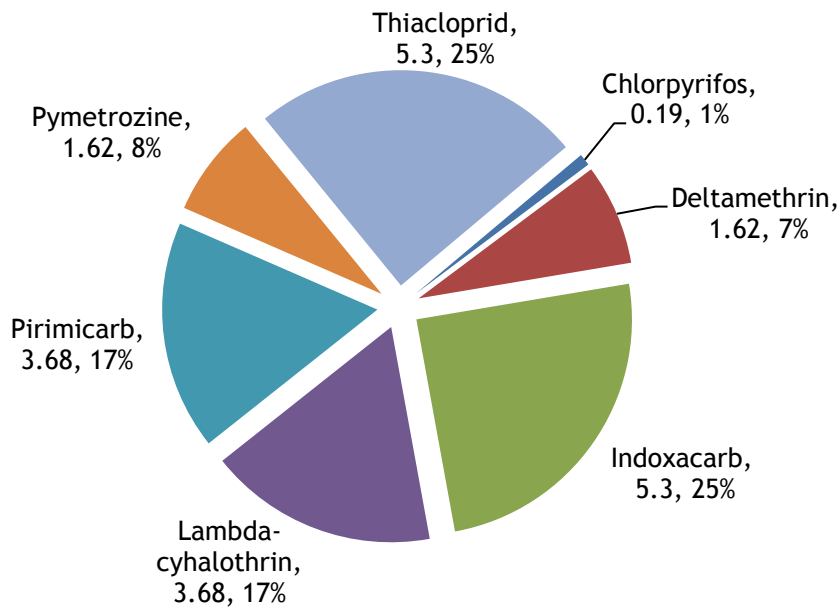


Figure 152: Weight of insecticide active substances applied to red cabbage crops in Northern Ireland (kg), 2013.

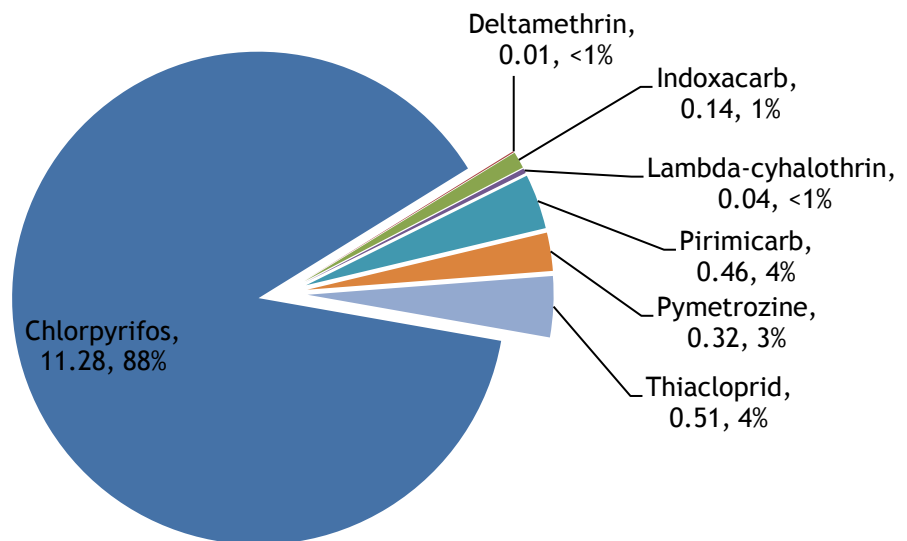
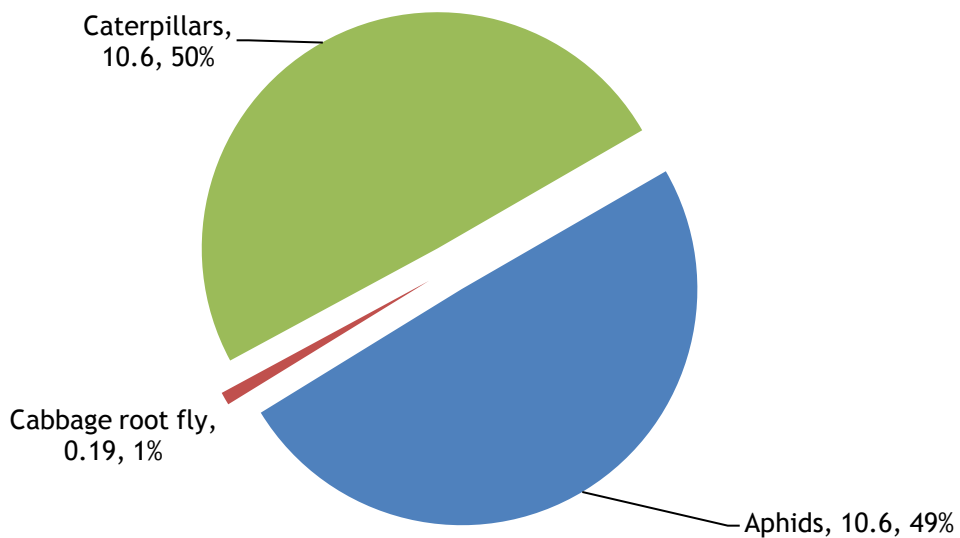
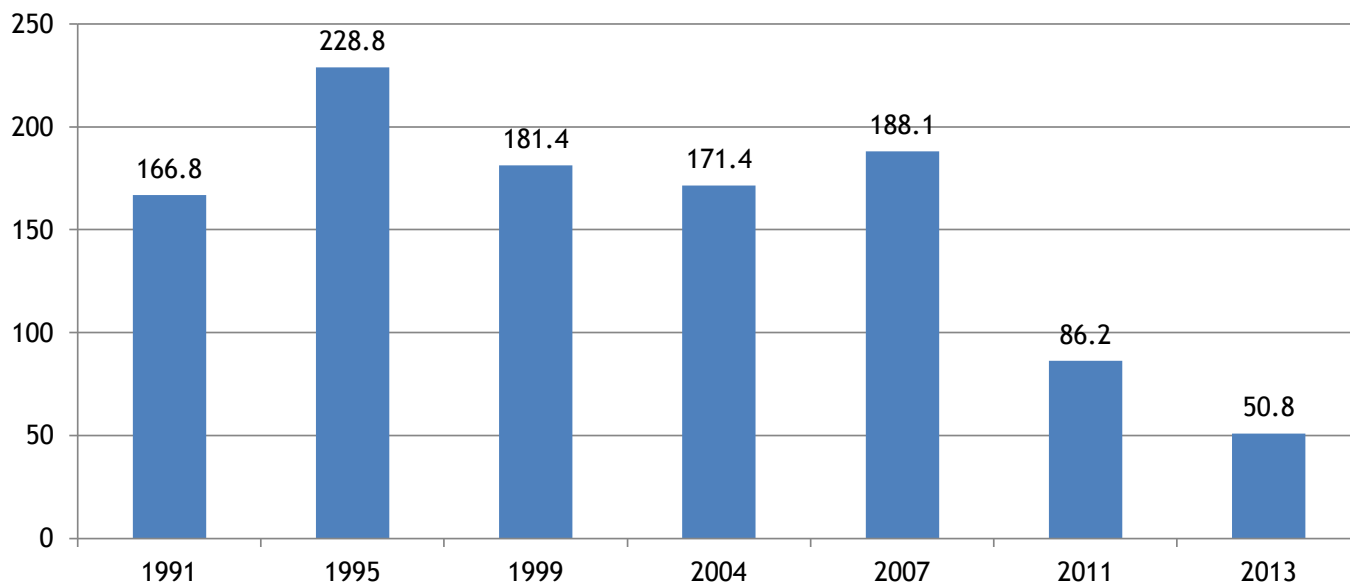


Figure 153: Red cabbage: reasons for insecticide use (spha).



Cauliflower crops:

Figure 154: Comparison of the area of cauliflower crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on autumn cauliflower crops:

8.62 hectares of autumn cauliflower crops grown in Northern Ireland

67.65 treated hectares

39.36kg applied

100% of crops received at least one treatment

Autumn cauliflower crops received on average 4.34 fungicide, 1.38 herbicide, 1.87 insecticide and 1.24 seed treatment applications.

Figure 155: Regional distribution of autumn cauliflower cabbage crops grown in Northern Ireland (ha), 2013.

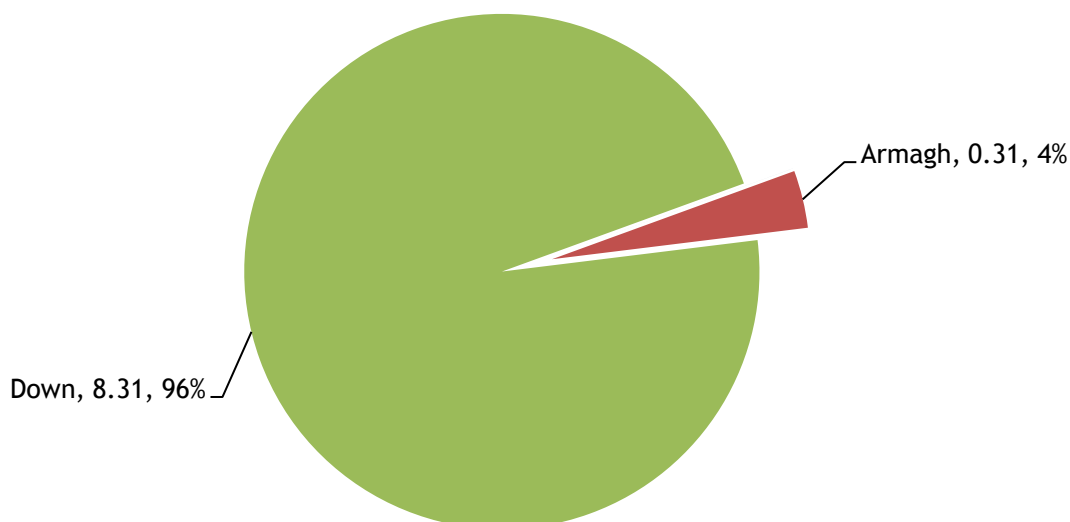


Figure 156: Pesticide usage on autumn cauliflower crops in Northern Ireland (spha), 2013.

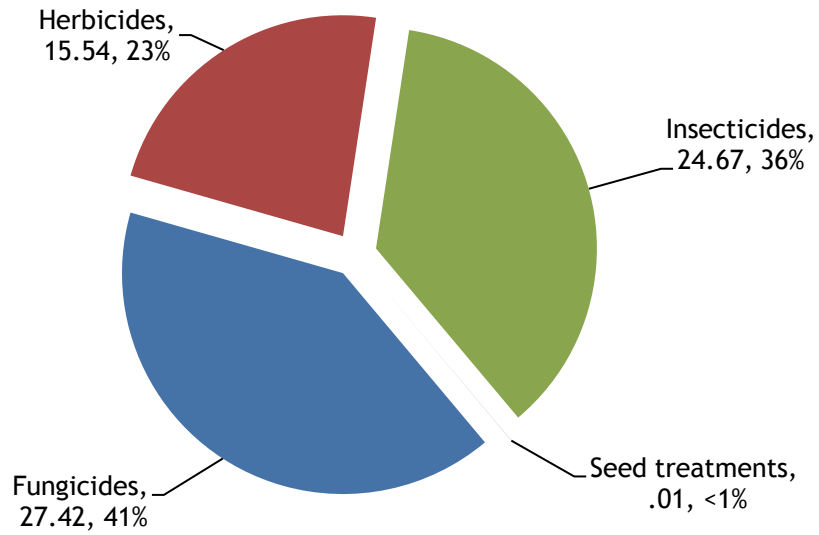


Figure 157: Weight of pesticides applied to autumn cauliflower crops in Northern Ireland (kg), 2013.

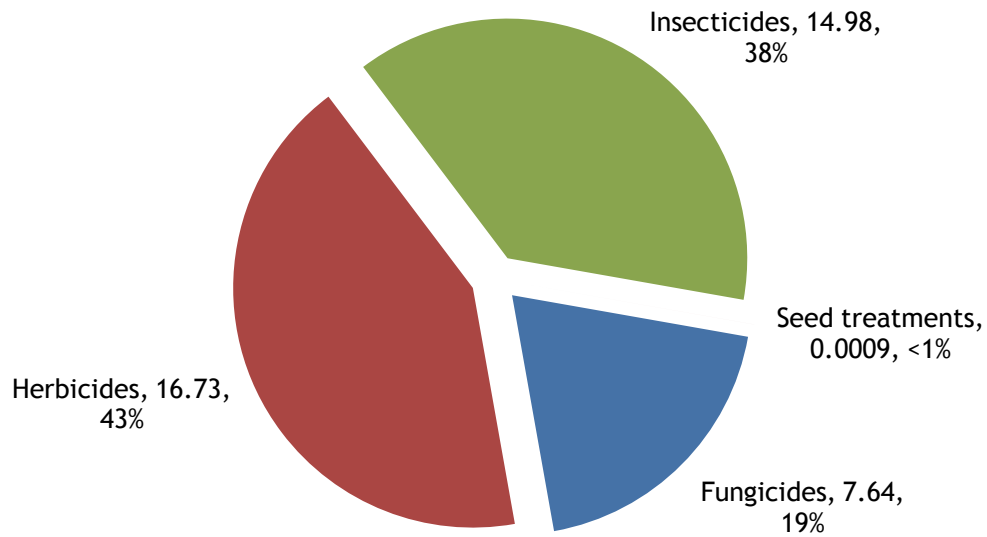
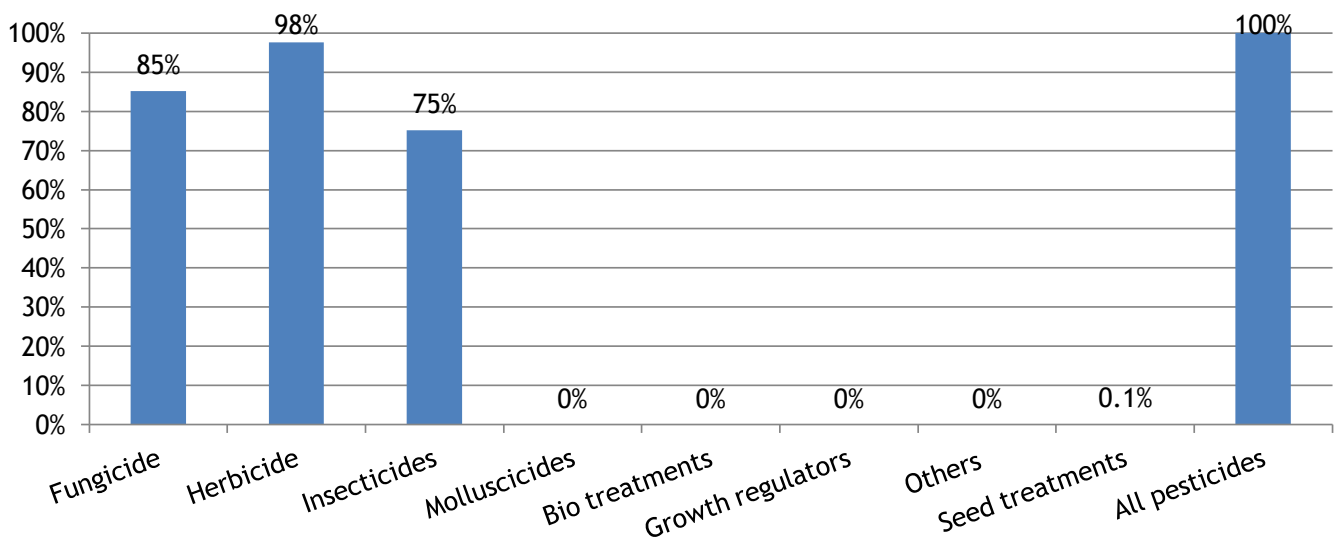


Figure 158: Proportional area of autumn cauliflower crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - autumn cauliflower

Basic area treated: 7.34 hectares

Area treated: 27.42 spray hectares

Weight of active substances applied: 7.64kg

85.2% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin/difenoconazole	7.13	7.13	2.32	26.00
Difenoconazole	7.13	7.13	0.54	26.00
Boscalid/pyraclostrobin	5.96	5.96	1.99	21.74
Prothioconazole	5.96	5.96	1.14	21.74
Propamocarb hydrochloride	0.21	0.21	1.03	0.77

Figure 159: Fungicide active substance usage on autumn cauliflower crops in Northern Ireland (spha), 2013.

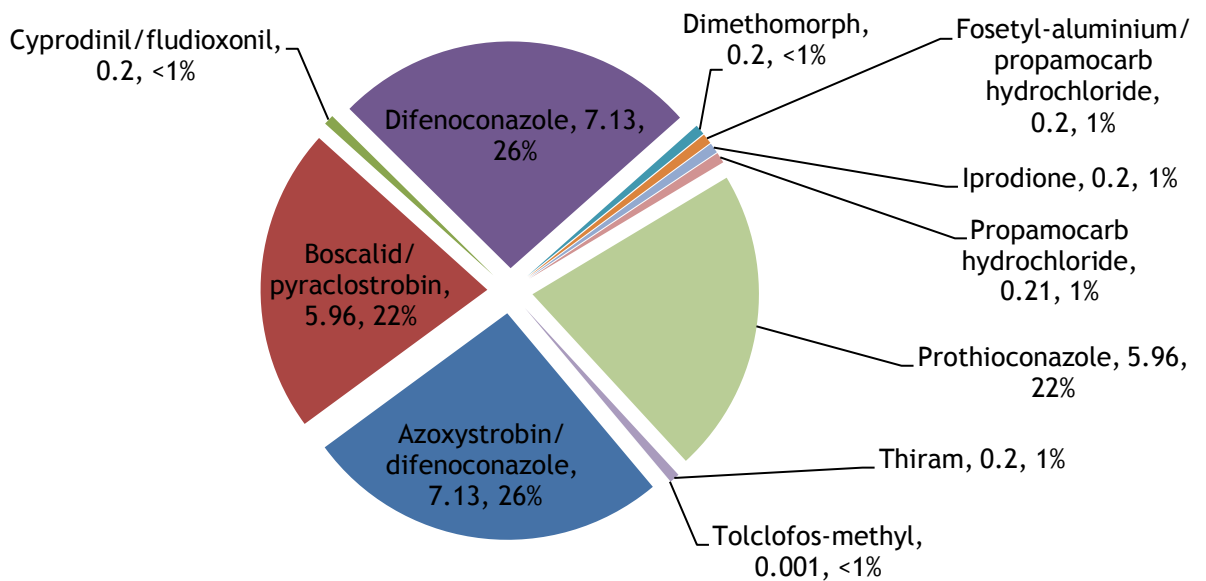


Figure 160: Weight of fungicide active substances applied to autumn cauliflower crops in Northern Ireland (kg), 2013.

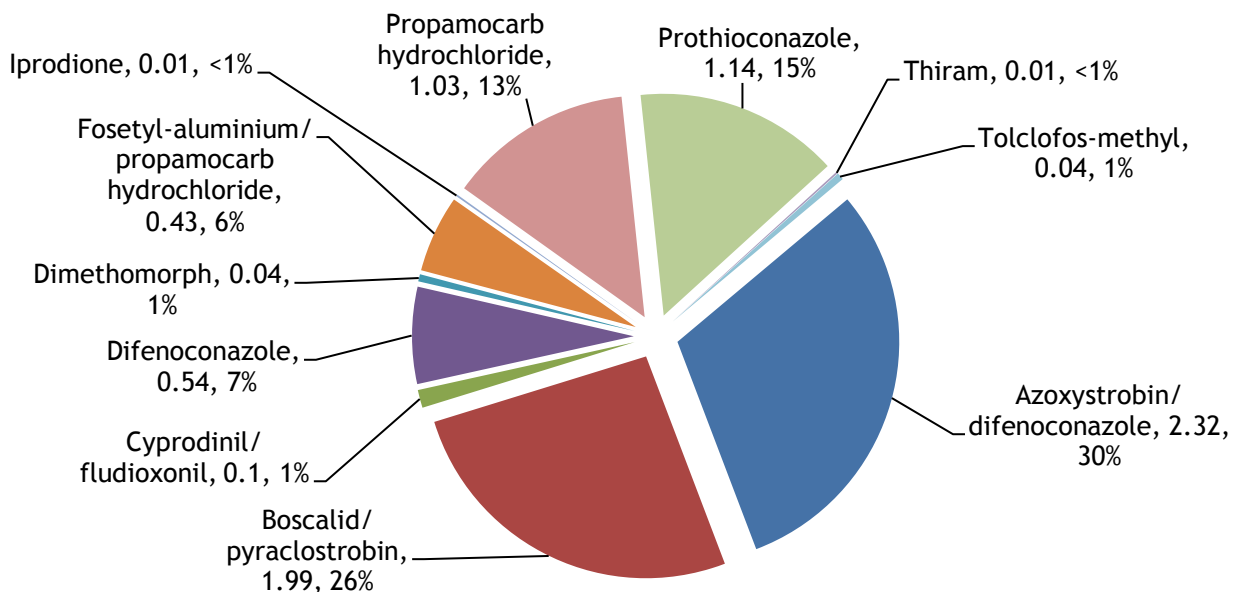
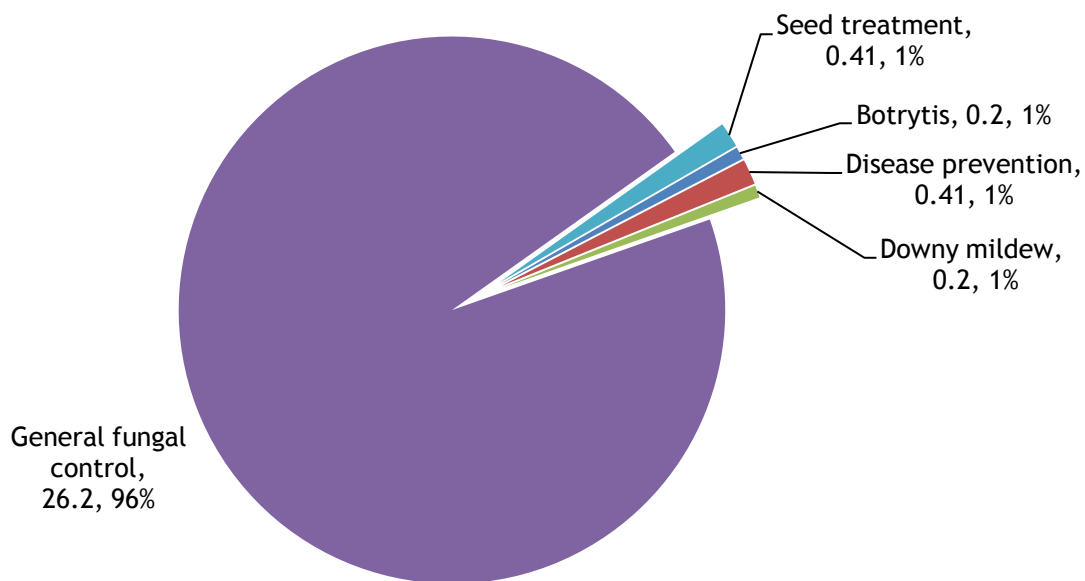


Figure 161: Autumn cauliflower: reasons for fungicide use (spha).



Herbicides & desiccants - autumn cauliflower

Basic area treated: 8.41 hectares

Area treated: 15.54 spray hectares

Weight of active substances applied: 39.36kg

97.6% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Glyphosate	8.1	8.1	11.15	52.12
Metazachlor	7.44	7.44	5.58	47.88

Figure 162: Herbicide & desiccant active substance usage on autumn cauliflower crops in Northern Ireland (spha), 2013.



Figure 163: Weight of herbicide & desiccant active substances applied to autumn cauliflower crops in Northern Ireland (kg), 2013.

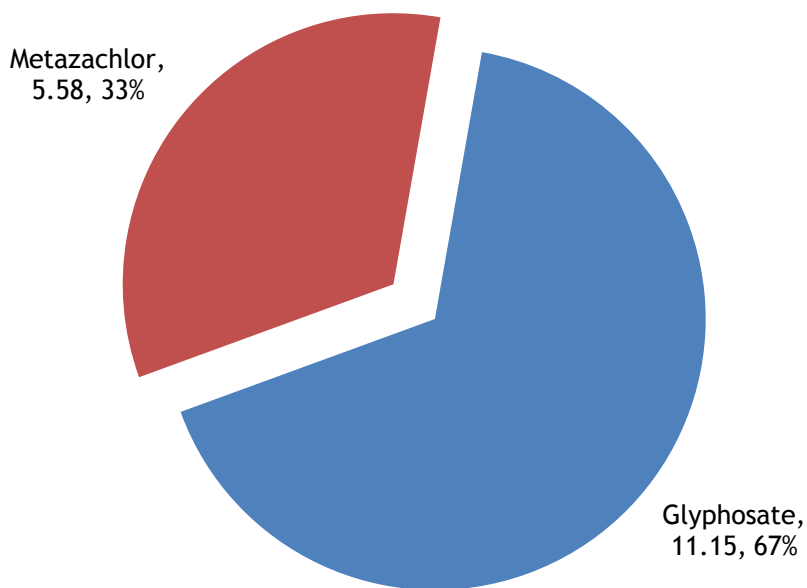
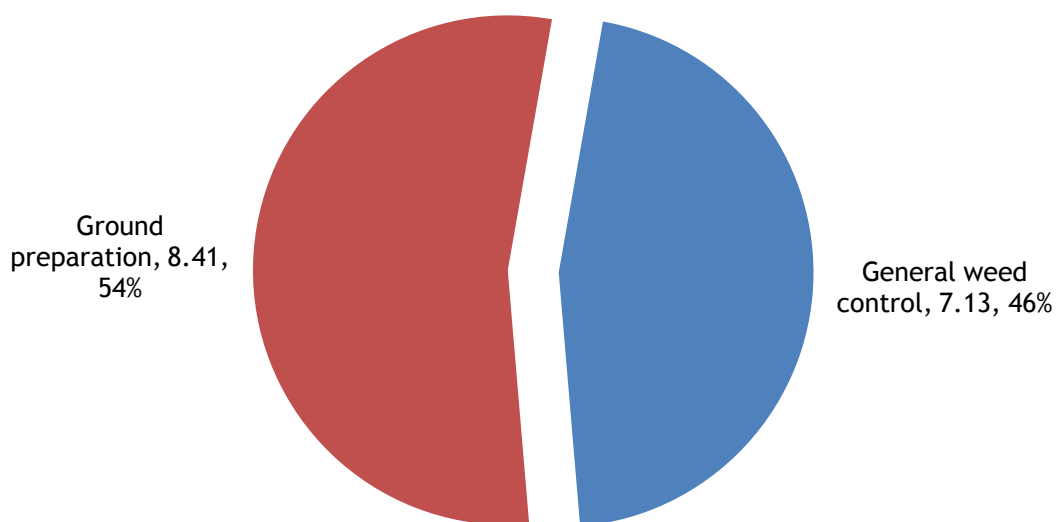


Figure 164: Autumn cauliflower: reasons for herbicide & desiccant use (spha).



Insecticides - autumn cauliflower

Basic area treated: 6.48 hectares

Area treated: 24.67 spray hectares

Weight of active substances applied: 14.98kg

75.15% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	5.96	5.96	0.06	24.16
Pirimicarb	5.96	5.96	1.25	24.16
Spirotetramat	5.96	5.96	0.45	24.16
Thiacloprid	5.96	5.96	0.57	24.16
Chlorpyrifos	0.51	0.51	12.65	2.07

Figure 165: Insecticide active substance usage on autumn cauliflower crops in Northern Ireland (spha), 2013.

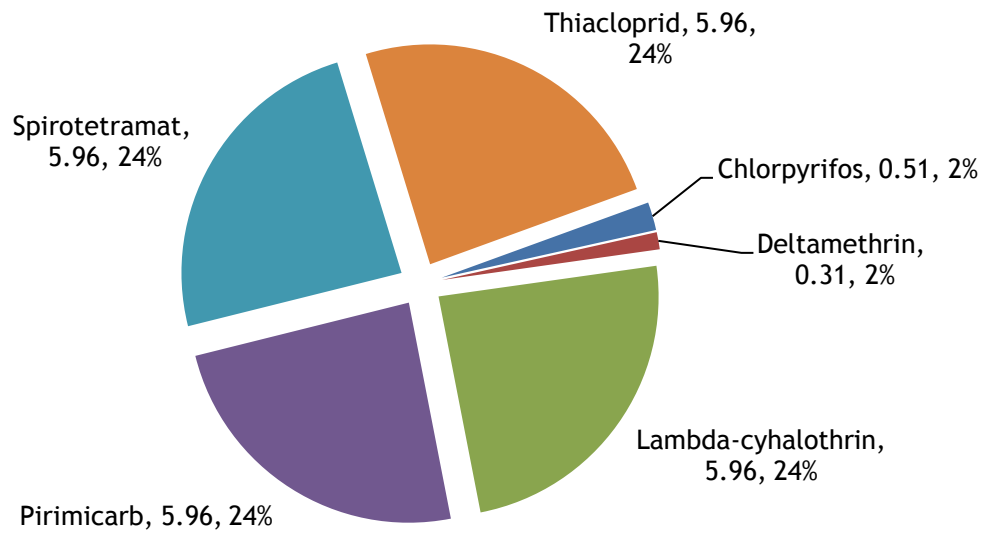


Figure 166: Weight of insecticide active substances applied to autumn cauliflower crops in Northern Ireland (kg), 2013.

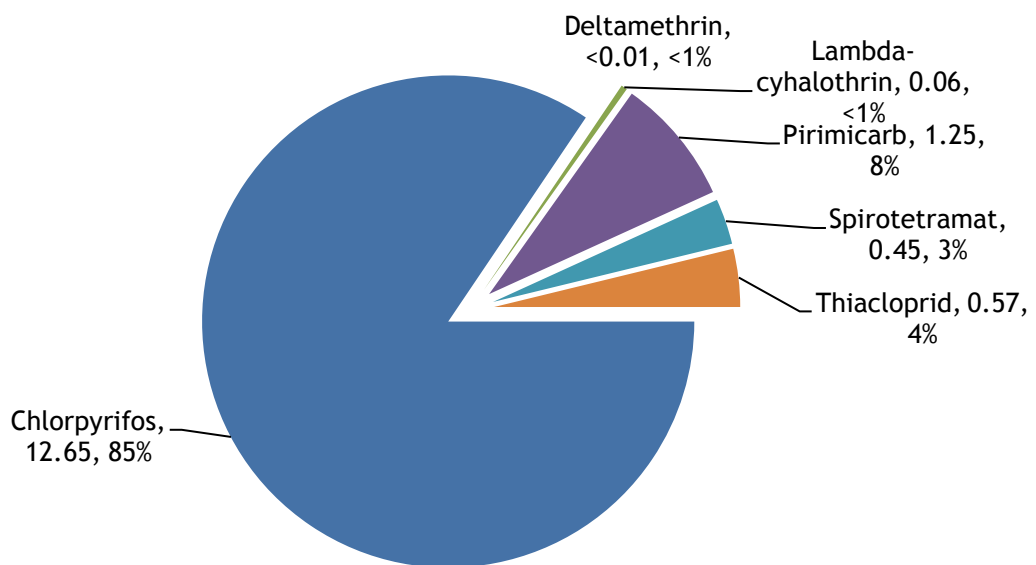
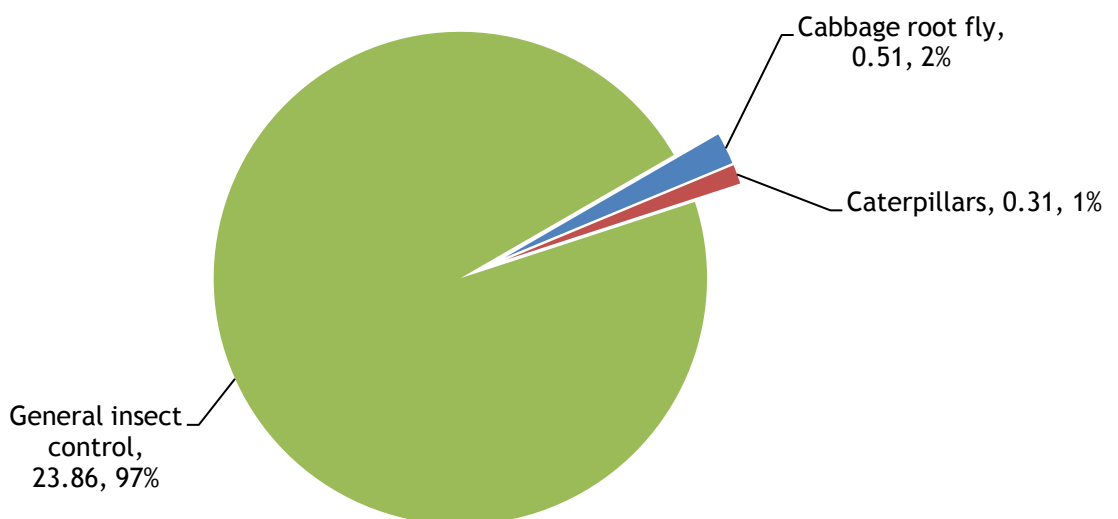


Figure 167: Autumn cauliflower: reasons for insecticide use (spha).



Pesticide Usage on summer cauliflower crops:

34.93 hectares of summer cauliflower crops grown in Northern Ireland

208.28 treated hectares

148.73kg applied

100% of crops received at least one treatment

Summer cauliflower received on average 3.19 fungicide, 2.0 herbicide, 2.0 insecticide and 1.56 seed treatment applications.

Figure 168: Regional distribution of summer cauliflower crops grown in Northern Ireland (ha), 2013.

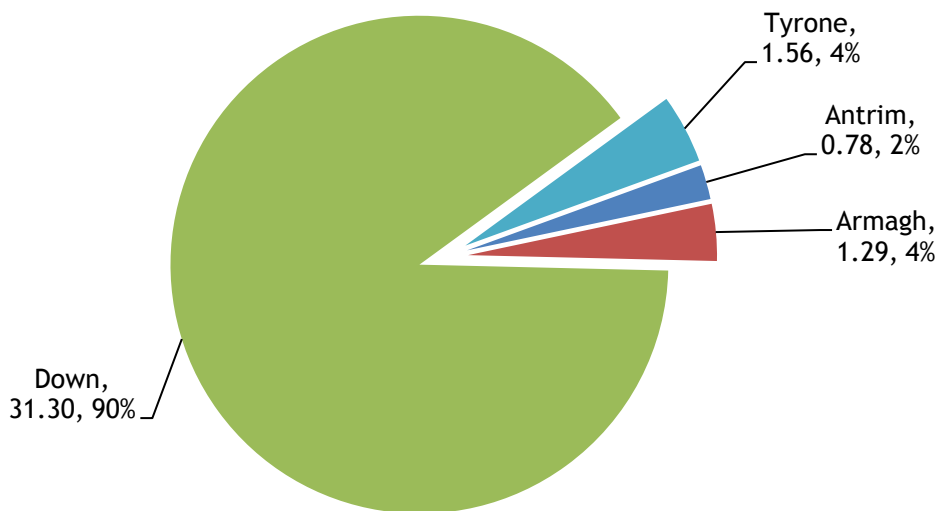


Figure 169: Pesticide usage on summer cauliflower crops in Northern Ireland (spha), 2013.

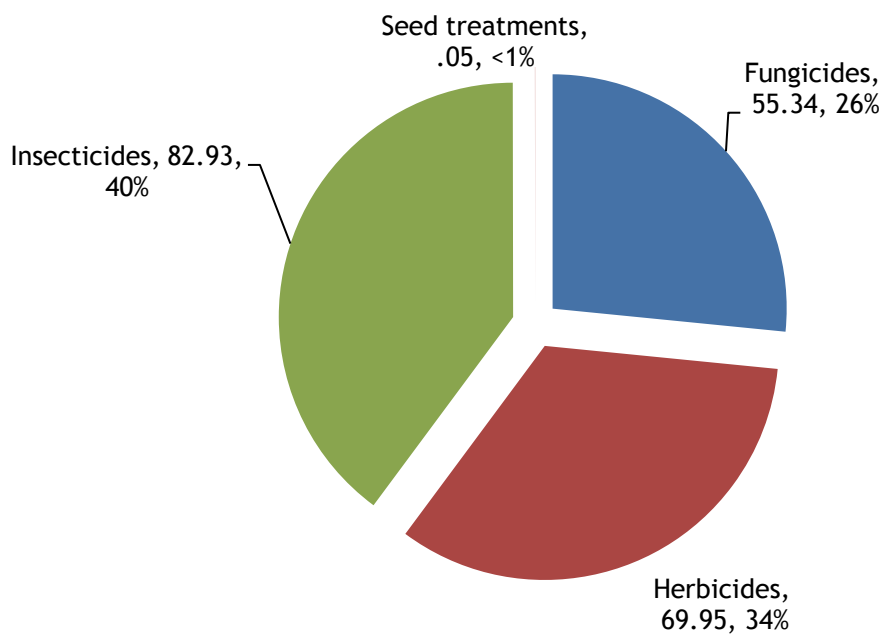


Figure 170: Weight of pesticides applied to summer cauliflower crops in Northern Ireland (kg), 2013.

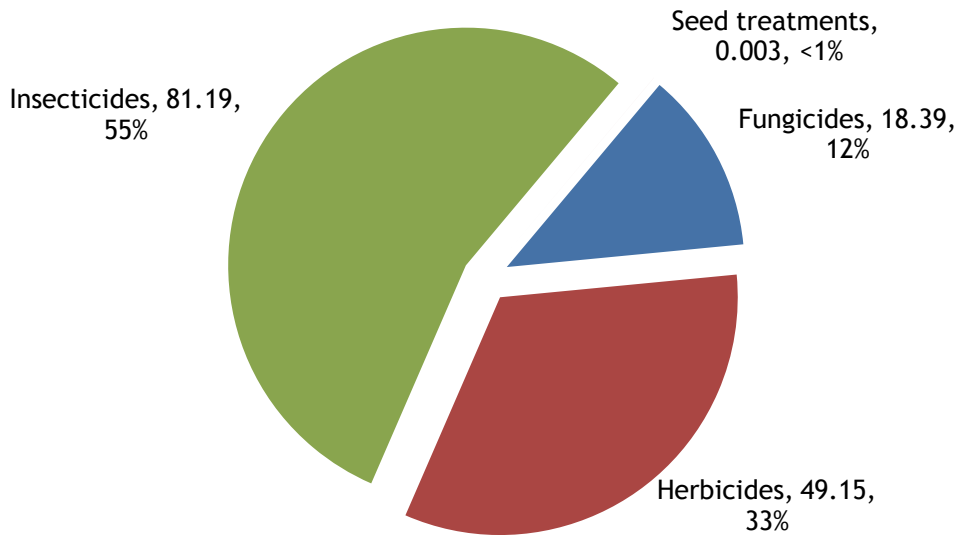
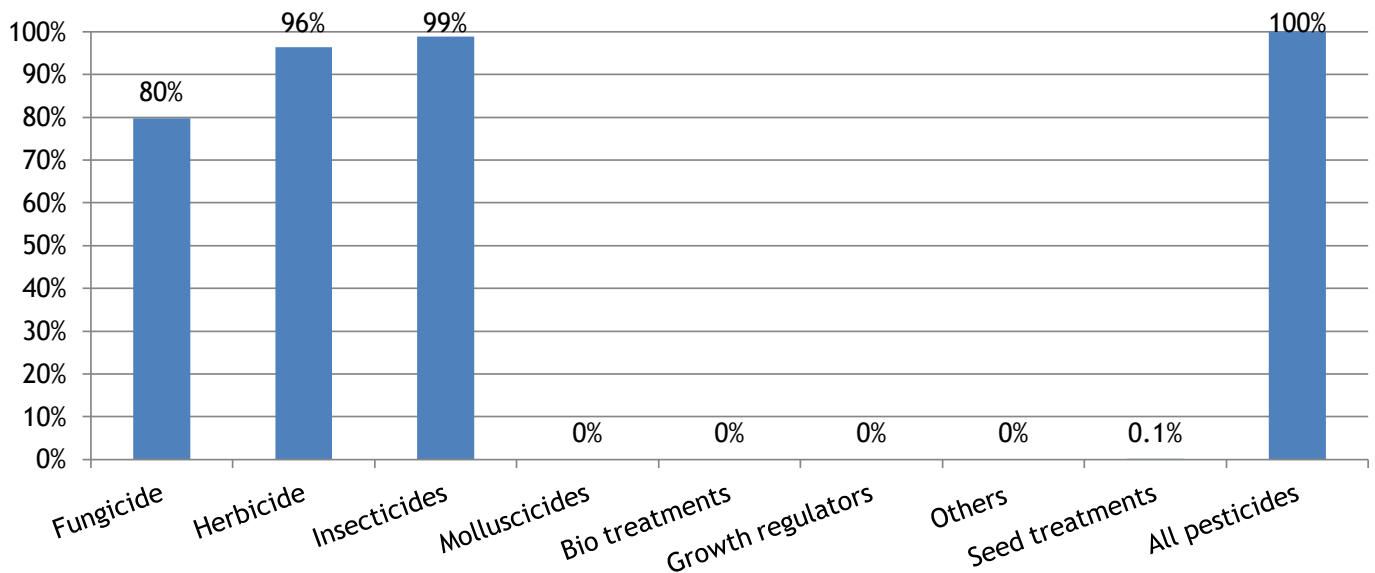


Figure 171: Proportional area of summer cauliflower crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - summer cauliflower

Basic area treated: 27.86 hectares

Area treated: 55.34 spray hectares

Weight of active substances applied: 18.39kg

79.8% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	23.91	21.61	1.79	43.21
Azoxystrobin/difenoconazole	9.05	9.05	2.94	16.35
Prothioconazole	7.14	7.14	1.37	12.90
Boscalid/pyraclostrobin	5.96	5.96	1.99	10.77
Propamocarb hydrochloride	1.24	1.24	6.13	2.24

Figure 172: Fungicide active substance usage on summer cauliflower crops in Northern Ireland (spha), 2013.

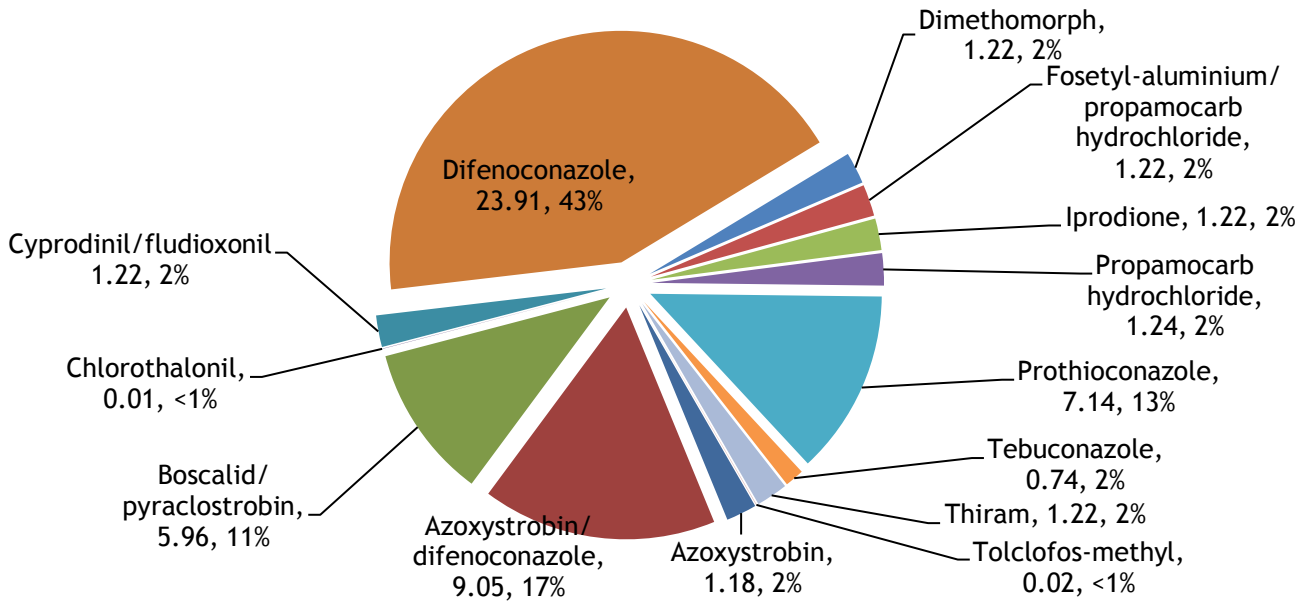


Figure 173: Weight of fungicide active substances applied to summer cauliflower crops in Northern Ireland (kg), 2013.

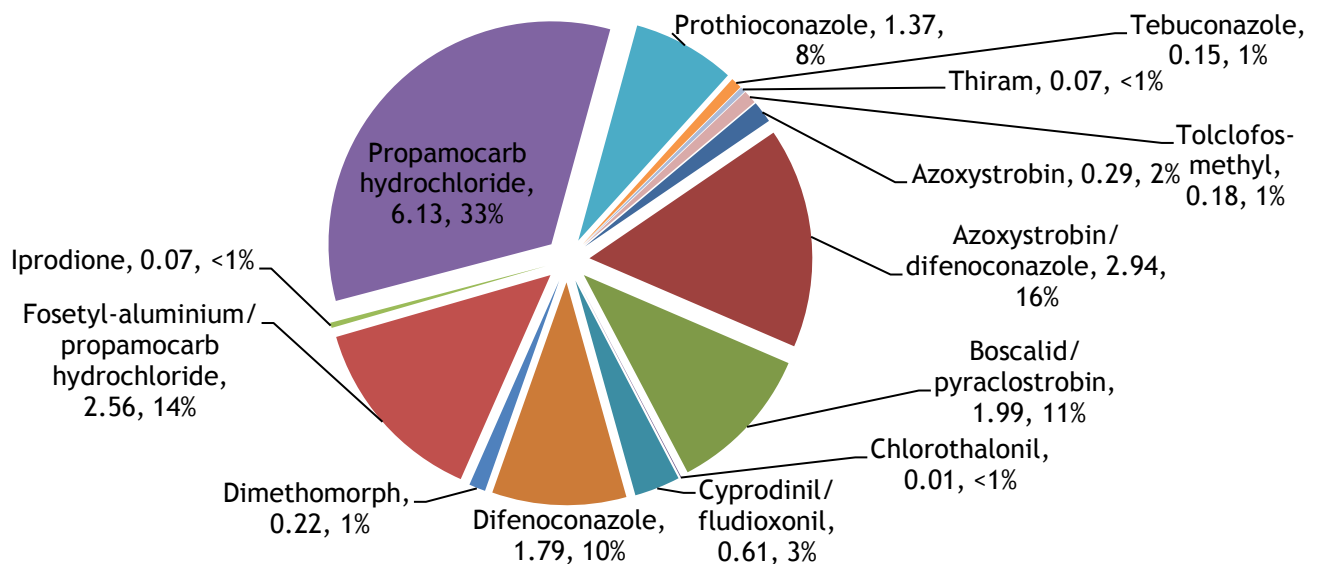
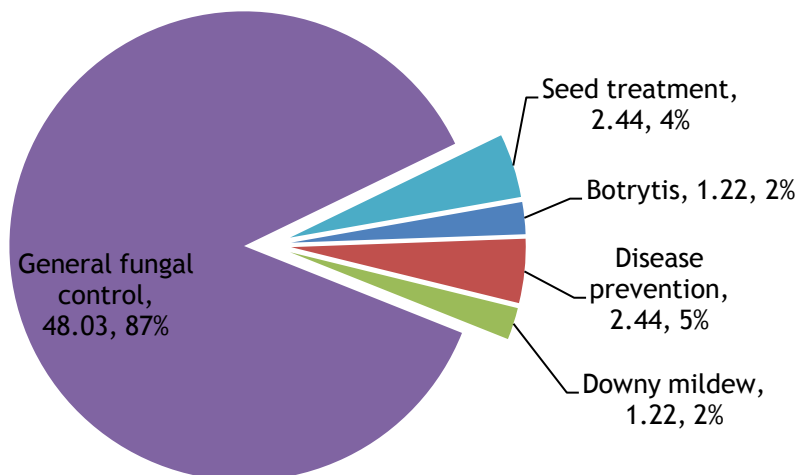


Figure 174: Summer cauliflower: reasons for fungicide use (spha).



Herbicides & desiccants - summer cauliflower

Basic area treated: 33.69 hectares

Area treated: 69.95 spray hectares

Weight of active substances applied: 49.15kg

96.4% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	35.16	33.69	26.9	50.26
Clomazone	19.32	17.84	1.12	27.62
Glyphosate	13.02	13.02	18.17	18.61
Propyzamide	2.3	2.3	2.86	3.29
Linuron	0.16	0.16	0.09	0.23

Figure 175: Herbicide & desiccant active substance usage on summer cauliflower crops in Northern Ireland (spha), 2013.

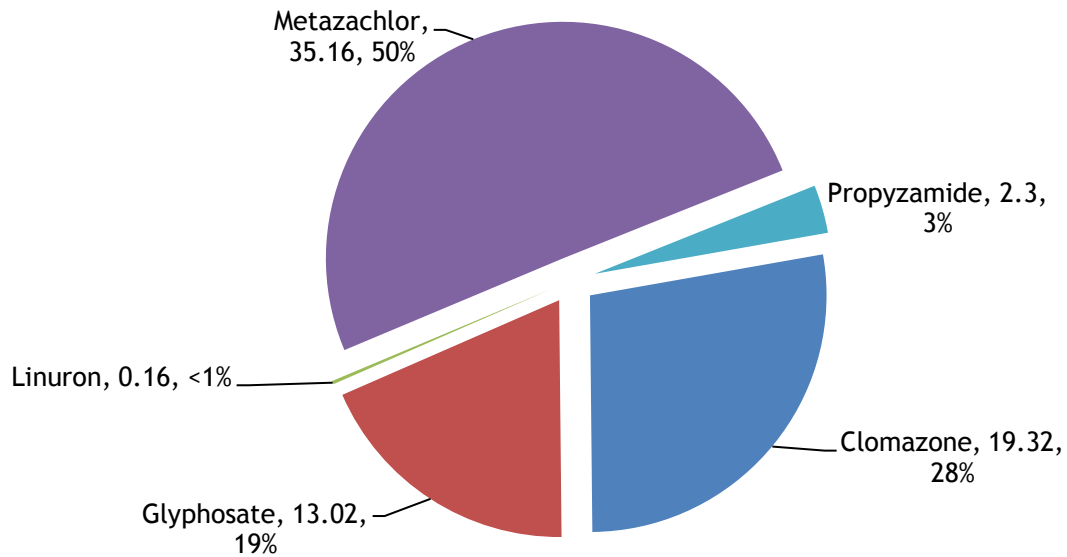


Figure 176: Weight of herbicide & desiccant active substances applied to summer cauliflower crops in Northern Ireland (kg), 2013.

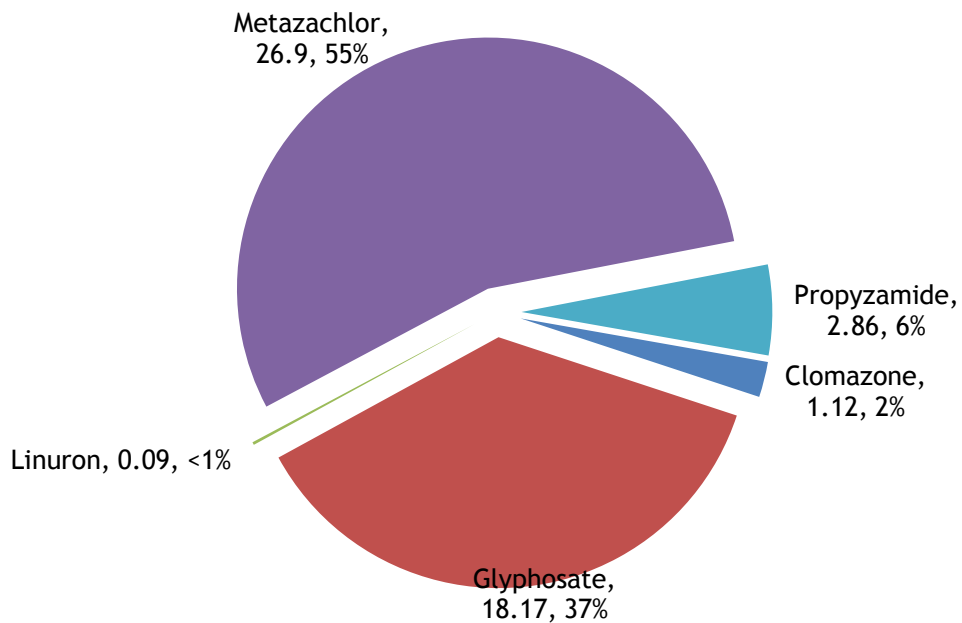
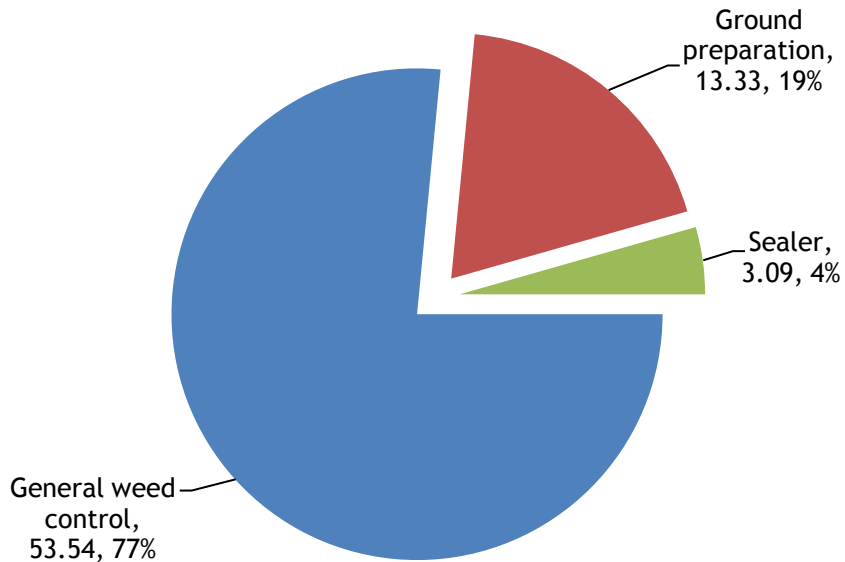


Figure 177: Summer cauliflower: reasons for herbicide & desiccant use (spha).



Insecticides - summer cauliflower

Basic area treated: 34.54 hectares
 Area treated: 82.93 spray hectares
 Weight of active substances applied: 81.19kg
 98.87% of the area grown treated with insecticides
 The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	25.07	17.53	0.26	30.23
Pirimicarb	19.35	15.47	3.7	23.33
Cypermethrin	12.37	12.37	0.33	14.92
Thiacloprid	10.23	10.23	0.98	12.34
Spirotetramat	5.96	5.96	0.45	7.19

Figure 178: Insecticide active substance usage on summer cauliflower crops in Northern Ireland (spha), 2013.

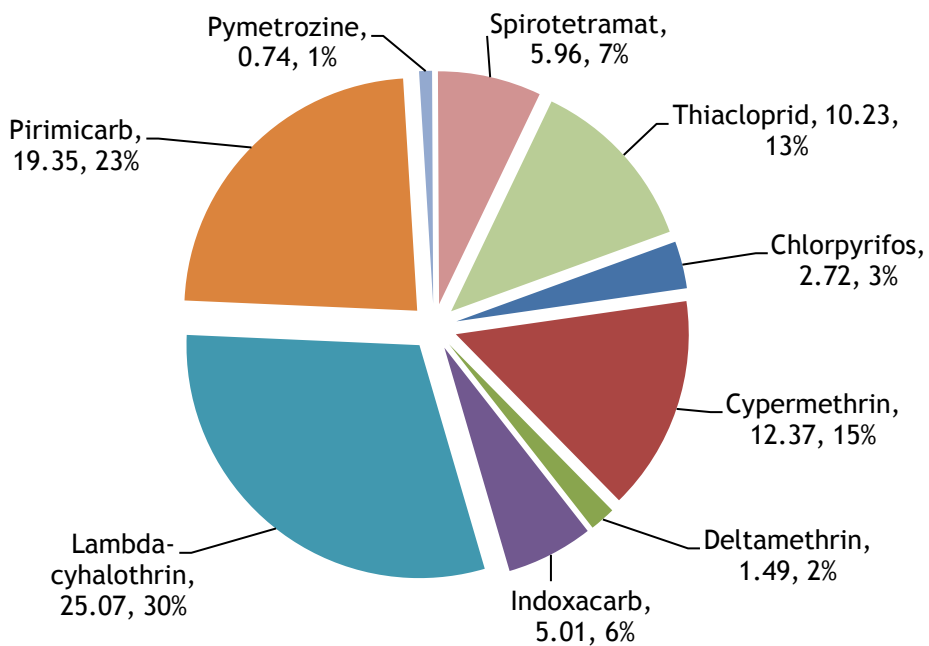


Figure 179: Weight of insecticide active substances applied to summer cauliflower crops in Northern Ireland (kg), 2013.

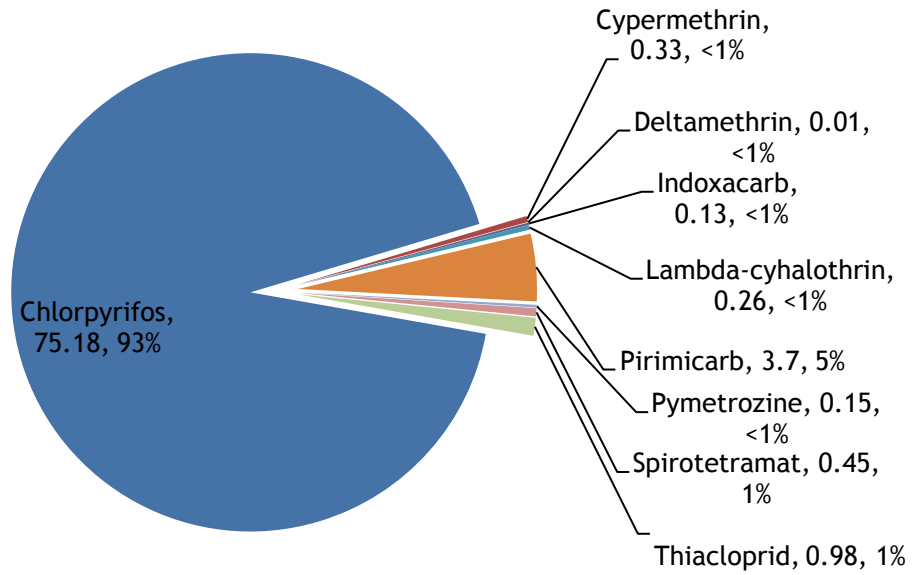
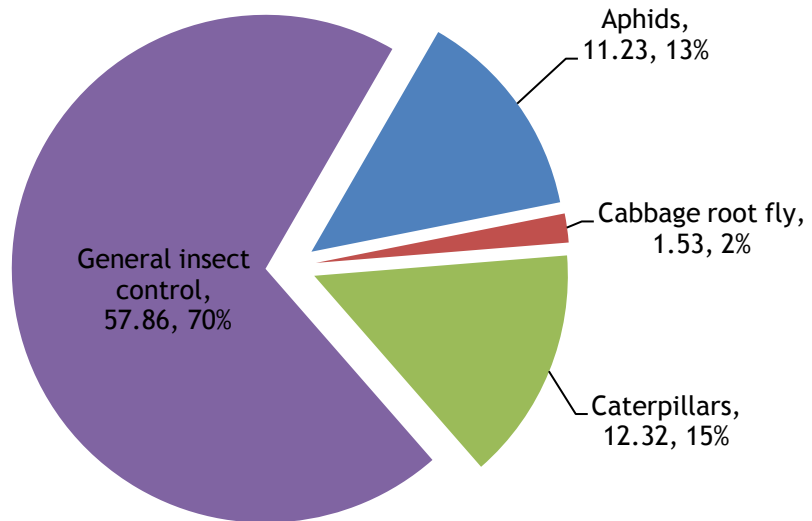


Figure 180: Summer cauliflower: reasons for insecticide use (spha).



Pesticide Usage on winter cauliflower crops:

7.25 hectares of winter cauliflower crops grown in Northern Ireland

73.71 treated hectares

123.59kg applied

100% of crops received at least one treatment

All crops grown in County Down

Winter cauliflower received on average 5.2 fungicide, 2.6 herbicide and 1.97 insecticide applications.

Figure 181: Pesticide usage on winter cauliflower crops in Northern Ireland (spha), 2013.

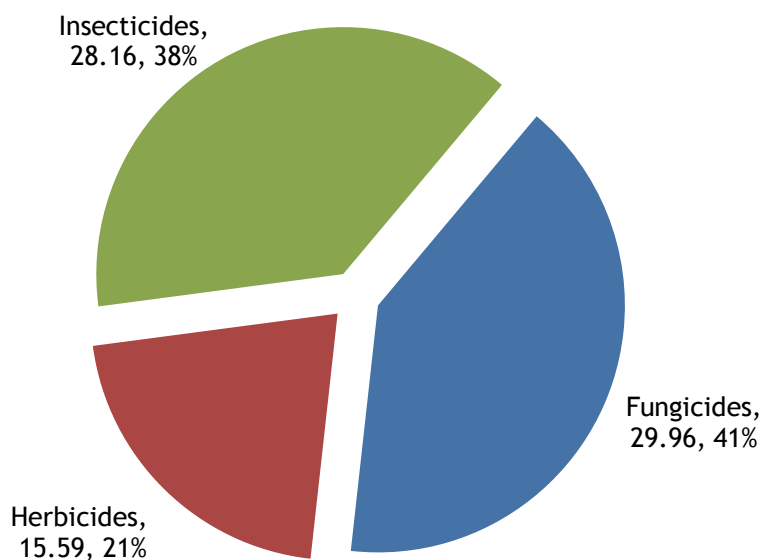


Figure 182: Weight of pesticides applied to winter cauliflower crops in Northern Ireland (kg), 2013.

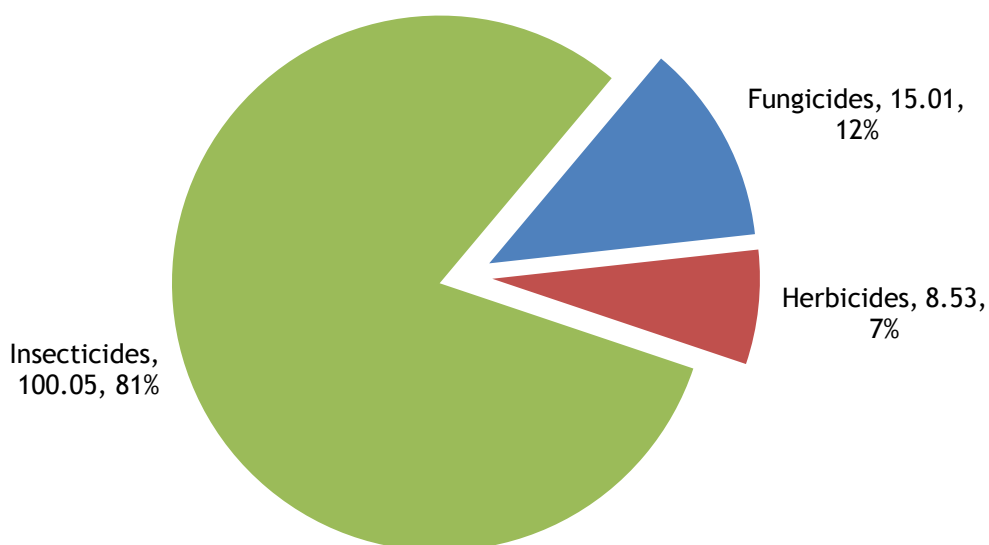
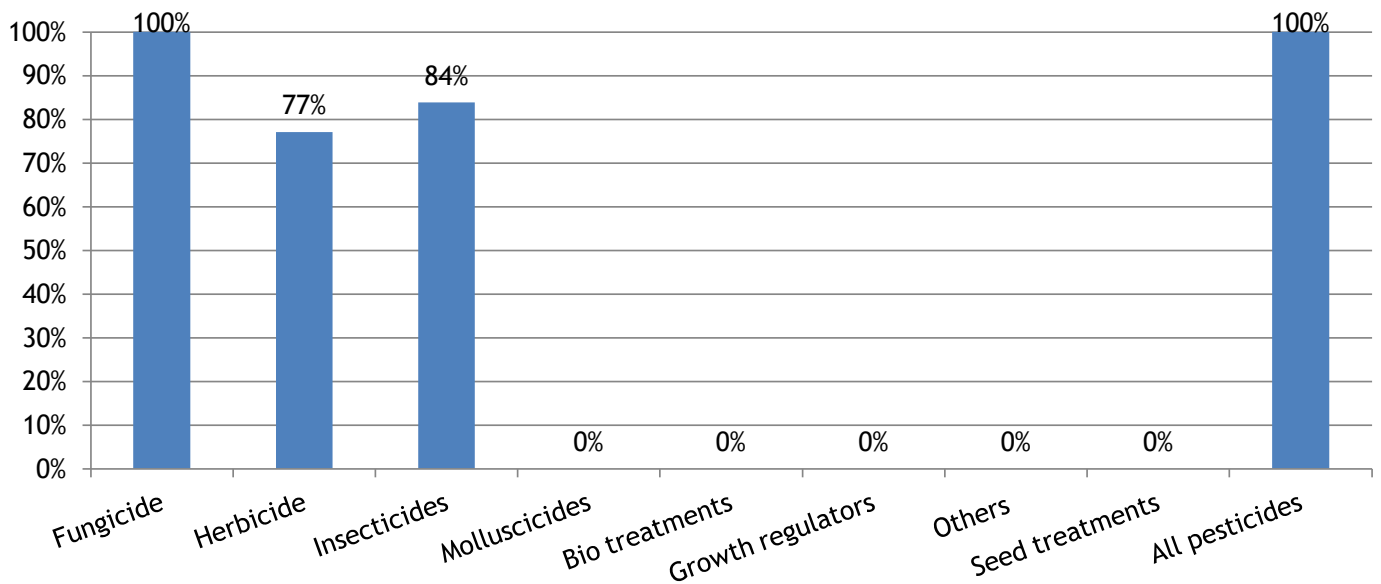


Figure 183: Proportional area of winter cauliflower crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - winter cauliflower

Basic area treated: 7.25 hectares
 Area treated: 29.96 spray hectares
 Weight of active substances applied: 15.01kg
 100% of the area grown treated with fungicides
 The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin/difenoconazole	5.59	5.59	1.82	18.66
Difenoconazole	5.59	5.59	0.42	18.66
Azoxystrobin	4.42	4.42	1.1	14.75
Tebuconazole/trifloxystrobin	4.42	4.42	0.99	14.75

Figure 184: Fungicide active substance usage on winter cauliflower crops in Northern Ireland (spha), 2013.

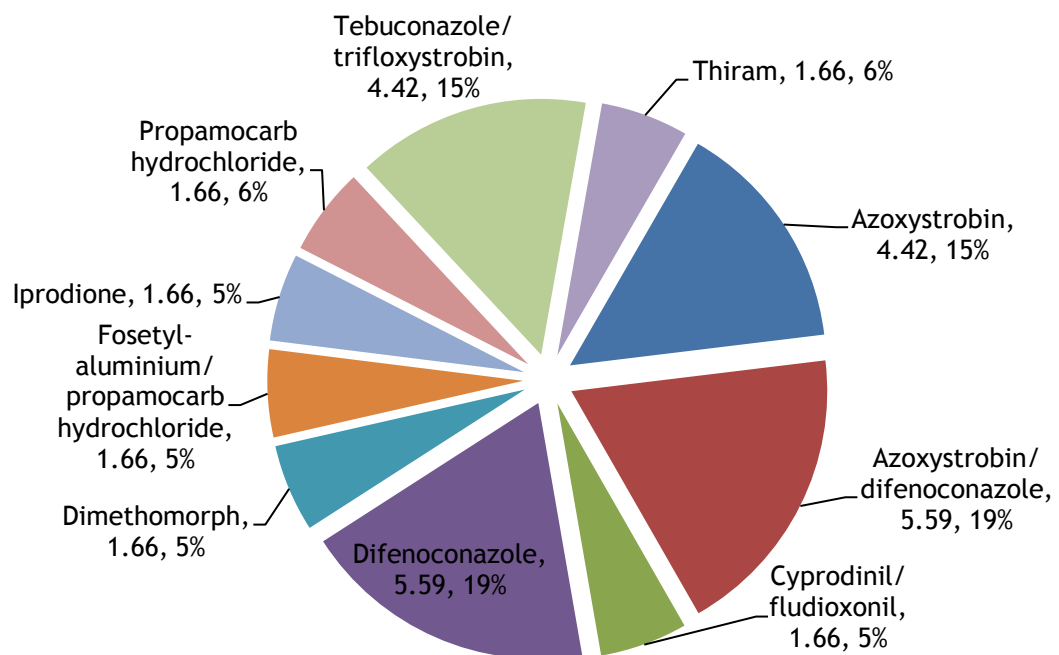


Figure 185: Weight of fungicide active substances applied to winter cauliflower crops in Northern Ireland (kg), 2013.

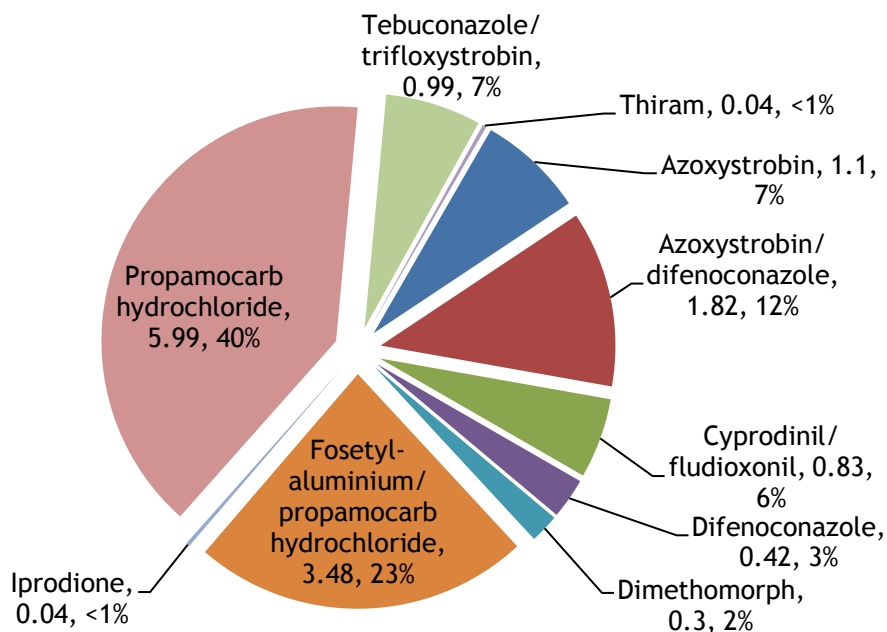
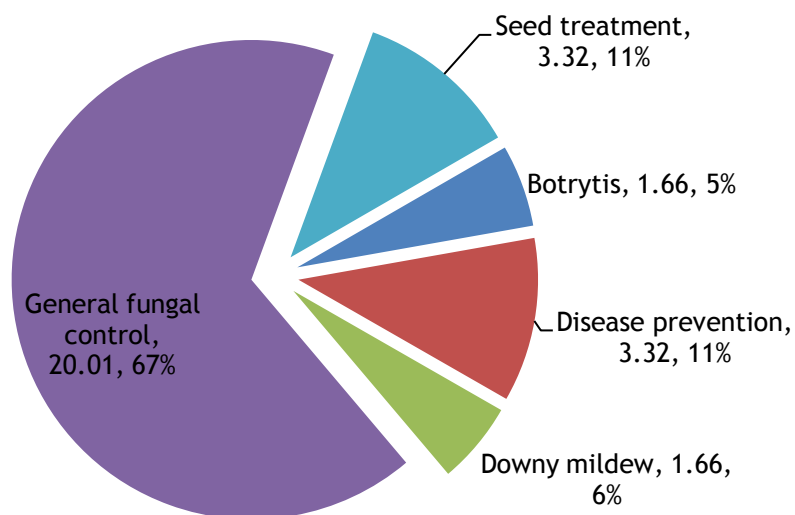


Figure 186: Winter cauliflower: reasons for fungicide use (spha).



Herbicides & desiccants - winter cauliflower

Basic area treated: 5.59 hectares

Area treated: 15.59 spray hectares

Weight of active substances applied: 8.53kg

77.1% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Glyphosate	5.59	5.59	4.02	35.86
Metazachlor	5.59	5.59	4.19	35.86
Clomazone	4.42	4.42	0.32	28.35

Figure 187: Herbicide & desiccant active substance usage on winter cauliflower crops in Northern Ireland (spha), 2013.

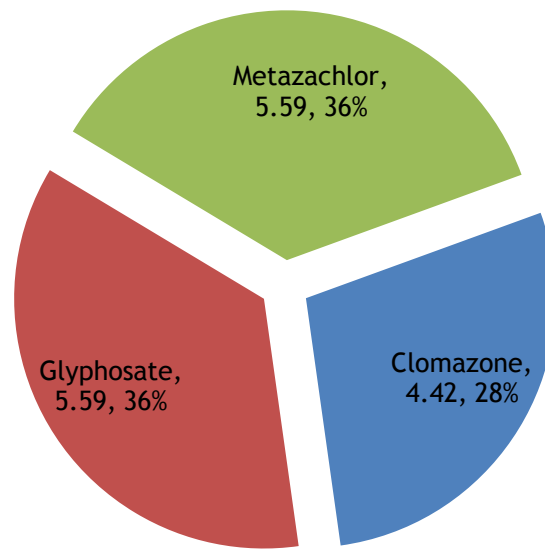


Figure 188: Weight of herbicide & desiccant active substances applied to winter cauliflower crops in Northern Ireland (kg), 2013.

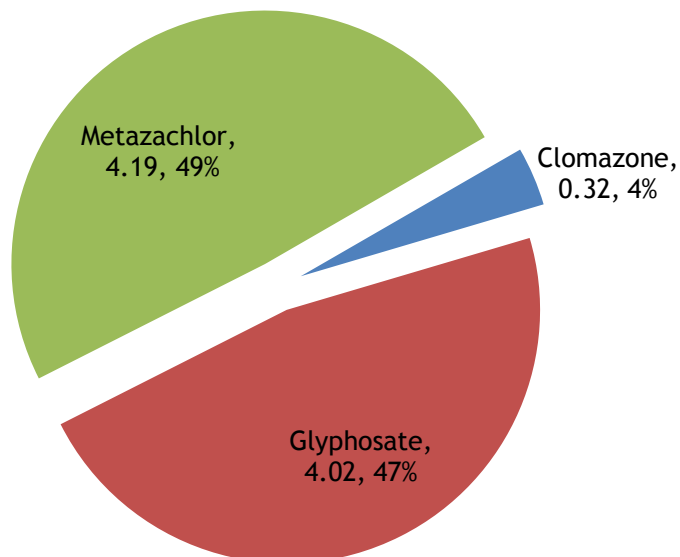
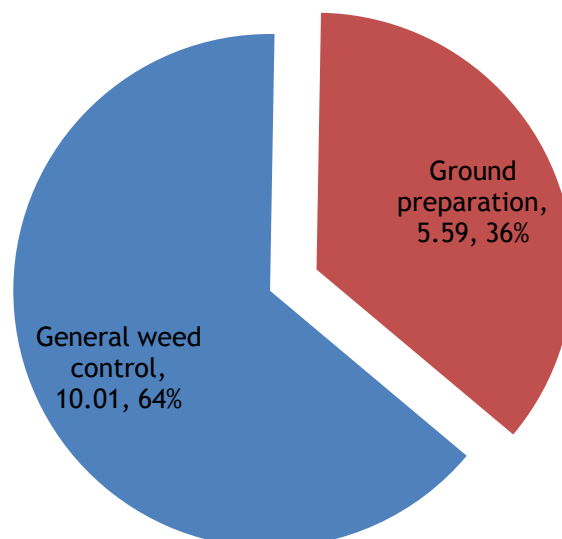


Figure 189: Winter cauliflower: reasons for herbicide & desiccant use (spha).



Basic area treated: 6.08 hectares
 Area treated: 28.16 spray hectares
 Weight of active substances applied: 100.05kg
 83.84% of the area grown treated with insecticides
 The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	13.25	4.42	0.07	47.05
Deltamethrin	8.83	4.42	0.07	31.36
Thiacloprid	4.42	4.42	0.42	15.70
Chlorpyrifos	1.66	1.66	99.49	5.89

Figure 190: Insecticide active substance usage on winter cauliflower crops in Northern Ireland (spha), 2013.

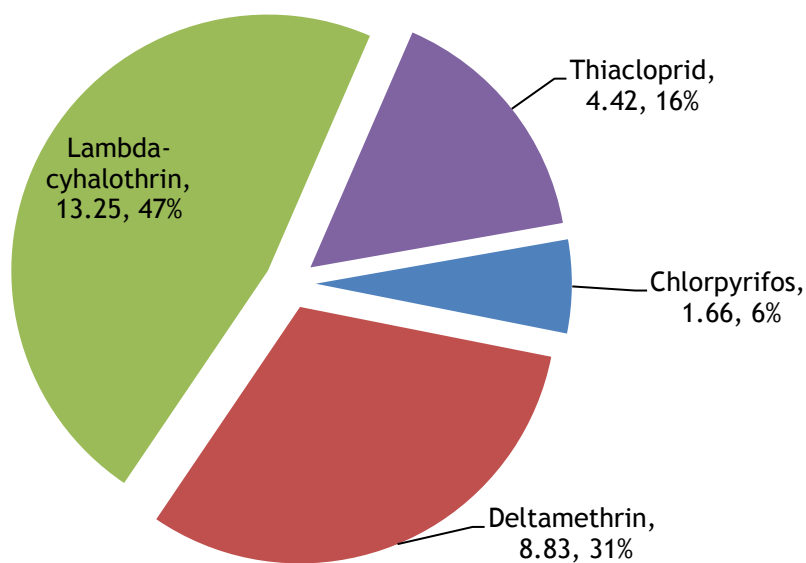


Figure 191: Weight of insecticide active substances applied to winter cauliflower crops in Northern Ireland (kg), 2013.

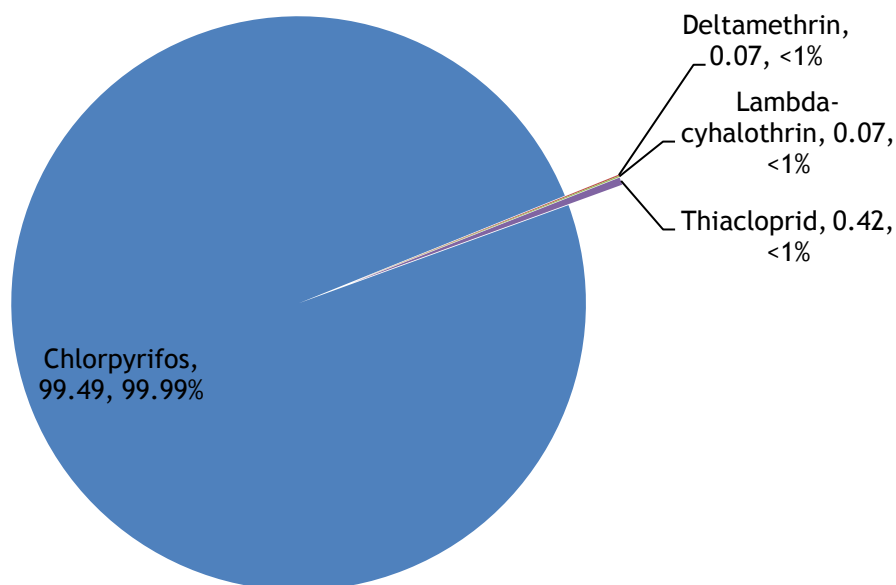
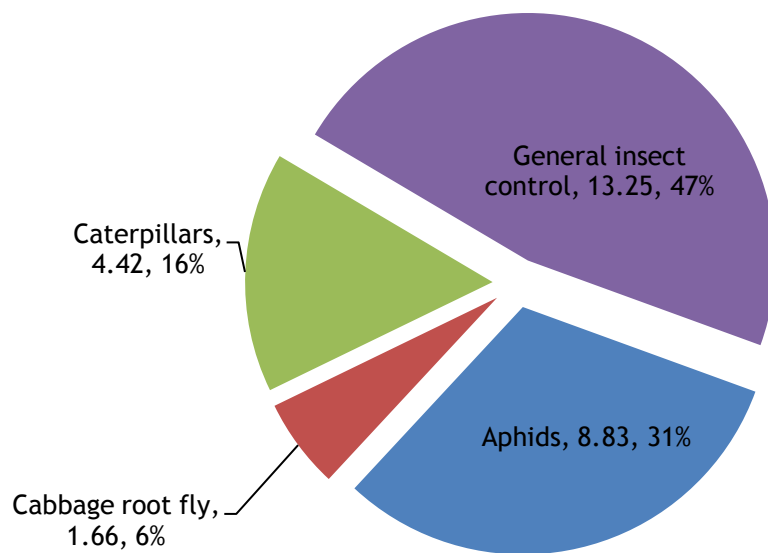
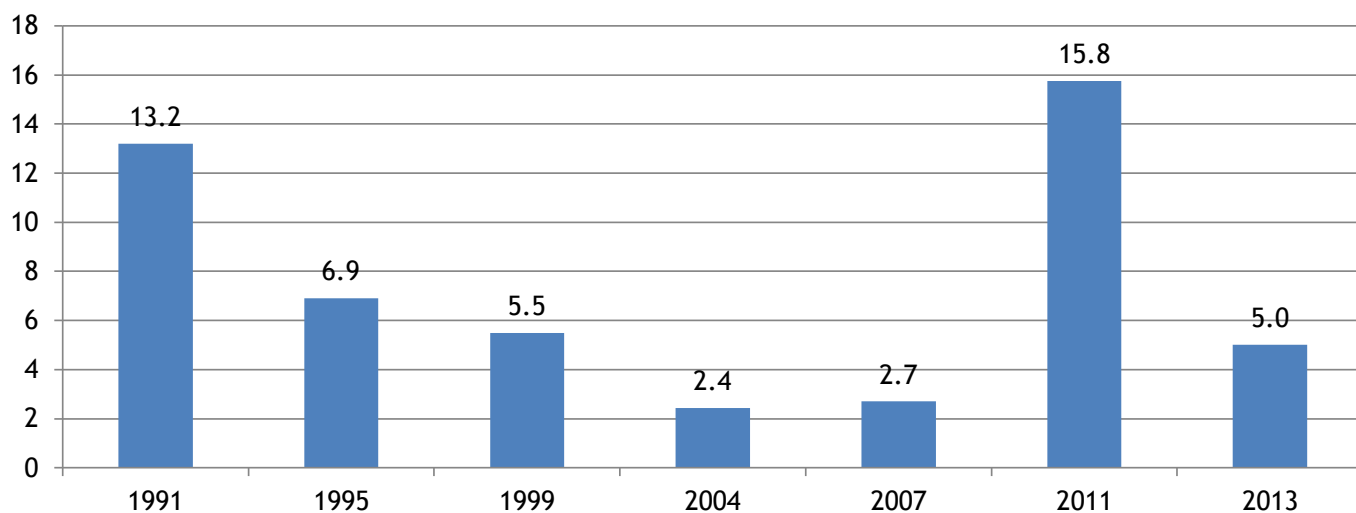


Figure 192: Winter cauliflower: reasons for insecticide use (spha).



Pea crops:

Figure 193: Comparison of the area of pea crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on pea crops:

14.42 hectares of pea crops grown in Northern Ireland

16.62 treated hectares

14.42kg applied

95.1% of crops received at least one treatment

Pea crops received on average 2.0 fungicide, 1.66 herbicide, 1.0 insecticide and 1.0 seed treatment applications.

Figure 194: Regional distribution of pea crops grown in Northern Ireland (ha), 2013.

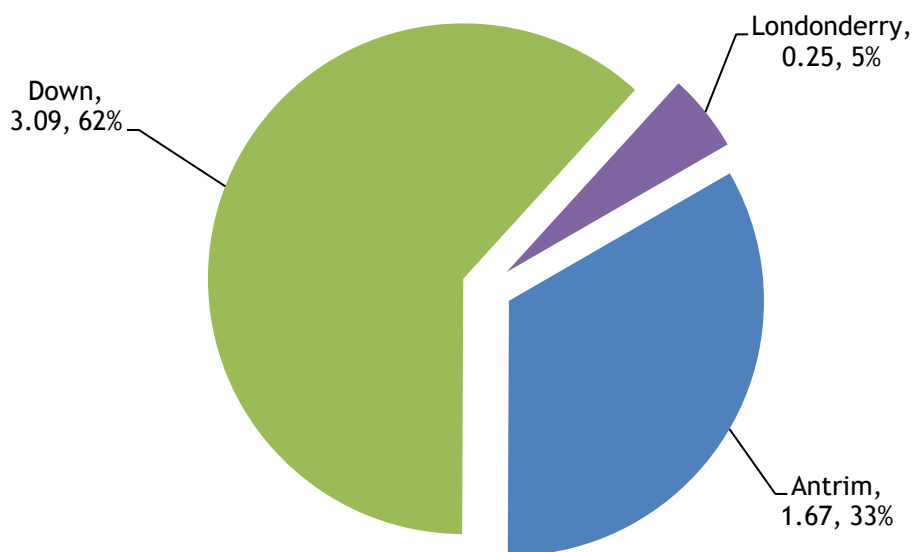


Figure 195: Pesticide usage on pea crops in Northern Ireland (spha), 2013.

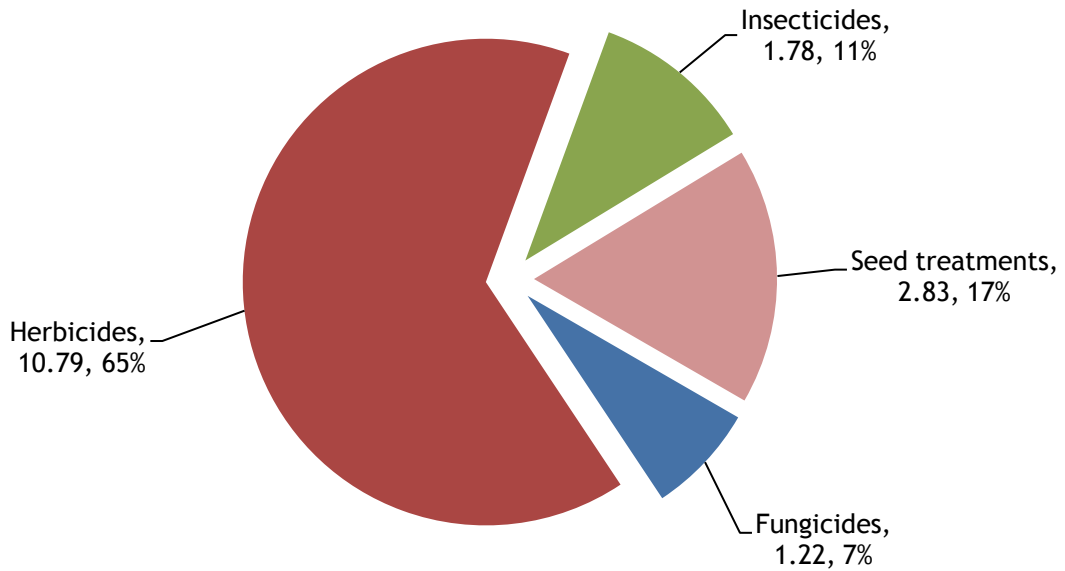


Figure 196: Weight of pesticides applied to pea crops in Northern Ireland (kg), 2013.

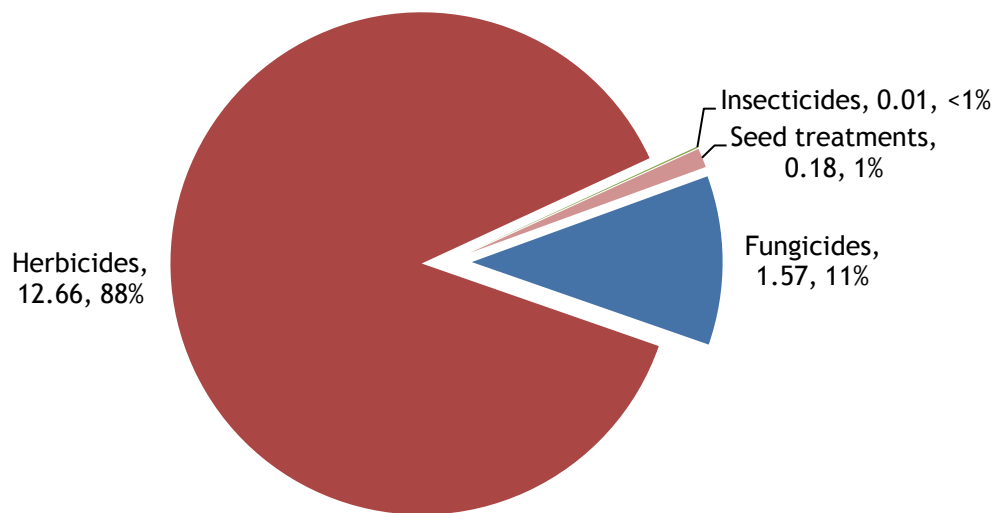
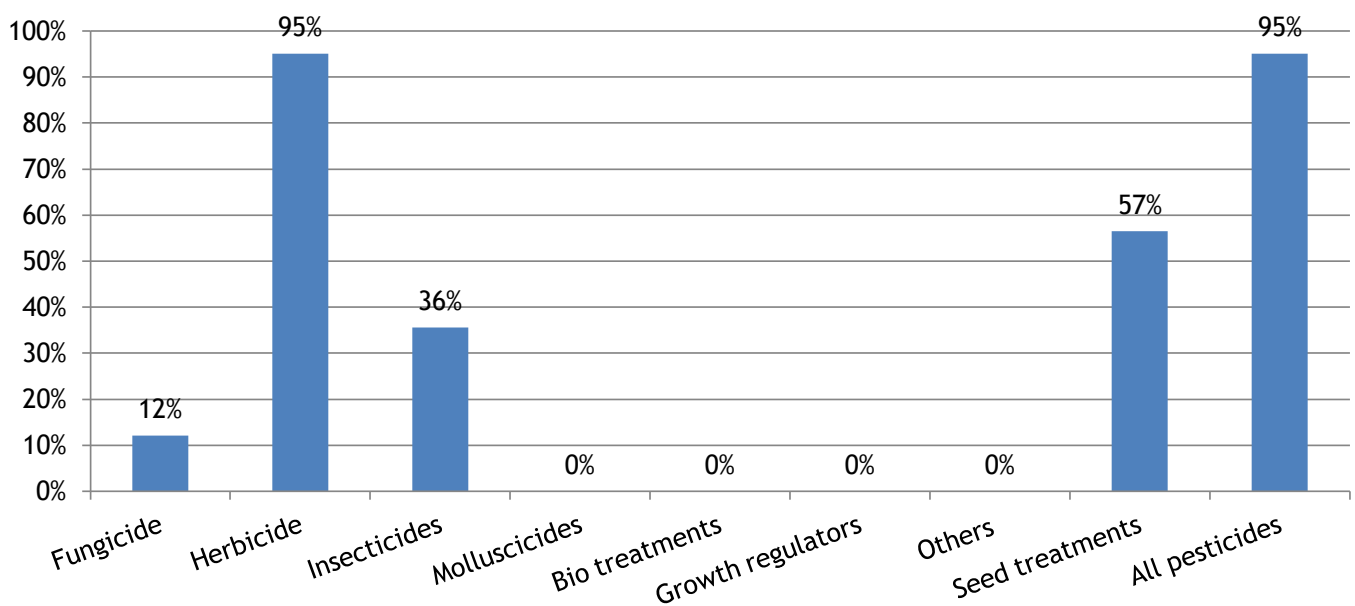


Figure 197: Proportional area of pea crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - peas

Basic area treated: 0.61 hectares
 Area treated: 1.22 spray hectares
 Weight of active substances applied: 1.57kg
 12.1% of the area grown treated with fungicides
 All applications were to control rust and mildew.
 The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Mancozeb/metalaxyl-M	1.22	0.61	1.57	100%

Herbicides & desiccants - peas

Basic area treated: 4.76 hectares
 Area treated: 10.79 spray hectares
 Weight of active substances applied: 12.66kg
 95.1% of the area grown treated with herbicides & desiccants
 The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Glyphosate	3.71	3.71	4.62	34.38
Diquat	1.78	1.78	1.43	16.50
Imazamox/pendimethalin	1.78	1.78	2.14	16.50
Bentazone	1.67	1.67	2.4	15.48
MCPB	1.23	1.23	1.85	11.40

Figure 198: Herbicide & desiccant active substance usage on pea crops in Northern Ireland (spha), 2013.

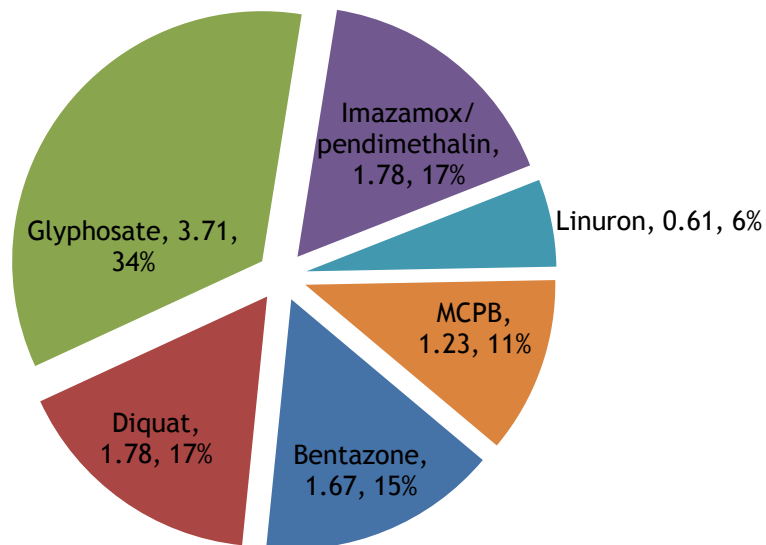


Figure 199: Weight of herbicide & desiccant active substances applied to pea crops in Northern Ireland (kg), 2013.

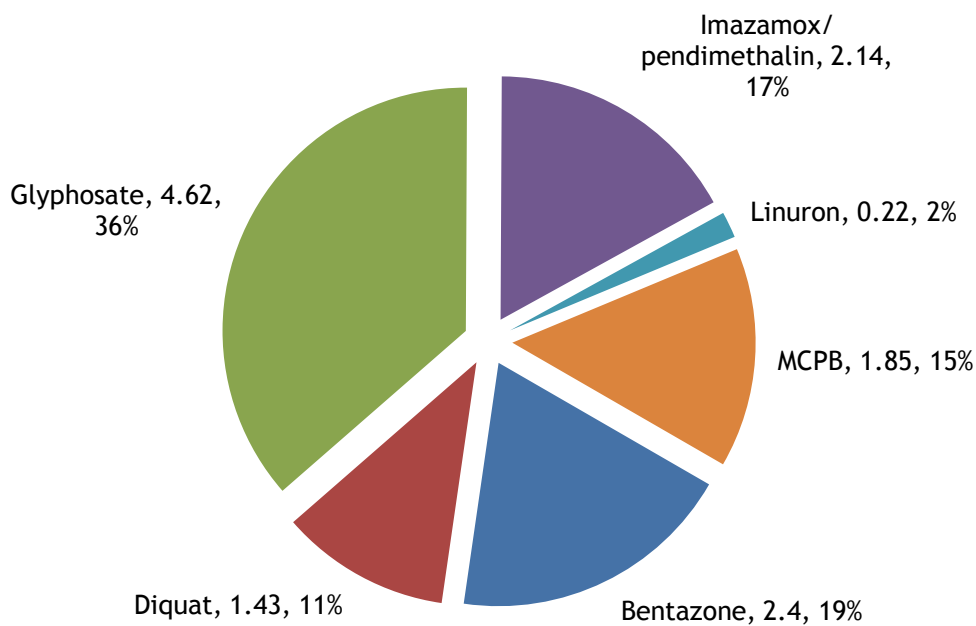
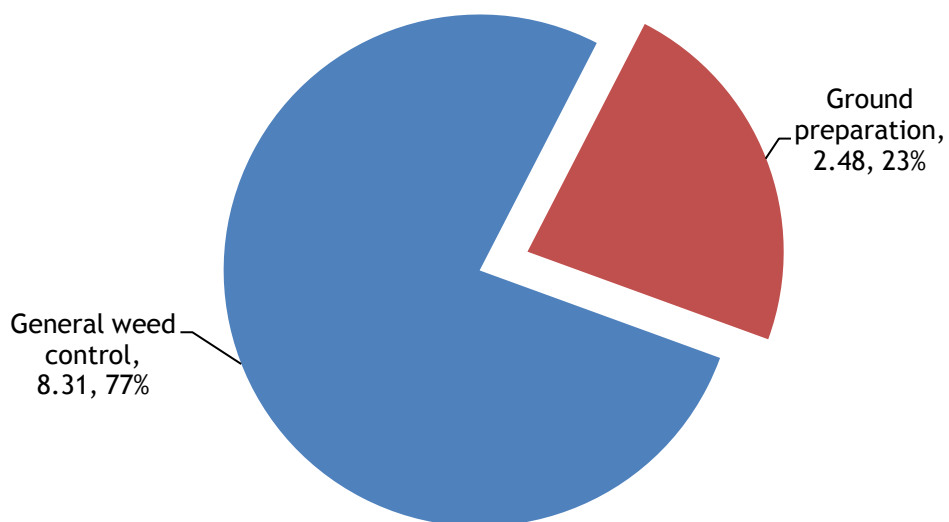


Figure 200: Pea crops: reasons for herbicide & desiccant use (spha).



Insecticides - peas

Basic area treated: 1.78 hectares

Area treated: 1.78 spray hectares

Weight of active substances applied: 0.01kg

35.56% of the area grown treated with insecticides

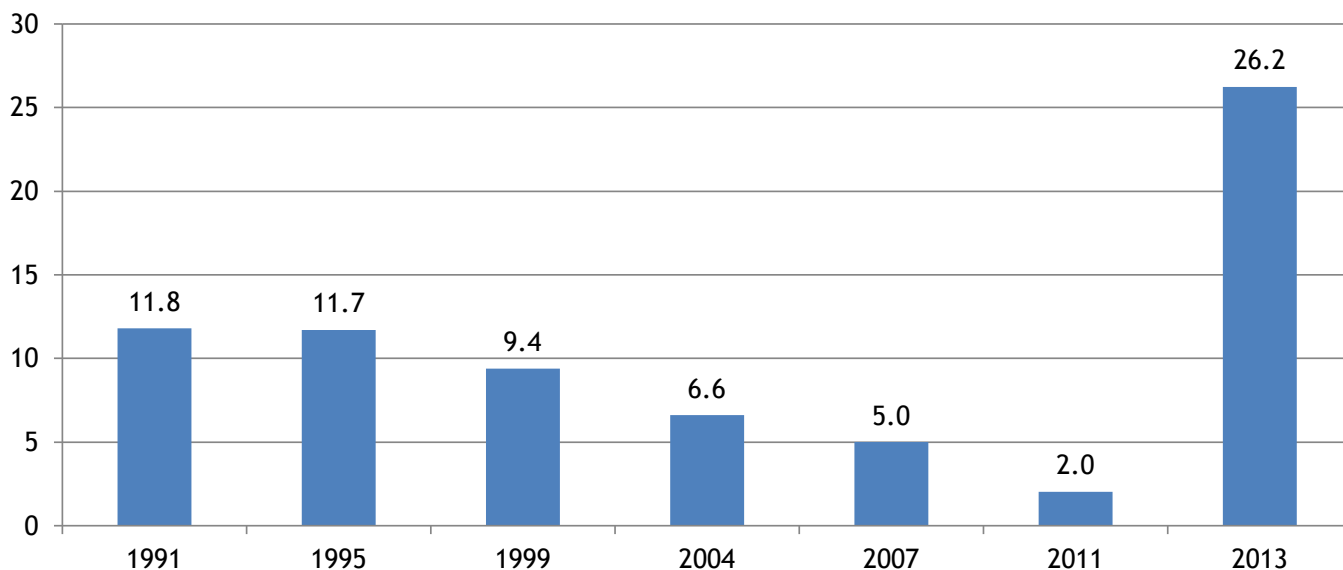
All applications were for general insect control

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	1.78	1.78	0.01	100%

Broad bean crops:

Figure 201: Comparison of the area of broad bean crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on broad bean crops:

26.21 hectares of broad bean crops grown in Northern Ireland

156.43 treated hectares

56kg applied

100% of crops received at least one treatment

Broad beans received on average 1.69 fungicide, 1.64 herbicide, 2.13 insecticide and 1.15 seed treatment applications.

Figure 202: Regional distribution of broad bean crops grown in Northern Ireland (ha), 2013.

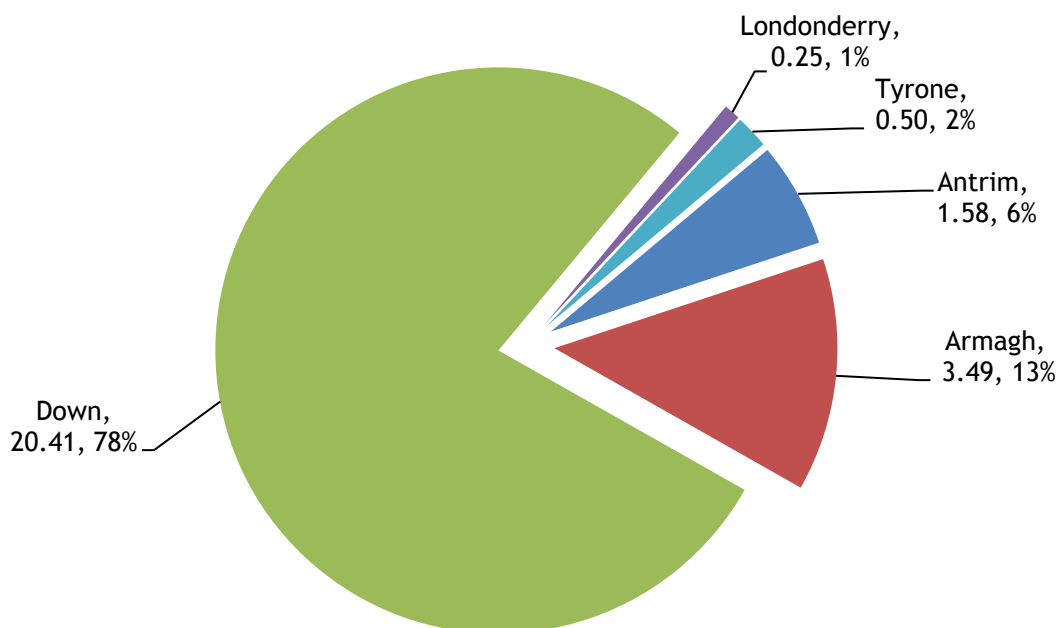


Figure 203: Pesticide usage on broad bean crops in Northern Ireland (spha), 2013.

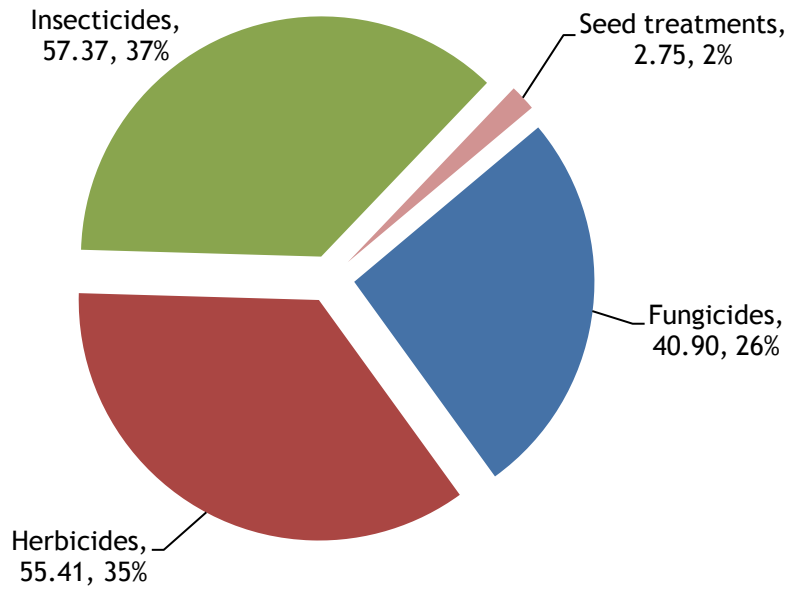


Figure 204: Weight of pesticides applied to broad bean crops in Northern Ireland (kg), 2013.

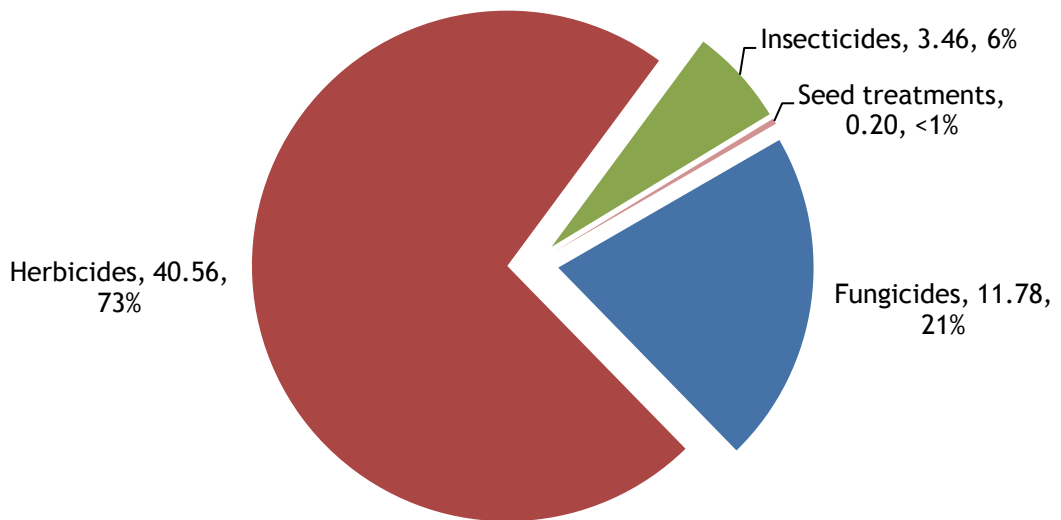
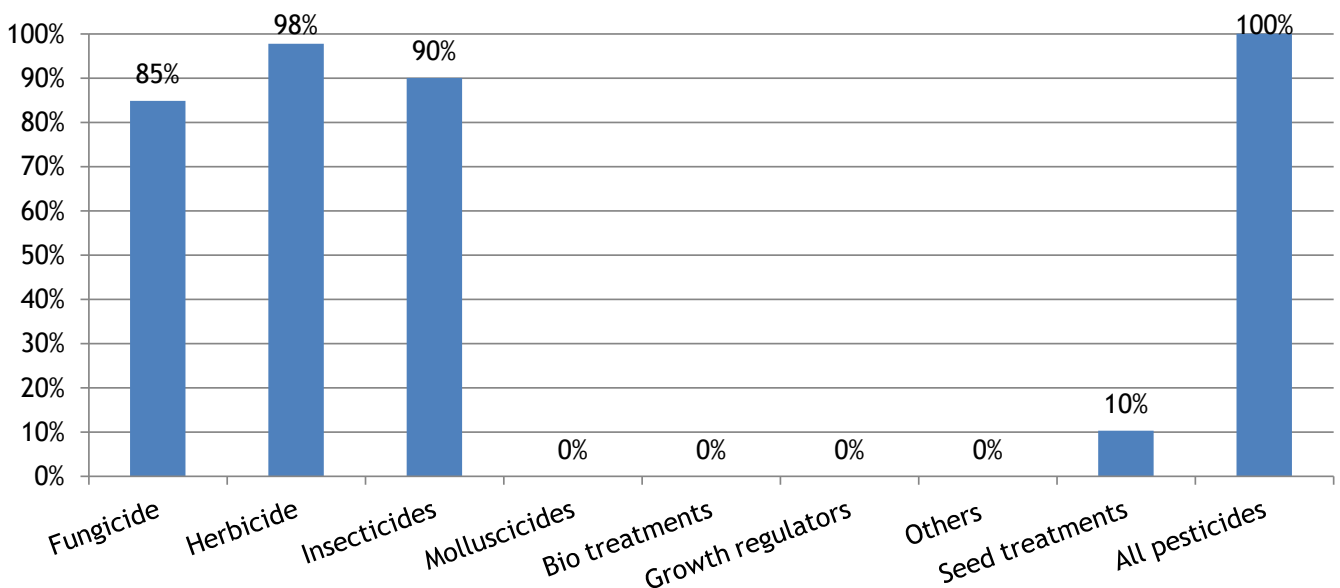


Figure 205: Proportional area of broad bean crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - broad beans

Basic area treated: 22.24 hectares

Area treated: 40.90 spray hectares

Weight of active substances applied: 11.78kg

84.8% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	21.73	14.05	1.63	53.13
Azoxystrobin	5.01	5.01	1.25	12.25
Tebuconazole	4.6	4.6	1.04	11.25
Azoxystrobin/difenoconazole	2.65	2.65	0.86	6.48
Prothioconazole	2.65	2.65	0.51	6.48

Figure 206: Fungicide active substance usage on broad bean crops in Northern Ireland (spha), 2013.

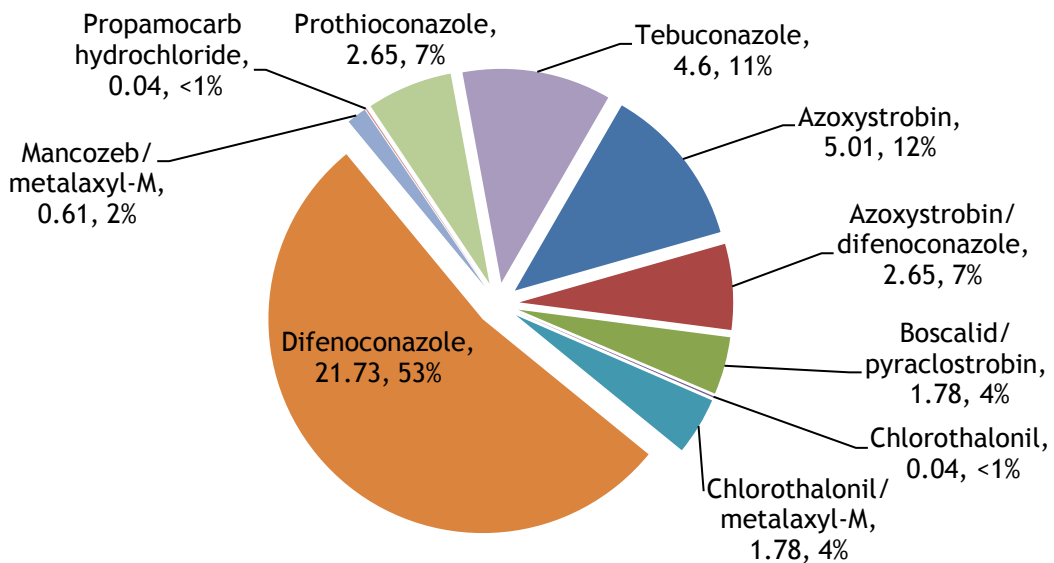


Figure 207: Weight of fungicide active substances applied to broad bean crops in Northern Ireland (kg), 2013.

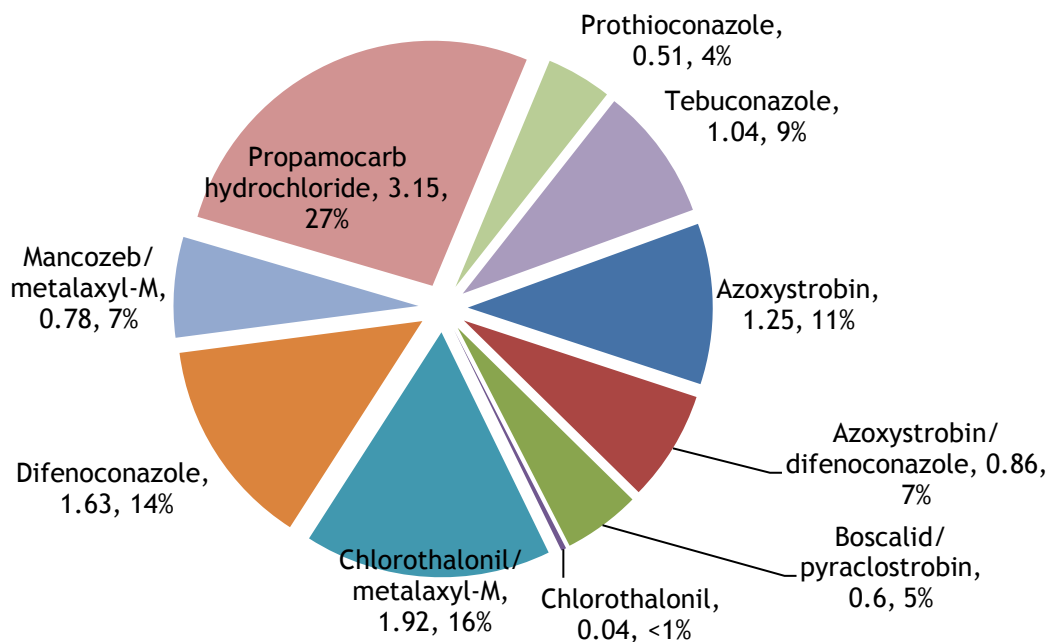
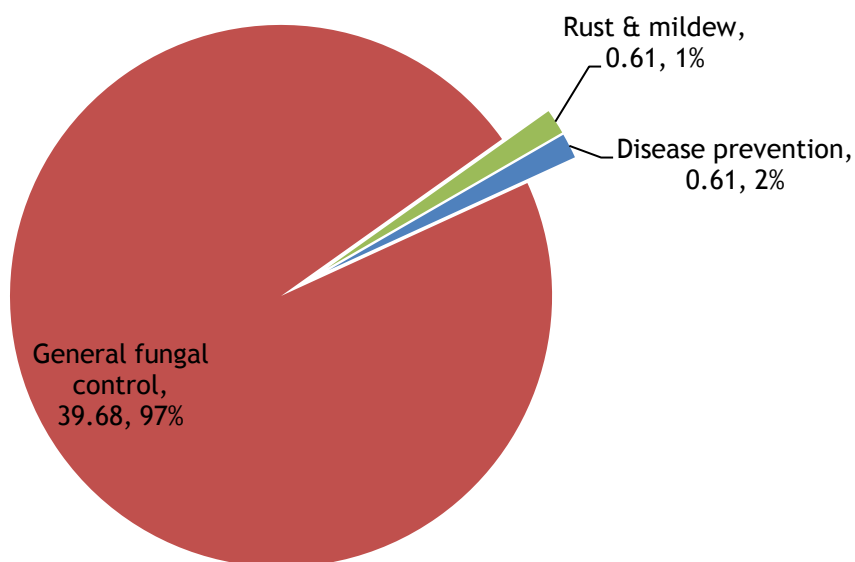


Figure 208: Broad beans: reasons for fungicide use (spha).



Herbicides & desiccants - broad beans

Basic area treated: 25.62 hectares

Area treated: 55.41 spray hectares

Weight of active substances applied: 40.56kg

97.7% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	22.18	20.7	16.53	40.03
Clomazone	10.75	9.28	0.74	19.40
Glyphosate	9.76	9.76	8.46	17.61
Propyzamide	7.68	7.68	9.52	13.86

Figure 209: Herbicide & desiccant active substance usage on broad bean crops in Northern Ireland (spha), 2013.

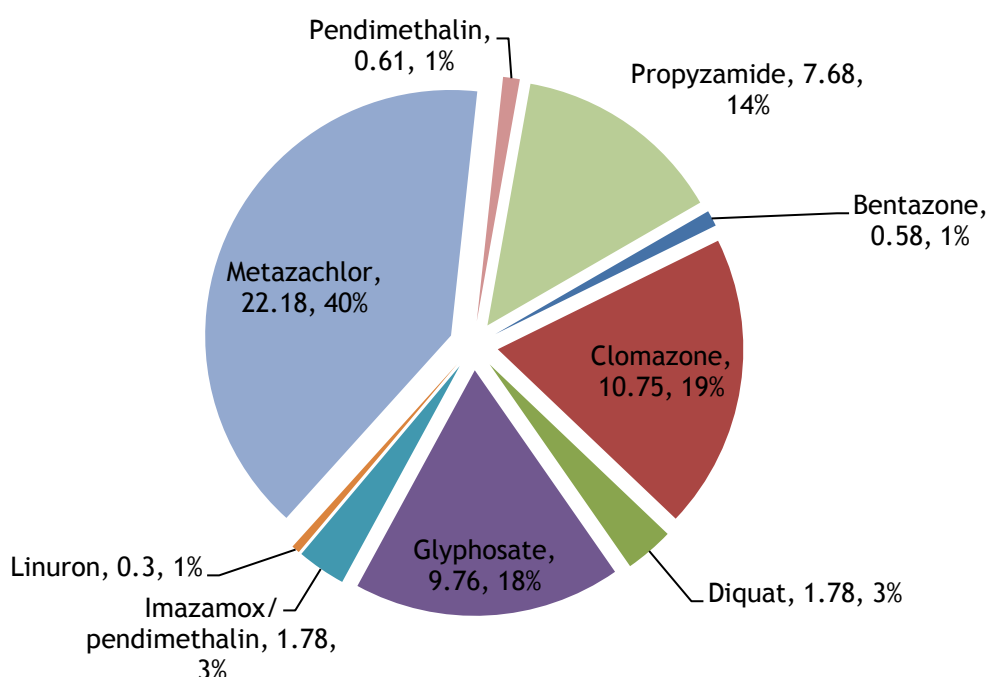


Figure 210: Weight of herbicide & desiccant active substances applied to broad bean crops in Northern Ireland (kg), 2013.

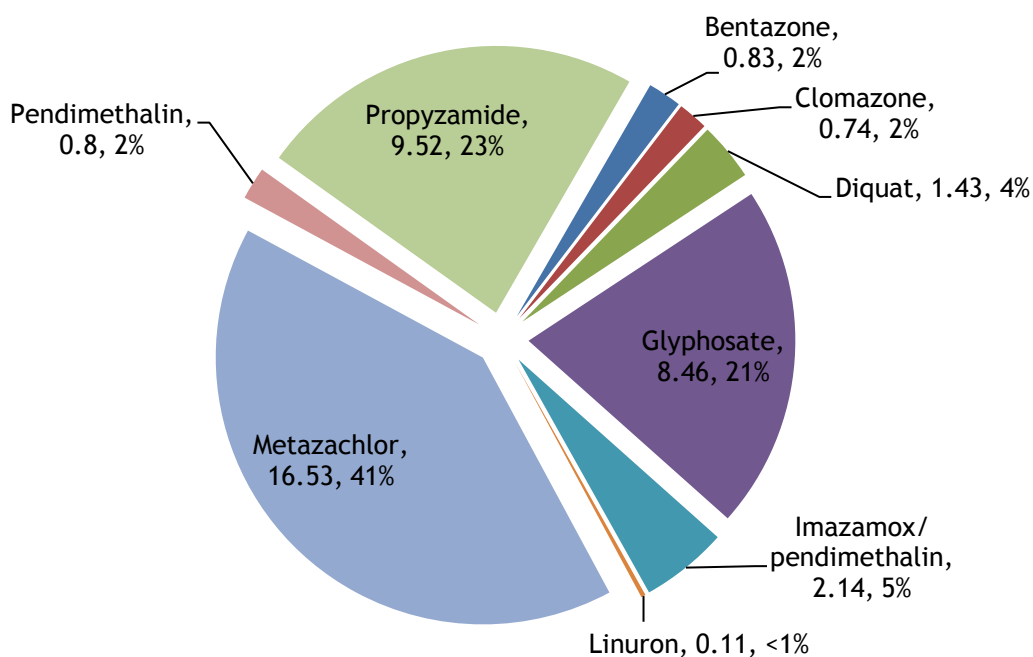
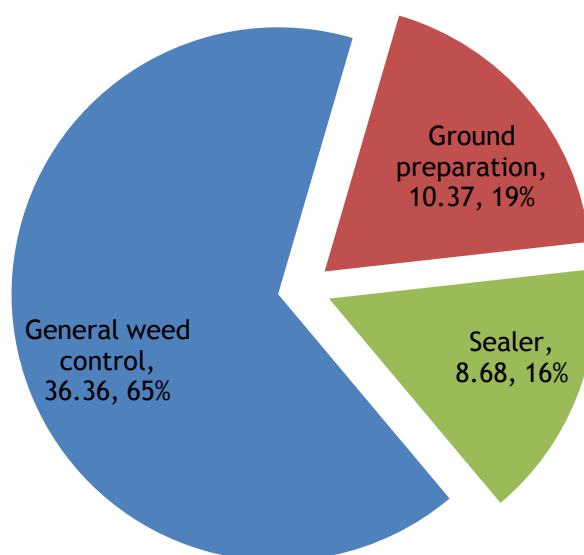


Figure 211: Broad beans: reasons for herbicide & desiccant use (spha).



Insecticides - broad beans

Basic area treated: 23.6 hectares

Area treated: 57.37 spray hectares

Weight of active substances applied: 3.46kg

100% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	25.55	15.92	0.25	44.54
Pirimicarb	10.4	8.45	1.59	18.13
Deltamethrin	7.09	7.09	0.05	12.36
Indoxacarb	5.45	5.45	0.14	9.50
Thiacloprid	3.24	3.24	0.31	5.65

Figure 212: Insecticide active substance usage on broad bean crops in Northern Ireland (spha), 2013.

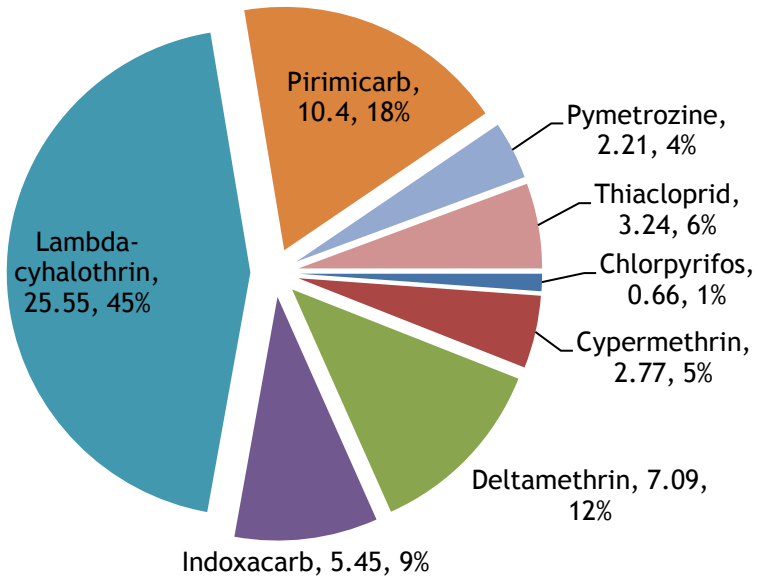


Figure 213: Weight of insecticide active substances applied to broad bean crops in Northern Ireland (kg), 2011.

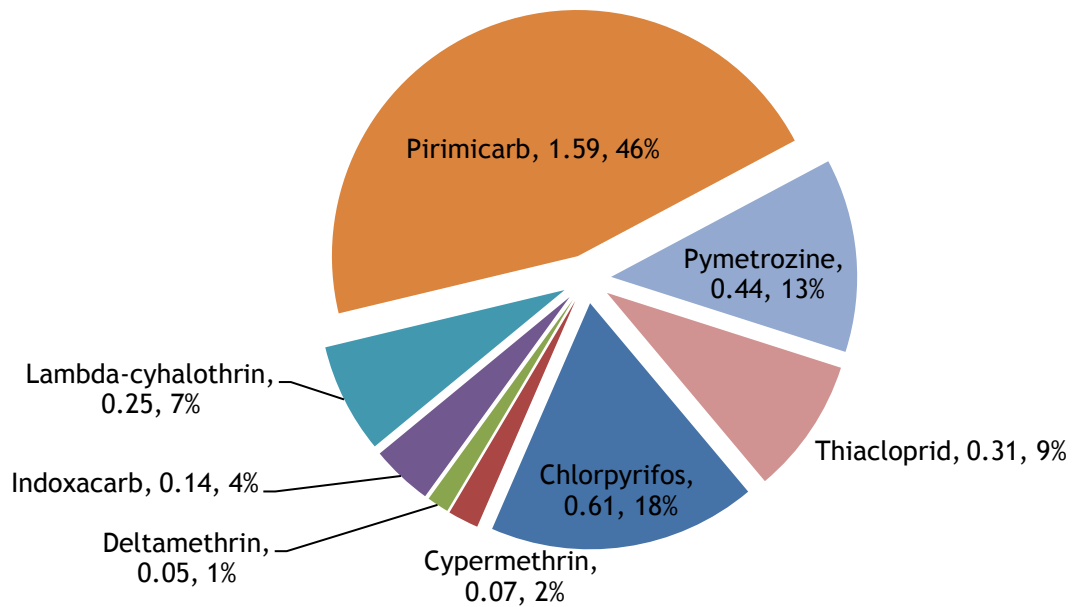
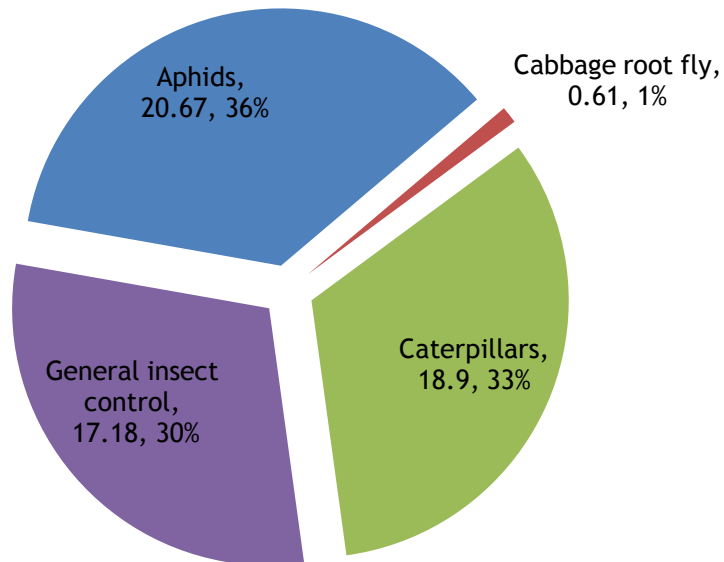


Figure 214: Broad bean: reasons for insecticide use (spha).



Pesticide Usage on runner bean crops:

0.02 hectares of runner bean crops grown in Northern Ireland

0.13 treated hectares

1.21kg applied

100% of crops received at least one treatment

All crops were grown in County Down

Runner beans received on average 6.0 fungicide and 1.0 insecticide applications.

Figure 215: Pesticide usage on runner bean crops in Northern Ireland (spha), 2013.

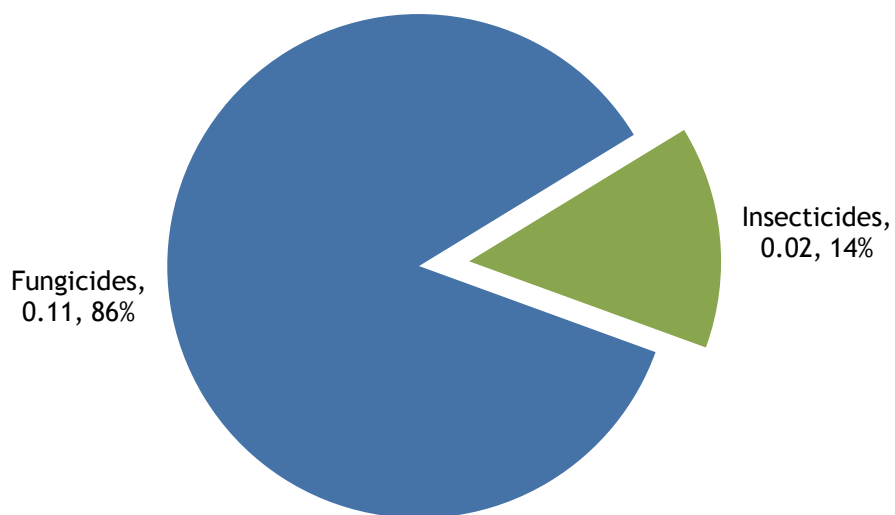


Figure 216: Weight of pesticides applied to runner bean crops in Northern Ireland (kg), 2013.

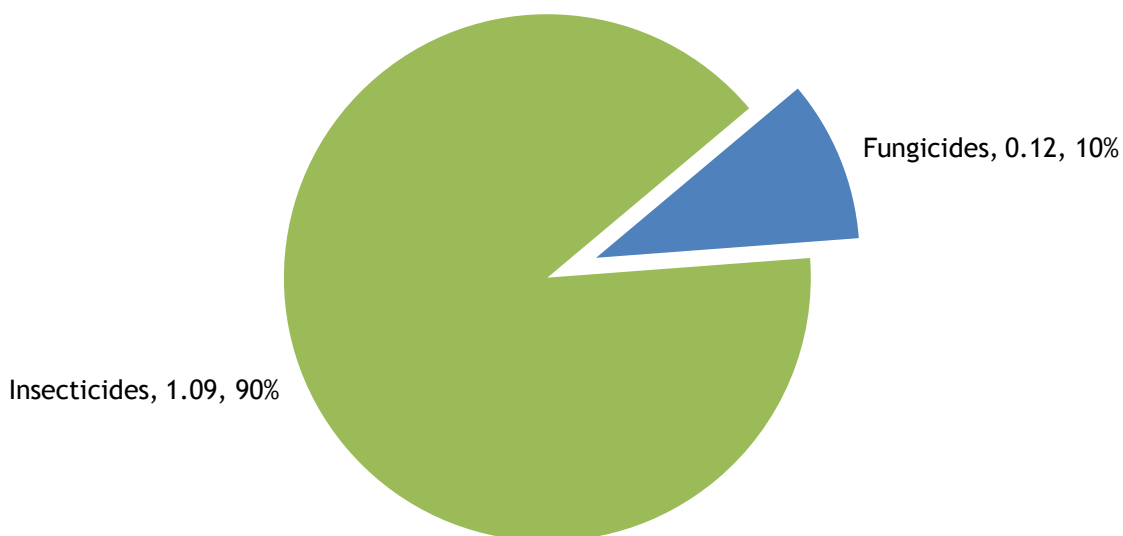
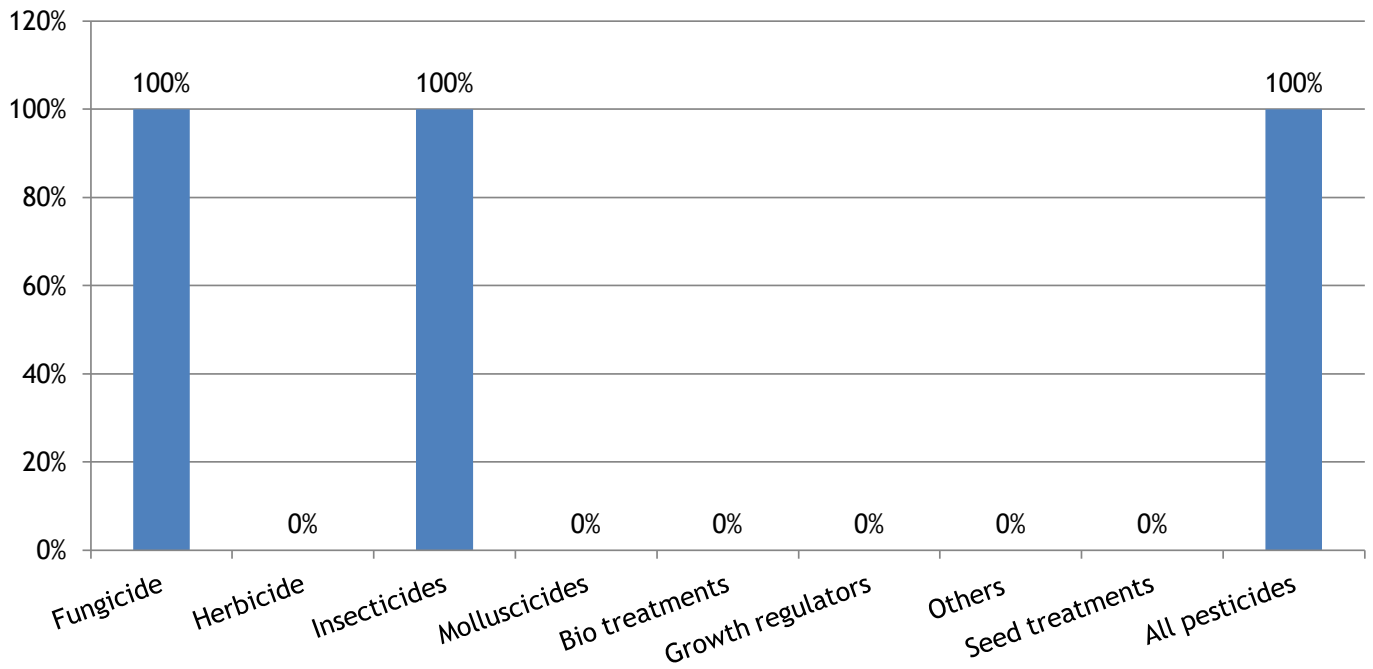


Figure 217: Proportional area of runner bean crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - runner beans

Basic area treated: 0.02 hectares

Area treated: 0.11 spray hectares

Weight of active substances applied: 0.12kg

100% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Cyprodinil/fludioxonil	0.02	0.02	0.01	18.18
Dimethomorph	0.02	0.02	<0.01	18.18
Fosetyl-aluminium/propamocarb hydrochloride	0.02	0.02	0.04	18.18
Iprodione	0.02	0.02	<0.01	18.18
Propamocarb hydrochloride	0.02	0.02	0.07	18.18
Thiram	0.02	0.02	<0.01	18.18

Figure 218: Fungicide active substance usage on runner bean crops in Northern Ireland (spha), 2013.

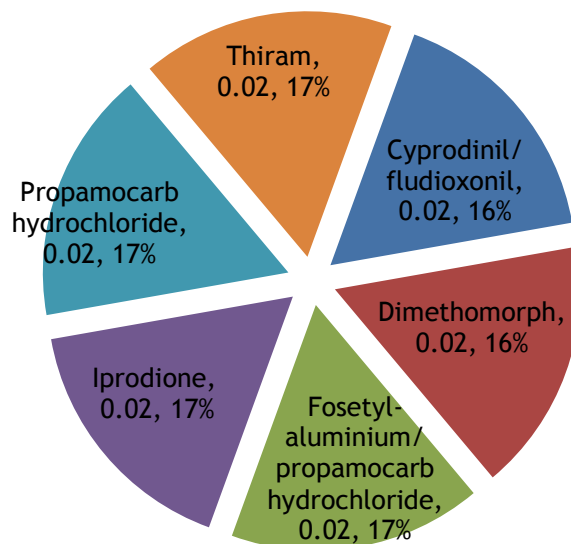


Figure 219: Weight of fungicide active substances applied to runner bean crops in Northern Ireland (kg), 2013.

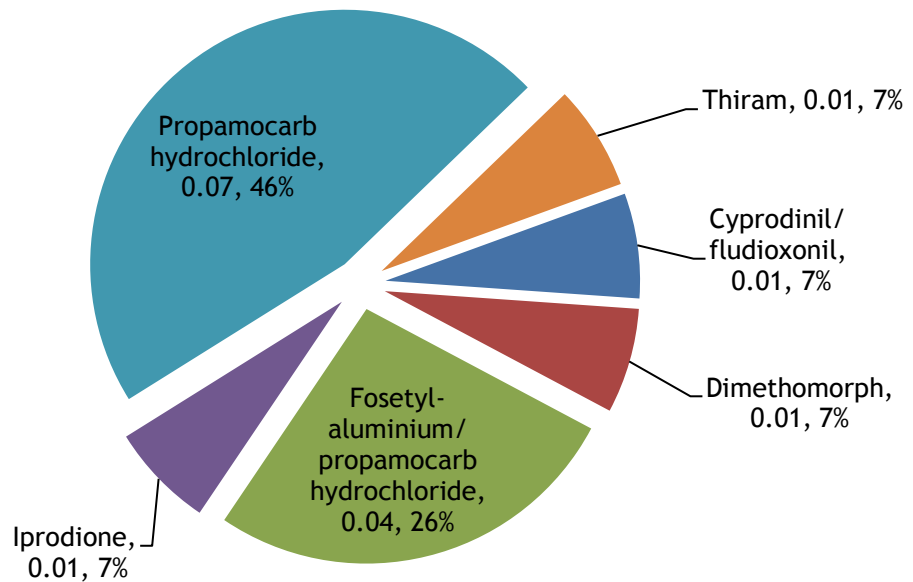
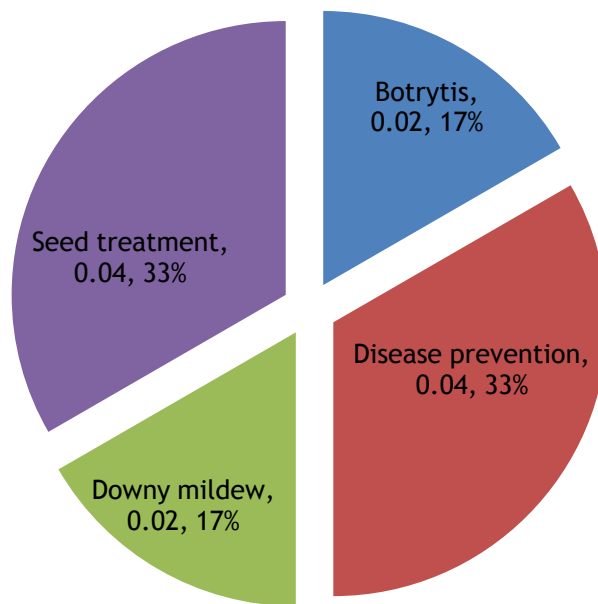


Figure 220: Runner beans: reasons for fungicide use (spha).



Insecticides - runner beans

Basic area treated: 0.02 hectares

Area treated: 0.02 spray hectares

Weight of active substances applied: 1.09kg

100% of the area grown treated with insecticides

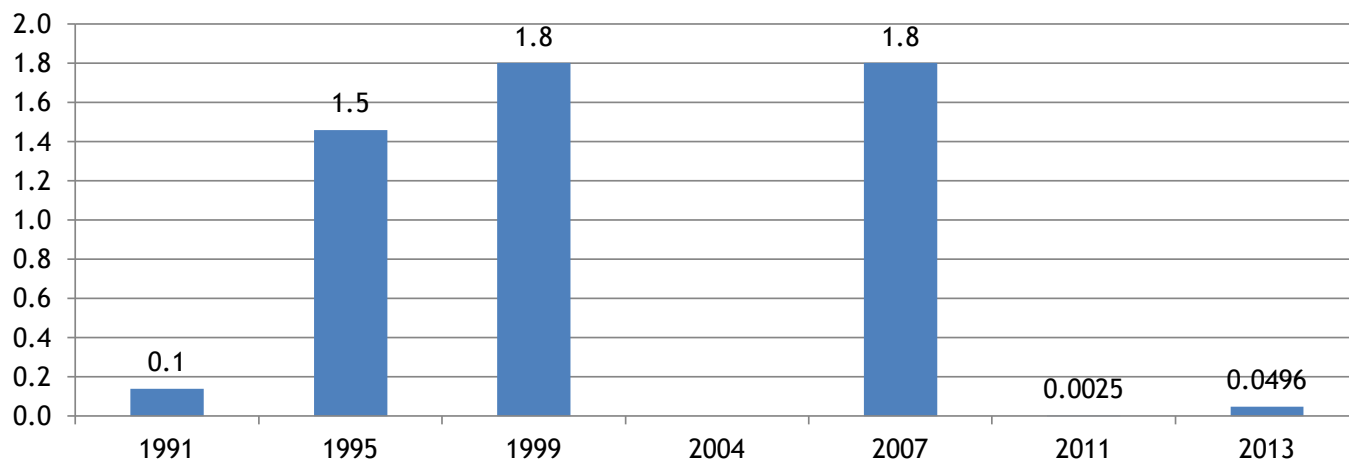
All applications were to control cabbage root fly

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Chlorpyrifos	0.02	0.02	1.09	100

Cucurbit crops:

Figure 221: Comparison of the area of cucurbit crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on courgette crops:

0.0073 hectares of courgette crops grown in Northern Ireland all of which grown in County Down

0.0146 treated hectares

0.0411kg applied

100% of crops received at least one treatment

Courgettes received on average 2.0 fungicide application.

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Propamocarb hydrochloride	0.01	0.01	0.03	50
Thiram	0.01	0.01	0.01	50

Figure 222: Fungicide active substance usage on courgette crops in Northern Ireland (spha), 2013.

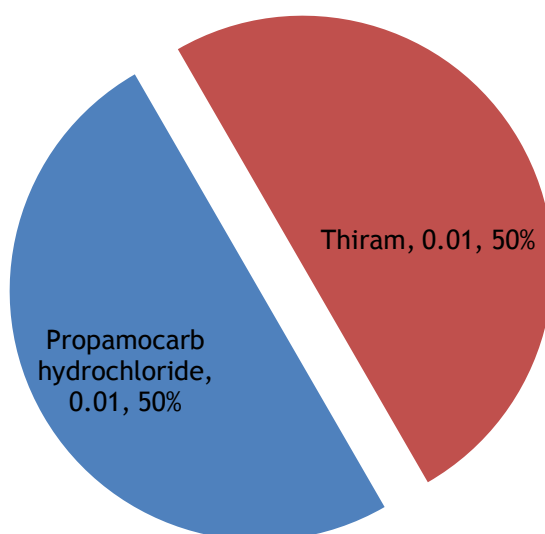


Figure 223: Weight of fungicide active substances applied to courgette crops in Northern Ireland (kg), 2013.

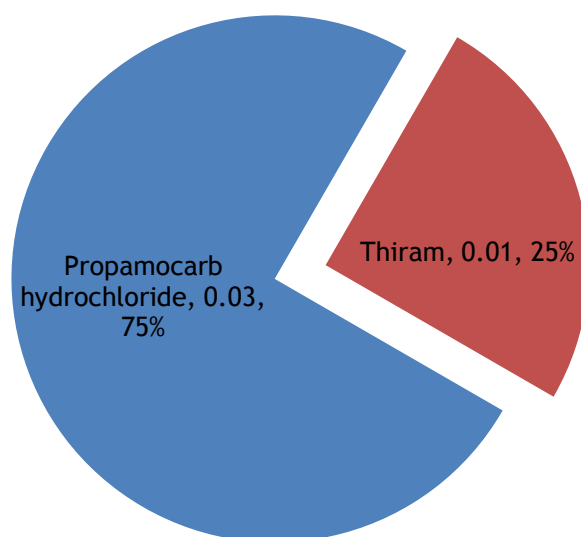
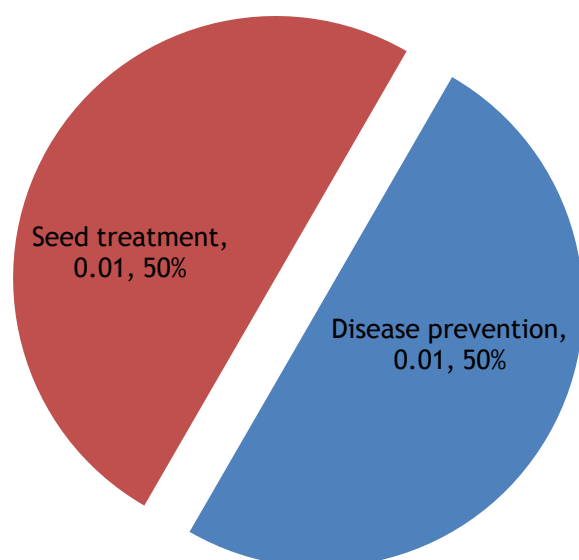


Figure 224: Courgette: reasons for fungicide use (spha).



Pesticide Usage on pumpkin crops:

0.0423 hectares of pumpkin crops grown in Northern Ireland all of which grown in County Down

0.0846 treated hectares

0.0255kg applied

100% of crops received at least one treatment

Pumpkins received on average 2.0 fungicide application.

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Propamocarb hydrochloride	0.04	0.04	0.15	50
Thiram	0.04	0.04	0.1	50

Figure 225: Fungicide active substance usage on pumpkin crops in Northern Ireland (spha), 2013.

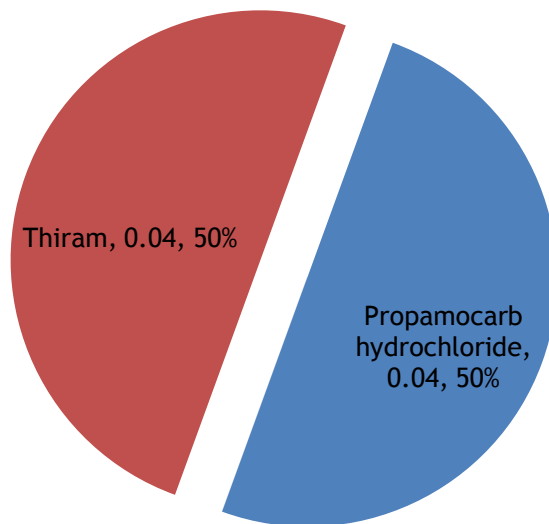


Figure 226: Weight of fungicide active substances applied to pumpkin crops in Northern Ireland (kg), 2013.

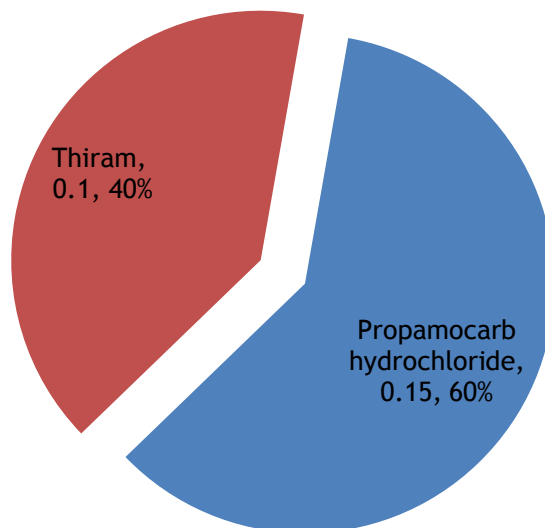
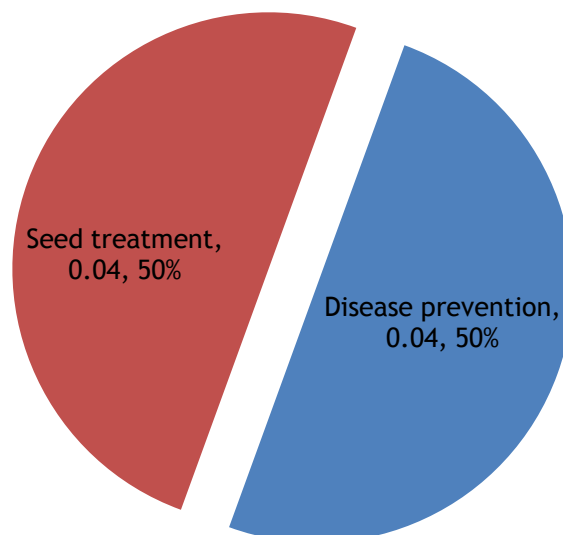
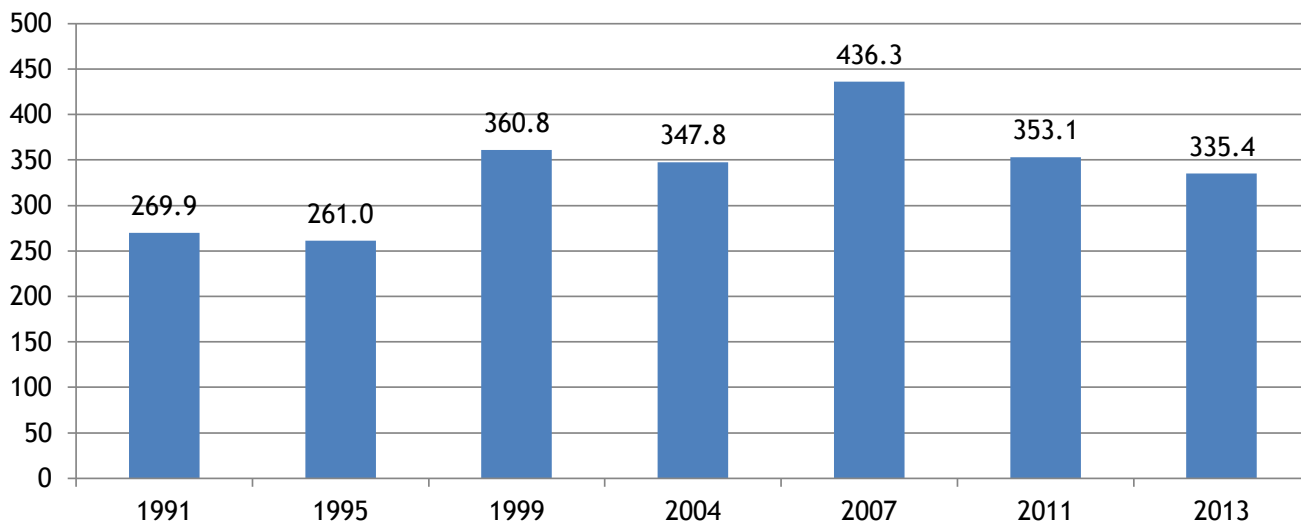


Figure 227: Pumpkin: reasons for fungicide use (spha).



Carrot crops:

Figure 228: Comparison of the area of carrot crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on carrot crops:

335.39 hectares of carrot crops grown in Northern Ireland

5,328.14 treated hectares

1,714.76kg applied

100% of crops received at least one treatment

Carrot crops received on average 4.22 fungicide, 5.43 herbicide, 4.06 insecticide, 1.0 molluscicide and 1.3 seed treatment applications.

Figure 229: Regional distribution of carrot crops grown in Northern Ireland (ha), 2013.

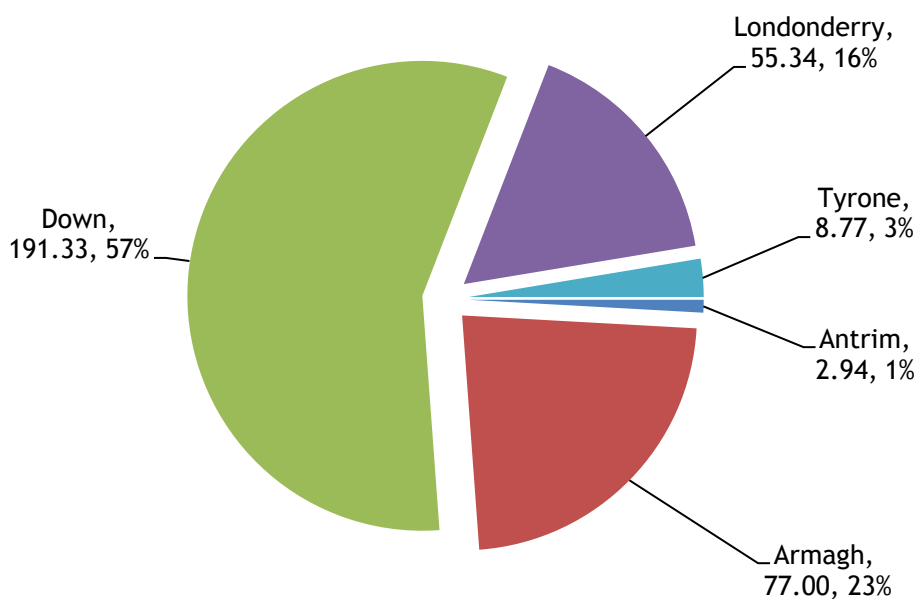


Figure 230: Pesticide usage on carrot crops in Northern Ireland (spha), 2013.

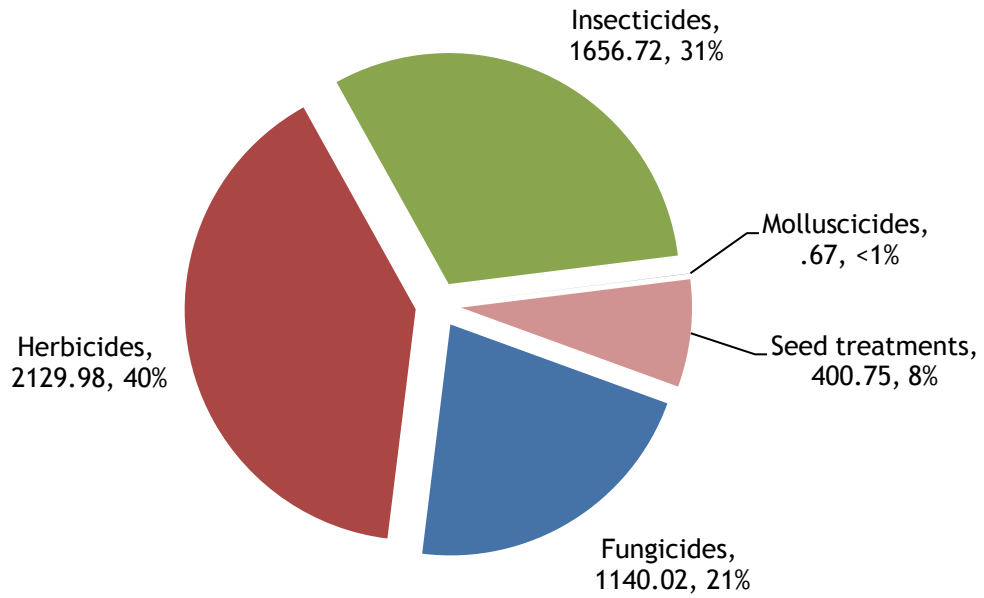


Figure 231: Weight of pesticides applied to carrot crops in Northern Ireland (kg), 2013.

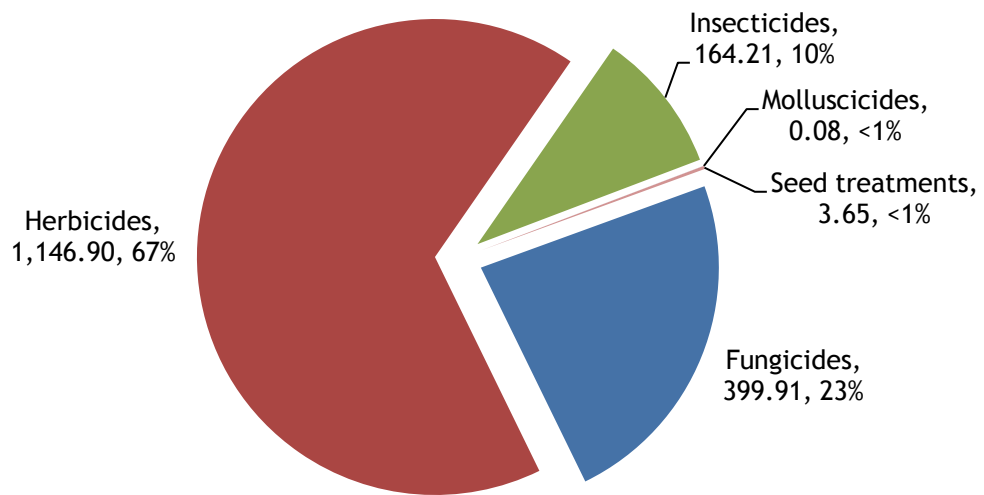
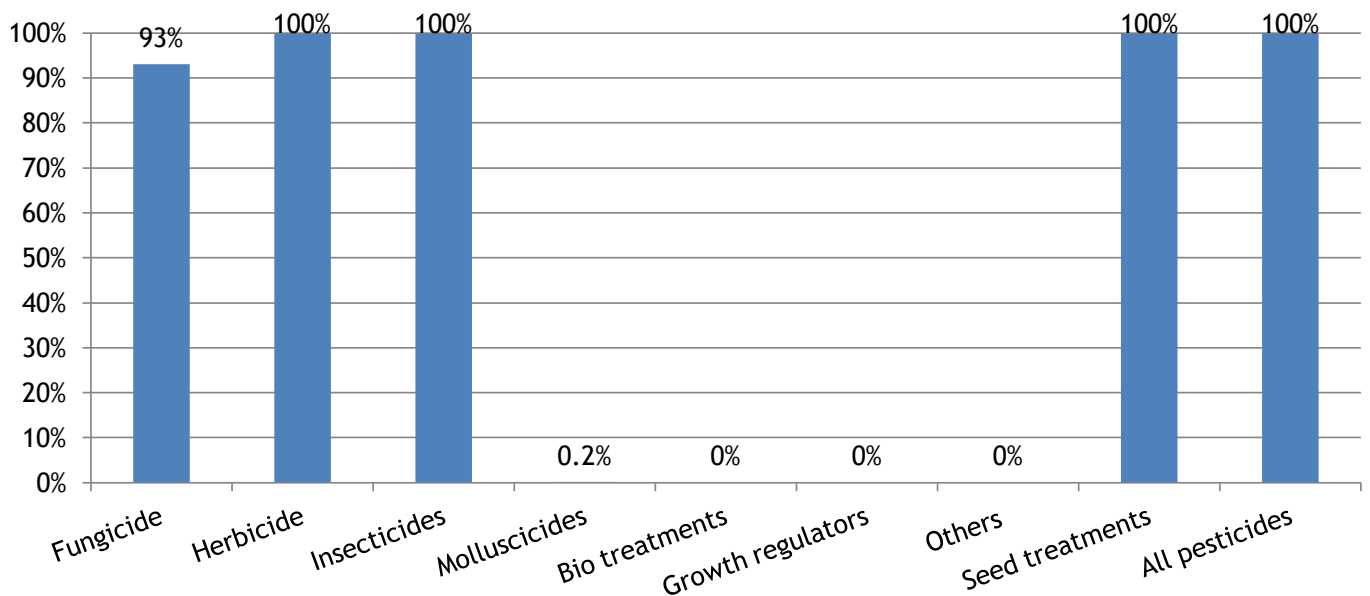


Figure 232: Proportional area of carrot crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - carrots

Basic area treated: 312.30 hectares

Area treated: 1,140.02 spray hectares

Weight of active substances applied: 399.91kg

93.1% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Boscalid/pyraclostrobin	256.72	192.39	85.7	22.52
Azoxystrobin/difenoconazole	213.97	129.32	69.5	18.77
Prothioconazole	186.6	145.3	35.77	16.37
Metalaxyl-M	184.93	184.93	109.38	16.22
Azoxystrobin	131.7	131.7	32.92	11.55

Figure 233: Fungicide active substance usage on carrot crops in Northern Ireland (spha), 2013.

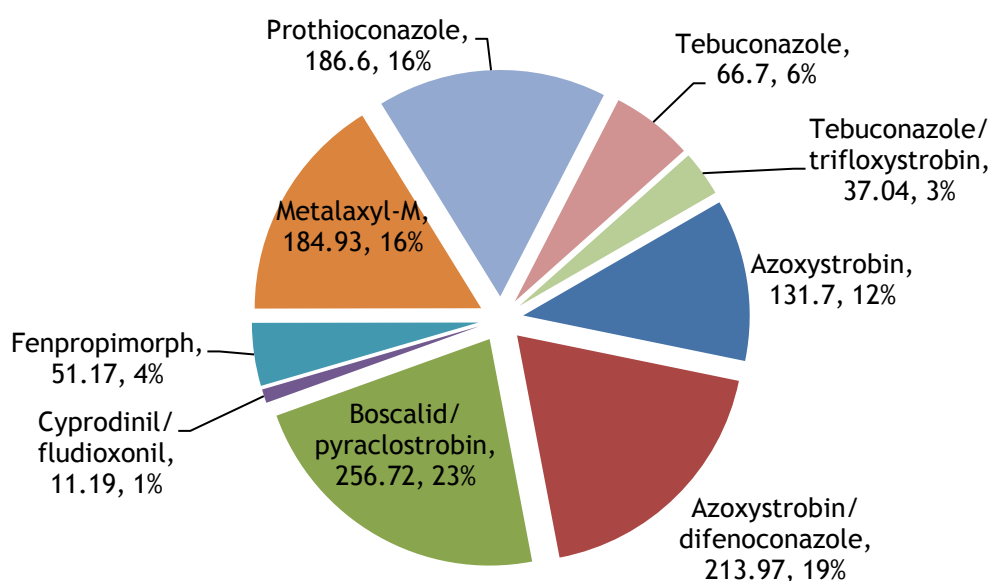


Figure 234: Weight of fungicide active substances applied to carrot crops in Northern Ireland (kg), 2013.

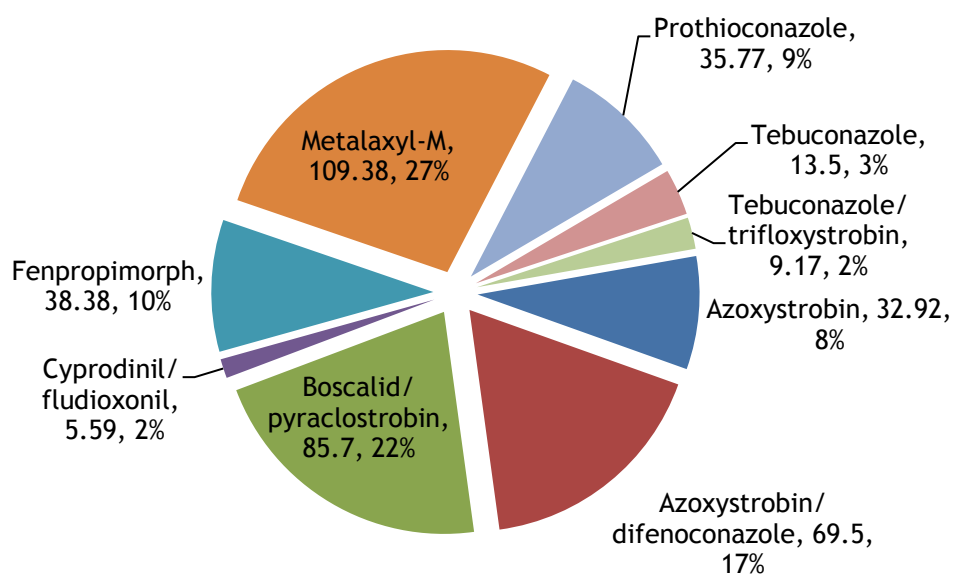
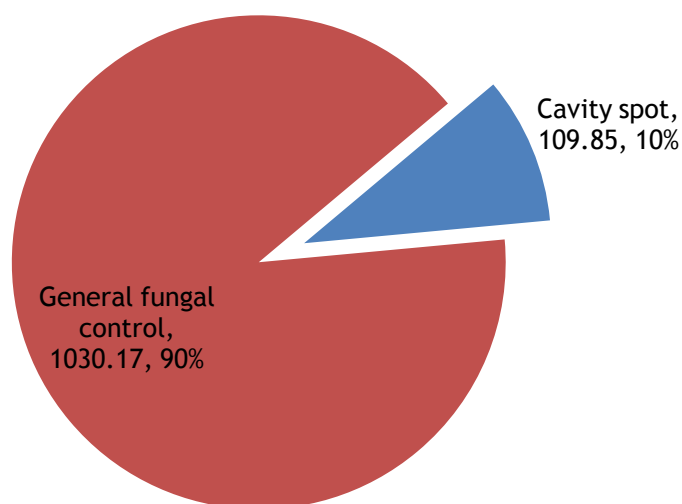


Figure 235: Carrots: reasons for fungicide use (spha).



Herbicides & desiccants - carrots

Basic area treated: 335.23 hectares

Area treated: 2,129.98 spray hectares

Weight of active substances applied: 1,146.90kg

100% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Linuron	647.88	334.45	196.05	30.42
Pendimethalin	397.49	311.33	434.68	18.66
Metribuzin	334.43	231.68	70.24	15.70
Clomazone	190.99	190.99	13.4	8.97
Prosulfocarb	187.6	159.93	295.18	8.81

Figure 236: Herbicide & desiccant active substance usage on carrot crops in Northern Ireland (spha), 2013.

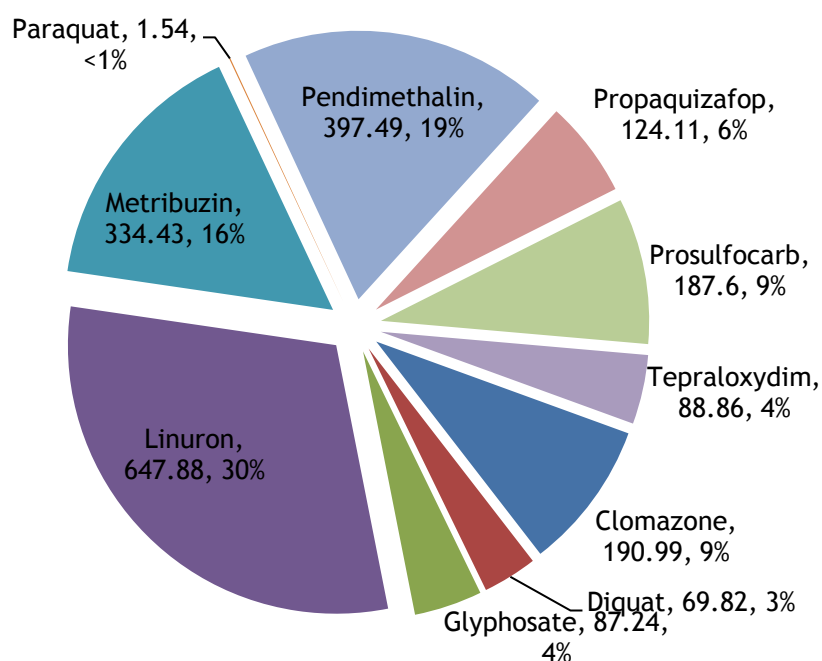


Figure 241: Weight of herbicide & desiccant active substances applied to carrot crops in Northern Ireland (kg), 2037.

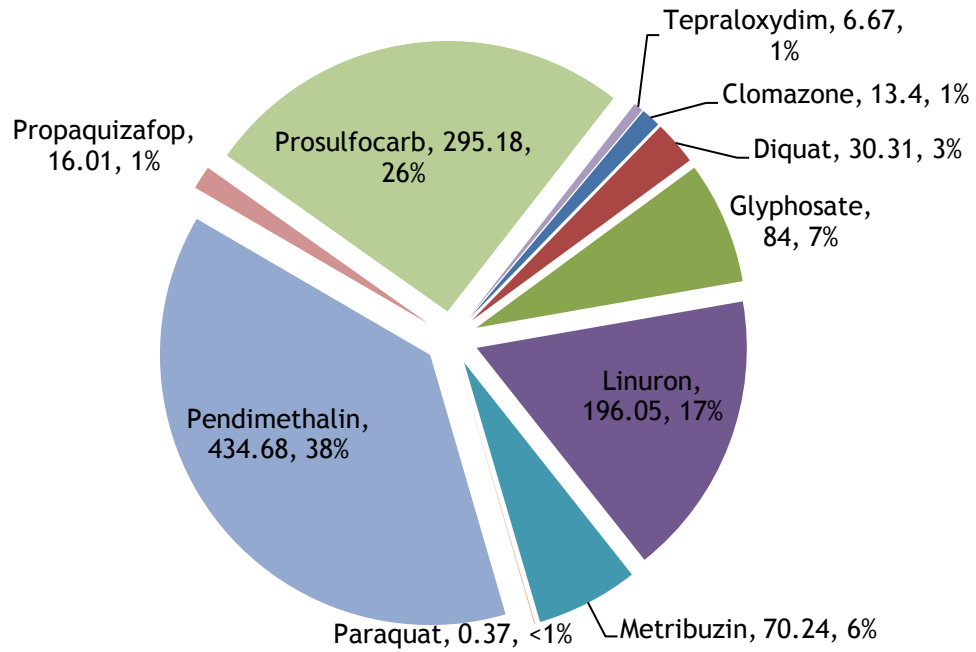
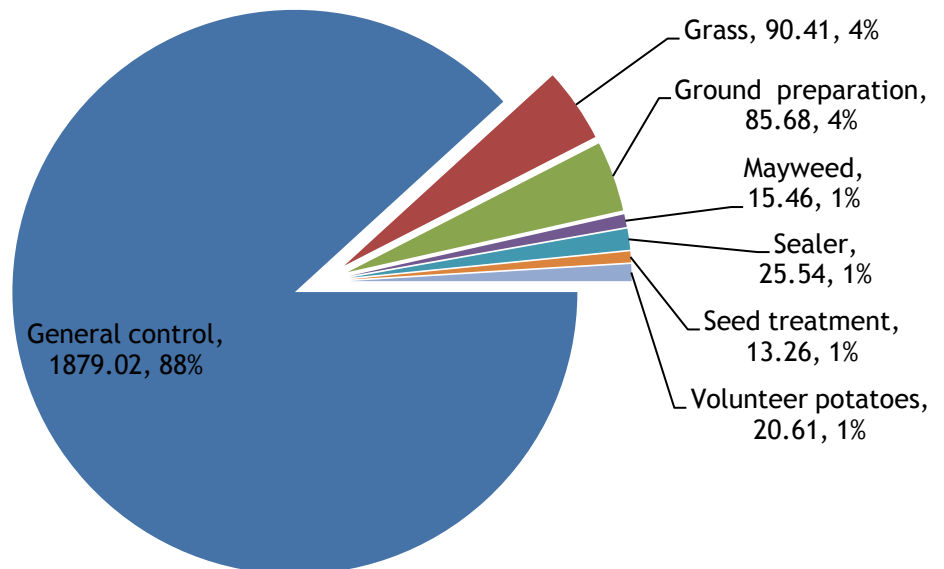


Figure 242: Carrots: reasons for herbicide & desiccant use (spha).



Insecticides - carrots

Basic area treated: 335.23 hectares
 Area treated: 1,656.72 spray hectares
 Weight of active substances applied: 164.21kg
 99.95% of the area grown treated with insecticides
 The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	886.45	334.45	9.56	53.51
Thiacloprid	307.03	213.11	29.47	18.53
Pirimicarb	210.85	141.82	22.91	12.73
Deltamethrin	163.69	99.37	1.23	9.88
Oxamyl	77.15	77.15	98.42	4.66

Figure 238: Insecticide active substance usage on carrot crops in Northern Ireland (spha), 2013.

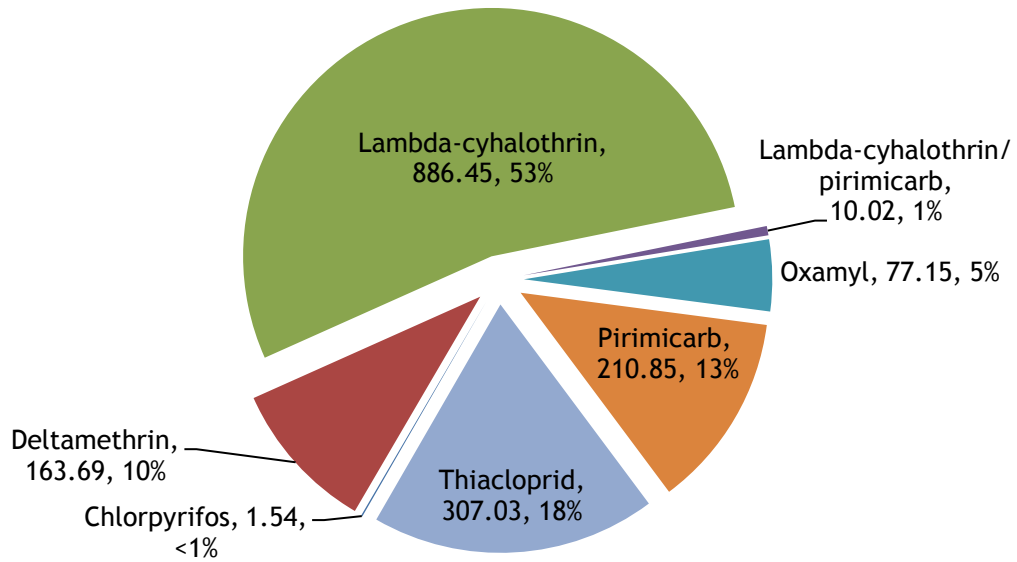


Figure 239: Weight of insecticide active substances applied to carrot crops in Northern Ireland (kg), 2013.

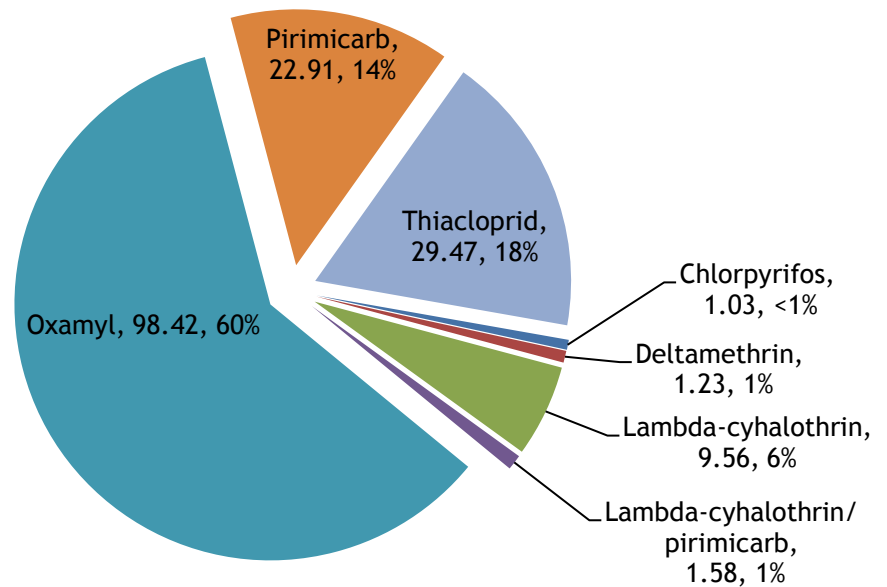
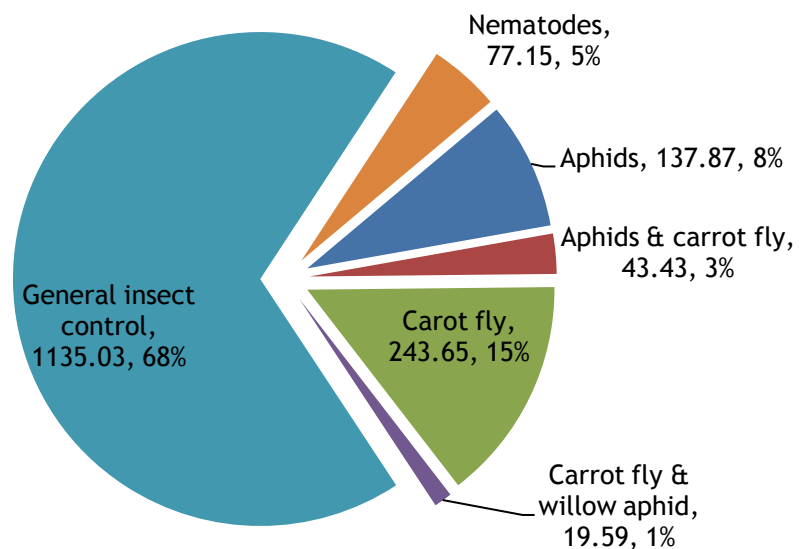


Figure 240: Carrots: reasons for insecticide use (spha).



Molluscicides - carrots

Basic area treated: 0.67 hectares

Area treated: 0.67 spray hectares

Weight of active substances applied: 0.08kg

0.2% of the area grown treated with molluscicides

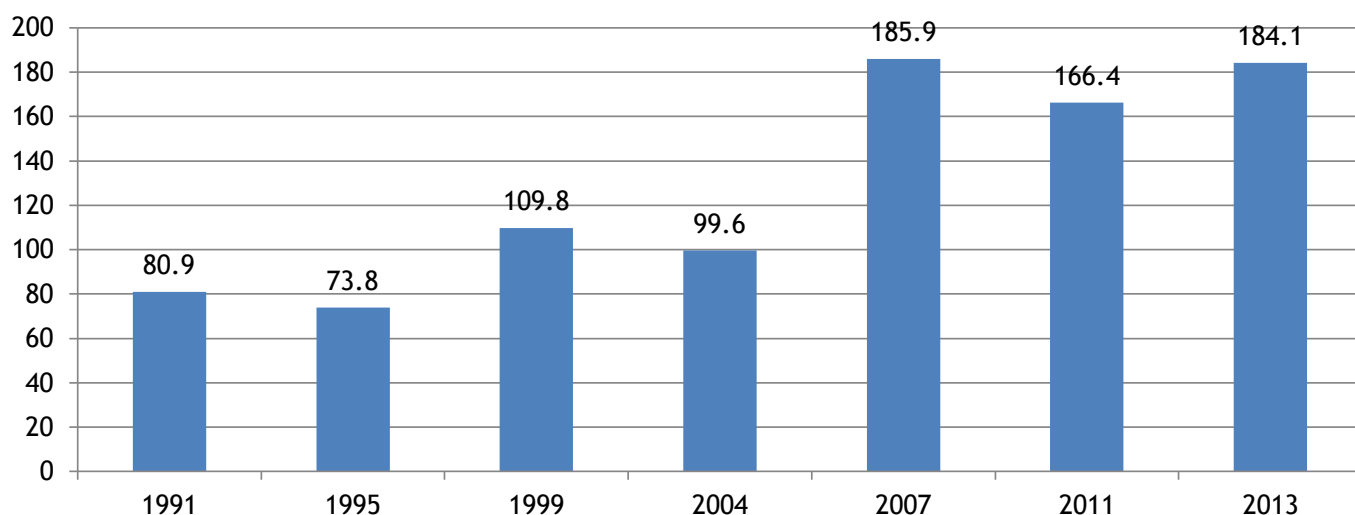
All applications were to control slugs

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Methiocarb	0.67	0.67	0.08	100

Parsnip crops:

Figure 241: Comparison of the area of parsnip crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on parsnip crops:

184.10 hectares of parsnip crops grown in Northern Ireland

2,558.44 treated hectares

1,207.43kg applied

99.9% of crops received at least one treatment

Parsnip crops received on average 4.34 fungicide, 5.24 herbicide, 3.98 insecticide, 1.0 growth regulator and 1.34 seed treatment applications.

Figure 242: Regional distribution of parsnip crops grown in Northern Ireland (ha), 2013.

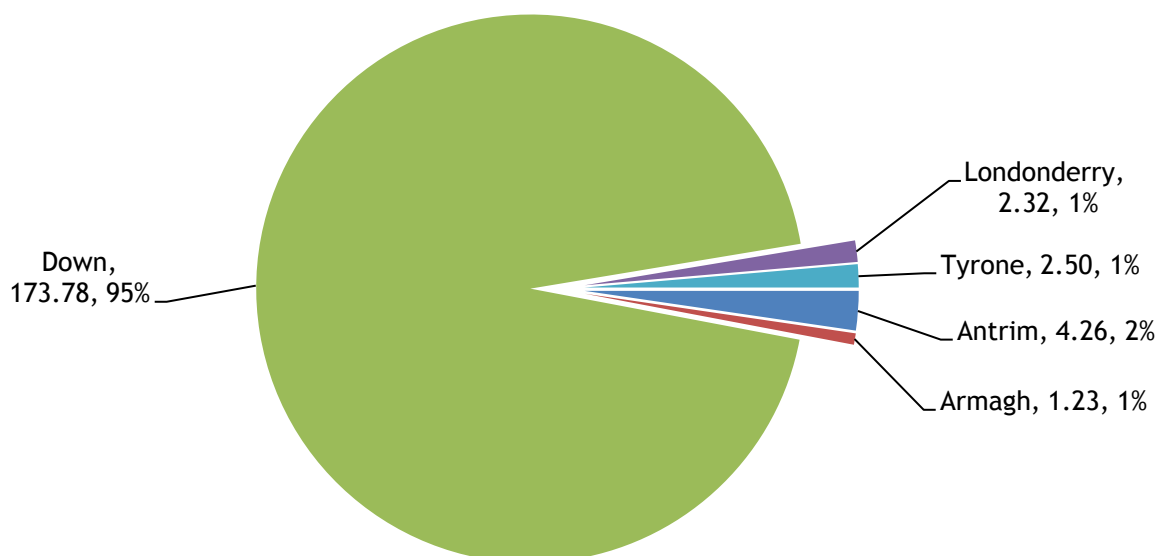


Figure 243: Pesticide usage on parsnip crops in Northern Ireland (spha), 2013.

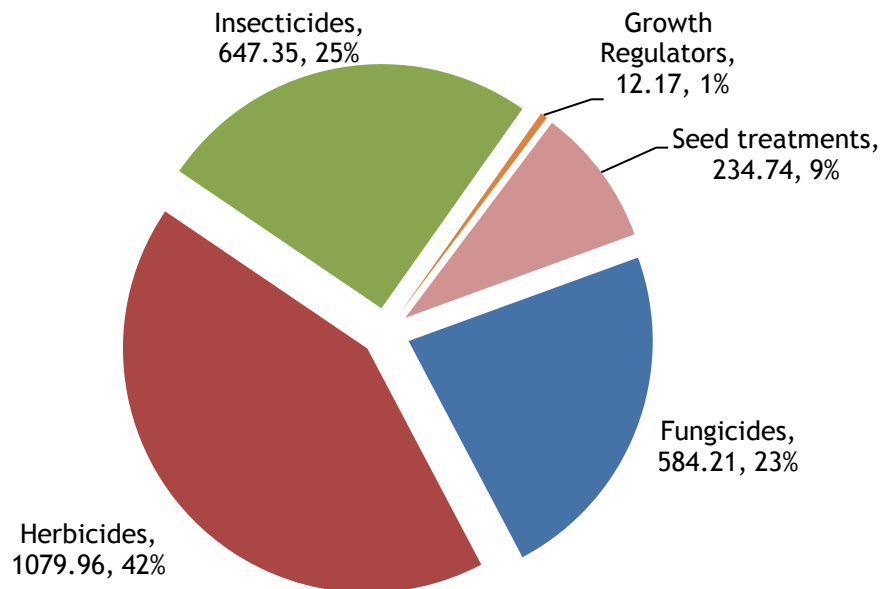


Figure 244: Weight of pesticides applied to parsnip crops in Northern Ireland (kg), 2013.

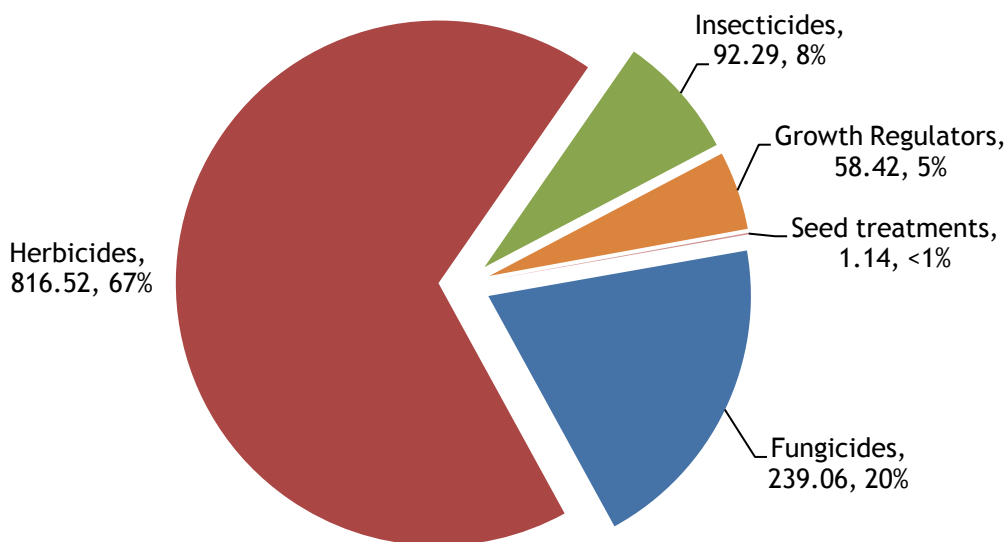
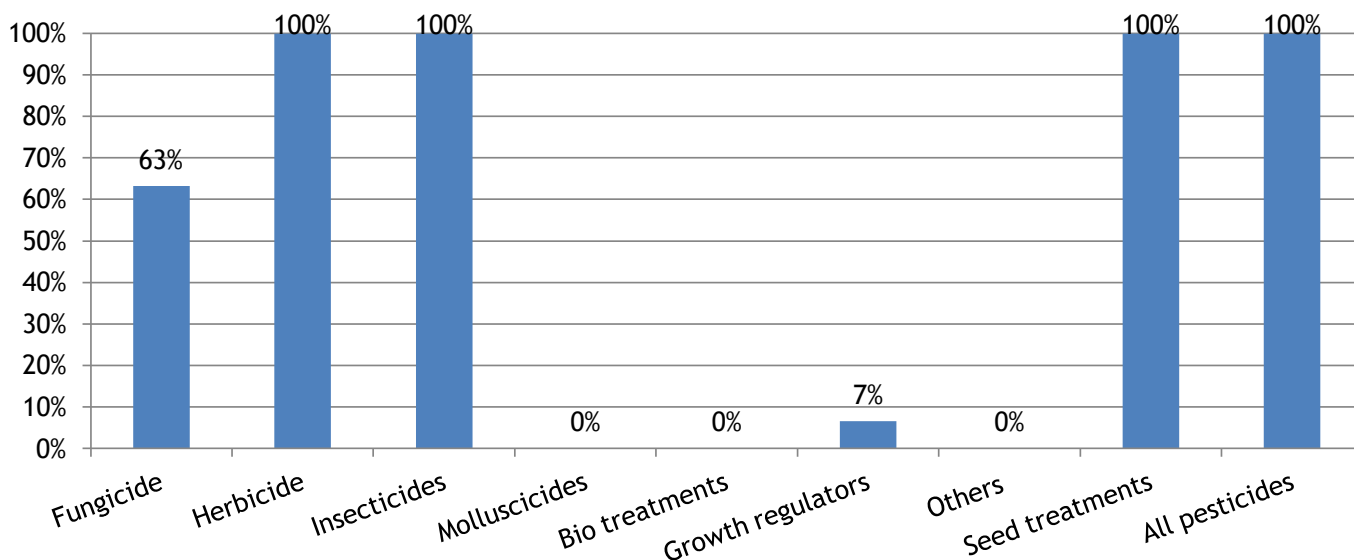


Figure 245: Proportional area of parsnip crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - parsnip

Basic area treated: 116.27 hectares

Area treated: 584.21 spray hectares

Weight of active substances applied: 239.06kg

63.2% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metalaxyl-M	109.43	109.43	70.04	18.73
Tebuconazole	91.95	45.98	22.99	15.74
Azoxystrobin/difenoconazole	85.58	56.72	27.81	14.65
Fenpropimorph	84.04	42.33	63.03	14.39
Boscalid/pyraclostrobin	64.91	60.65	21.25	11.11

Figure 246: Fungicide active substance usage on parsnip crops in Northern Ireland (spha), 2013.

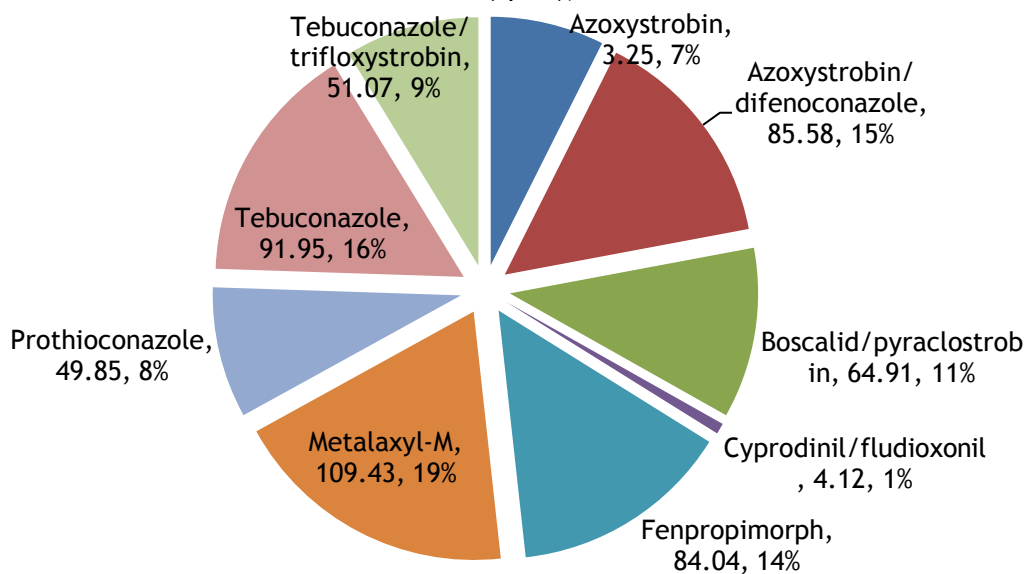


Figure 247: Weight of fungicide active substances applied to parsnip crops in Northern Ireland (kg), 2013.

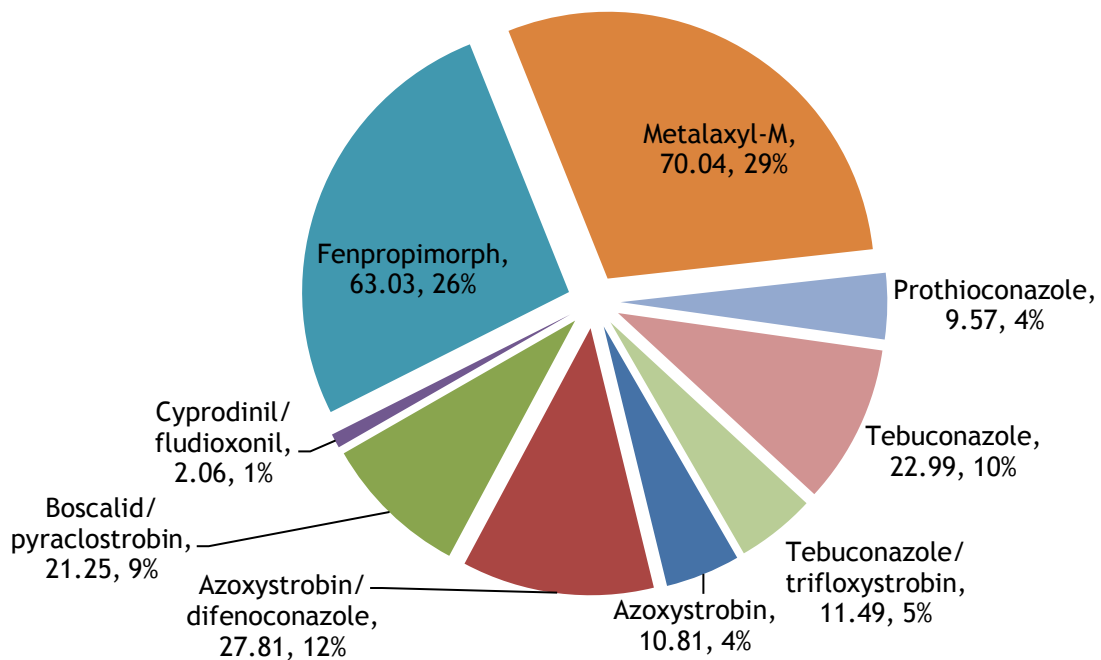
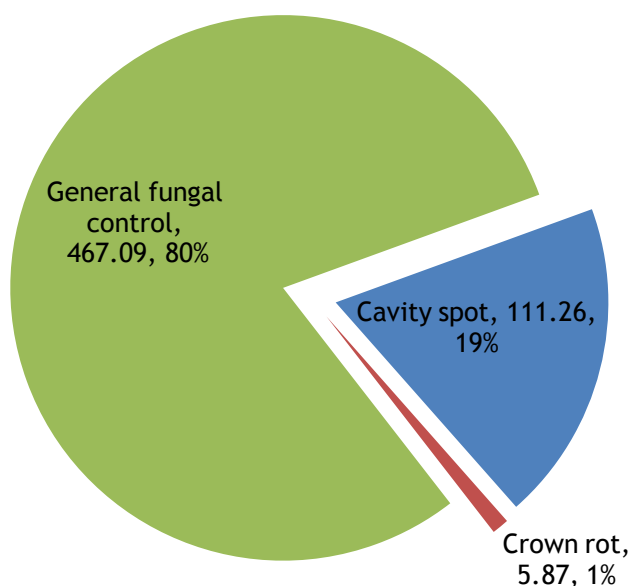


Figure 248: Parsnips: reasons for fungicide use (spha).



Herbicides & desiccants - parsnips

Basic area treated: 183.95 hectares

Area treated: 1,079.96 spray hectares

Weight of active substances applied: 816.52kg

99.9% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Linuron	415.22	183.95	120.11	38.45
Prosulfocarb	186.09	170.78	271.41	17.23
Pendimethalin	180.81	180.81	217.22	16.74
Glyphosate	98.96	98.96	88.22	9.16
Metamitron	67.72	67.72	90.96	6.27

Figure 249: Herbicide & desiccant active substance usage on parsnip crops in Northern Ireland (spha), 2013.

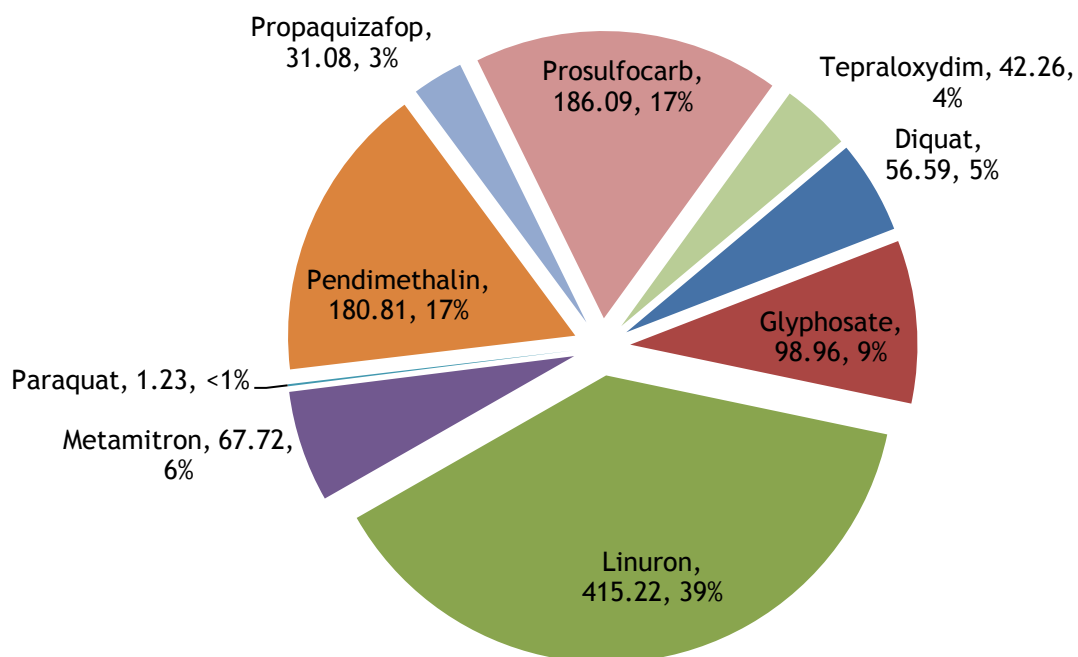


Figure 250: Weight of herbicide & desiccant active substances applied to parsnip crops in Northern Ireland (kg), 2013.

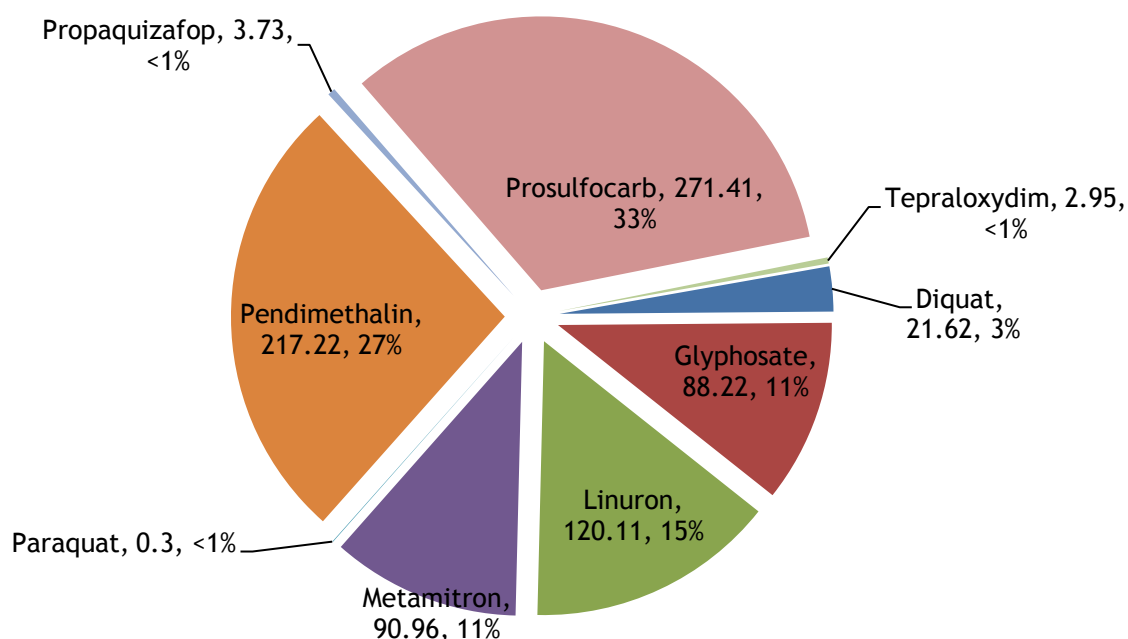
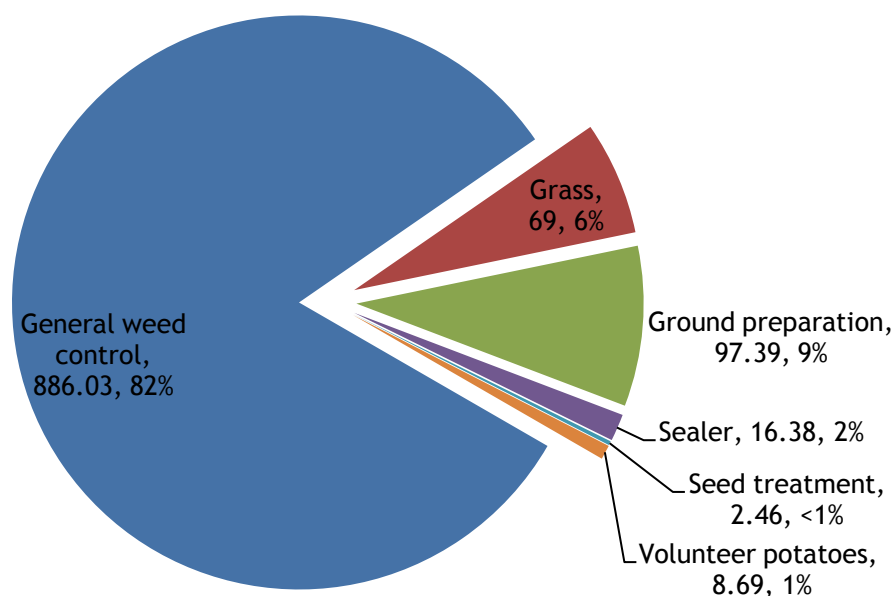


Figure 251: Parsnips: reasons for herbicide & desiccant use (spha).



Insecticides - parsnips

Basic area treated: 647.35 hectares

Area treated: 627 spray hectares

Weight of active substances applied: 92.29kg

99.92% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	498.34	183.95	5.78	76.98
Thiacloprid	80.08	54.47	7.69	12.37
Oxamyl	43.25	43.25	77.01	6.68
Indoxacarb	10.31	10.31	0.26	1.59
Deltamethrin	10.01	10.01	0.08	1.55

Figure 252: Insecticide active substance usage on parsnip crops in Northern Ireland (spha), 2013.

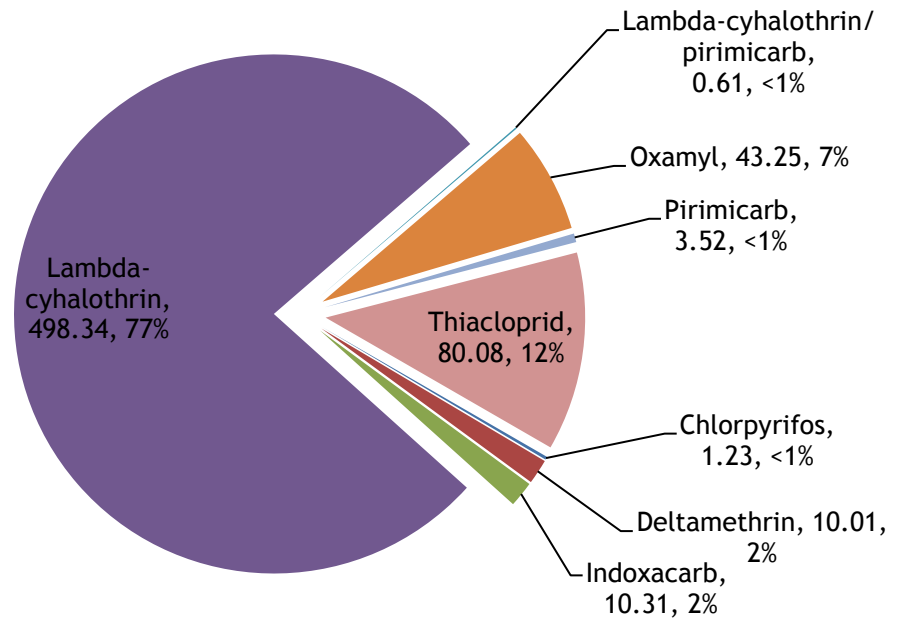


Figure 253: Weight of insecticide active substances applied to parsnip crops in Northern Ireland (kg), 2013.

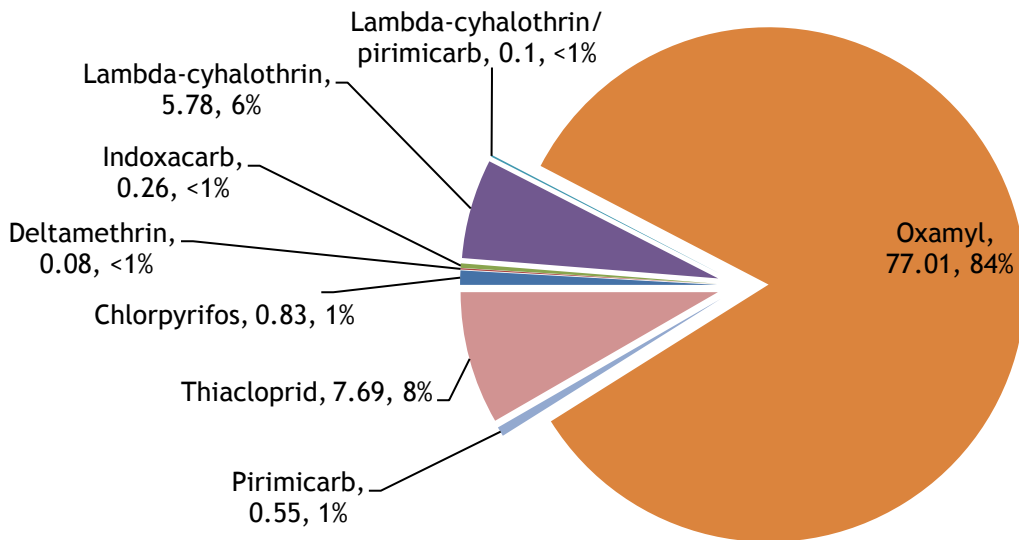
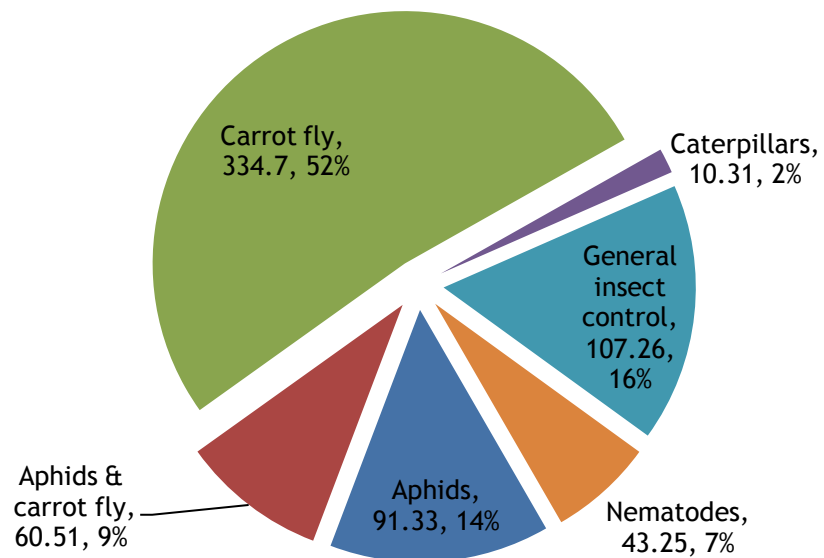


Figure 254: Parsnips: reasons for insecticide use (spha).



Growth regulators - parsnips

Basic area treated: 12.17 hectares

Area treated: 12.17 spray hectares

Weight of active substances applied: 58.42kg

6.6% of the area grown treated with growth regulators

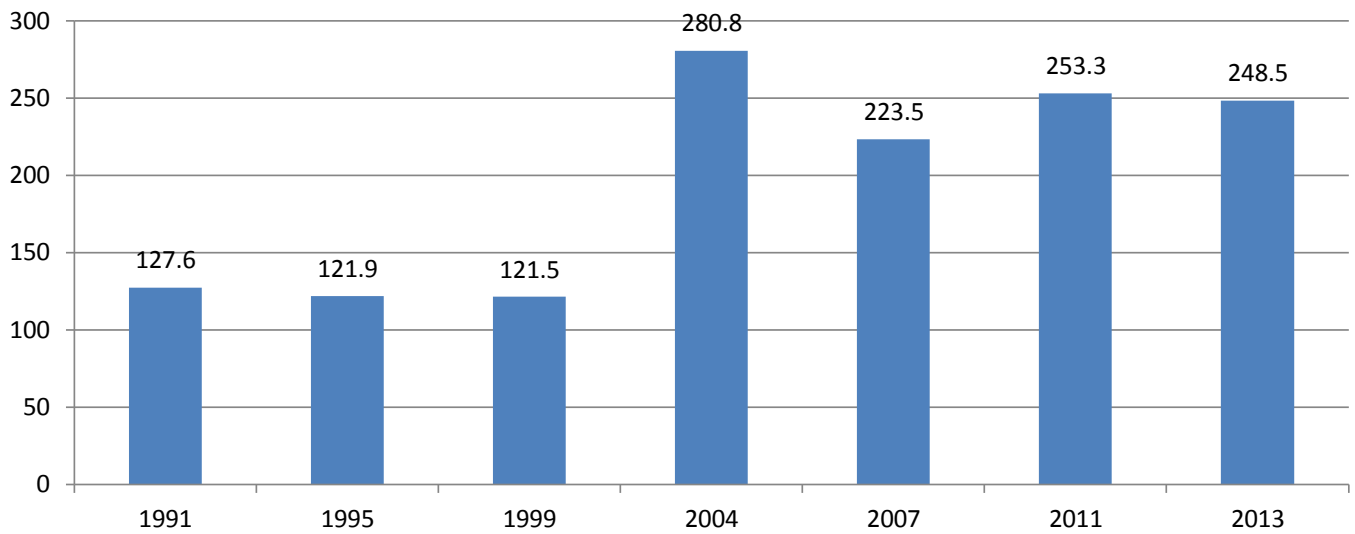
All applications were for growth regulation

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Maleic hydrazide	12.17	12.17	58.42	100

Turnip & swede crops:

Figure 255: Comparison of the area of turnip & swede crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on turnip crops:

119.11 hectares of turnip crops grown in Northern Ireland

600.78 treated hectares

255.52kg applied

99.8% of crops received at least one treatment

Turnip crops received on average 1.0 fungicide, 2.35 herbicide, 2.05 insecticide, 1.0 molluscicide and 1.0 seed treatment applications.

Figure 256: Regional distribution of turnip crops grown in Northern Ireland (ha), 2013.

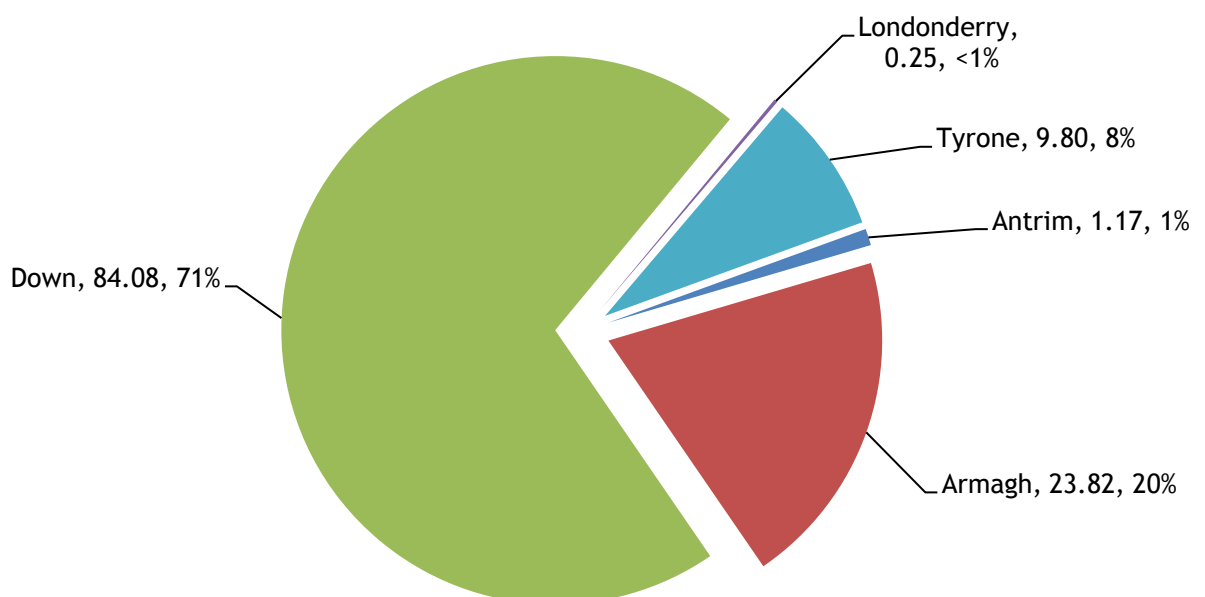


Figure 257: Pesticide usage on turnip crops in Northern Ireland (spha), 2013.

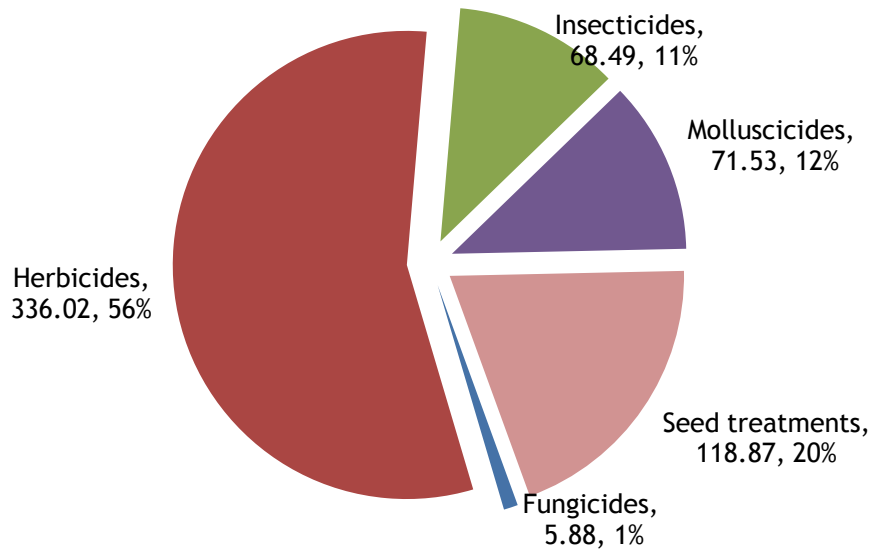


Figure 258: Weight of pesticides applied to turnip crops in Northern Ireland (kg), 2013.

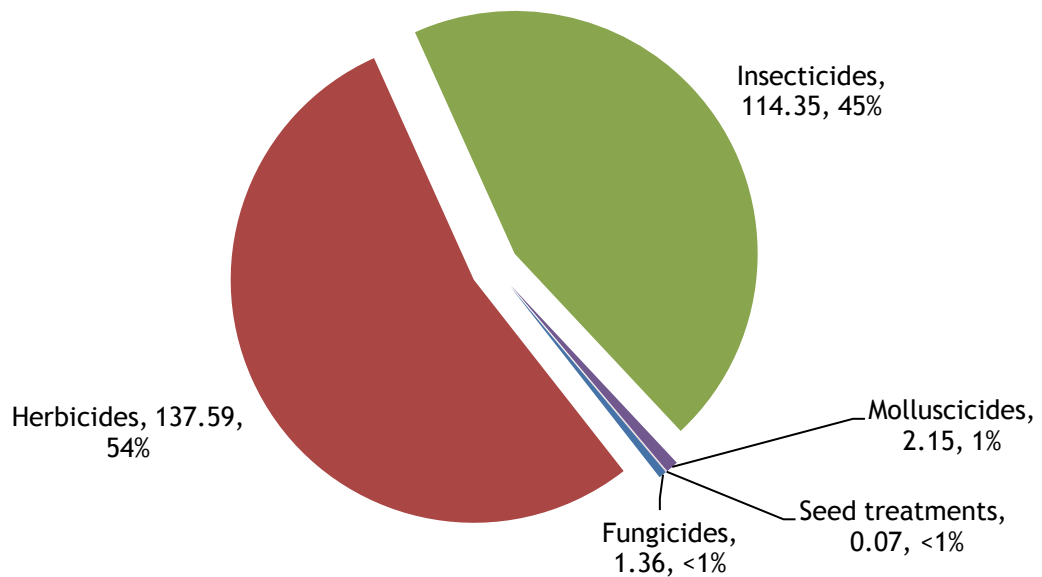
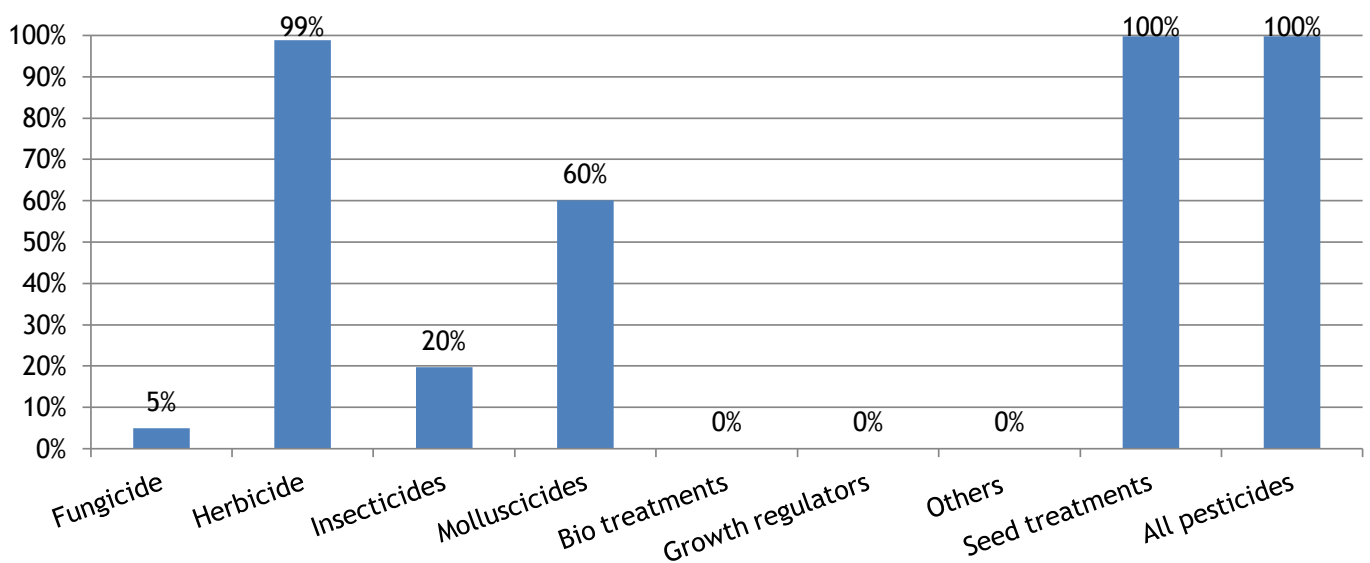


Figure 259: Proportional area of turnip crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - turnips

Basic area treated: 5.88 hectares

Area treated: 5.88 spray hectares

Weight of active substances applied: 1.36kg

4.9% of the area grown treated with fungicides

All applications were for general fungal control

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin	1.57	1.57	0.39	26.70
Tebuconazole	4.31	4.31	0.97	73.30

Figure 260: Fungicide active substance usage on turnip crops in Northern Ireland (spha), 2013.

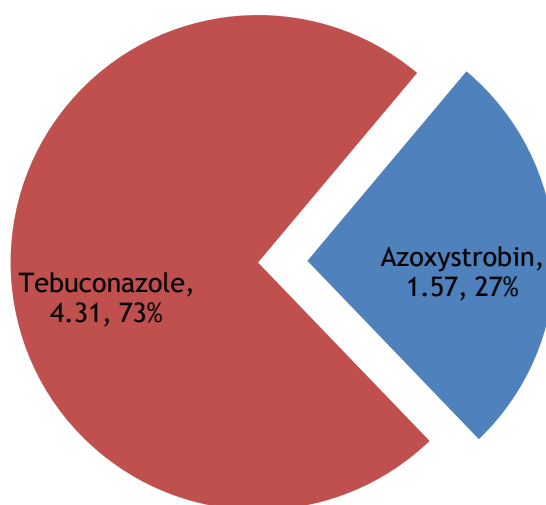
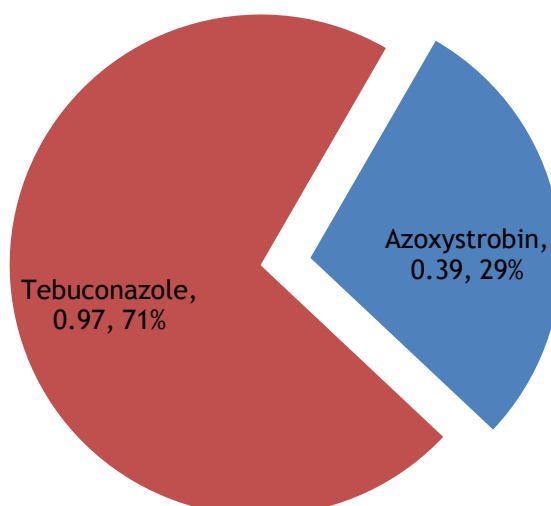


Figure 261: Weight of fungicide active substances applied to turnip crops in Northern Ireland (kg), 2013.



Herbicides & desiccants - turnips

Basic area treated: 117.69 hectares

Area treated: 336.02 spray hectares

Weight of active substances applied: 137.59kg

98.8% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	113.38	113.38	64.51	33.74
Clomazone	96.32	96.32	6.49	28.66
Glyphosate	83.36	79.05	64.28	24.81
Clopyralid	28.13	28.13	1.72	8.37
Ethametsulfuron-methyl	10.75	10.75	0.2	3.20

Figure 262: Herbicide & desiccant active substance usage on turnip crops in Northern Ireland (spha), 2013.

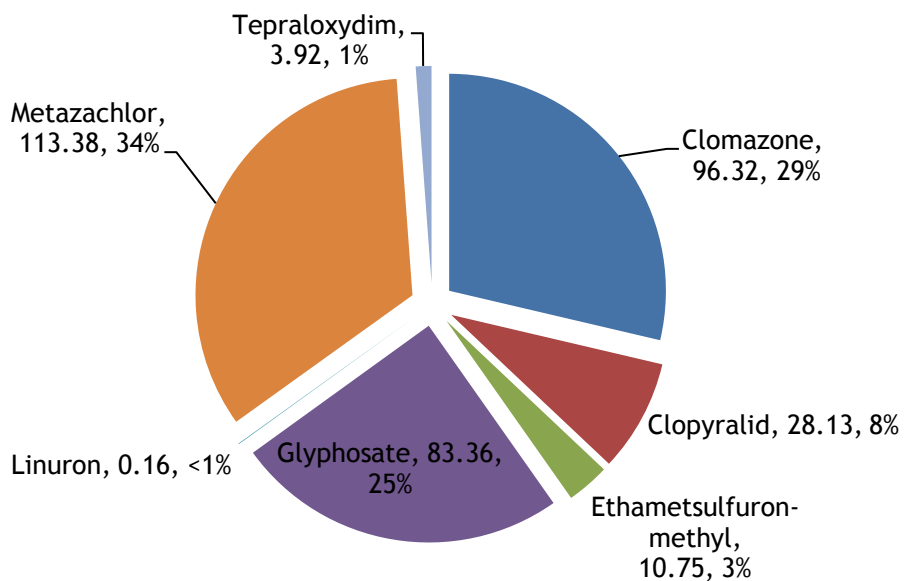


Figure 263: Weight of herbicide & desiccant active substances applied to turnip crops in Northern Ireland (kg), 2013.

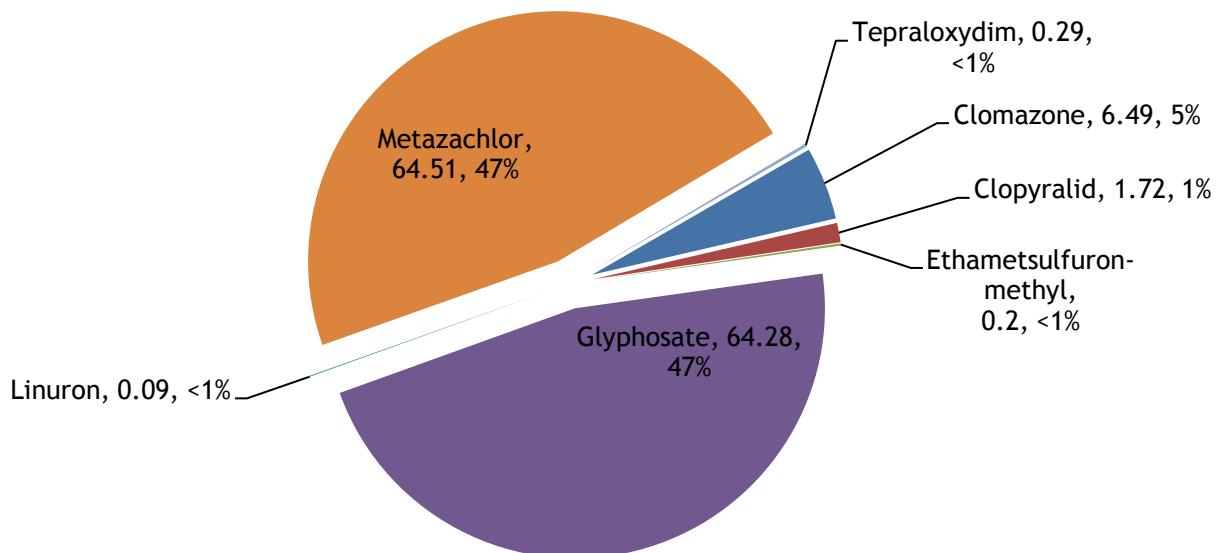
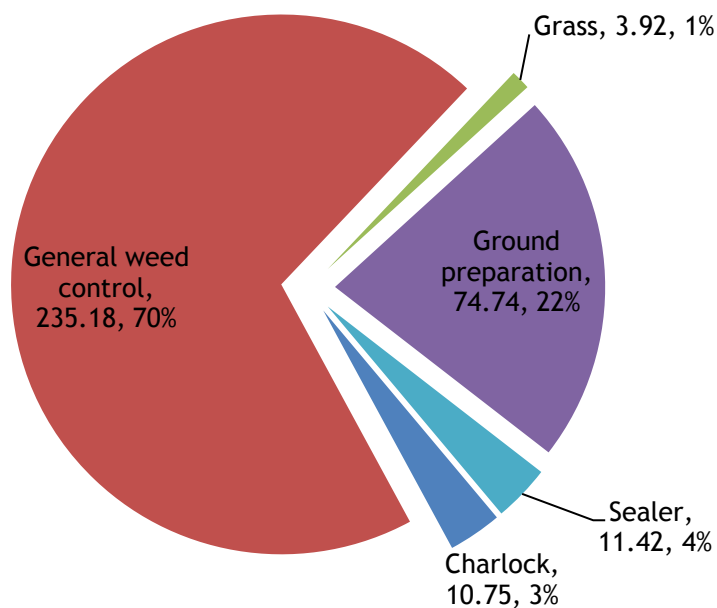


Figure 264: Turnips & swedes: reasons for herbicide & desiccant use (spha).



Insecticides - turnips

Basic area treated: 23.52 hectares

Area treated: 68.49 spray hectares

Weight of active substances applied: 114.35kg

19.75% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Garlic Extract	56.58	17.49	109.65	82.61
Chlorpyrifos	8.62	4.31	4.66	12.59
Lambda-cyhalothrin	3.29	1.72	0.05	4.80

Figure 265: Insecticide active substance usage on turnip crops in Northern Ireland (spha), 2013.

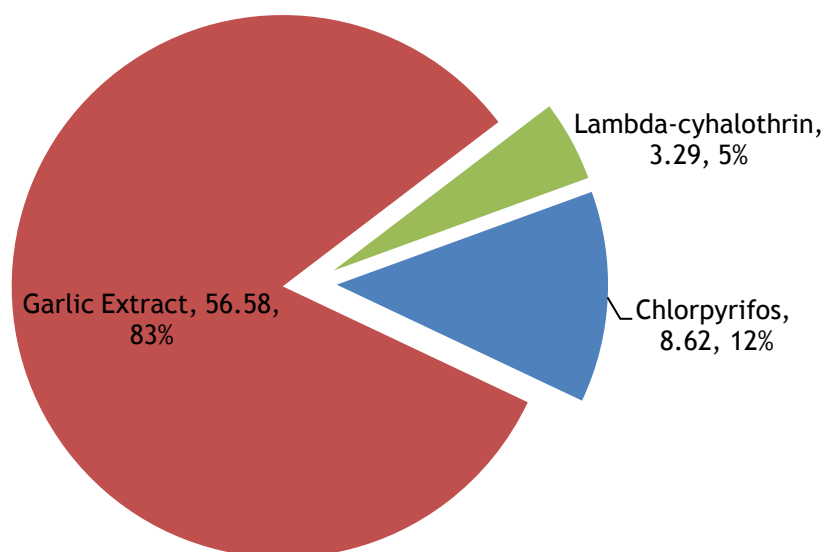


Figure 266: Weight of insecticide active substances applied to turnip crops in Northern Ireland (kg), 2013.

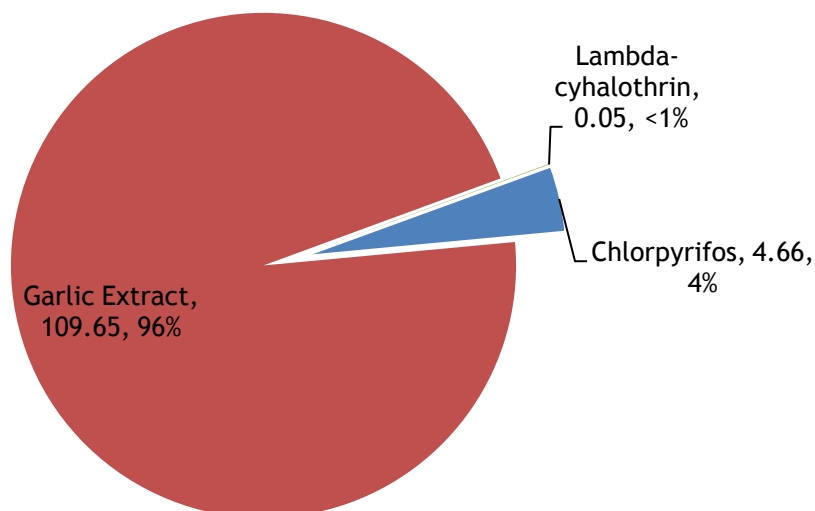
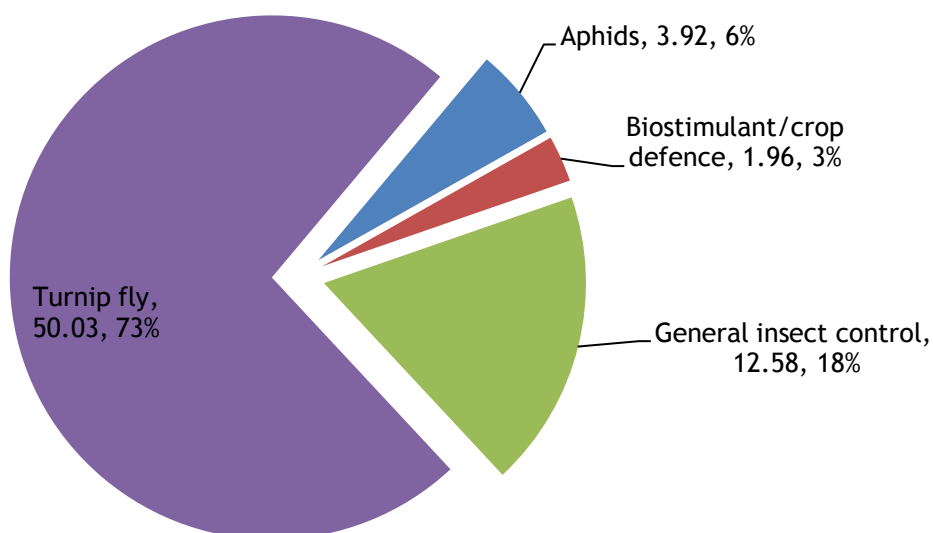


Figure 267: Turnips: reasons for insecticide use (spha).



Molluscicides - turnips

Basic area treated: 71.53 hectares

Area treated: 71.53 spray hectares

Weight of active substances applied: 2.15Kg

60.05% of the area grown treated with molluscicides

All applications were for slug control

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Ferric phosphate	71.53	71.53	2.15	100

Pesticide Usage on swede crops:

129.35 hectares of swede crops grown in Northern Ireland

501.66 treated hectares

161.91kg applied

100% of crops received at least one treatment

Swede crops received on average 2.0 fungicide, 2.0 herbicide, 2.0 other and 1.56 seed treatment applications.

Figure 268: Regional distribution of swede crops grown in Northern Ireland (ha), 2013.



Figure 269: Pesticide usage on swede crops in Northern Ireland (spha), 2013.

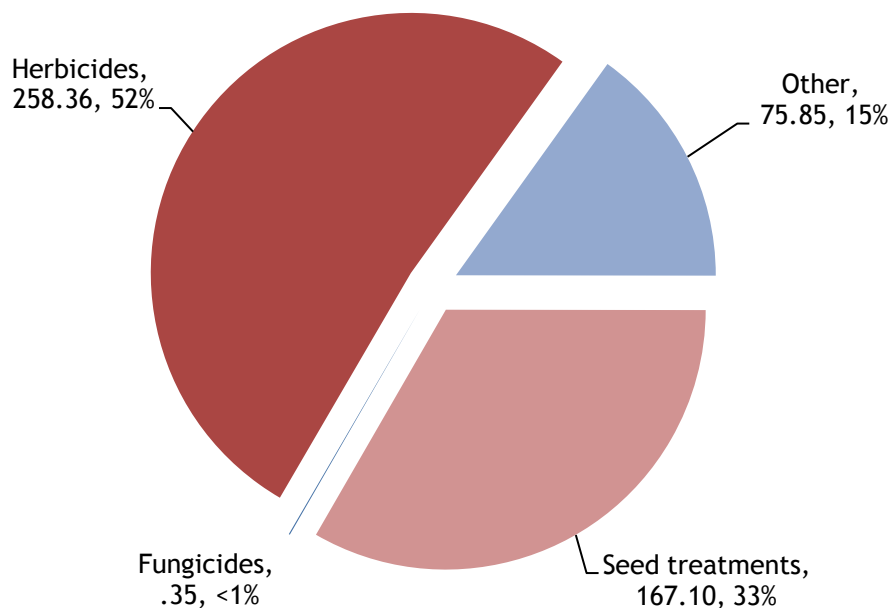


Figure 270: Weight of pesticides applied to swede crops in Northern Ireland (kg), 2013.

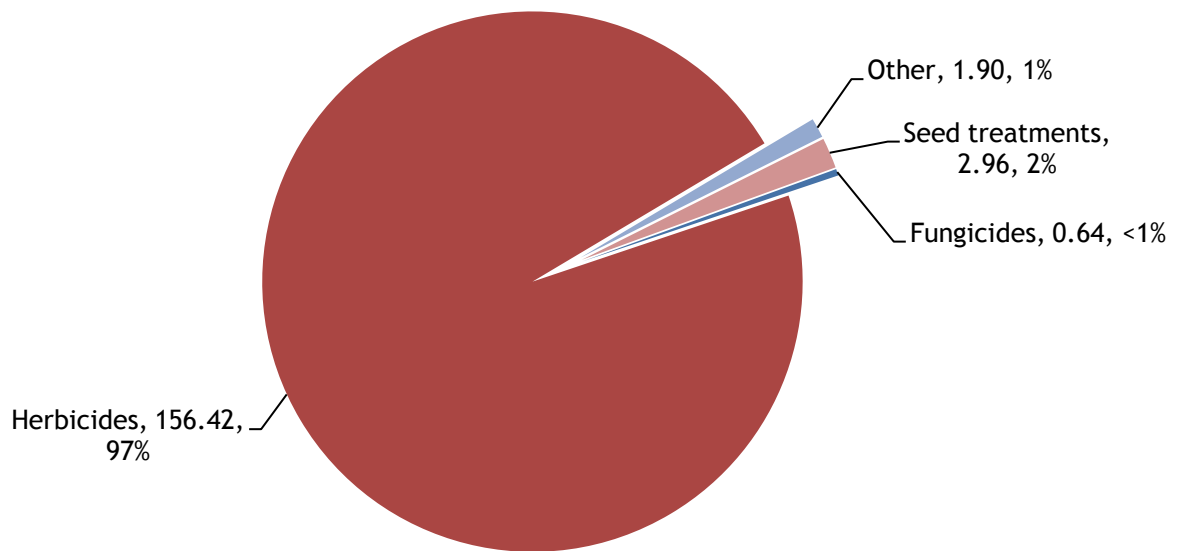
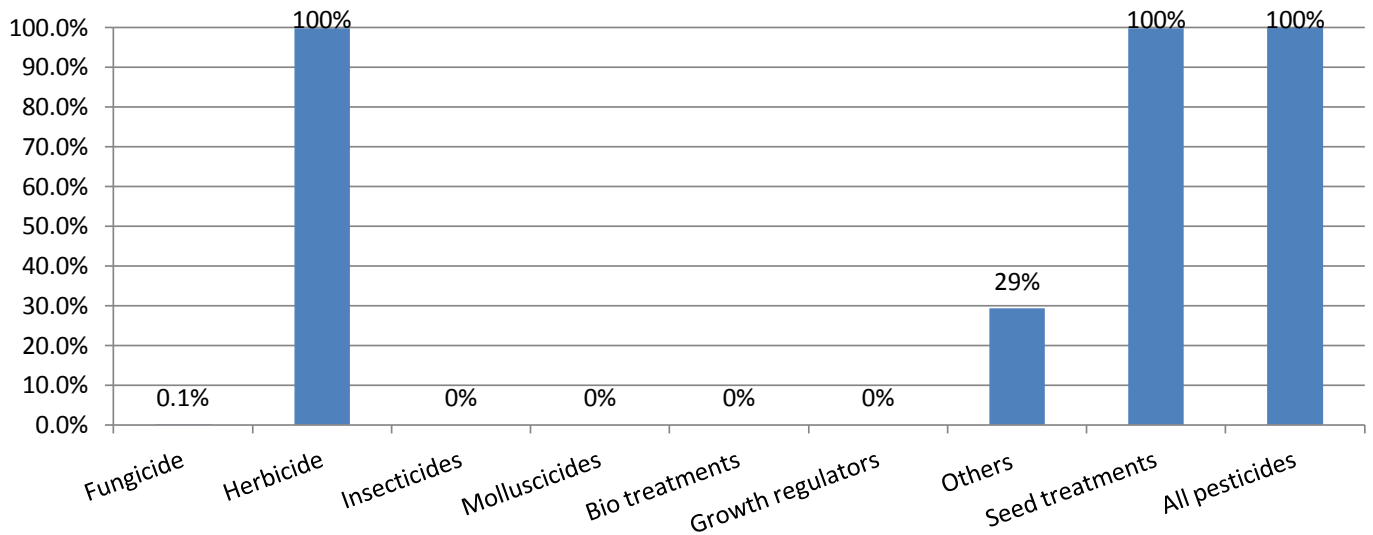


Figure 271: Proportional area of swede crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides -swedes

Basic area treated: 0.17 hectares

Area treated: 0.35 spray hectares

Weight of active substances applied: 0.64kg

0.1% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Iprodione	0.175	0.175	0.01	50
Propamocarb hydrochloride	0.175	0.175	0.63	50

Figure 272: Fungicide active substance usage on swede crops in Northern Ireland (spha), 2013.

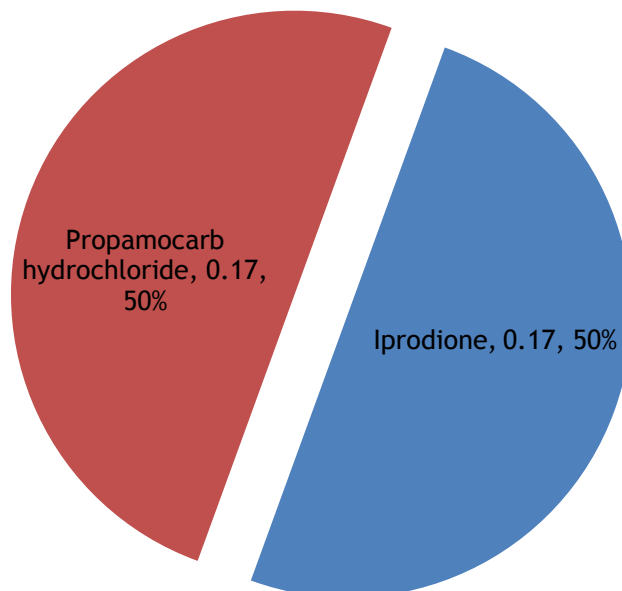


Figure 273: Weight of fungicide active substances applied to swede crops in Northern Ireland (kg), 2013.

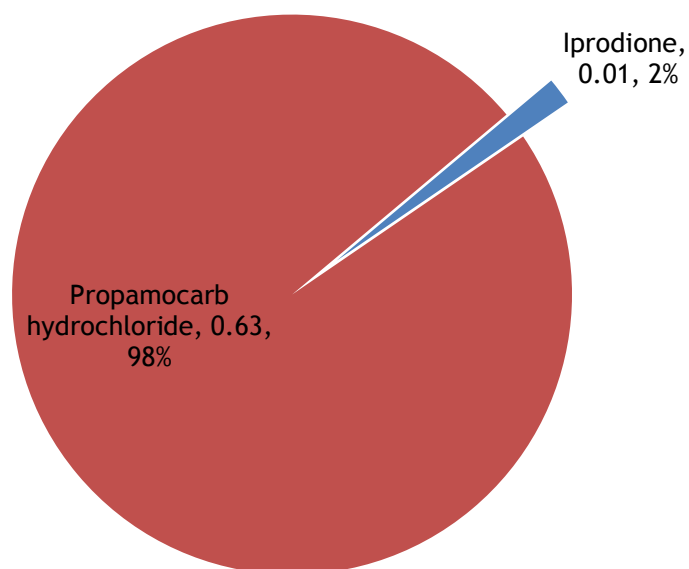
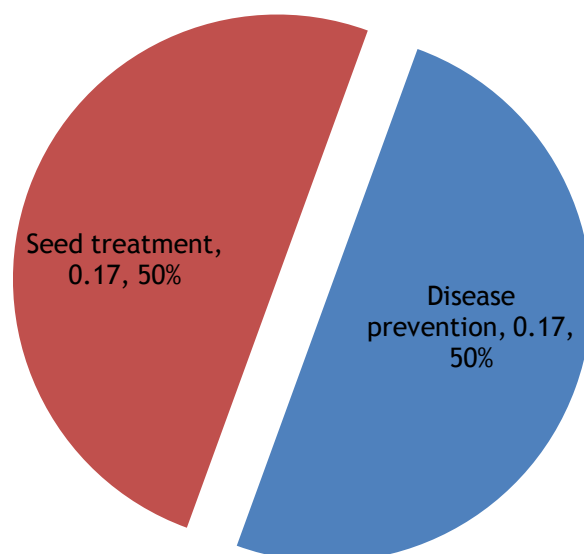


Figure 274: Swedes: reasons for fungicide use (spha).



Herbicides & desiccants -swedes

Basic area treated: 129.18 hectares

Area treated: 258.36 spray hectares

Weight of active substances applied: 156.42kg

99.9% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metazachlor	129.18	129.18	96.88	50
Clomazone	91.25	91.25	4.93	35.32
Glyphosate	37.92	37.92	54.61	14.68

Figure 275: Herbicide & desiccant active substance usage on swede crops in Northern Ireland (spha), 2013.

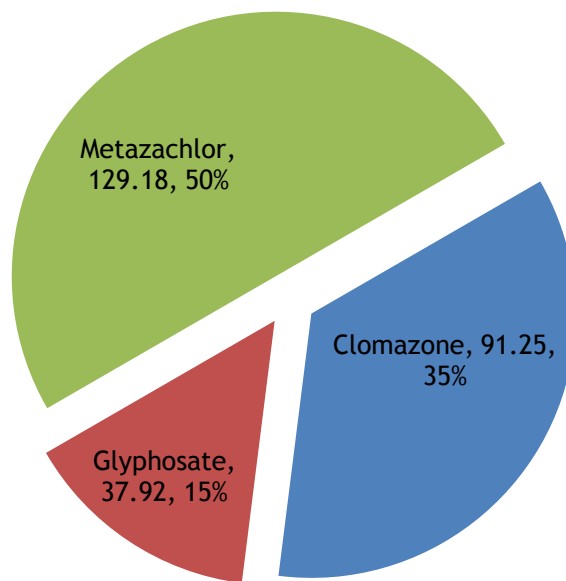


Figure 276: Weight of herbicide & desiccant active substances applied to swede crops in Northern Ireland (kg), 2013.

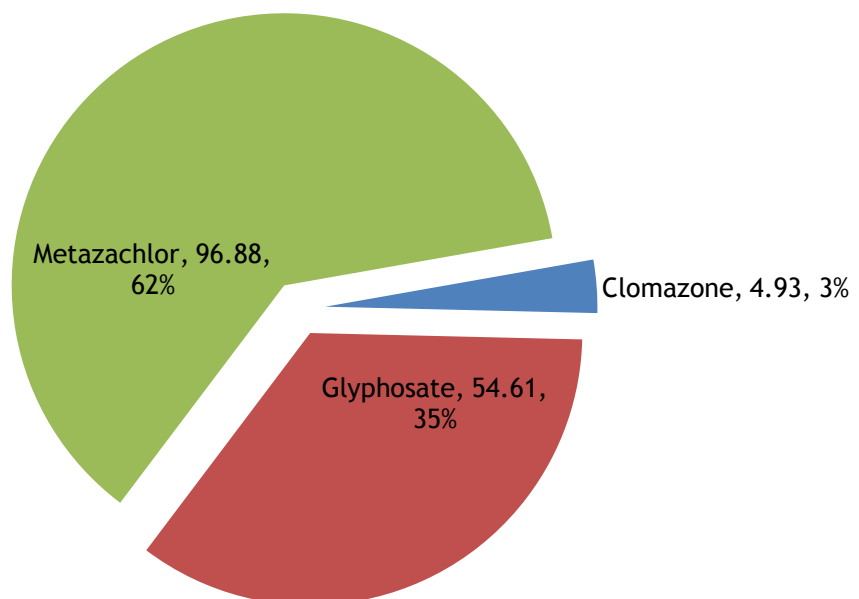
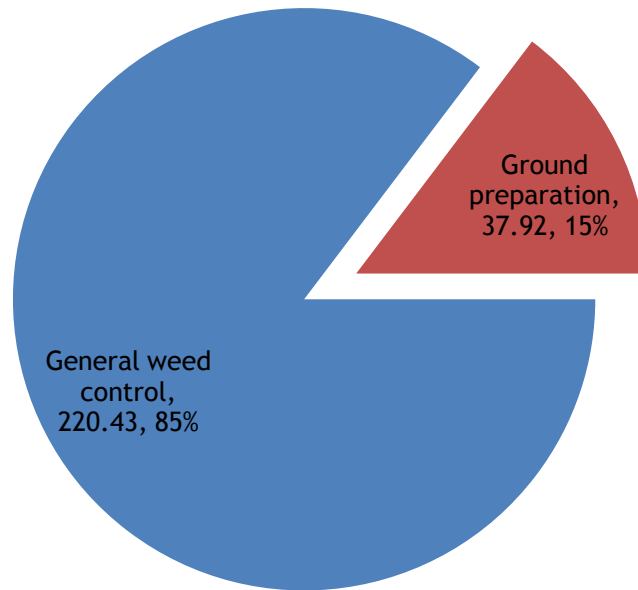
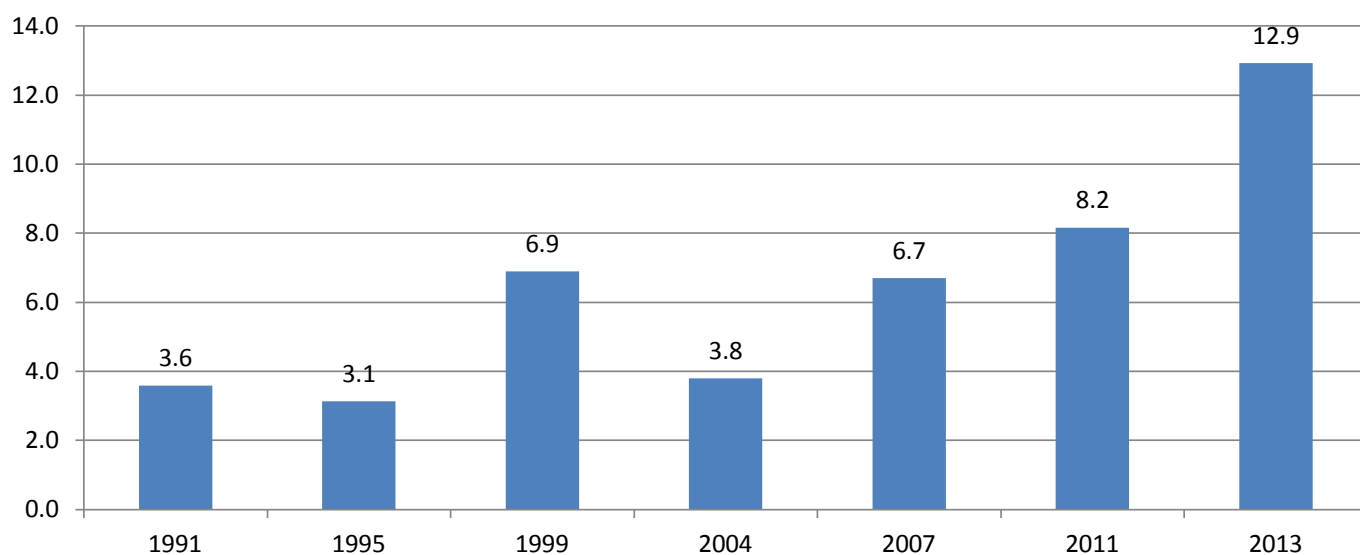


Figure 277: Swedes: reasons for herbicide & desiccant use (spha).



Beetroot crops:

Figure 278: Comparison of the area of beetroot crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on beetroot crops:

12.93 hectares of beetroot crops grown in Northern Ireland

90.00 treated hectares

83.91kg applied

98.8% of crops received at least one treatment

Beetroot crops received on average 1.0 fungicide, 2.59 herbicide, 1.0 insecticide and 3.0 seed treatment applications.

Figure 279: Regional distribution of beetroot crops grown in Northern Ireland (ha), 2013.

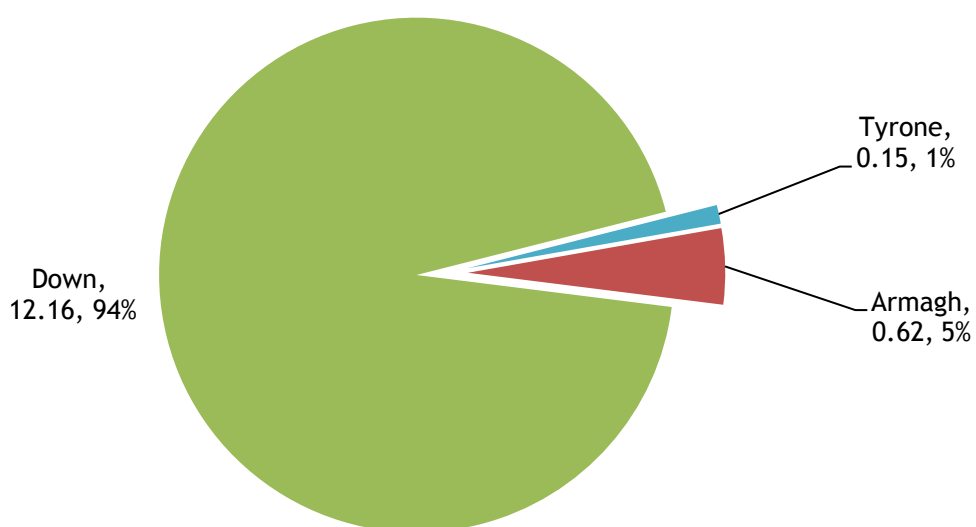


Figure 280: Pesticide usage on beetroot crops in Northern Ireland (spha), 2013.

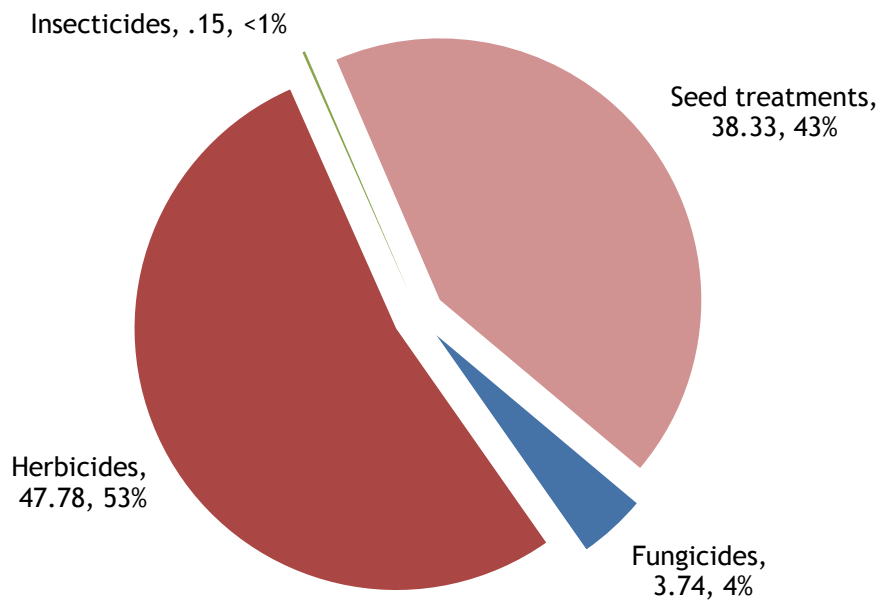


Figure 281: Weight of pesticides applied to beetroot crops in Northern Ireland (kg), 2013.

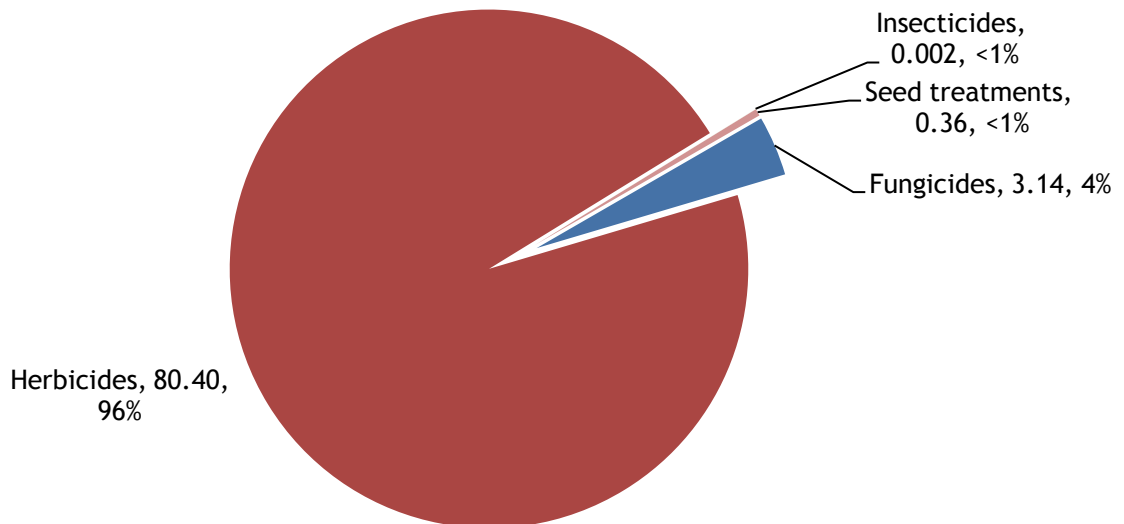
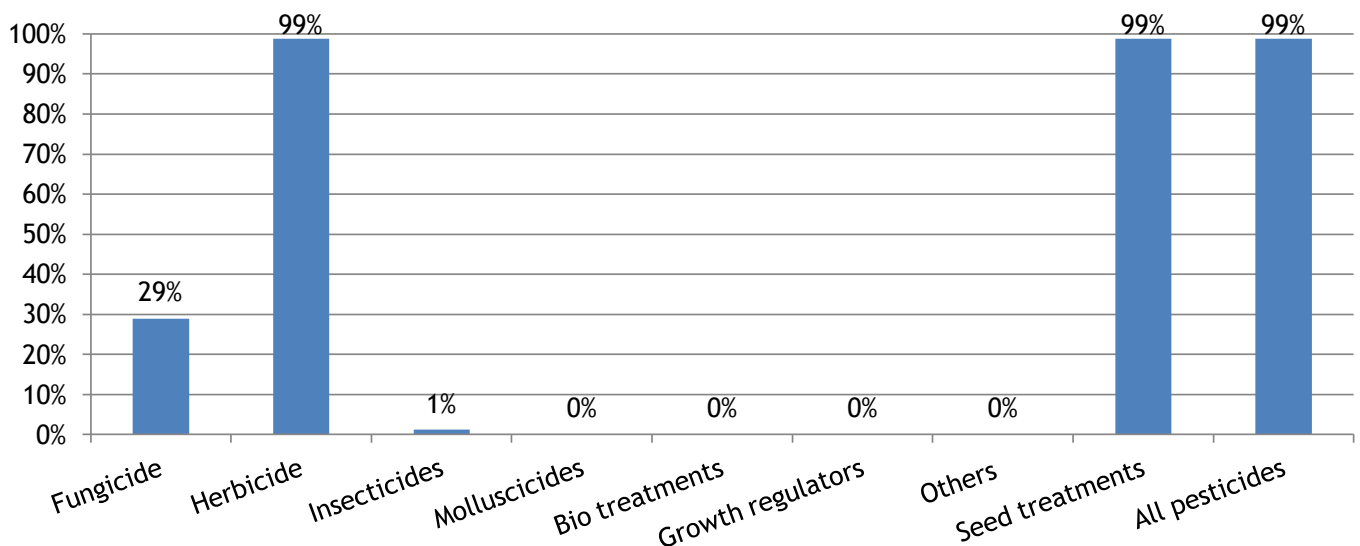


Figure 282: Proportional area of beetroot crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - beetroot

Basic area treated: 3.74 hectares

Area treated: 3.74 spray hectares

Weight of active substances applied: 3.14kg

29.0% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Fenpropimorph	3.14	3.14	2.35	83.96
Mancozeb/metalaxyl-M	0.61	0.61	0.78	16.31

Figure 283: Fungicide active substance usage on beetroot crops in Northern Ireland (spha), 2013.

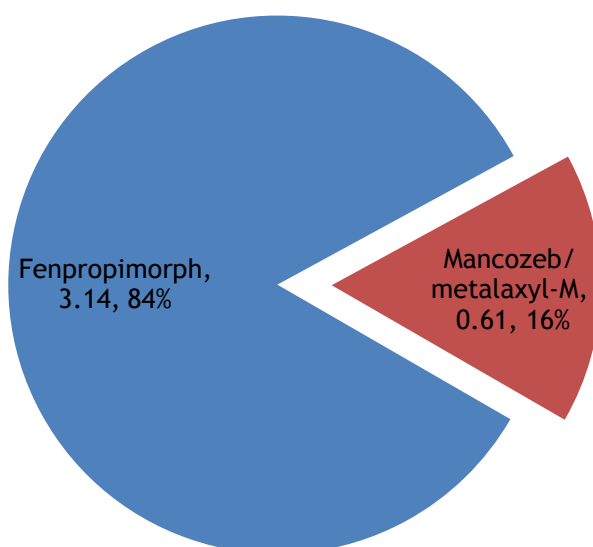


Figure 284: Weight of fungicide active substances applied to beetroot crops in Northern Ireland (kg), 2013.

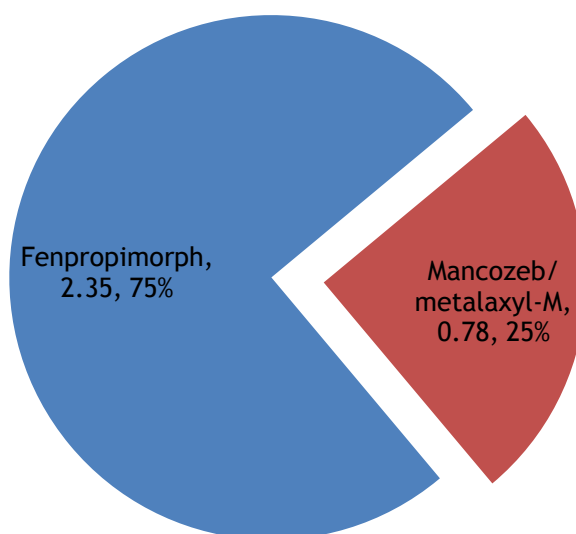
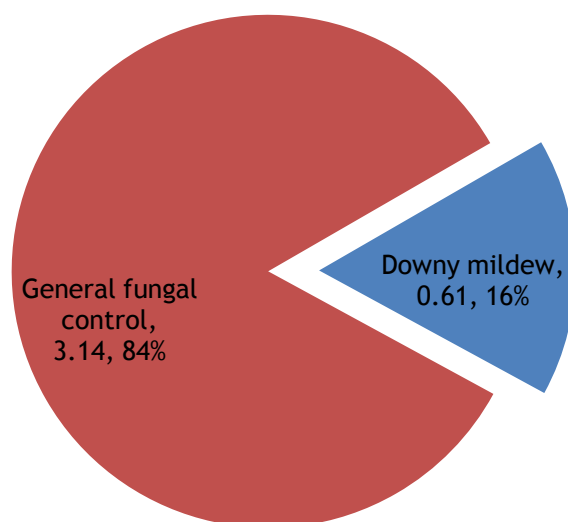


Figure 285: Beetroot crops: reasons for fungicide use (spha).



Herbicides & desiccants - beetroot

Basic area treated: 12.78 hectares

Area treated: 47.78 spray hectares

Weight of active substances applied: 80.4kg

98.8% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Metamitron	15.57	7.73	53.54	32.59
Glyphosate	8.9	8.9	6.97	18.63
Phenmedipham	7.53	7.53	2.71	15.76
Lenacil	7.42	7.42	13.24	15.53
Ethofumesate	3.14	3.14	3.14	6.57
Triflusulfuron-methyl	3.14	3.14	0.05	6.57

Figure 286: Herbicide & desiccant active substance usage on beetroot crops in Northern Ireland (spha), 2013.

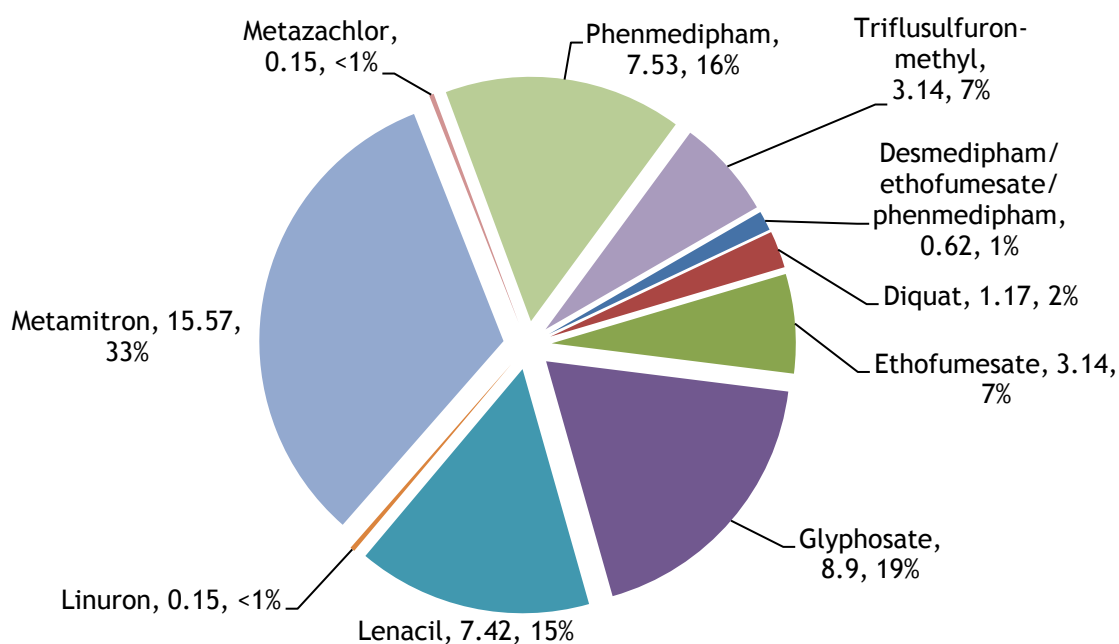


Figure 287: Weight of herbicide & desiccant active substances applied to beetroot crops in Northern Ireland (kg), 2013.

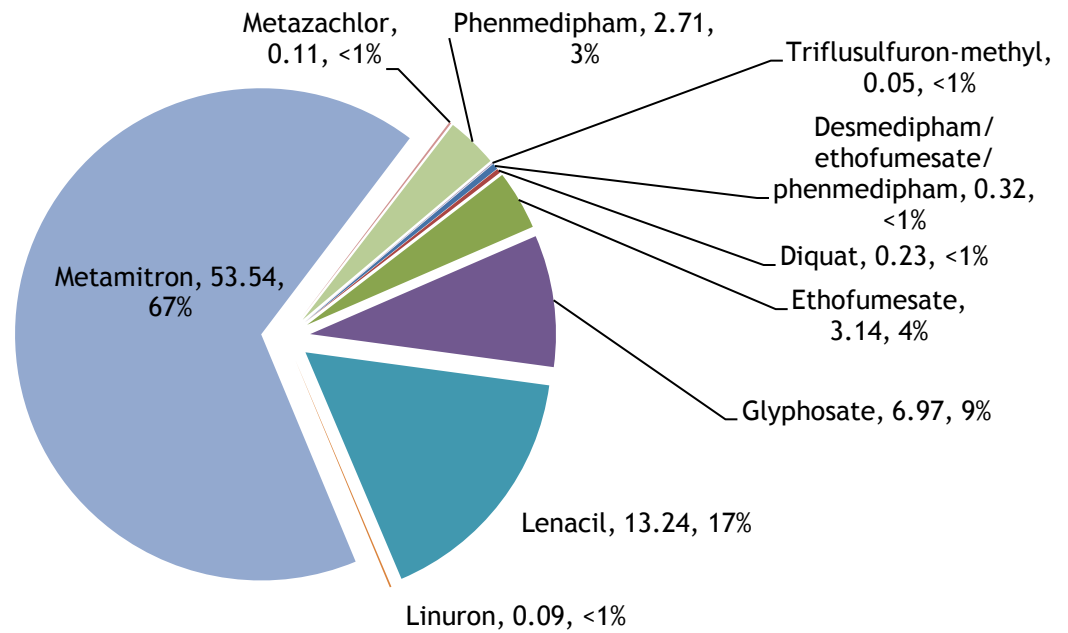
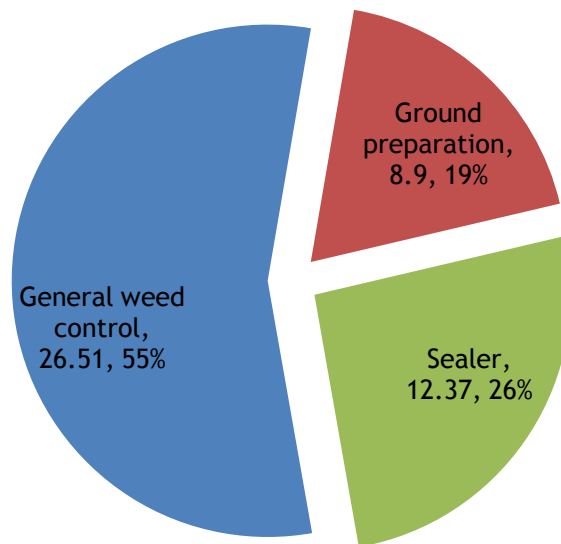


Figure 288: Beetroot: reasons for herbicide & desiccant use (spha).



Insecticides - beetroot

Basic area treated: 0.15 hectares

Area treated: 0.15 spray hectares

Weight of active substances applied: <0.01kg

1.18% of the area grown treated with insecticides

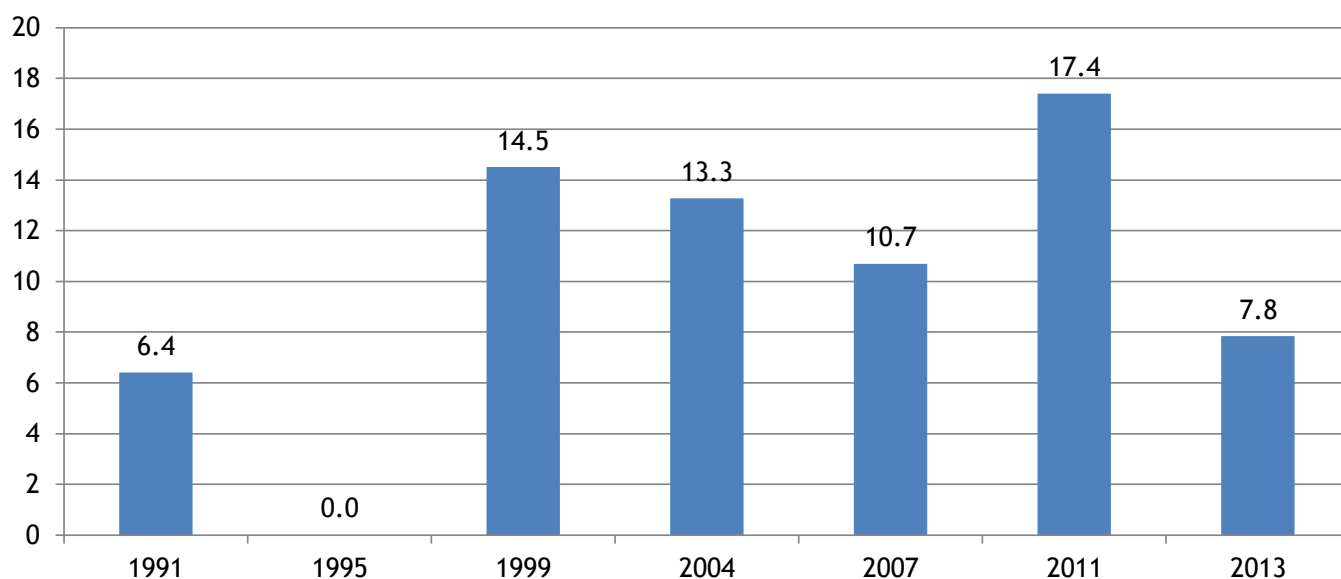
All applications were for general insect control

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	0.15	0.15	<0.01	100

Bulb onion crops:

Figure 289: Comparison of the area of bulb onion crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on bulb onion crops:

7.84 hectares of bulb onion crops grown in Northern Ireland all of which grown in County Londonderry

109.76 treated hectares

78.79kg applied

100% of crops received at least one treatment

Onion crops received on average 7.0 fungicide and 7.0 herbicide applications.

Figure 290: Pesticide usage on bulb onion crops in Northern Ireland (spha), 2013.

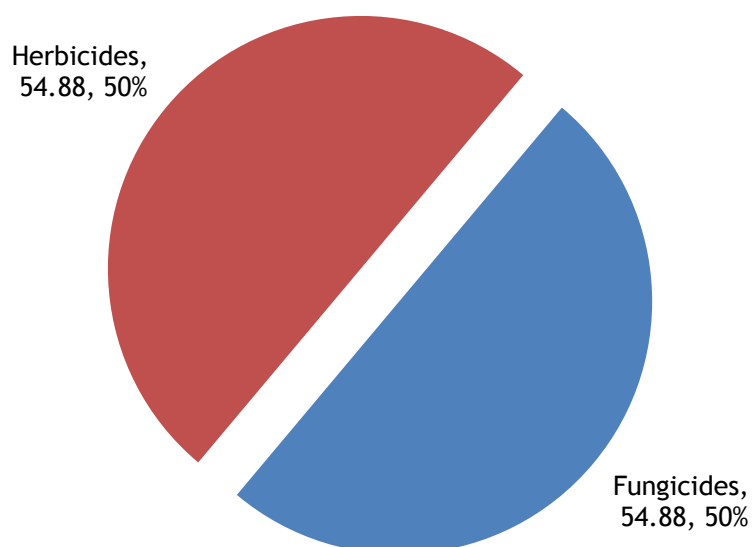


Figure 291: Weight of pesticides applied to bulb onion crops in Northern Ireland (kg), 2013.

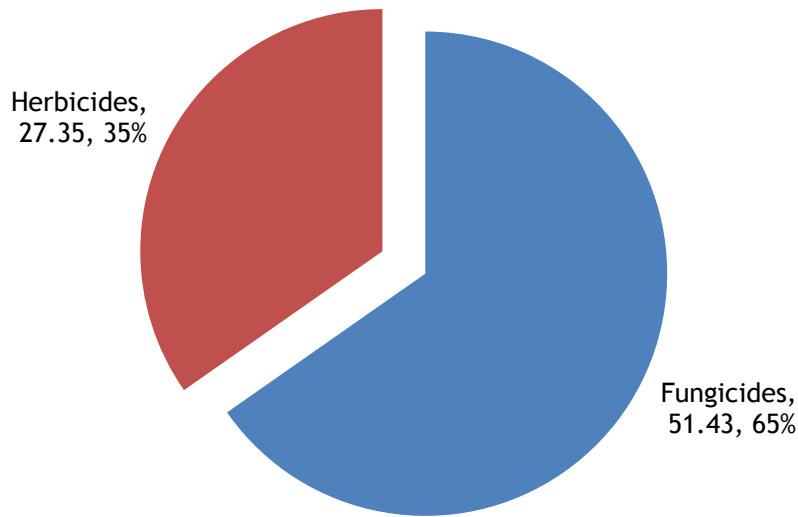
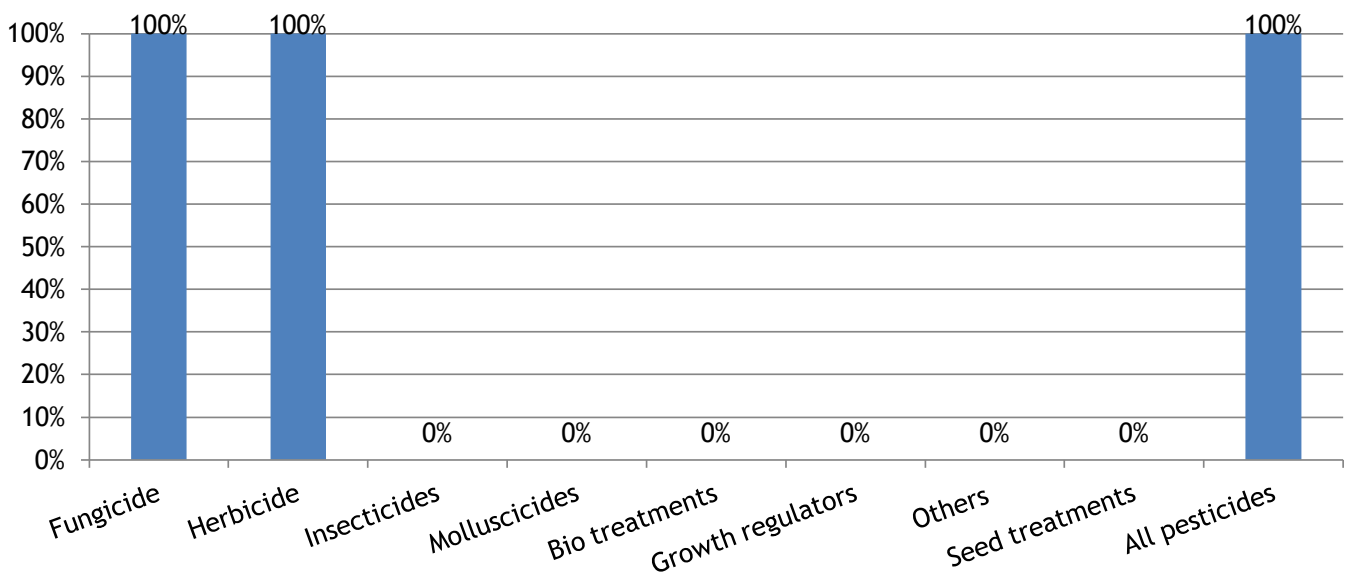


Figure 292: Proportional area of bulb onion crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - bulb onions

Basic area treated: 7.84 hectares
 Area treated: 54.88 spray hectares
 Weight of active substances applied: 51.43kg
 100% of the area grown treated with fungicides
 All applications were for general fungal control
 The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin	15.68	7.84	3.14	28.57
Benthiavdicarb-isopropyl/mancozeb	7.84	7.84	8.44	14.29
Chlorothalonil	7.84	7.84	7.84	14.29
Copper oxychloride	7.84	7.84	7.84	14.29
Dimethomorph/mancozeb	7.84	7.84	11.63	14.29
Mancozeb	7.84	7.84	12.54	14.29

Figure 293: Fungicide active substance usage on bulb onion crops in Northern Ireland (spha), 2013.

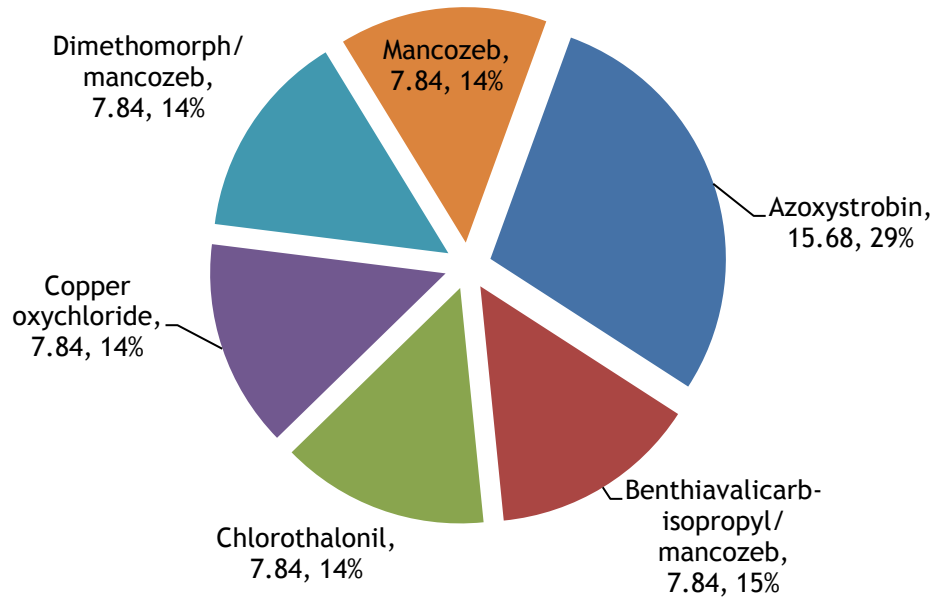
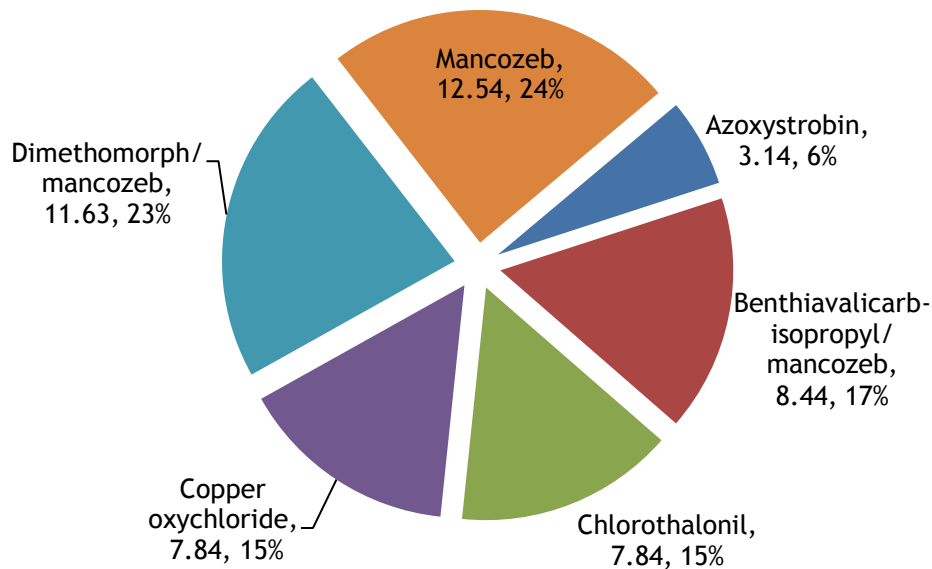


Figure 294: Weight of fungicide active substances applied to bulb onion crops in Northern Ireland (kg), 2013.



Herbicides & desiccants - bulb onions

Basic area treated: 7.84 hectares

Area treated: 54.88 spray hectares

Weight of active substances applied: 27.35kg

100% of the area grown treated with herbicides & desiccants

All applications were for general weed control

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
loxynil	15.68	7.84	0.97	28.57
Pendimethalin	15.68	7.84	10.7	28.57
Chloridazon	7.84	7.84	2.55	14.29
Prosulfocarb	7.84	7.84	12.54	14.29
Tepraloxymid	7.84	7.84	0.59	14.29

Figure 295: Herbicide & desiccant active substance usage on bulb onion crops in Northern Ireland (spha), 2013.

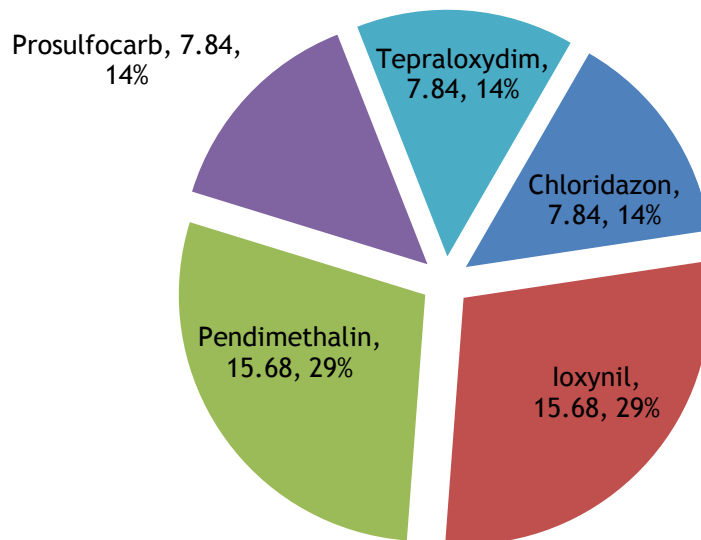
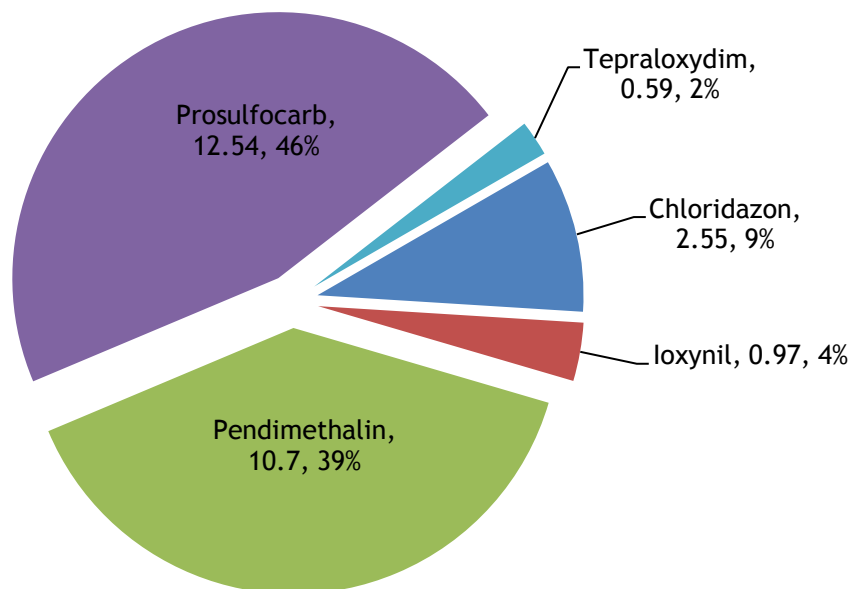
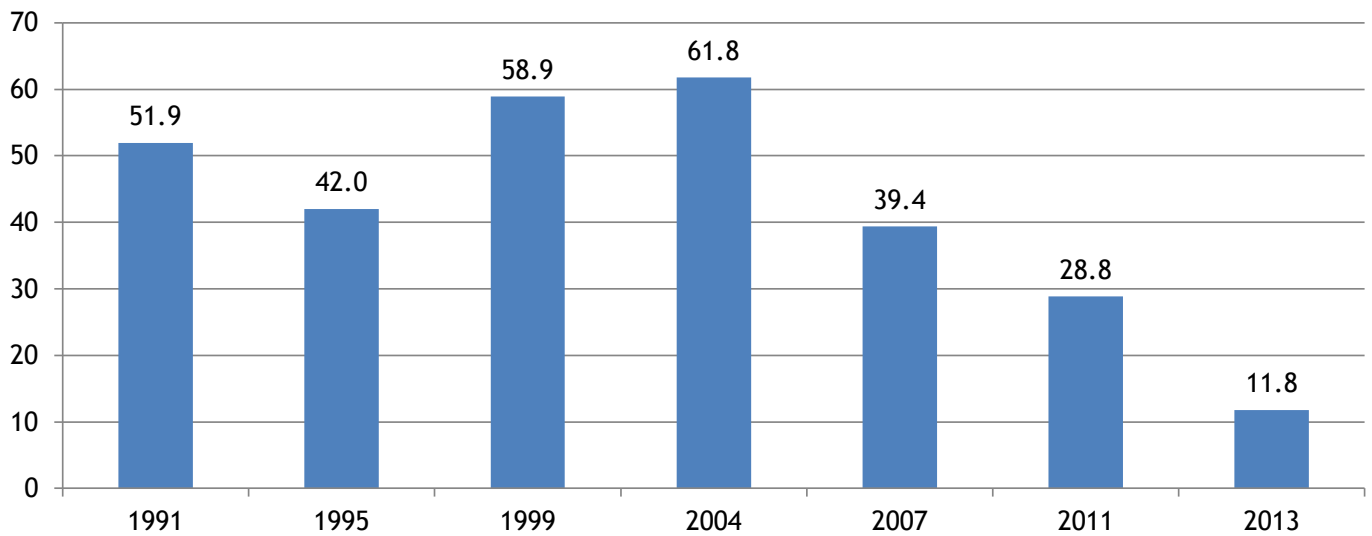


Figure 296: Weight of herbicide & desiccant active substances applied to bulb onion crops in Northern Ireland (kg), 2013.



Scallion crops:

Figure 297: Comparison of the area of Scallion crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on summer scallion crops:

11.79 hectares of summer scallion crops grown in Northern Ireland

82.70 treated hectares

53.71kg applied

100% of crops received at least one treatment

Summer scallions received on average 1.9 fungicide, 4.28 herbicide and 1.0 seed treatment applications.

Figure 298: Regional distribution of summer scallion crops grown in Northern Ireland (ha), 2013.

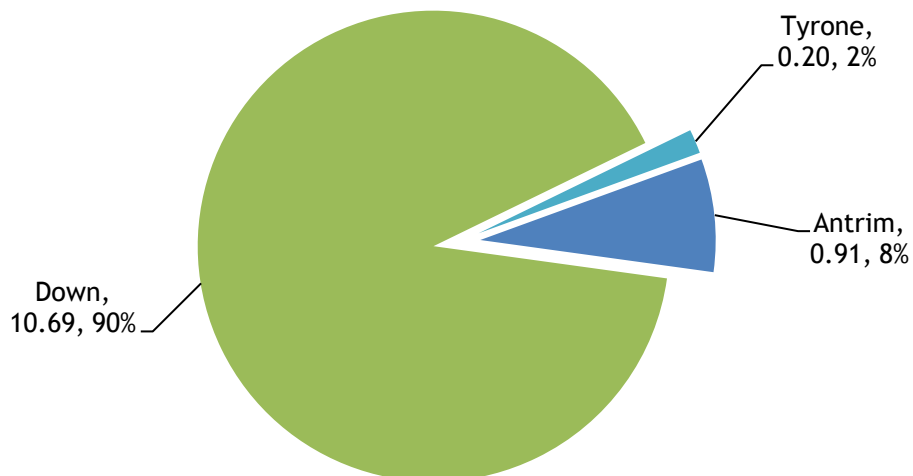


Figure 299: Pesticide usage on summer scallion crops in Northern Ireland (spha), 2013.

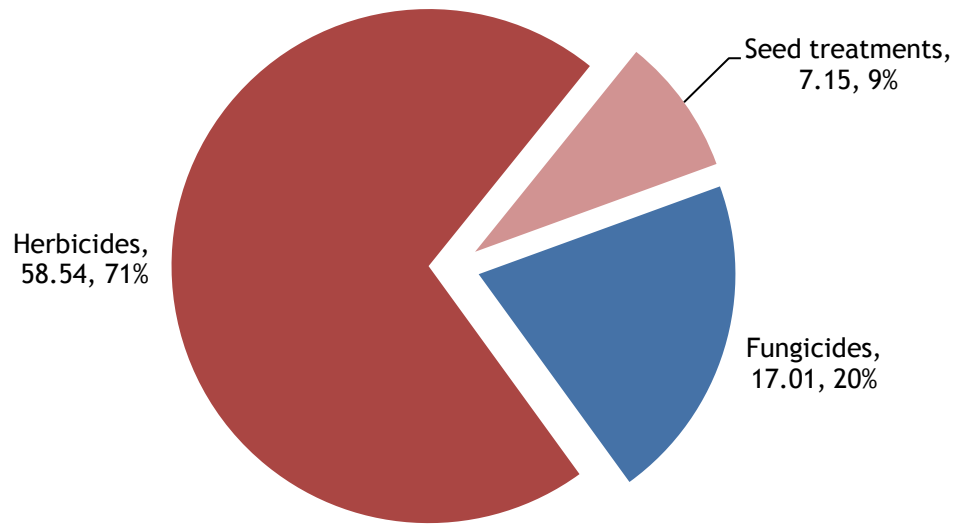


Figure 300: Weight of pesticides applied to summer scallion crops in Northern Ireland (kg), 2013.

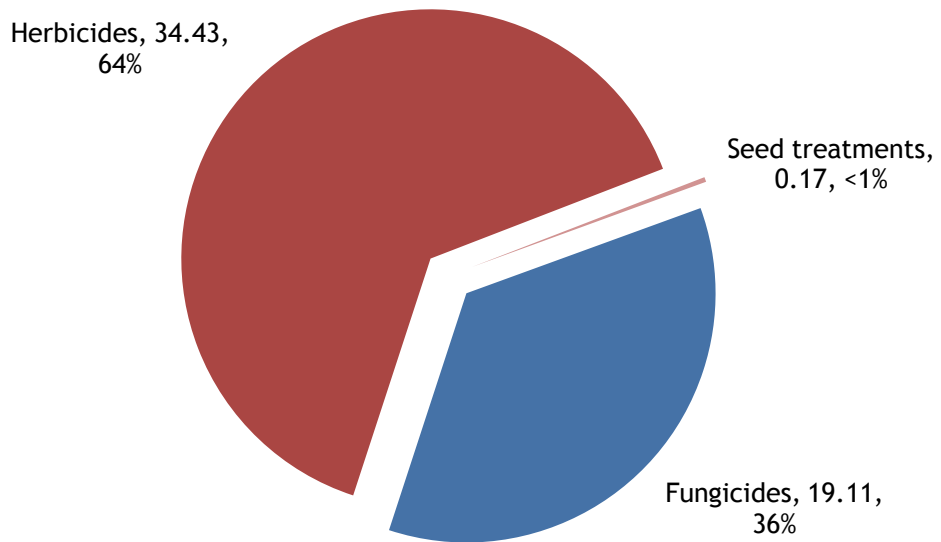
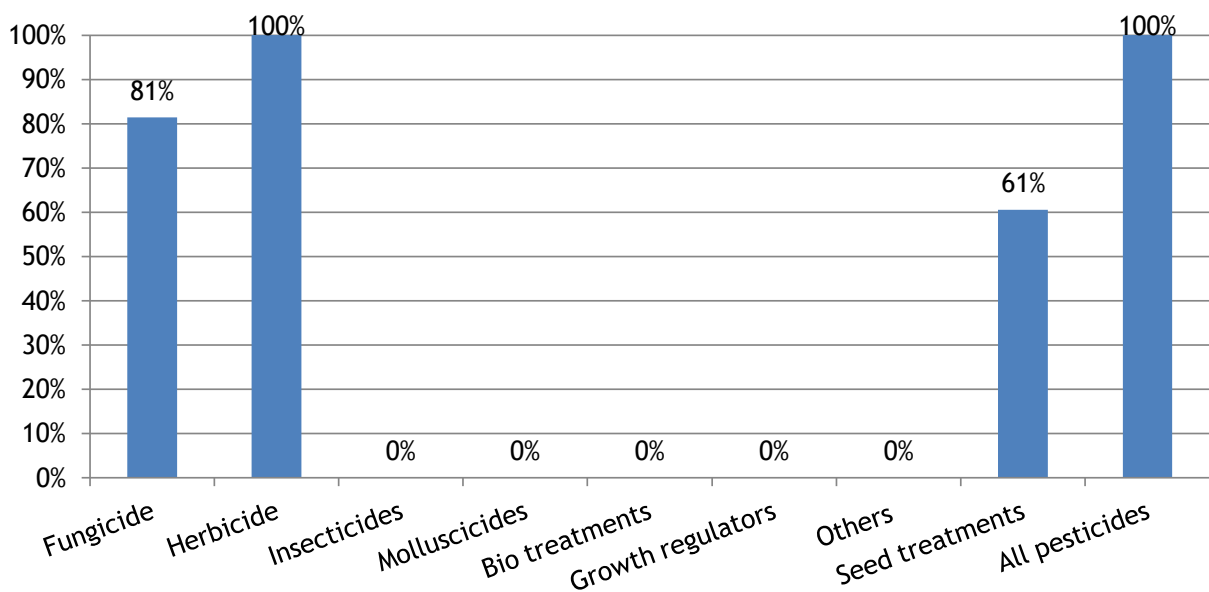


Figure 301: Proportional area of summer scallion crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - summer scallions

Basic area treated: 9.61 hectares

Area treated: 17.01 spray hectares

Weight of active substances applied: 19.11kg

81.5% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Mancozeb/metalaxyl-M	9.86	2.46	12.71	57.97
Chlorothalonil	6.15	6.15	6.15	36.16
Azoxystrobin	1	1	0.25	5.88

Figure 302: Fungicide active substance usage on summer scallion crops in Northern Ireland (spha), 2013.

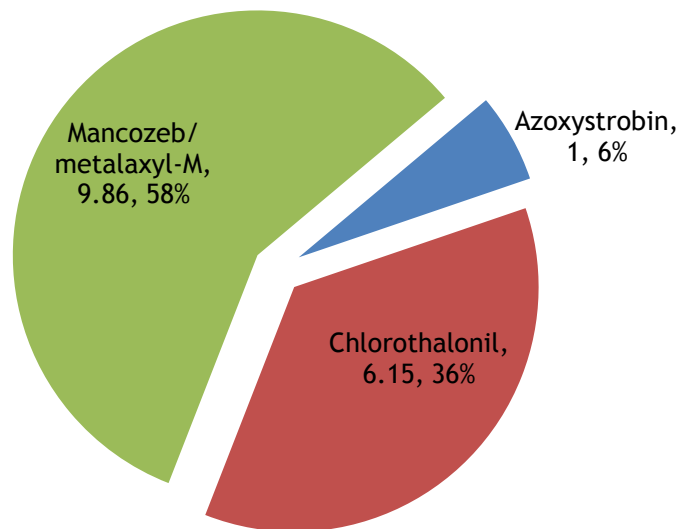


Figure 303: Weight of fungicide active substances applied to summer scallion crops in Northern Ireland (kg), 2013.

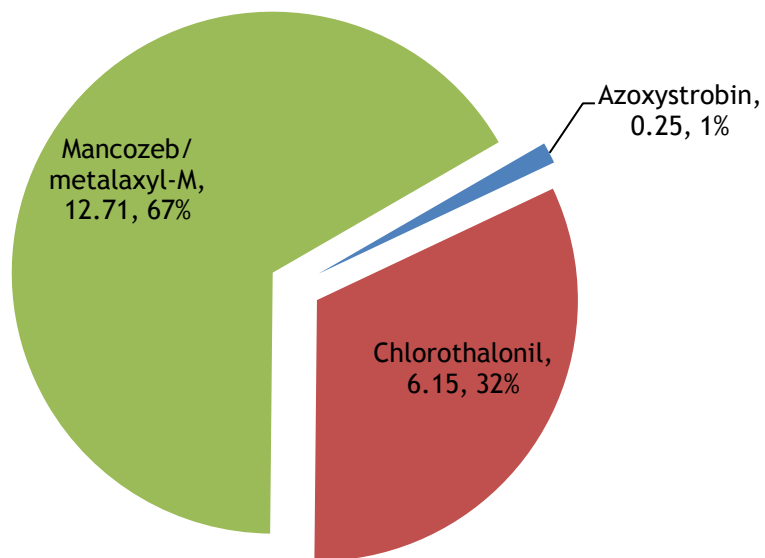
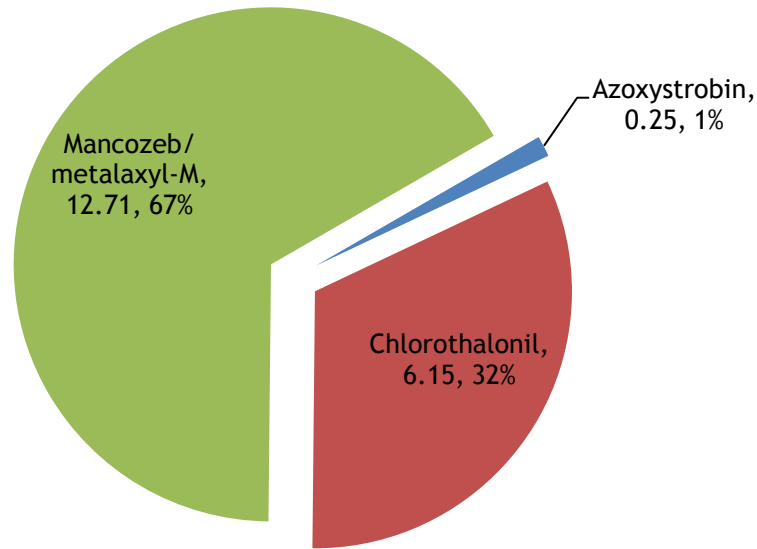


Figure 304: Summer scallion: reasons for fungicide use (spha).



Herbicides & desiccants - summer scallion

Basic area treated: 11.79 hectares

Area treated: 58.54 spray hectares

Weight of active substances applied: 34.43kg

100% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
loxynil	32.7	11.79	6.16	55.86
Pendimethalin	11.54	11.15	14.25	19.71
Glyphosate	5.93	4.39	3.88	10.13
Propachlor	2.77	2.77	6.35	4.73
Chloridazon	1.93	1.93	1.06	3.30

Figure 305: Herbicide & desiccant active substance usage on summer scallion crops in Northern Ireland (spha), 2013.

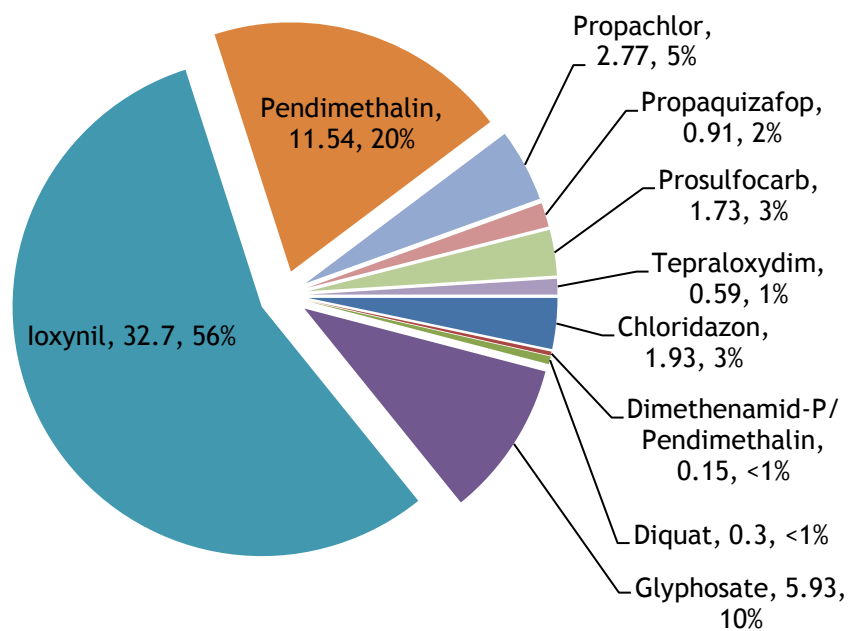


Figure 306: Weight of herbicide & desiccant active substances applied to summer scallion crops in Northern Ireland (kg), 2013.

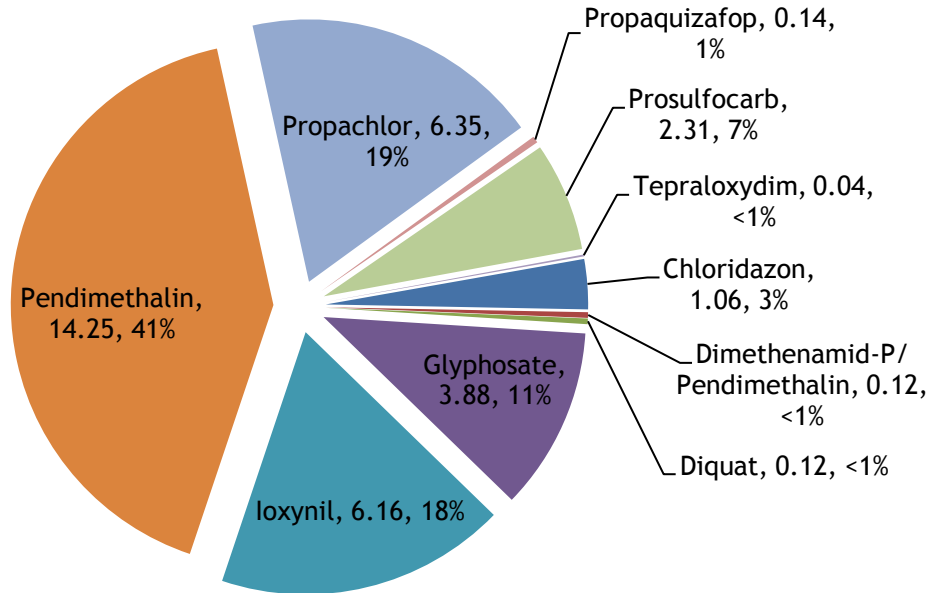
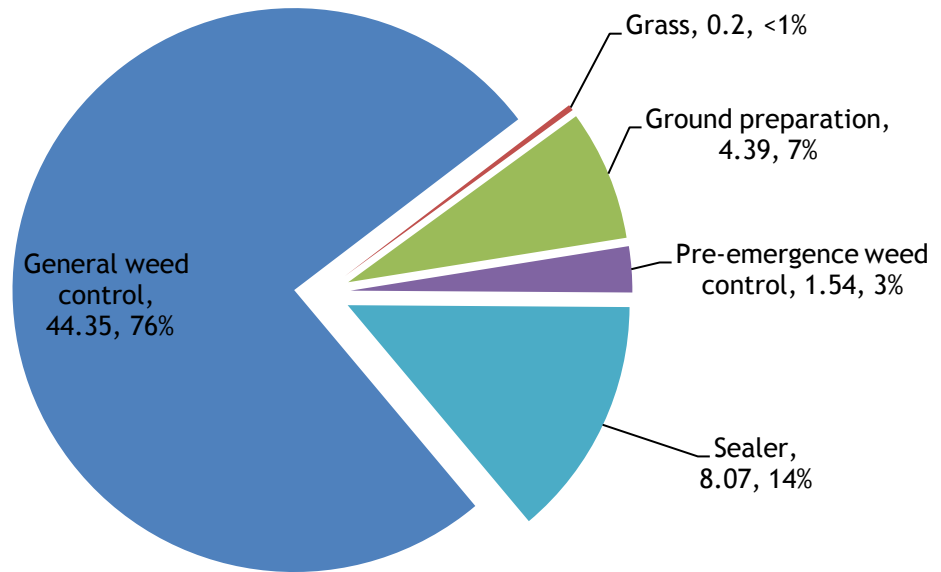
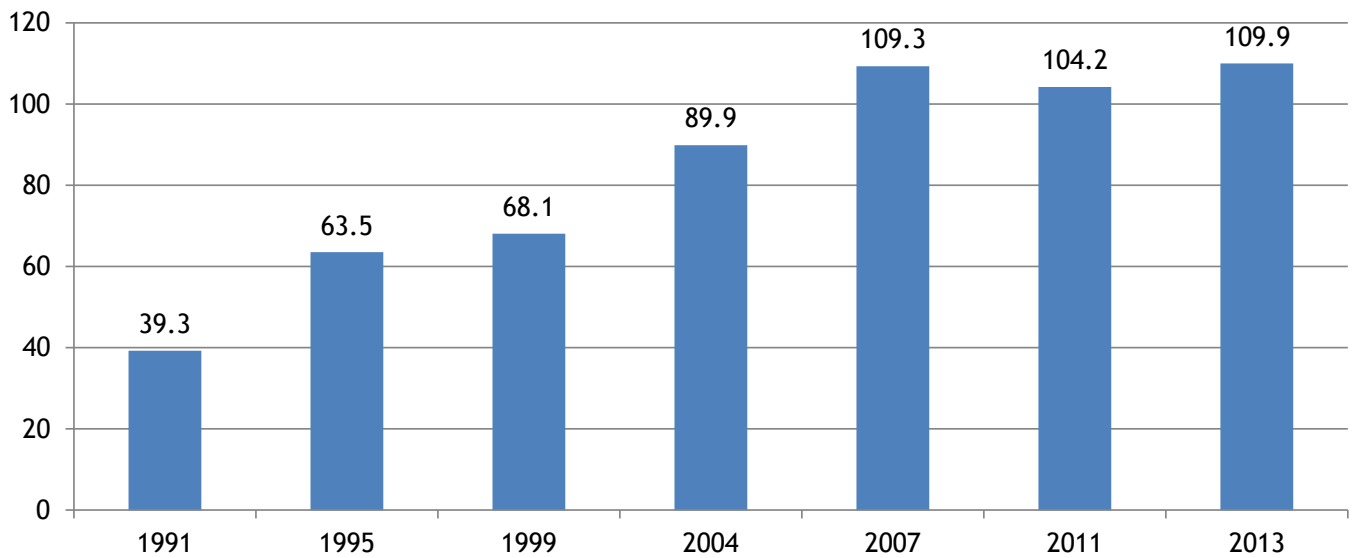


Figure 307: Summer scallions: reasons for herbicide & desiccant use (spha).



Leek crops:

Figure 308: Comparison of the area of leek crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on soup leek crops:

44.47 hectares of soup leek crops grown in Northern Ireland

586.67 treated hectares

254.96kg applied

100% of crops received at least one treatment

Soup leeks received on average 4.28 fungicide, 5.71 herbicide and 1.0 seed treatment applications.

Figure 309: Regional distribution of soup leek crops grown in Northern Ireland (ha), 2013.



Figure 310: Pesticide usage on soup leek crops in Northern Ireland (spha), 2013.

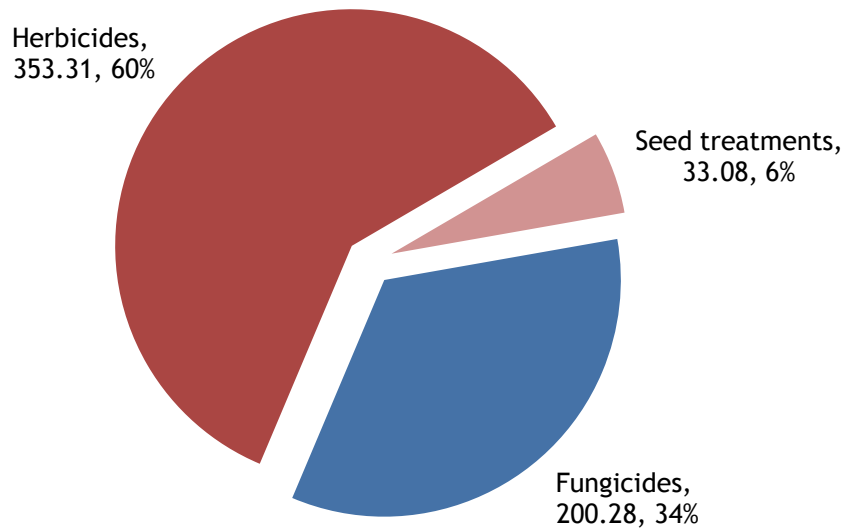


Figure 311: Weight of pesticides applied to soup leek crops in Northern Ireland (kg), 2013.

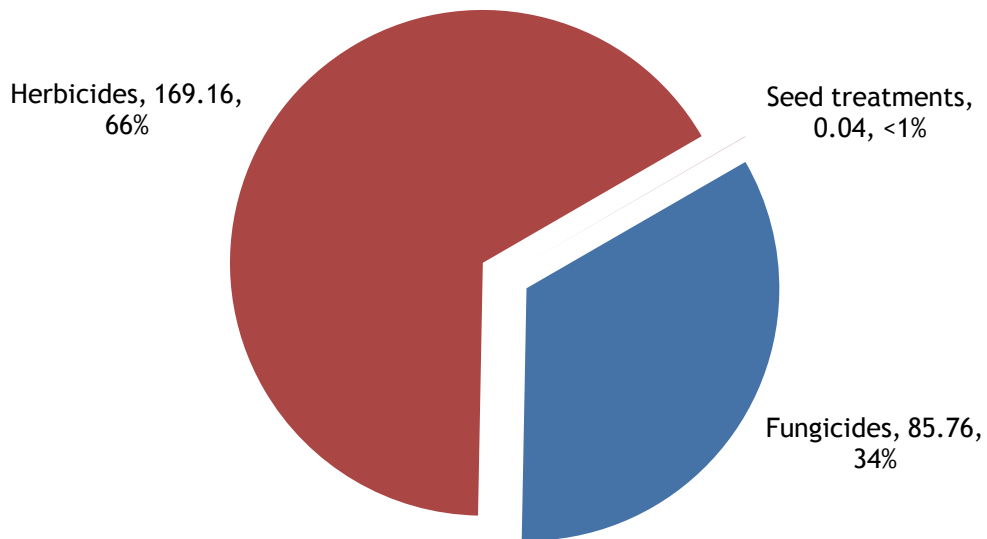
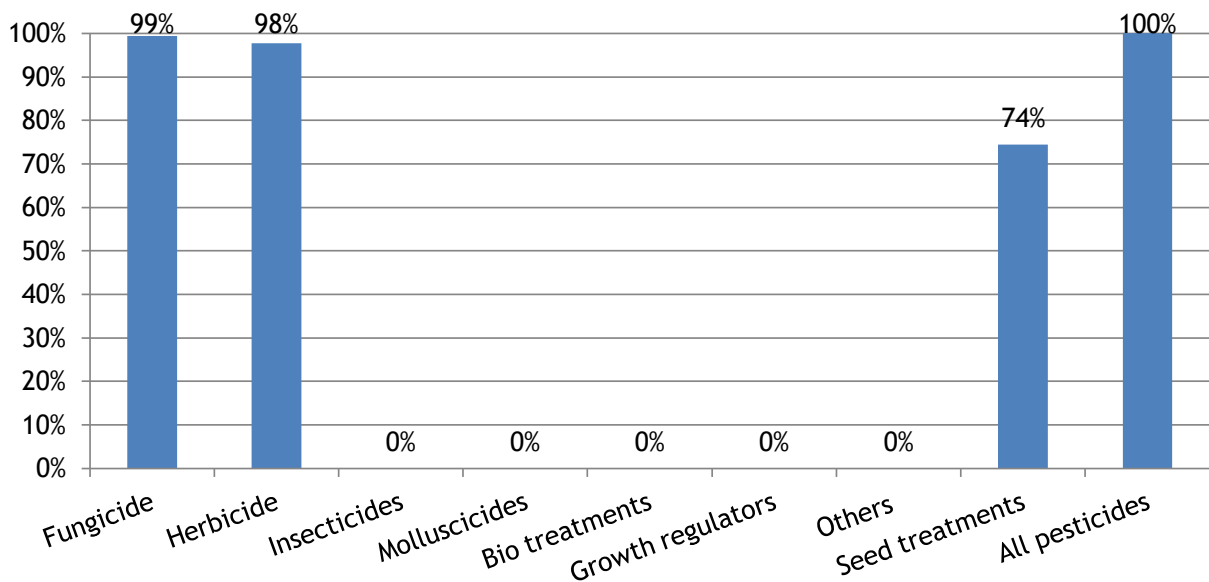


Figure 312: Proportional area of soup leek crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - soup leeks

Basic area treated: 44.23 hectares

Area treated: 200.28 spray hectares

Weight of active substances applied: 85.76kg

99.5% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Tebuconazole	42.72	37.8	10.68	21.33
Prothioconazole	37.01	37.01	5.45	18.48
Azoxystrobin	34.74	34.74	8.69	17.35
Dimethomorph/mancozeb	34.55	34.55	17.94	17.25
Azoxystrobin/difenoconazole	24.38	7.94	7.92	12.17

Figure 313: Fungicide active substance usage on soup leek crops in Northern Ireland (spha), 2013.

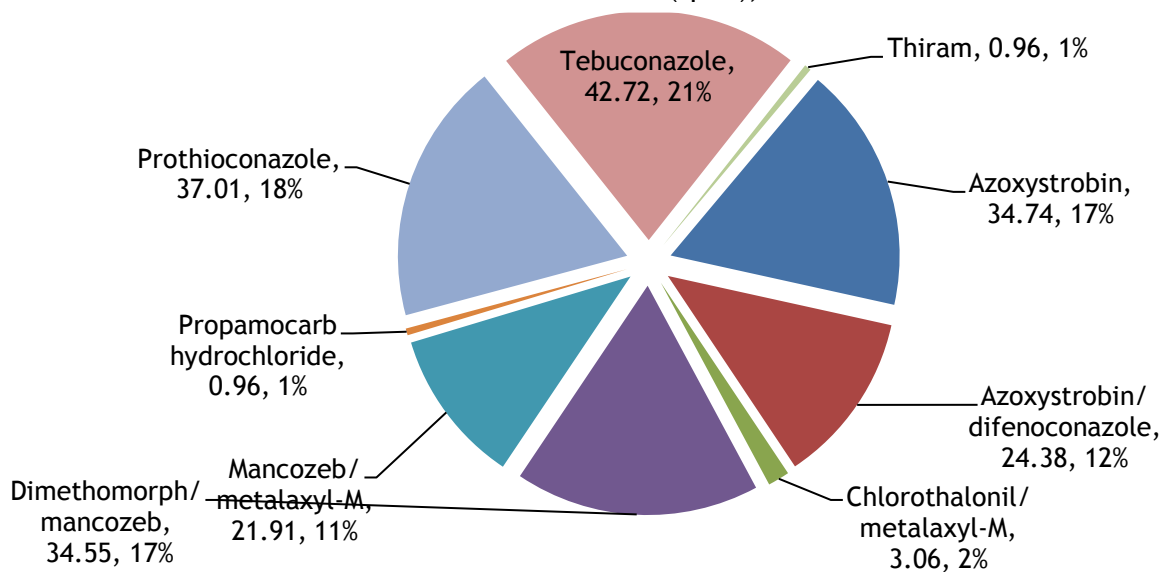


Figure 314: Weight of fungicide active substances applied to soup leek crops in Northern Ireland (kg), 2013.

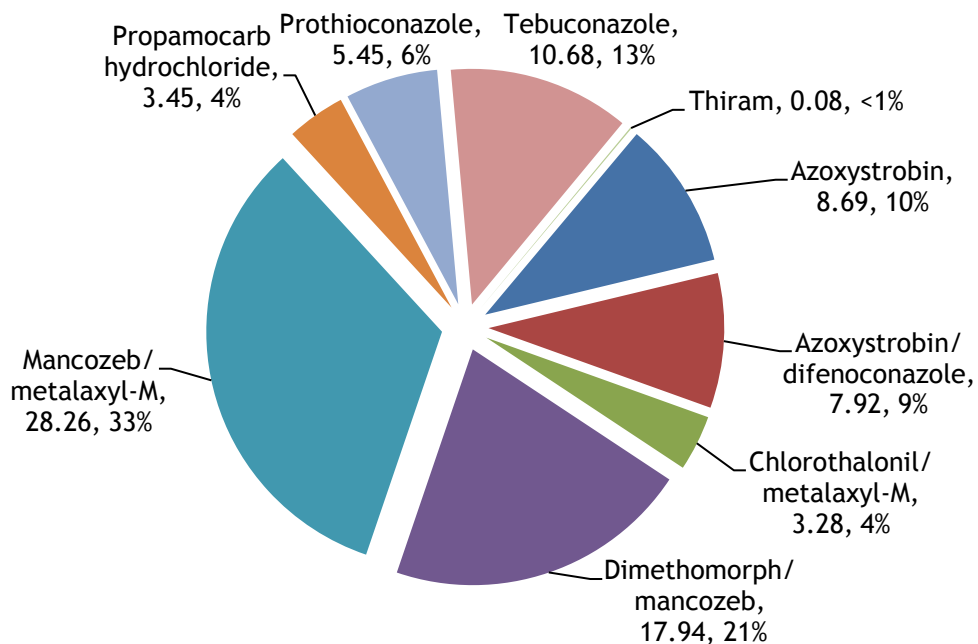
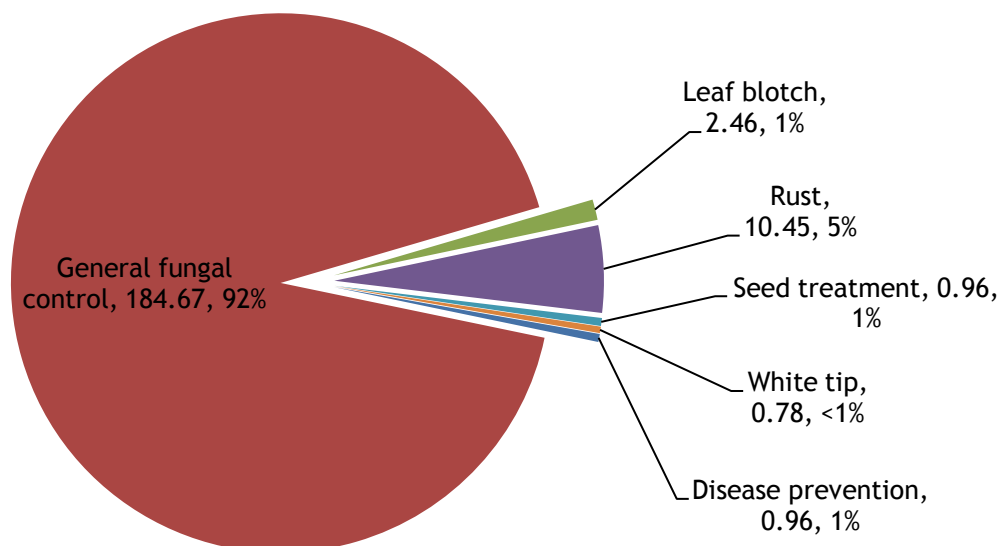


Figure 315: Soup leeks: reasons for fungicide use (spha).



Herbicides & desiccants - soup leeks

Basic area treated: 43.47 hectares

Area treated: 353.31 spray hectares

Weight of active substances applied: 169.16kg

97.7% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
loxynil	146.64	40.53	25.19	41.50
Glyphosate	67.77	35.52	40.67	19.18
Pendimethalin	38.39	37.8	28.64	10.87
Chloridazon	35.14	35.14	16.26	9.95
Prosulfocarb	34.93	34.74	42.54	9.89

Figure 316: Herbicide & desiccant active substance usage on soup leek crops in Northern Ireland (spha), 2013.

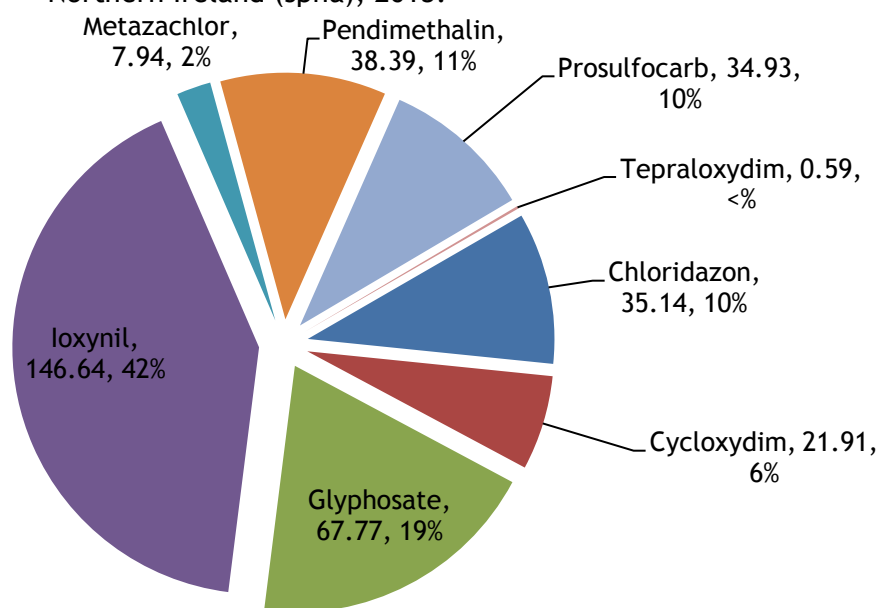


Figure 317: Weight of herbicide & desiccant active substances applied to soup leek crops in Northern Ireland (kg), 2013.

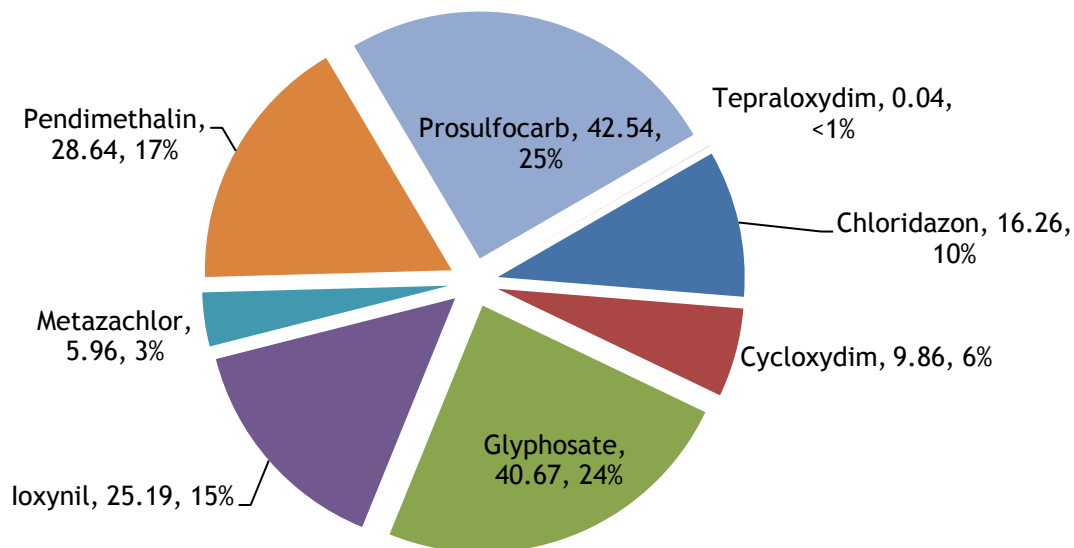
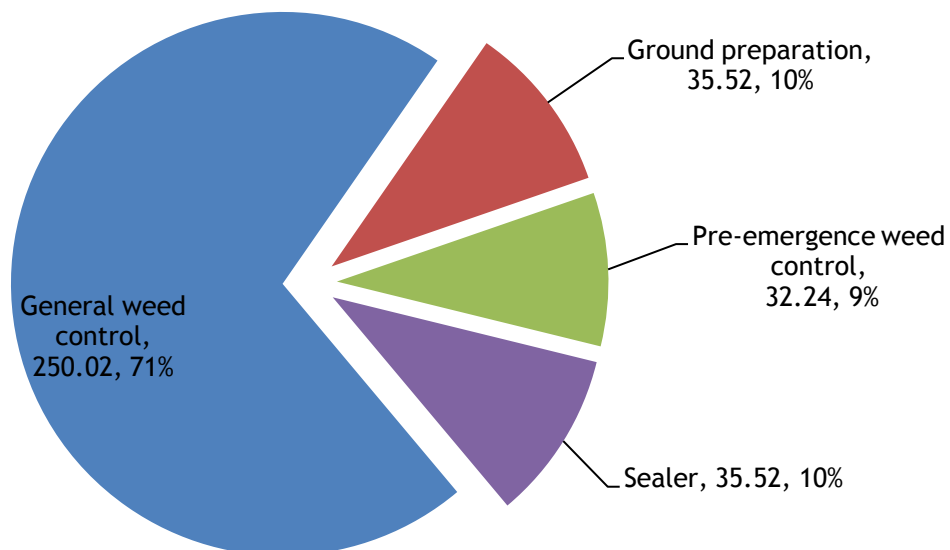


Figure 318: Soup leeks: reasons for herbicide & desiccant use (spha).



Pesticide Usage on table leek crops:

65.47 hectares of table leek crops grown in Northern Ireland

465.46 treated hectares

253.74kg applied

100% of crops received at least one treatment

Table leeks received on average 2.32 fungicide, 3.4 herbicide, 1.0 insecticide and 1.0 seed treatment applications.

Figure 319: Regional distribution of table leek crops grown in Northern Ireland (ha), 2013.

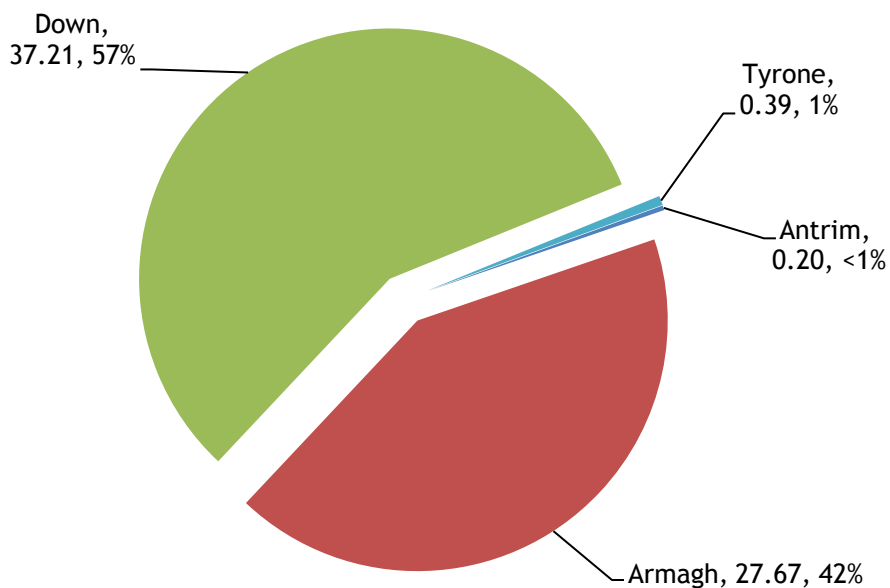


Figure 320: Pesticide usage on table leek crops in Northern Ireland (spha), 2013.

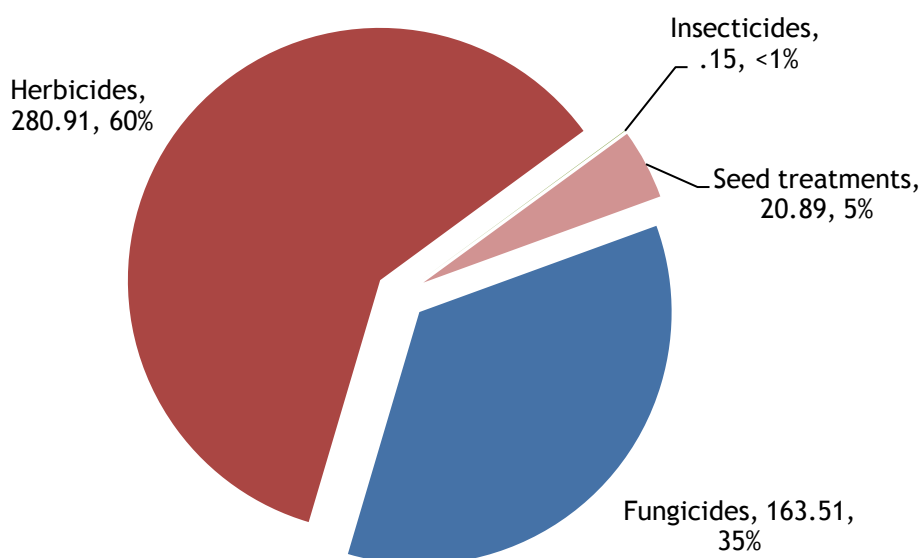


Figure 321: Weight of pesticides applied to table leek crops in Northern Ireland (kg), 2013.

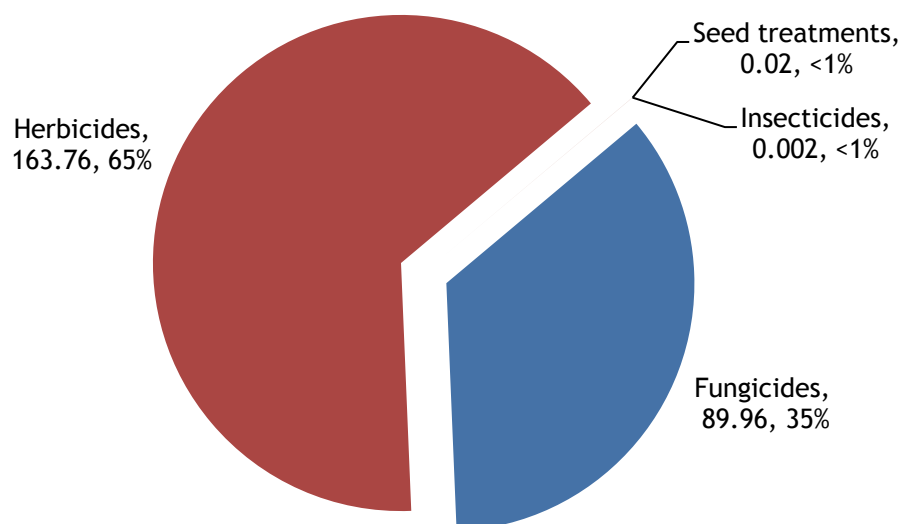
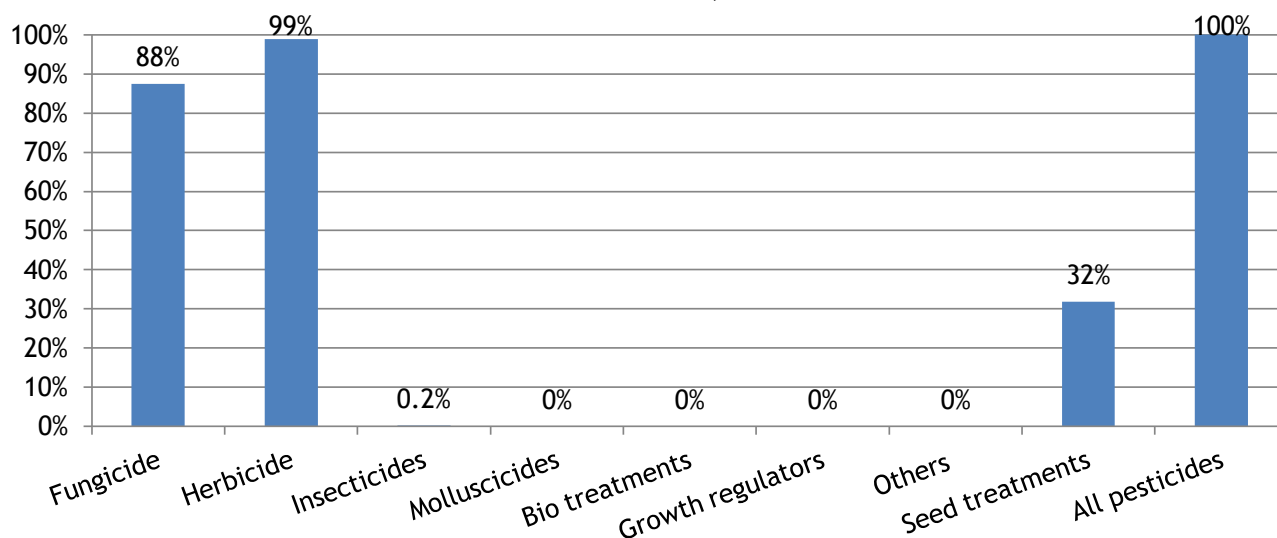


Figure 322: Proportional area of table leek crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - table leek

Basic area treated: 57.31 hectares

Area treated: 163.51 spray hectares

Weight of active substances applied: 89.96kg

87.5% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Prothioconazole	51.99	35.92	9.98	31.80
Tebuconazole/trifloxystrobin	29.8	14.9	8.94	18.23
Dimethomorph/mancozeb	21.71	15.41	32.21	13.28
Boscalid/pyraclostrobin	12.03	12.03	4.41	7.36
Mancozeb	11.08	11.08	16.61	6.78

Figure 323: Fungicide active substance usage on table leek crops in Northern Ireland (spha), 2013.

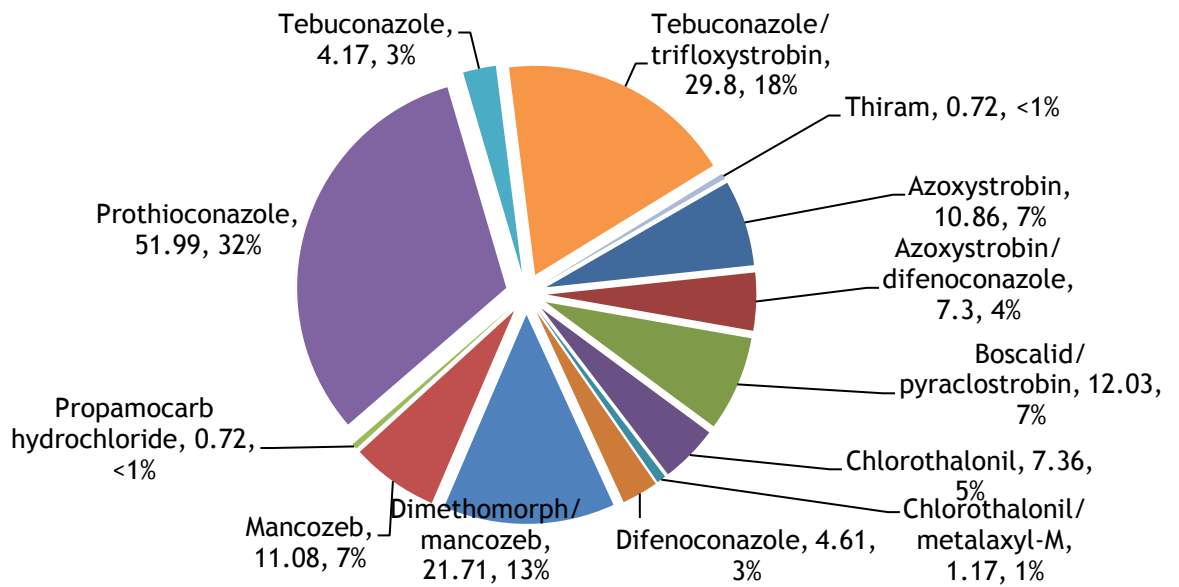


Figure 324: Weight of fungicide active substances applied to table leek crops in Northern Ireland (kg), 2013.

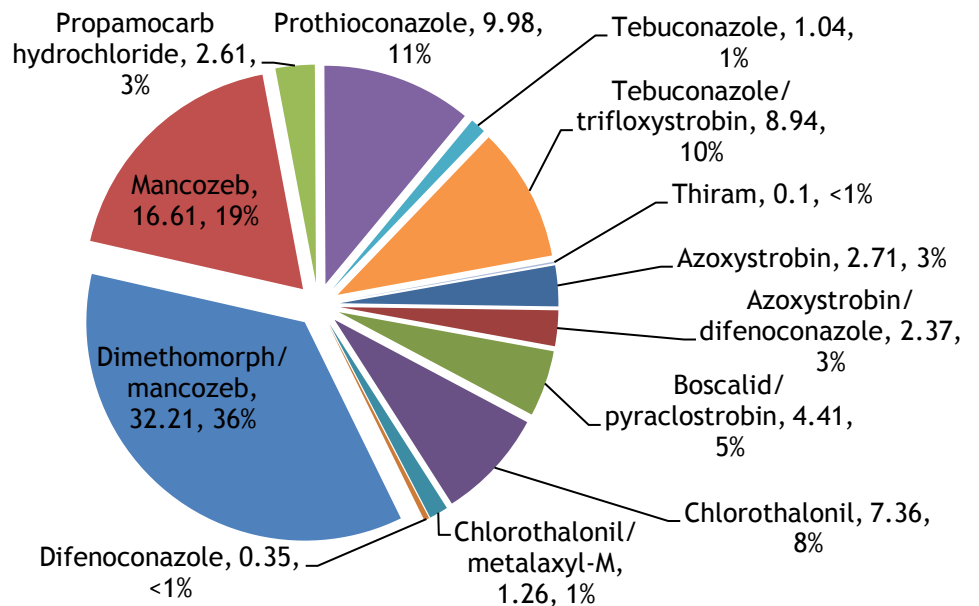
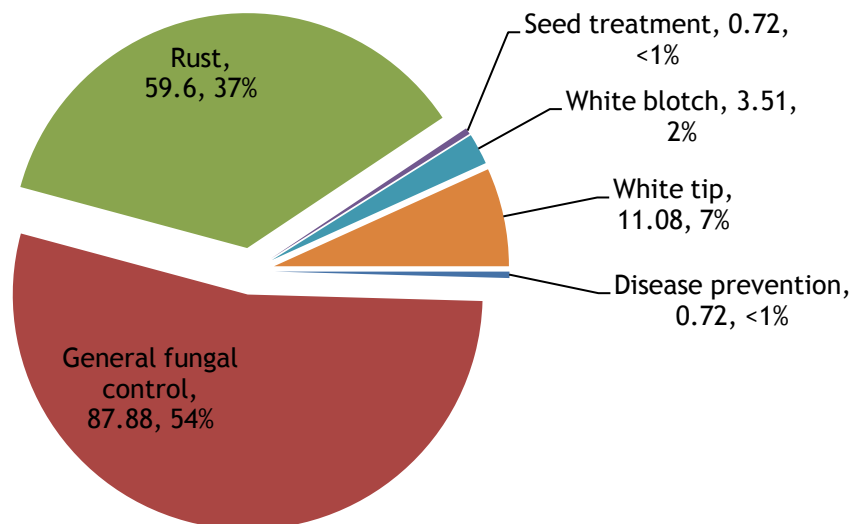


Figure 325: Table leeks: reasons for fungicide use (spha).



Herbicides & desiccants - table leeks

Basic area treated: 64.74 hectares

Area treated: 280.91 spray hectares

Weight of active substances applied: 163.76kg

98.9% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
loxynil	124.7	63.14	20.82	44.39
Metazachlor	31.64	31.64	23.73	11.26
Pendimethalin	25.1	23.92	14.88	8.94
Prosulfocarb	24.8	20.63	43.33	8.83
Dimethenamid-P/Pendimethalin	21.92	21.92	35.4	7.80

Figure 326: Herbicide & desiccant active substance usage on table leek crops in Northern Ireland (spha), 2013.

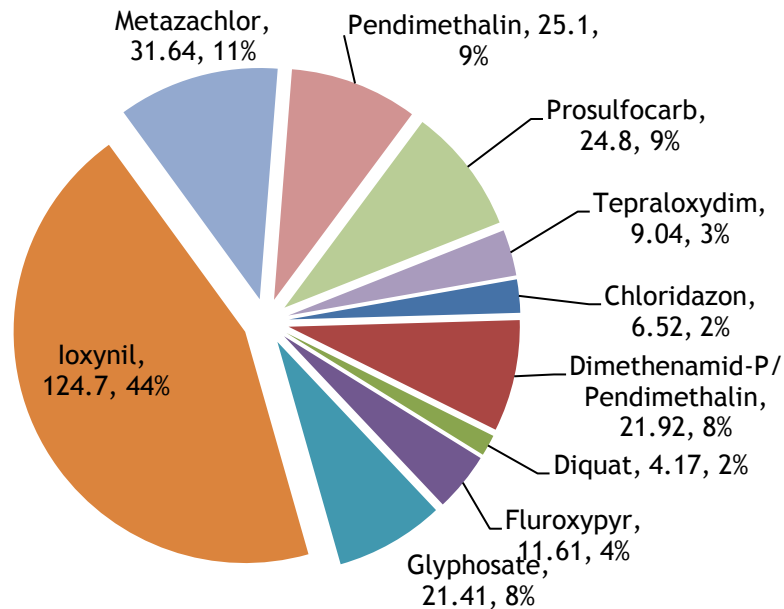


Figure 327: Weight of herbicide & desiccant active substances applied to table leek crops in Northern Ireland (kg), 2013.

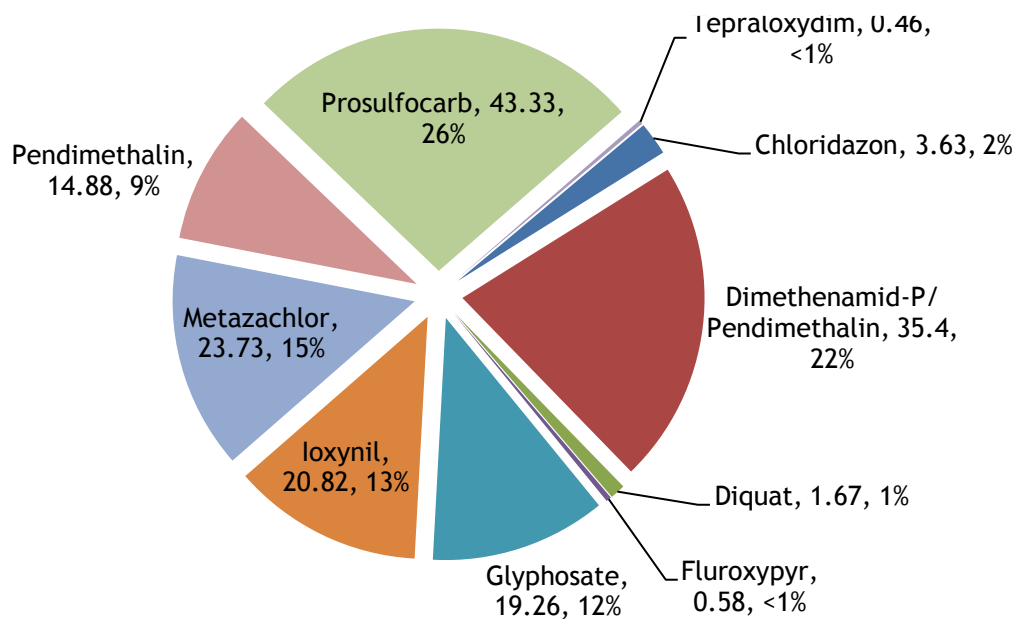
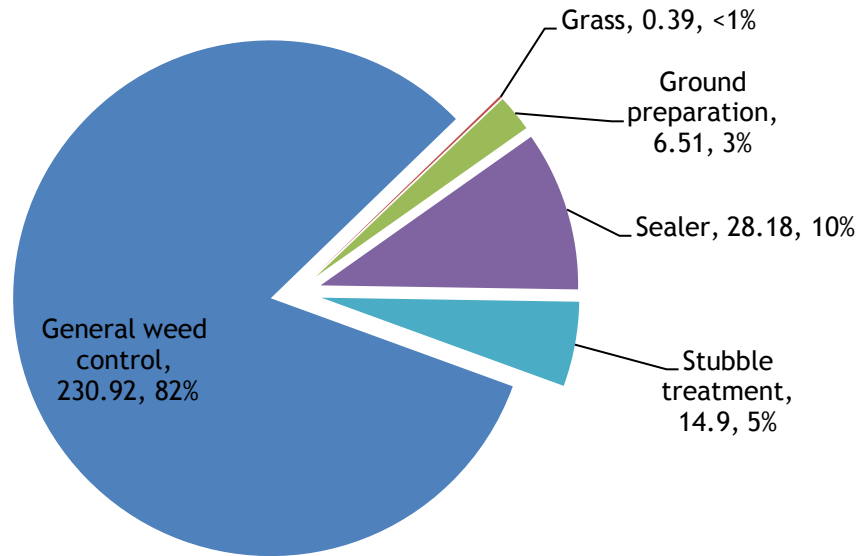


Figure 328: Table leeks: reasons for herbicide & desiccant use (spha).



Insecticides - table leeks

Basic area treated: 0.15 hectares

Area treated: 0.15 spray hectares

Weight of active substances applied: <0.001kg

0.23% of the area grown treated with insecticides

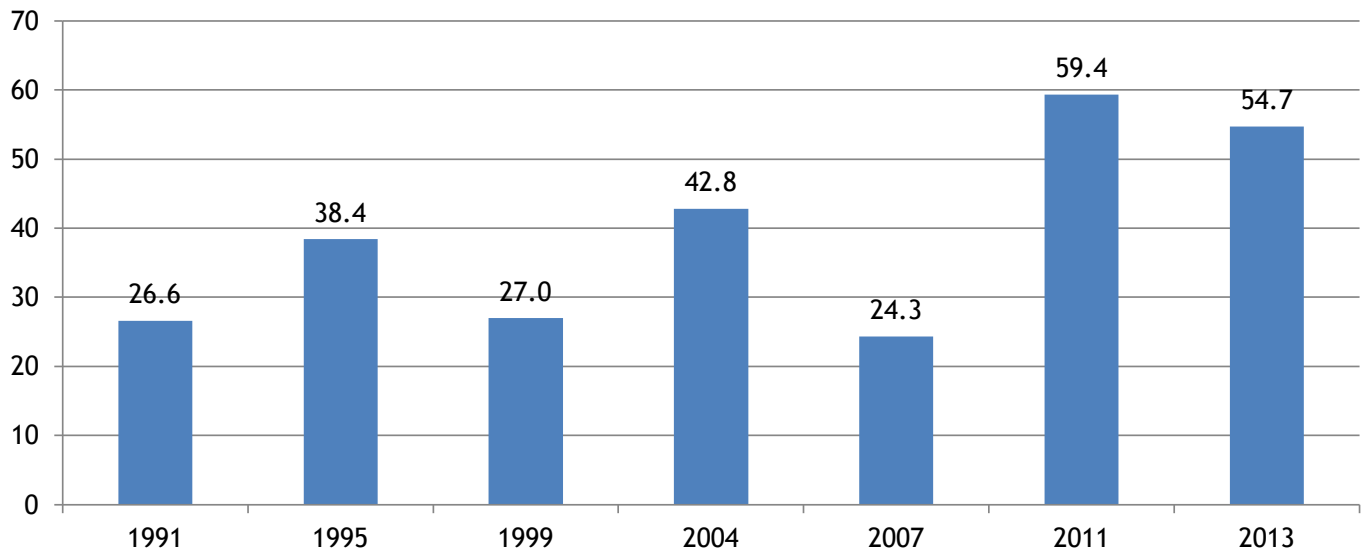
All applications were for general insect control

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	0.15	0.15	<0.001	100

Lettuce crops:

Figure 329: Comparison of the area of lettuce crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on lettuce crops:

54.71 hectares of lettuce crops grown in Northern Ireland

393.04 treated hectares

171.15kg applied

99.5% of crops received at least one treatment

Lettuce received on average 2.79 fungicide, 2.0 herbicide, 3.0 insecticide and 1.0 biological control and 1.0 seed treatment applications.

Figure 330: Regional distribution of lettuce crops grown in Northern Ireland (ha), 2013.

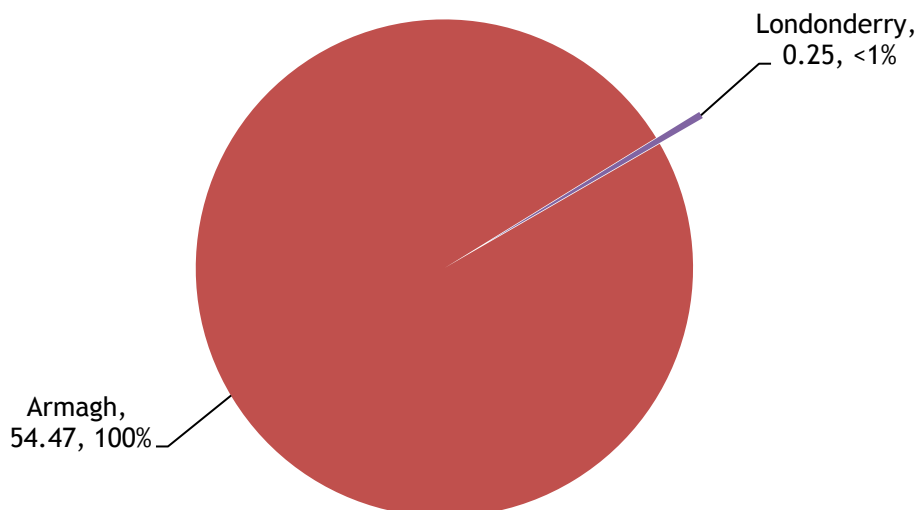


Figure 331: Pesticide usage on lettuce crops in Northern Ireland (spha), 2013.

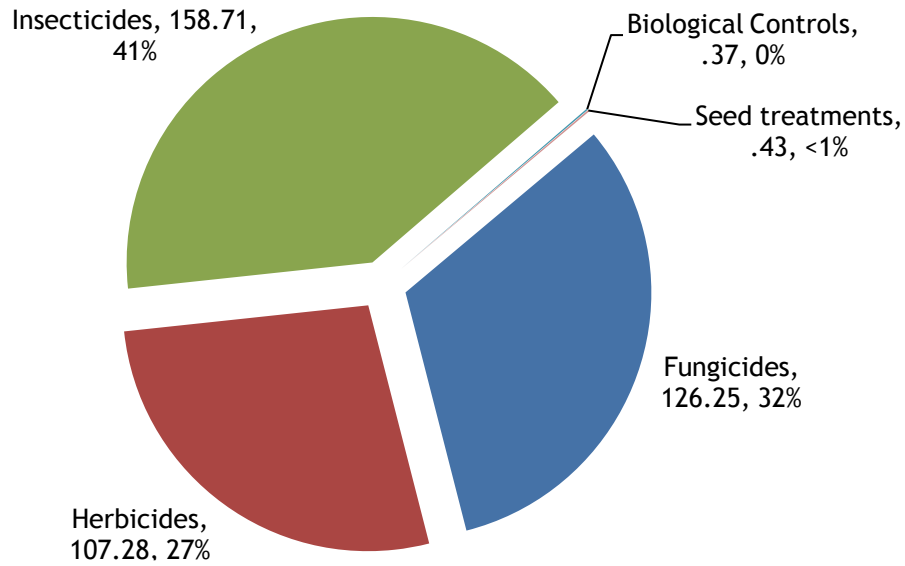


Figure 332: Weight of pesticides applied to lettuce crops in Northern Ireland (kg), 2013.

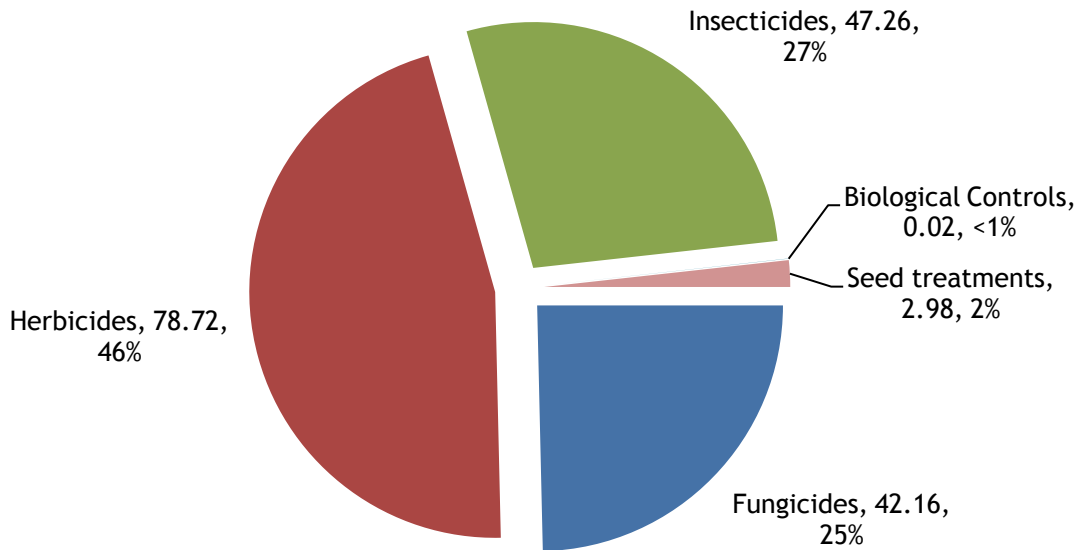
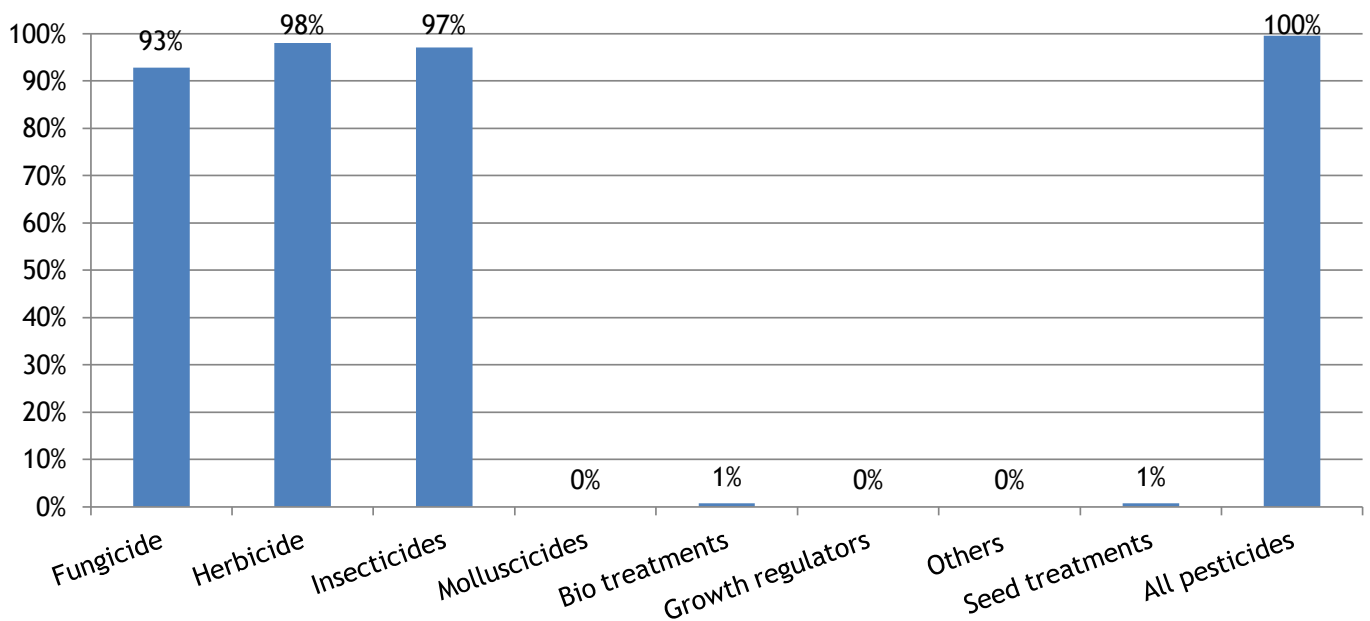


Figure 333: Proportional area of lettuce crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - lettuce

Basic area treated: 50.82 hectares

Area treated: 126.25 spray hectares

Weight of active substances applied: 42.16kg

92.9% of the area grown treated with fungicides

All applications were for general fungal control

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin	67.73	50.82	16.93	53.65
Mandipropamid	43.14	27.13	5.39	34.17
Mancozeb/metalaxyl-M	15.38	15.38	19.83	12.18

Figure 334: Fungicide active substance usage on lettuce crops in Northern Ireland (spha), 2013.

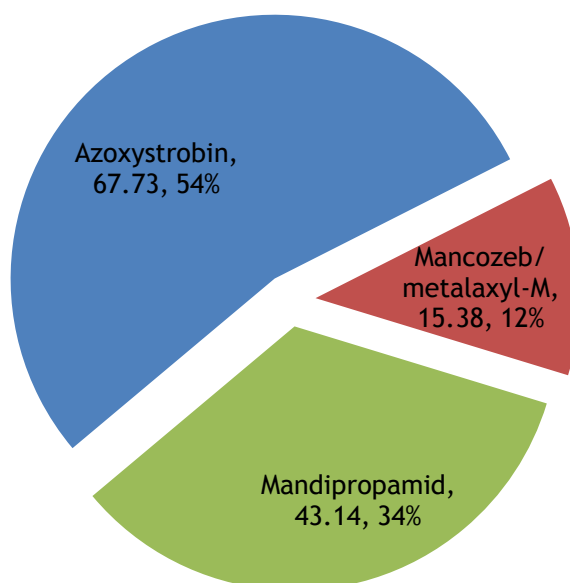
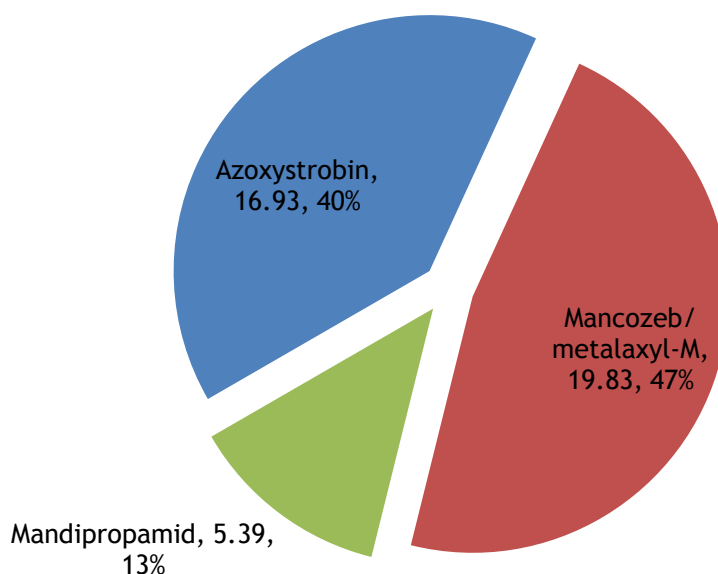


Figure 335: Weight of fungicide active substances applied to lettuce crops in Northern Ireland (kg), 2013.



Herbicides & desiccants - lettuce

Basic area treated: 53.64 hectares

Area treated: 107.28 spray hectares

Weight of active substances applied: 78.72kg

98.0% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Dimethenamid-P/Pendimethalin	44.43	44.43	24.66	41.41
Pendimethalin	44.43	44.43	24.58	41.41
Glyphosate	9.21	9.21	16.58	8.59
Propyzamide	9.21	9.21	12.9	8.59

Figure 336: Herbicide & desiccant active substance usage on lettuce crops in Northern Ireland (spha), 2013.

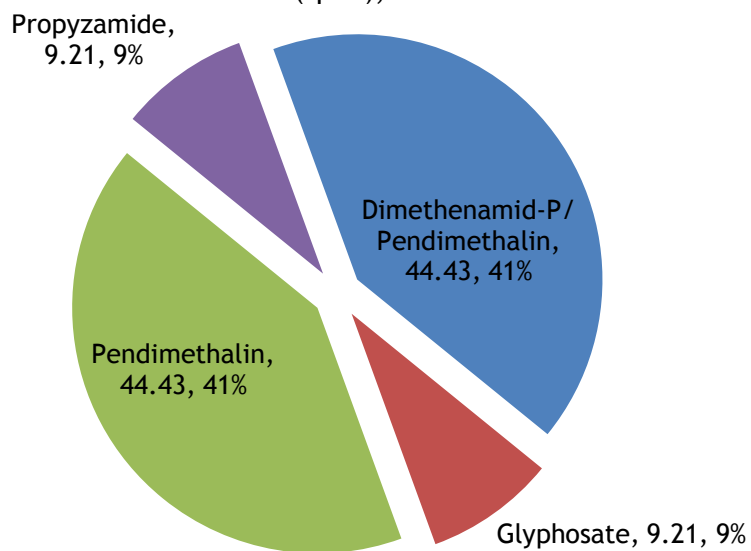


Figure 337: Weight of herbicide & desiccant active substances applied to lettuce crops in Northern Ireland (kg), 2013.

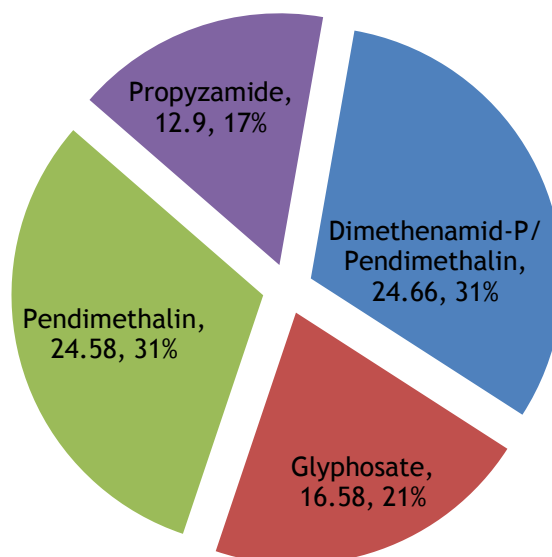
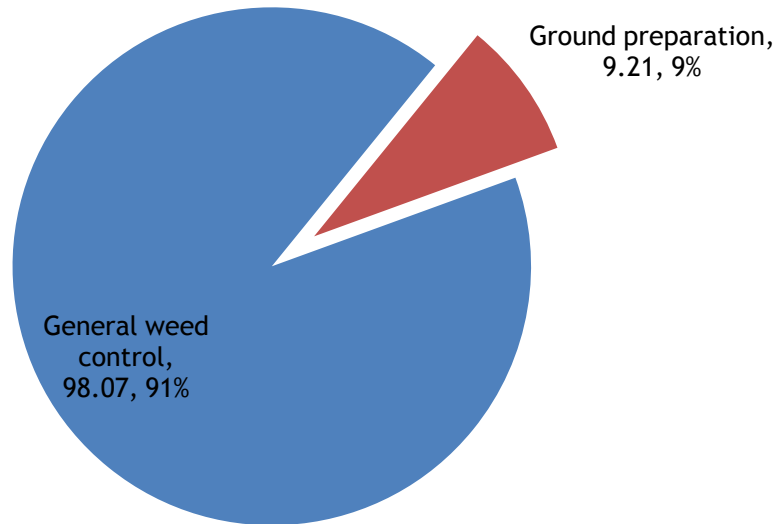


Figure 338: Lettuce: reasons for herbicide & desiccant use (spha).



Insecticides - lettuce

Basic area treated: 53.09 hectares
 Area treated: 158.71 spray hectares
 Weight of active substances applied: 47.26kg
 97.03% of the area grown treated with insecticides
 The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Pymetrozine	50.02	41.6	7.55	31.52
Deltamethrin	34.08	28.5	0.26	21.47
Spirotetramat	30.11	30.11	2.26	18.97
Garlic Extract	22.28	15.8	35.65	14.04
Lambda-cyhalothrin	9.21	9.21	0.03	5.80

Figure 339: Insecticide active substance usage on lettuce crops in Northern Ireland (spha), 2013.

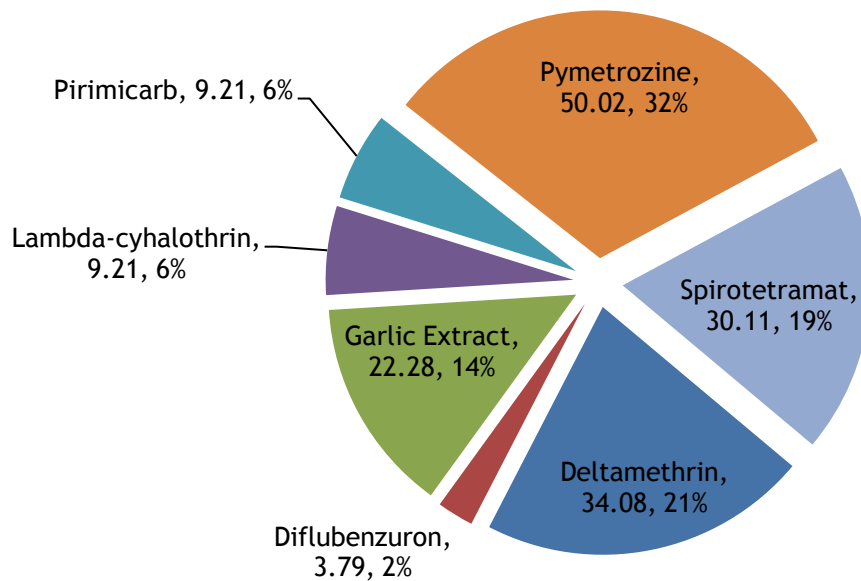


Figure 340: Weight of insecticide active substances applied to lettuce crops in Northern Ireland (kg), 2013.

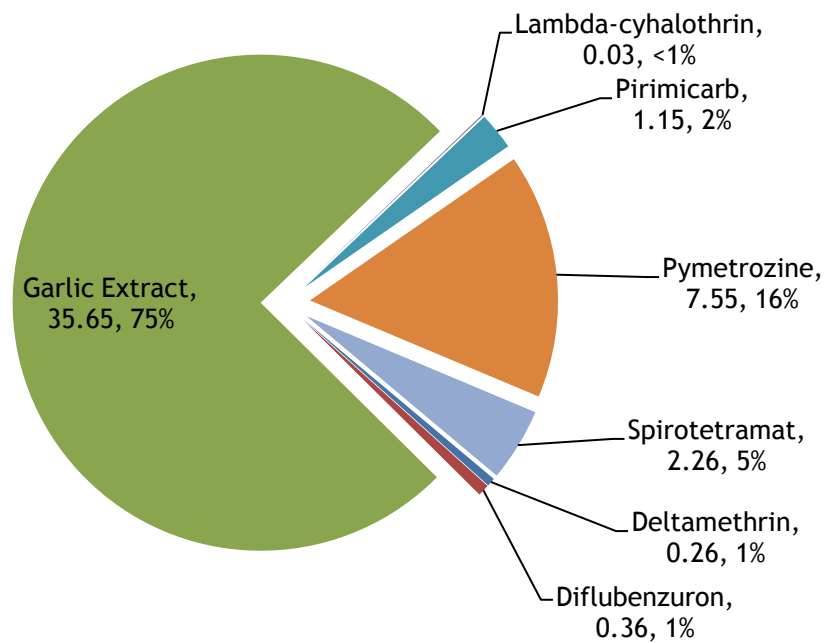
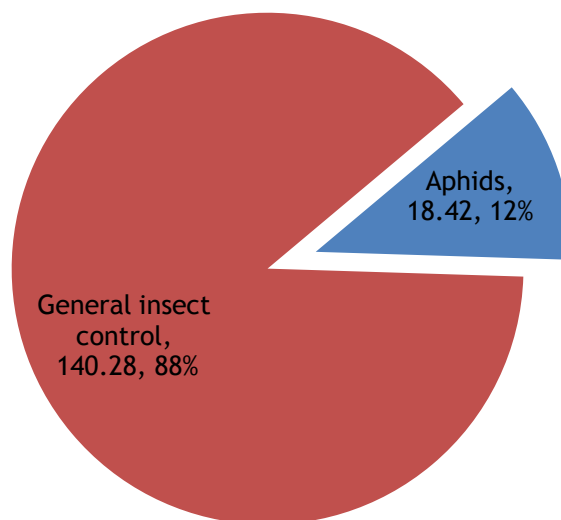


Figure 341: Lettuce: reasons for insecticide use (spha).



Biological controls - lettuce

Basic area treated: 0.37 hectares

Area treated: 0.37 spray hectares

Weight of active substances applied: 0.02kg

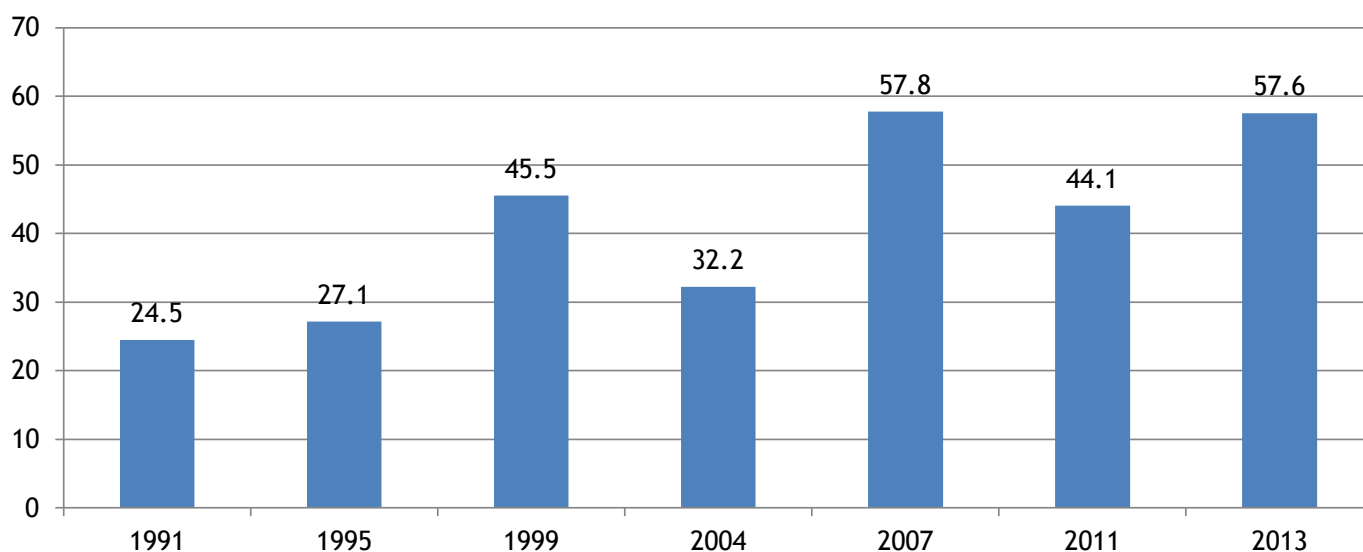
0.68% of the area grown treated with biological controls

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Bacillus subtilis	0.37	0.37	0.02	100

Celery crops:

Figure 342: Comparison of the area of celery crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on table celery crops:

38.47 hectares of table celery crops grown in Northern Ireland

235.46 treated hectares

178.58kg applied

100% of crops received at least one treatment

Table celery received on average 2.23 fungicide, 2.41 herbicide, 2.97 insecticide and 1.0 seed treatment applications.

Figure 343: Regional distribution of table celery crops grown in Northern Ireland (ha), 2013.

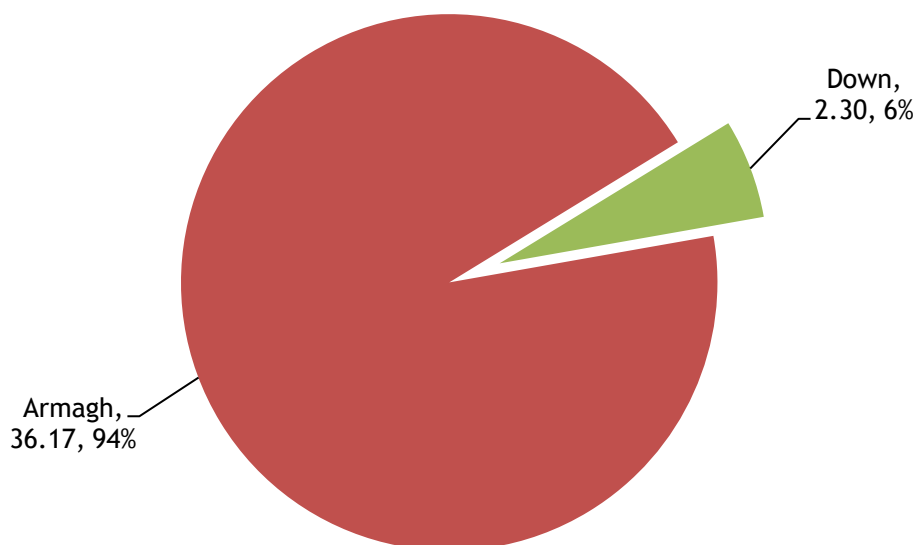


Figure 344: Pesticide usage on table celery crops in Northern Ireland (spha), 2013.

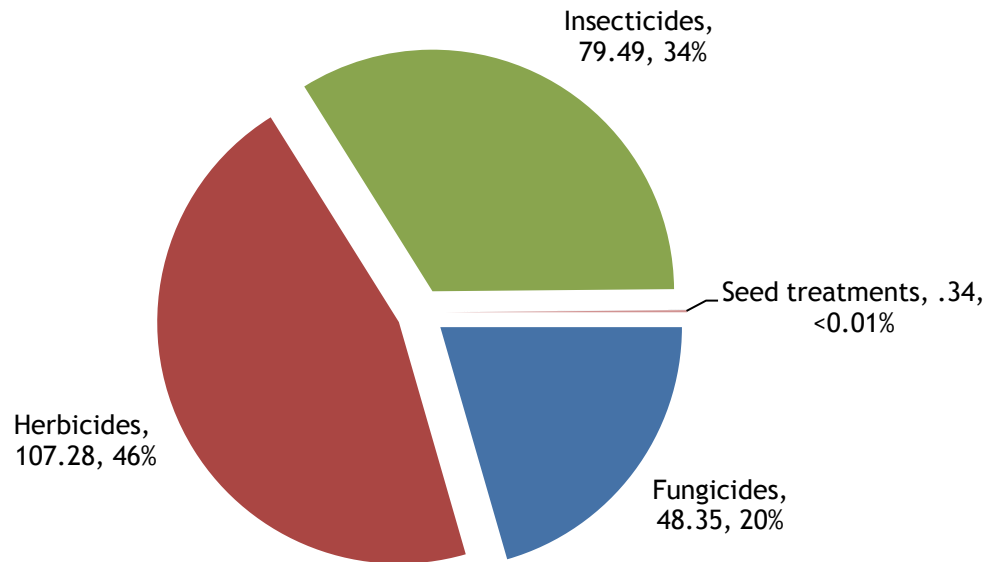


Figure 345: Weight of pesticides applied to table celery crops in Northern Ireland (kg), 2013.

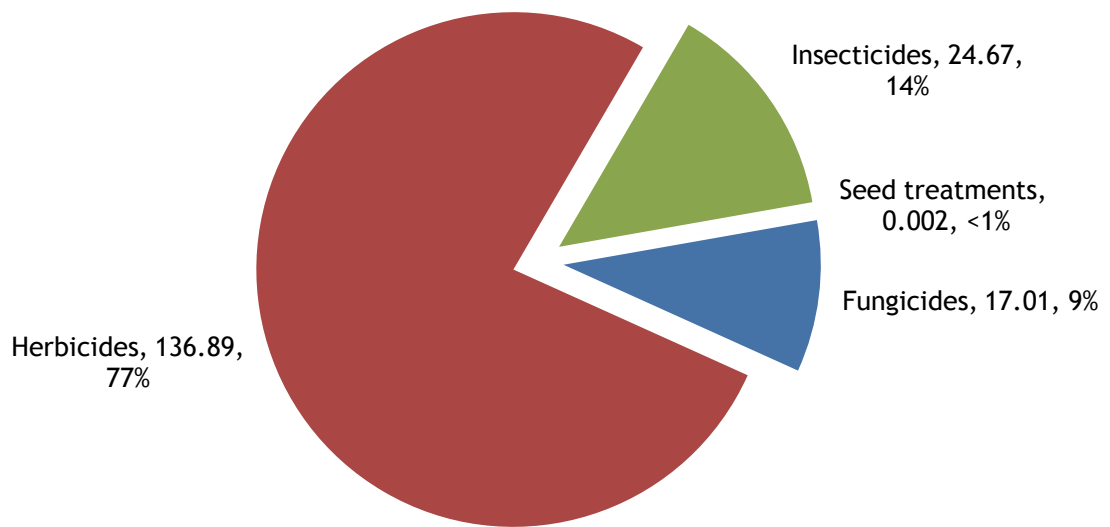
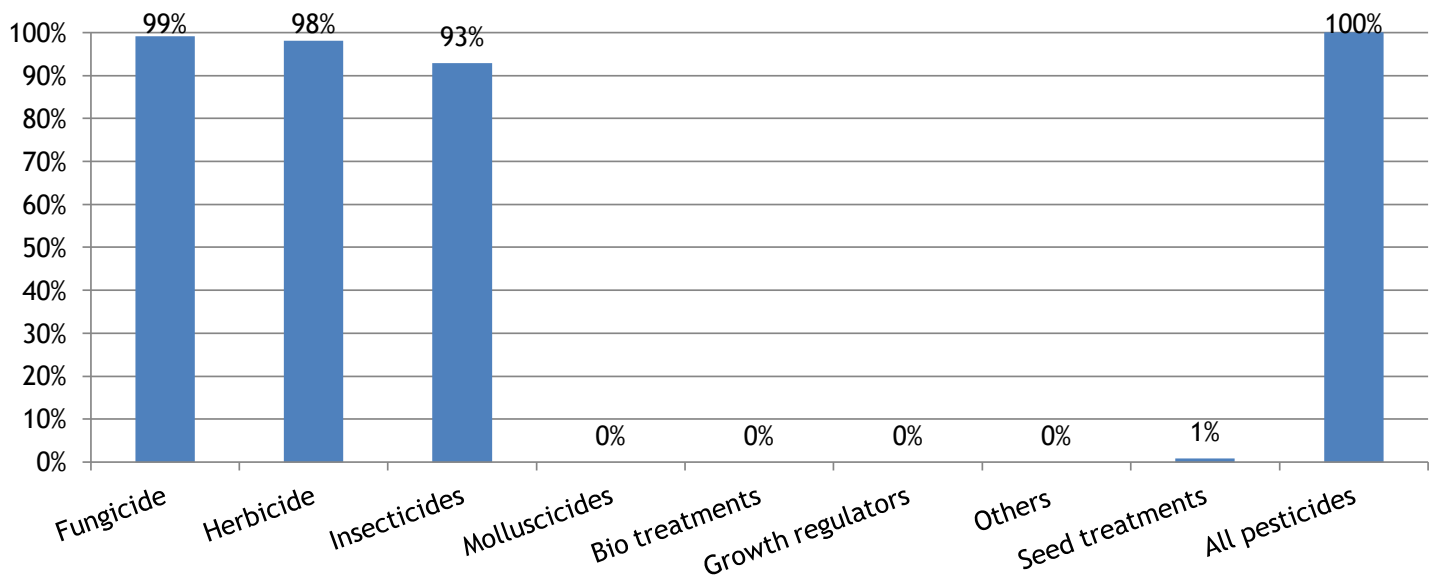


Figure 346: Proportional area of table celery crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - table celery

Basic area treated: 38.13 hectares

Area treated: 48.35 spray hectares

Weight of active substances applied: 17.01kg

99.1% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Azoxystrobin/difenoconazole	26.87	26.87	8.73	55.57
Azoxystrobin	13.54	10.5	2.89	28.00
Difenoconazole	3.65	2.48	0.38	7.55
Boscalid/pyraclostrobin	1.78	1.78	0.6	3.68
Copper oxychloride	1.78	1.78	3.1	3.68

Figure 347: Fungicide active substance usage on table celery crops in Northern Ireland (spha), 2013.

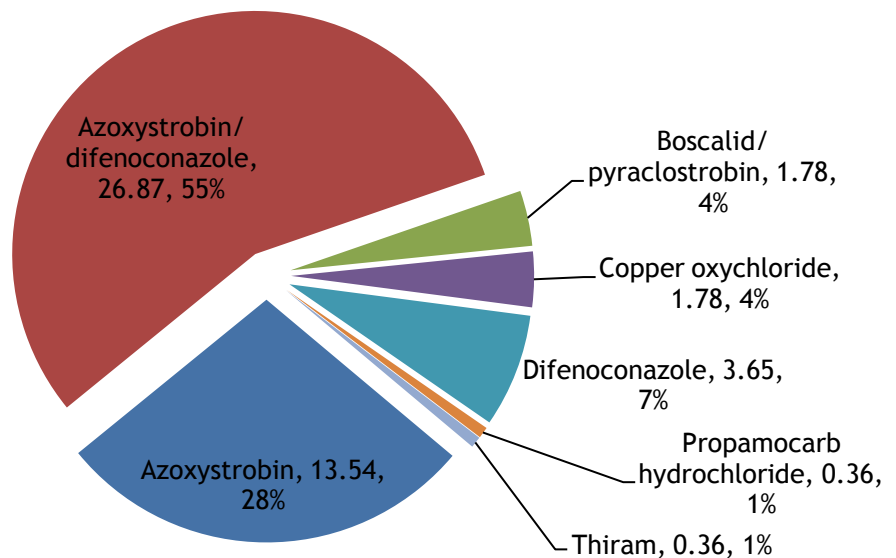


Figure 348: Weight of fungicide active substances applied to table celery crops in Northern Ireland (kg), 2013.

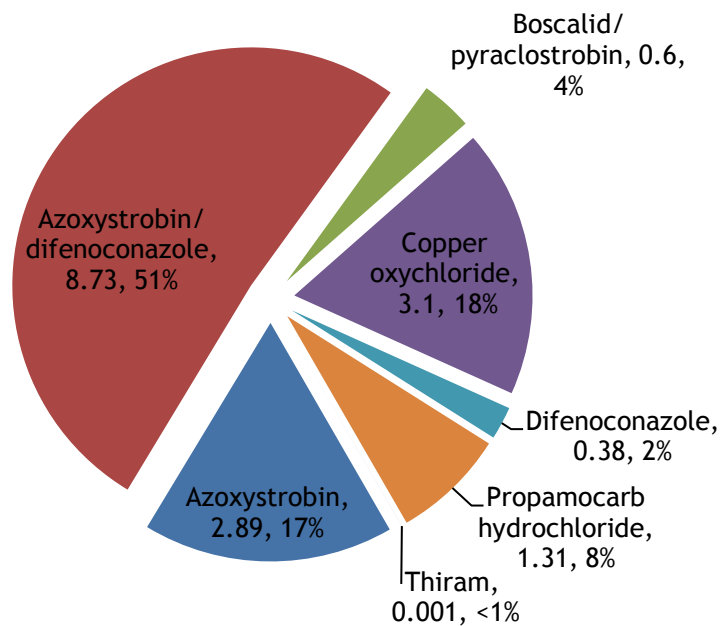
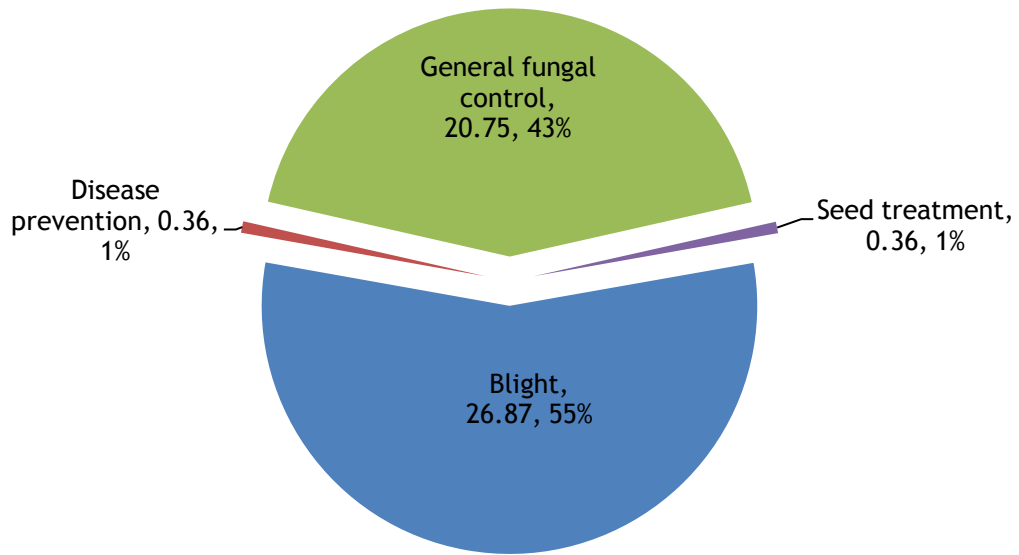


Figure 349: Table celery: reasons for fungicide use (spha).



Herbicides & desiccants - table celery

Basic area treated: 37.73 hectares

Area treated: 107.28 spray hectares

Weight of active substances applied: 136.89kg

98.1% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Prosulfocarb	37.18	37.18	70.11	34.66
Linuron	33.82	32.04	11.95	31.52
Glyphosate	28.65	28.65	50.93	26.71
Pendimethalin	5.84	5.84	2.48	5.44
Diquat	1.78	1.78	1.43	1.66

Figure 350: Herbicide & desiccant active substance usage on table celery crops in Northern Ireland (spha), 2013.

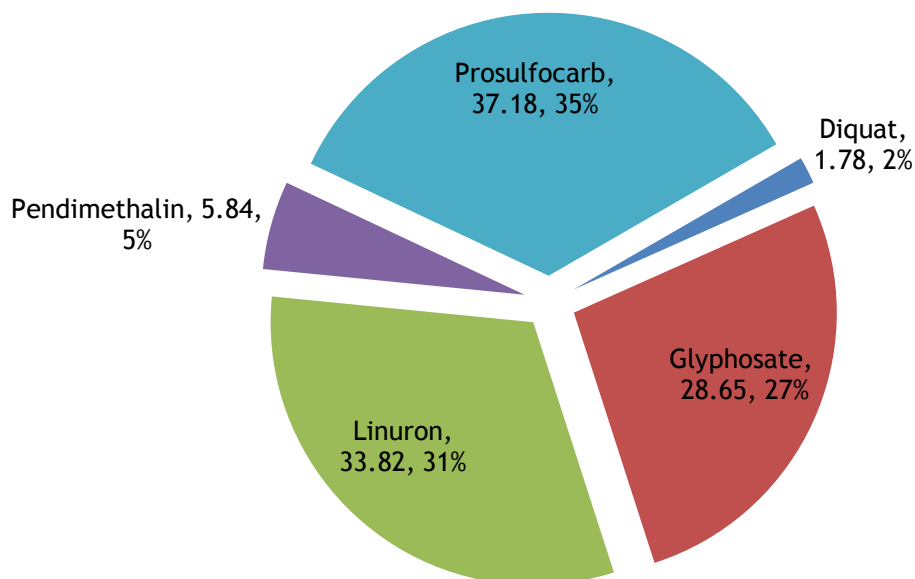


Figure 351: Weight of herbicide & desiccant active substances applied to table celery crops in Northern Ireland (kg), 2013.

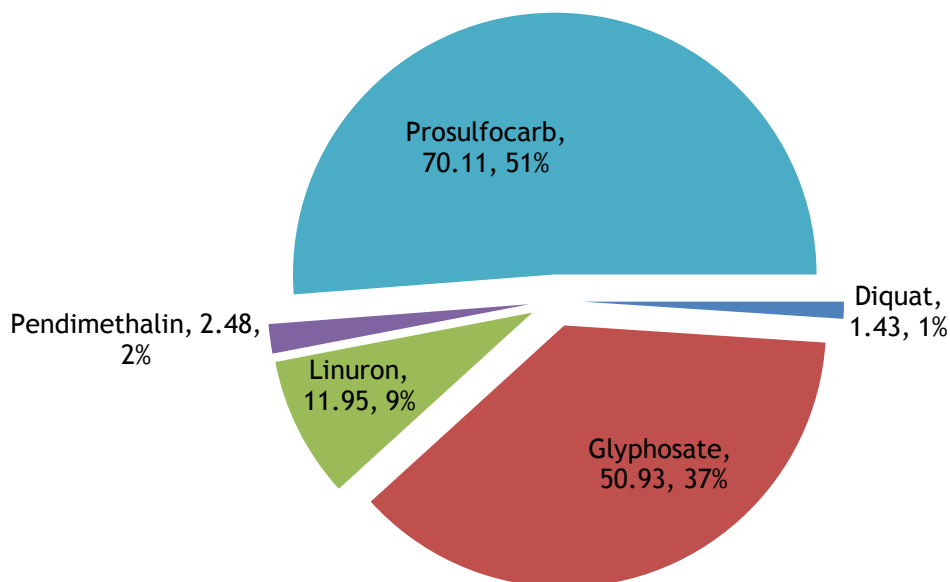
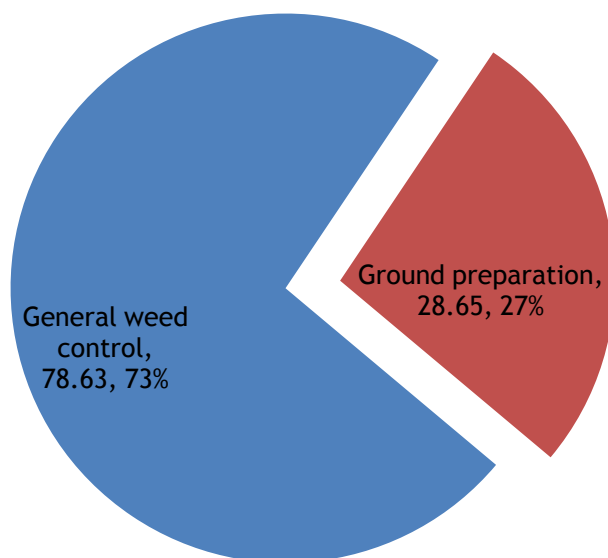


Figure 352: Table celery: reasons for herbicide & desiccant use (spha).



Insecticides - table celery

Basic area treated: 35.74 hectares

Area treated: 79.49 spray hectares

Weight of active substances applied: 24.67kg

92.92% of the area grown treated with insecticides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	27.02	27.02	0.2	33.99
Pirimicarb	26.87	26.87	3.76	33.80
Garlic Extract	11.76	8.72	18.81	14.79
Pymetrozine	10.81	8.72	1.88	13.60
Deltamethrin	3.03	3.03	0.02	3.81

Figure 353: Insecticide active substance usage on table celery crops in Northern Ireland (spha), 2013.

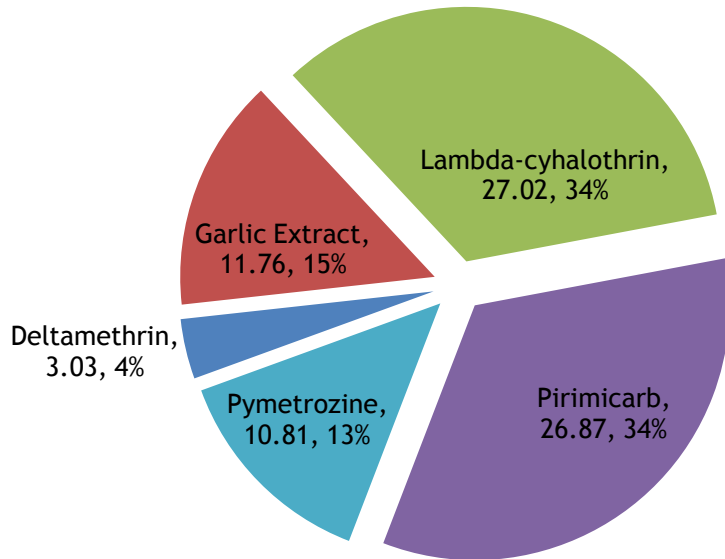


Figure 354: Weight of insecticide active substances applied to table celery crops in Northern Ireland (kg), 2013.

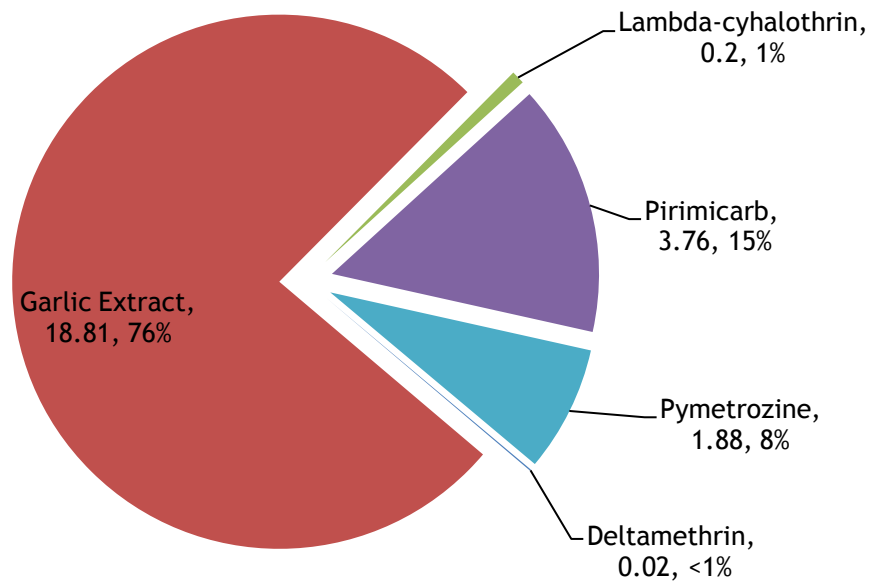
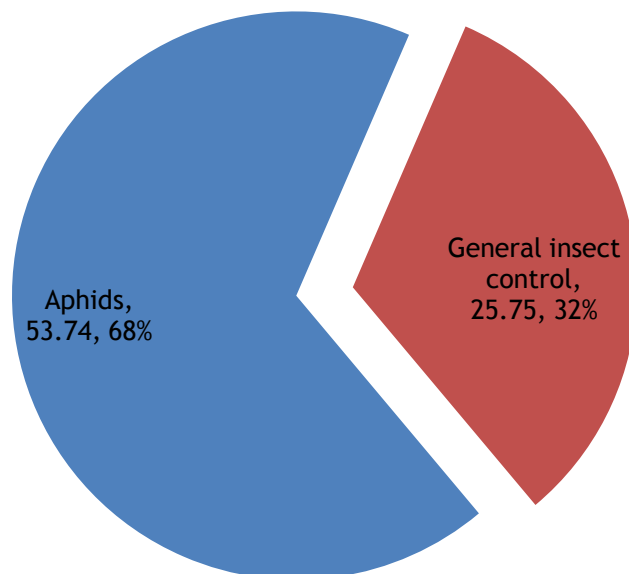


Figure 355: Table celery: reasons for insecticide use (spha).



Pesticide Usage on soup celery crops:

19.10 hectares of soup celery crops grown in Northern Ireland

184.42 treated hectares

118.51kg applied

100% of crops received at least one treatment

Soup celery received on average 4.02 fungicide, 2.95 herbicide, 2.21 insecticide and 1.0 seed treatment applications.

Figure 356: Regional distribution of soup celery grown in Northern Ireland (ha), 2013.

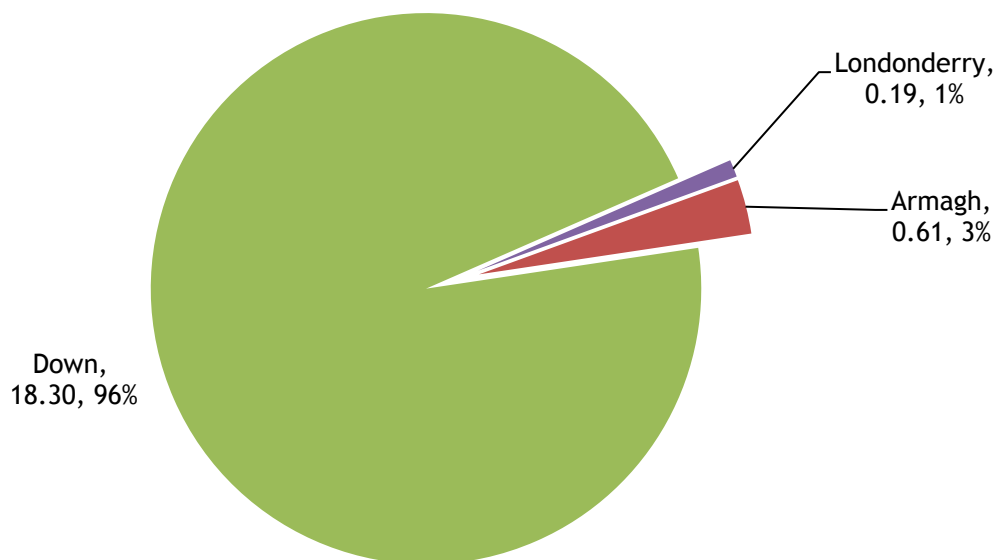


Figure 357: Pesticide usage on soup celery crops in Northern Ireland (spha), 2013.

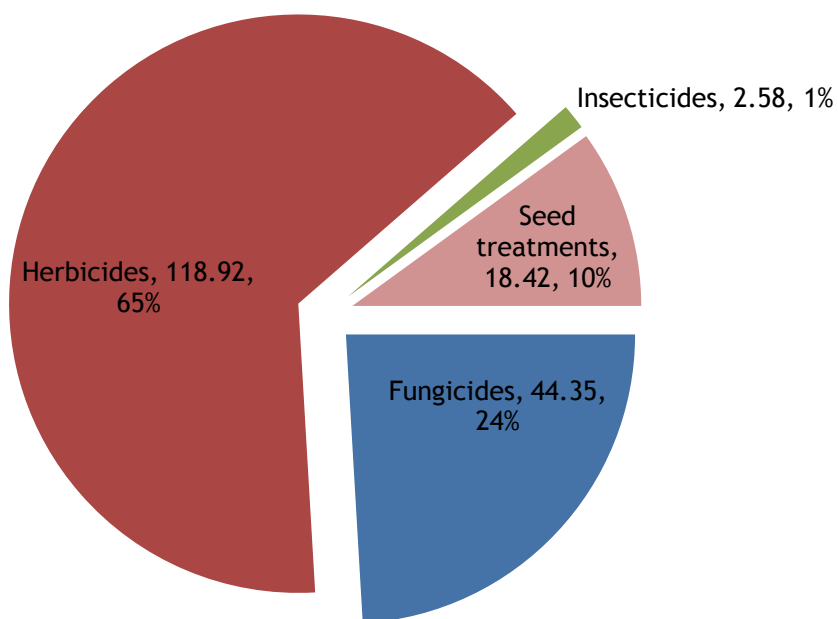


Figure 358: Weight of pesticides applied to soup celery crops in Northern Ireland (kg), 2013.

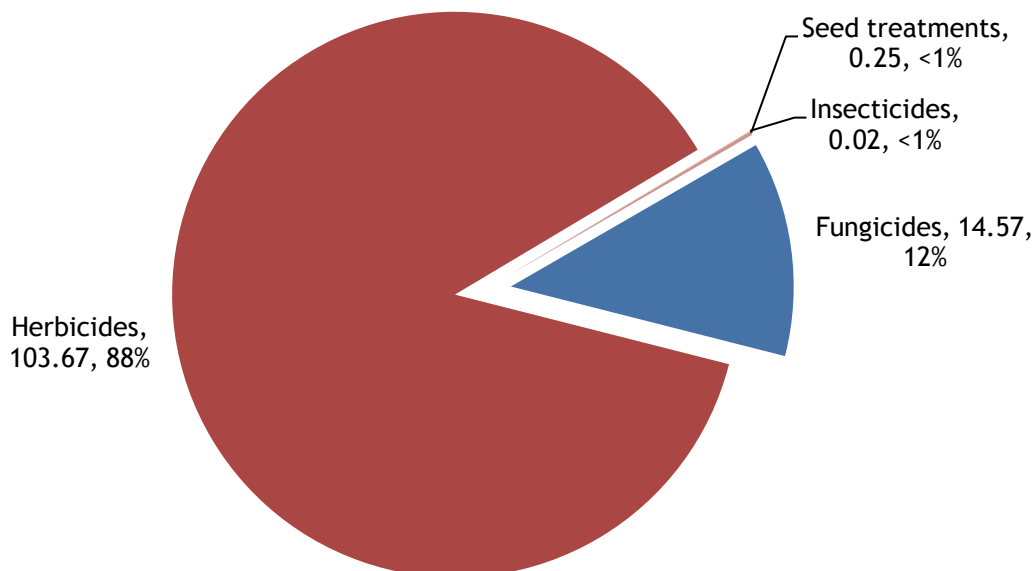
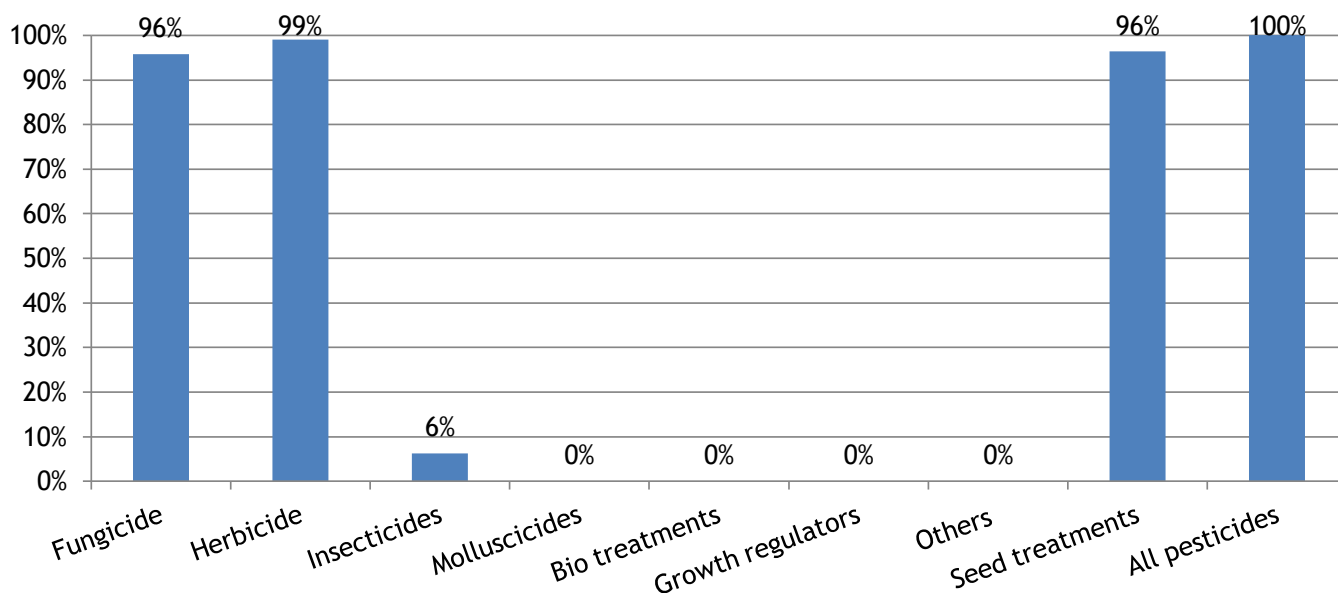


Figure 359: Proportional area of soup celery crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - soup celery

Basic area treated: 18.30 hectares

Area treated: 44.35 spray hectares

Weight of active substances applied: 14.57kg

95.8% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	21.84	17.72	4.32	49.24
Azoxystrobin	17.72	15.94	4.43	39.95
Mancozeb/metalaxyl-M	2.43	0.61	3.14	5.48
Dimethomorph/mancozeb	0.78	0.39	1.16	1.76
Azoxystrobin/difenoconazole	0.61	0.61	0.2	1.38
Chlorothalonil/metalaxyl-M	0.61	0.61	0.65	1.38

Figure 360: Fungicide active substance usage on soup celery crops in Northern Ireland (spha), 2013.

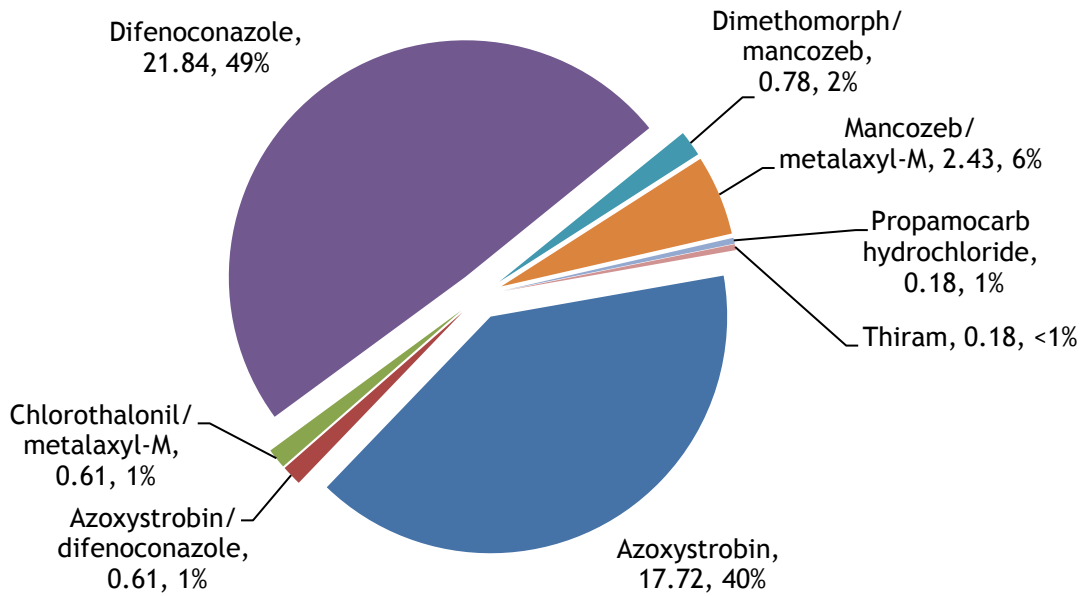


Figure 361: Weight of fungicide active substances applied to soup celery crops in Northern Ireland (kg), 2013.

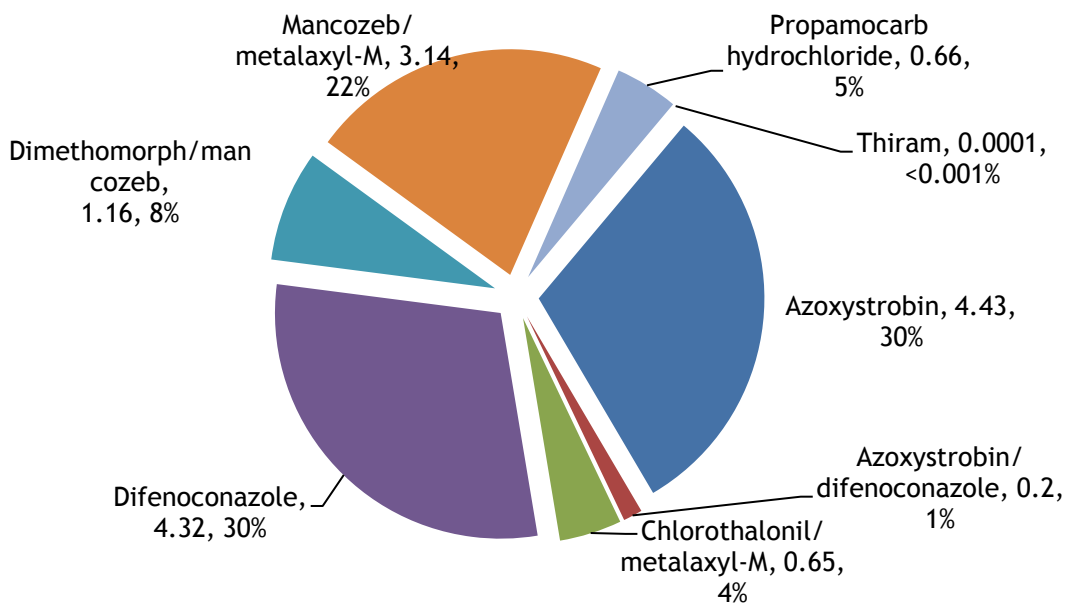
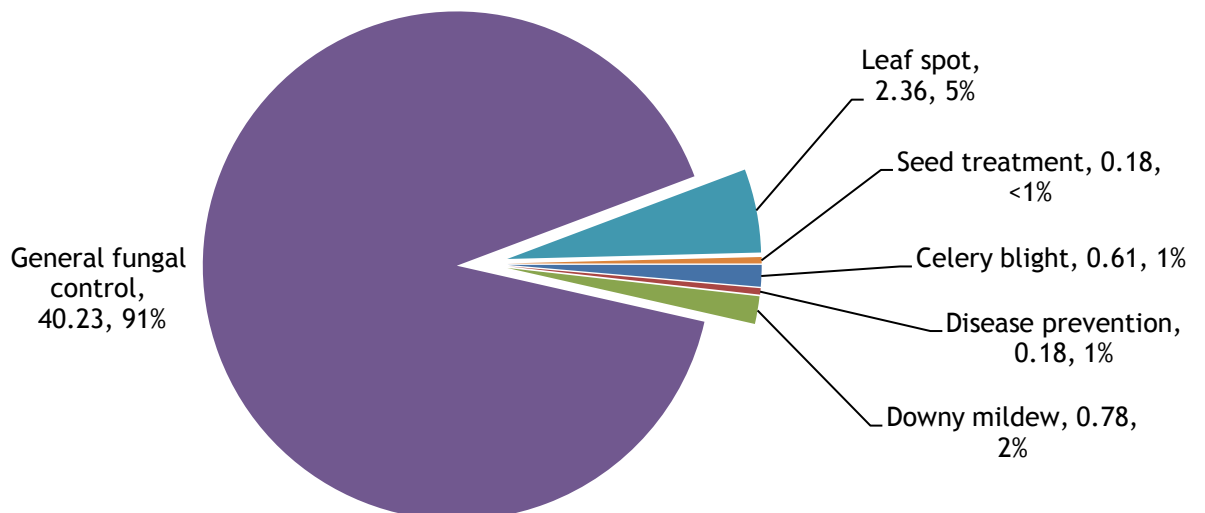


Figure 362: Soup celery: reasons for fungicide use (spha).



Herbicides & desiccants - soup celery

Basic area treated: 18.92 hectares

Area treated: 118.92 spray hectares

Weight of active substances applied: 103.67kg

99.0% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Linuron	50.8	18.92	15.01	42.72
Prosulfocarb	31.69	16.34	52.28	26.65
Pendimethalin	18.12	18.12	23.58	15.24
Glyphosate	17.7	17.7	12.74	14.88
Clomazone	0.61	0.61	0.05	0.51

Figure 363: Herbicide & desiccant active substance usage on soup celery crops in Northern Ireland (spha), 2013.

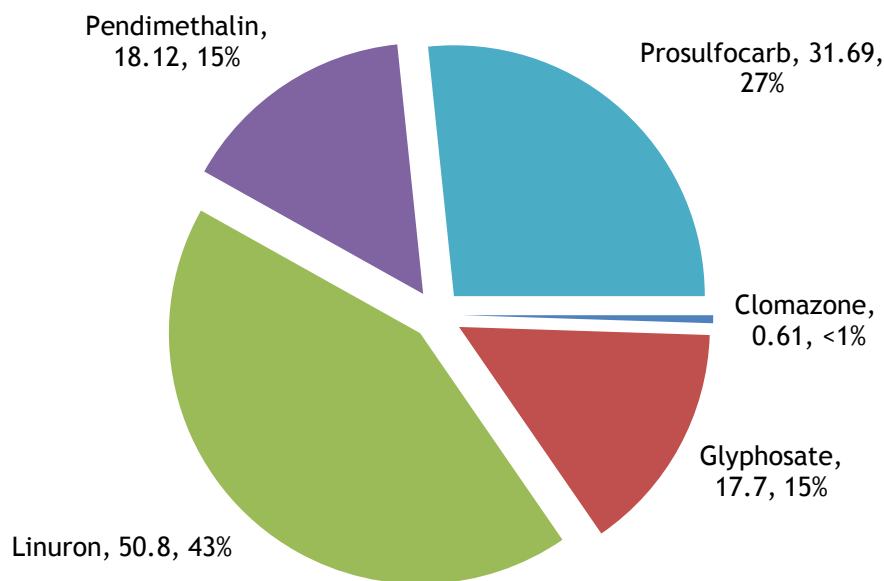


Figure 364: Weight of herbicide & desiccant active substances applied to soup celery crops in Northern Ireland (kg), 2013.

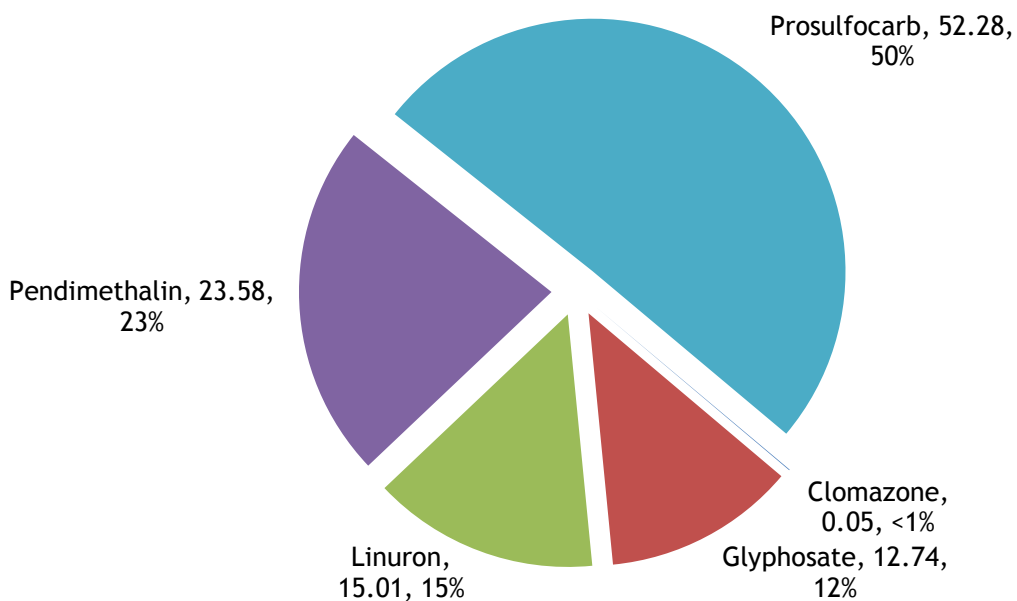
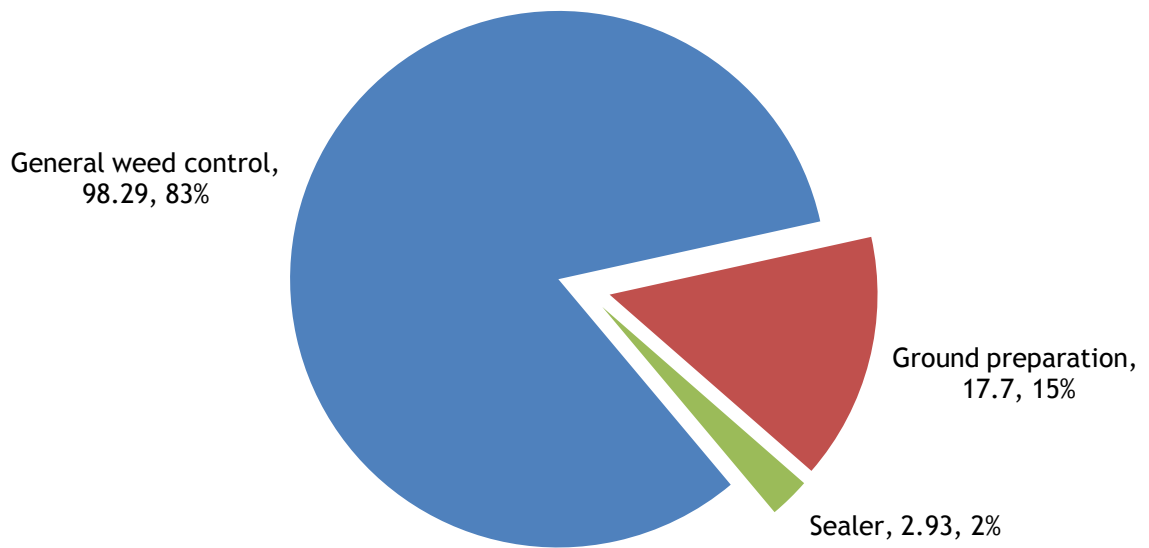


Figure 365: Soup celery: reasons for herbicide & desiccant use (spha).



Insecticides - soup celery

Basic area treated: 1.19 hectares

Area treated: 2.58 spray hectares

Weight of active substances applied: 0.02kg

6.25% of the area grown treated with insecticides

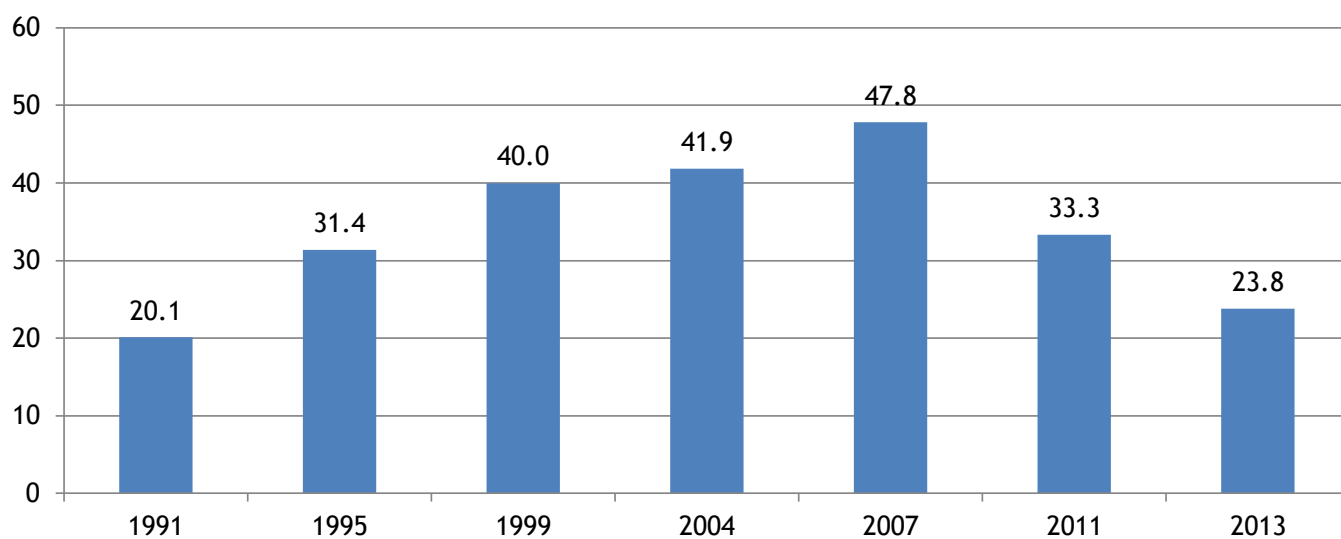
All applications were for general insect control

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	2.58	1.19	0.02	100

Parsley crops:

Figure 366: Comparison of the area of parsley crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on parsley crops:

23.78 hectares of parsley crops grown in Northern Ireland

206.59 treated hectares

133.78kg applied

100% of crops received at least one treatment

Parsley received on average 3.28 fungicide, 3.06 herbicide, 1.74 insecticide and 1.0 seed treatment applications.

Figure 367: Regional distribution of parsley crops grown in Northern Ireland (ha), 2013.

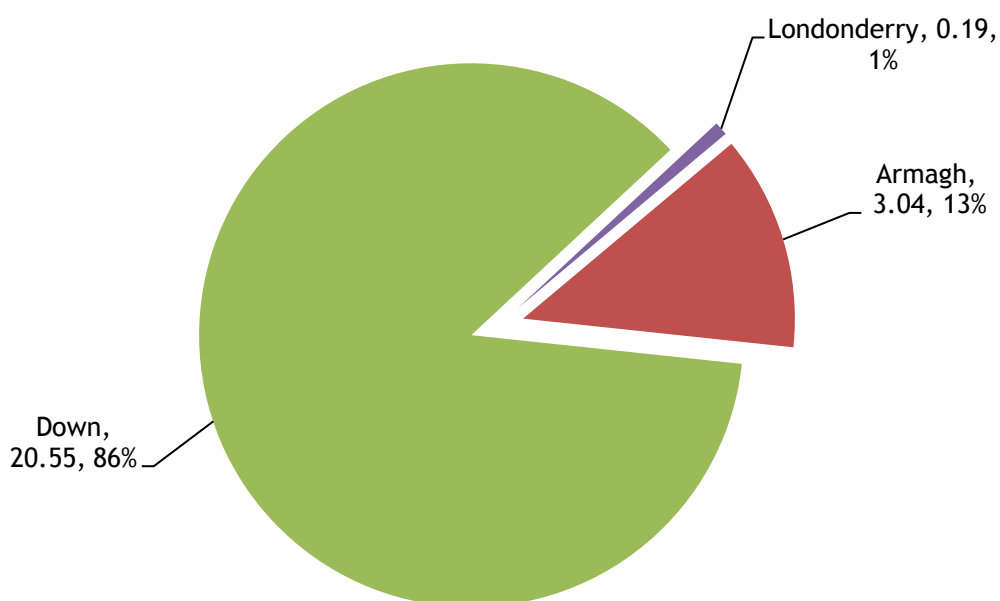


Figure 368: Pesticide usage on parsley crops in Northern Ireland (spha), 2013.

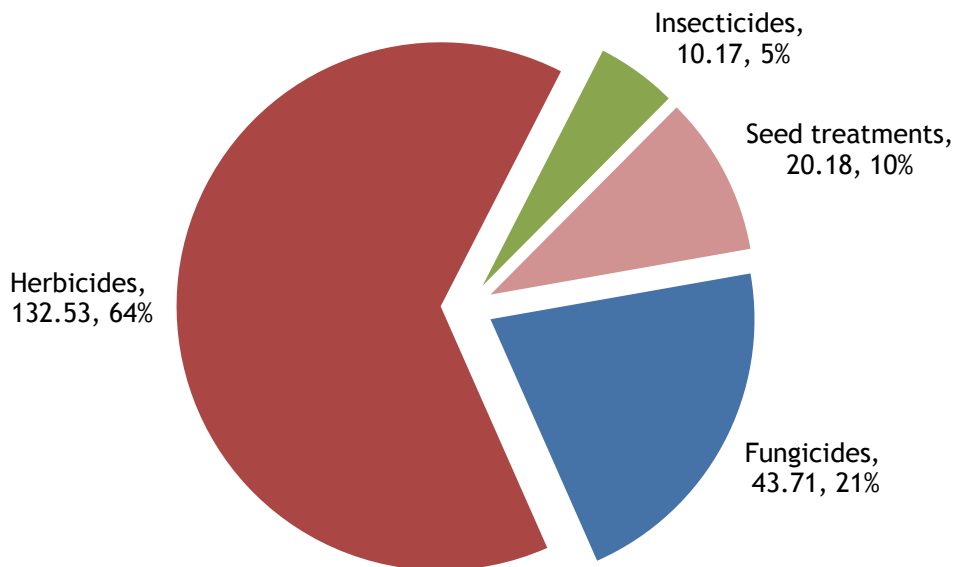


Figure 369: Weight of pesticides applied to parsley crops in Northern Ireland (kg), 2013.

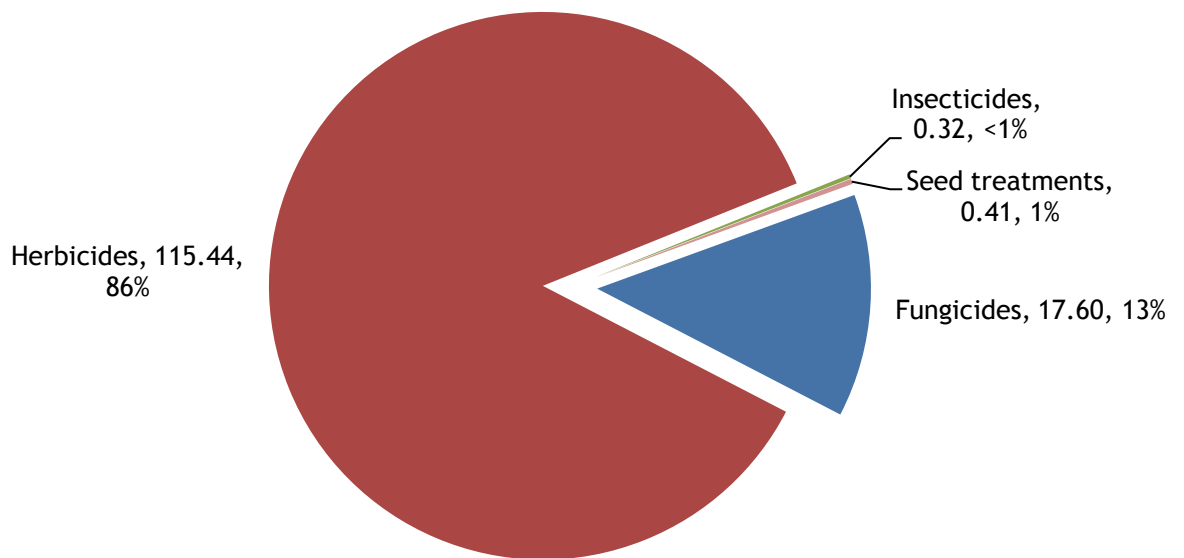
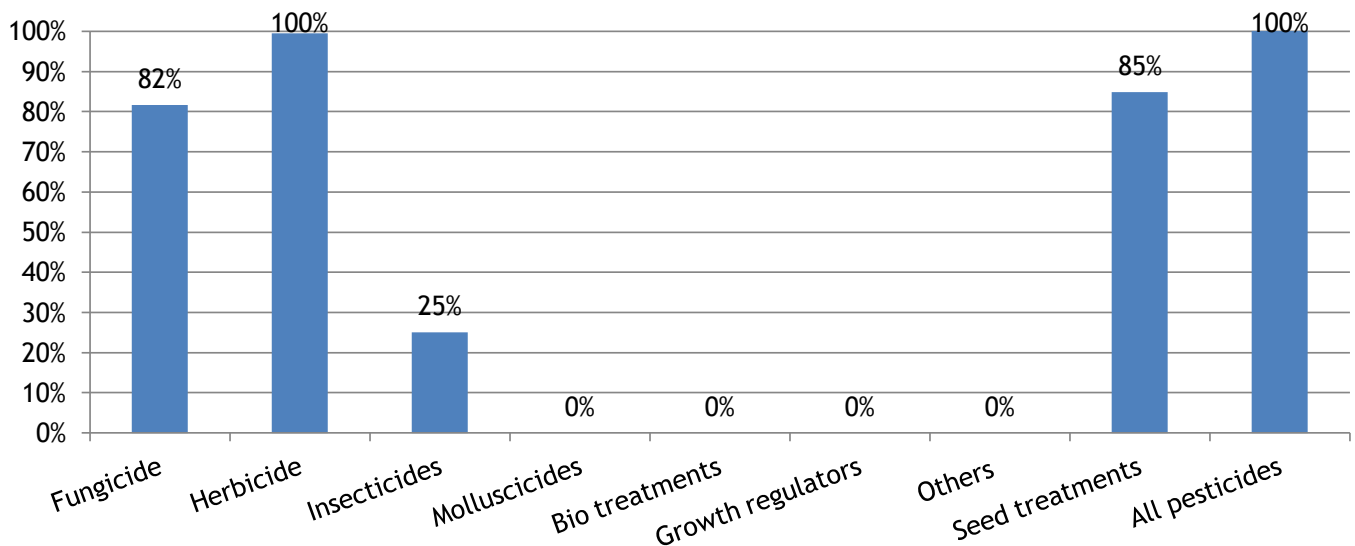


Figure 370: Proportional area of parsley crops treated with each pesticide group in Northern Ireland, 2013.



Fungicides - parsley

Basic area treated: 19.41 hectares

Area treated: 43.71 spray hectares

Weight of active substances applied: 17.60kg

81.6% of the area grown treated with fungicides

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Difenoconazole	18.87	16.53	4.1	43.17
Azoxystrobin	17.14	17.14	4.28	39.21
Mancozeb/metalaxyl-M	3.61	2.39	4.17	8.26
Dimethomorph/mancozeb	2.57	2.17	3.81	5.88
Azoxystrobin/difenoconazole	0.61	0.61	0.2	1.40
Chlorothalonil/metalaxyl-M	0.61	0.61	0.65	1.40

Figure 371: Fungicide active substance usage on parsley crops in Northern Ireland (spha), 2013.

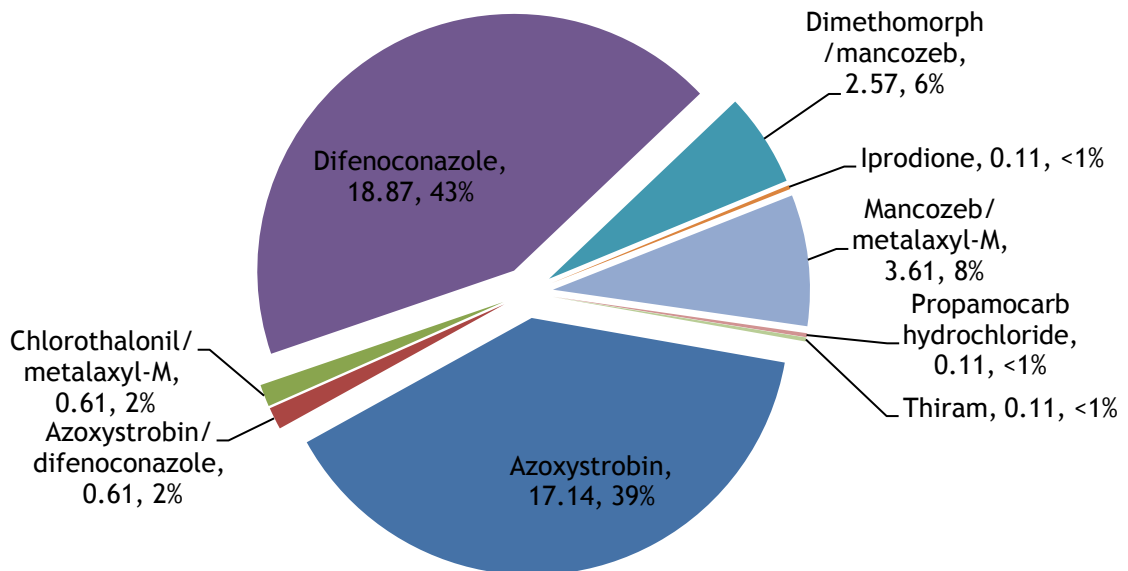


Figure 372: Weight of fungicide active substances applied to parsley crops in Northern Ireland (kg), 2013.

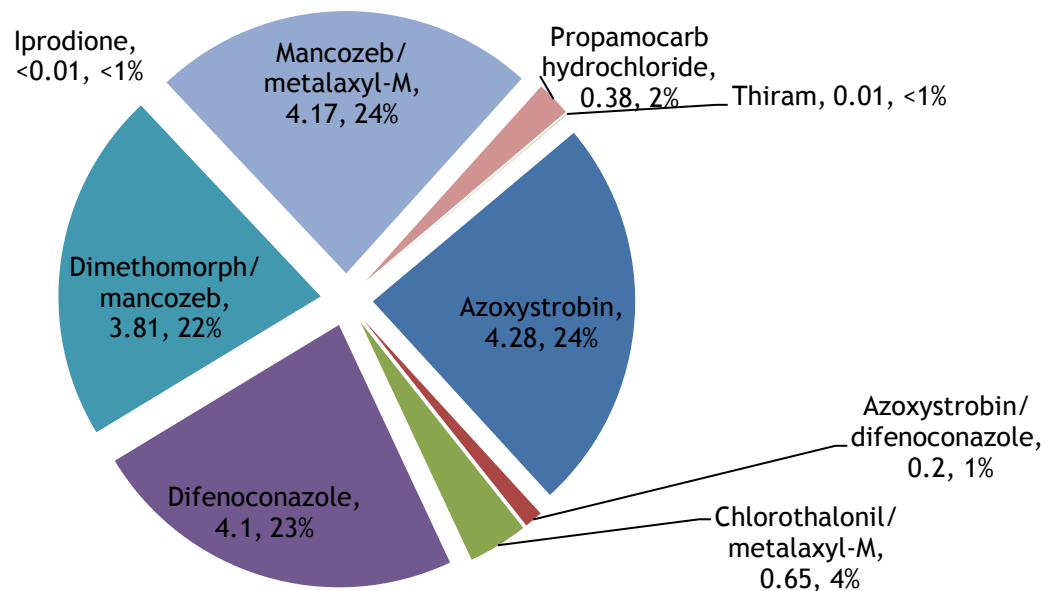
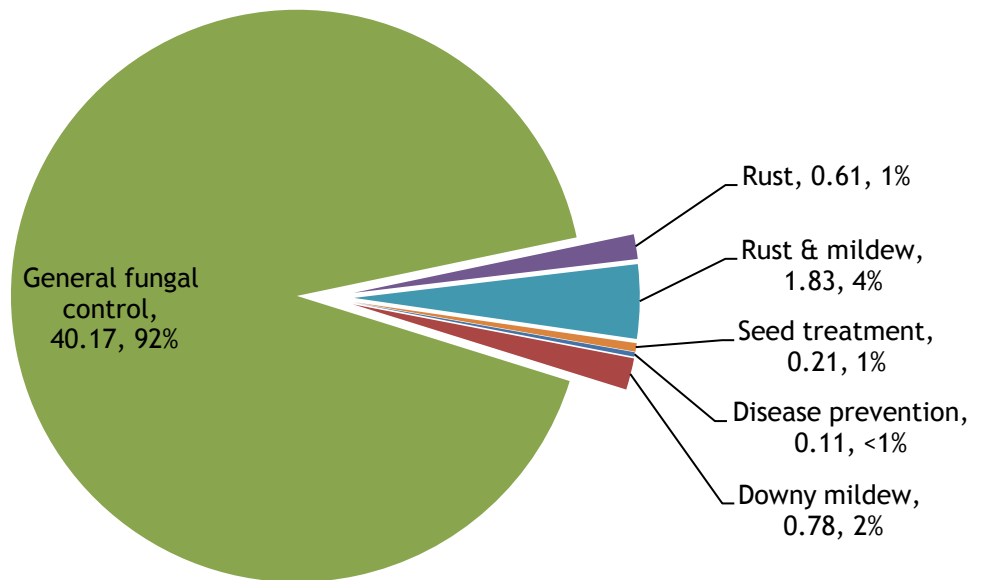


Figure 373: Parsley: reasons for fungicide use (spha).



Herbicides & desiccants - Parsley

Basic area treated: 23.68 hectares

Area treated: 132.53 spray hectares

Weight of active substances applied: 115.44kg

99.0% of the area grown treated with herbicides & desiccants

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Linuron	57.74	23.68	18.29	43.57
Prosulfocarb	33.86	18.51	55.75	25.55
Glyphosate	19.87	19.87	15.87	14.99
Pendimethalin	18.66	18.66	24.04	14.08
Diquat	1.78	1.78	1.43	1.34

Figure 374: Herbicide & desiccant active substance usage on parsley crops in Northern Ireland (spha), 2013.

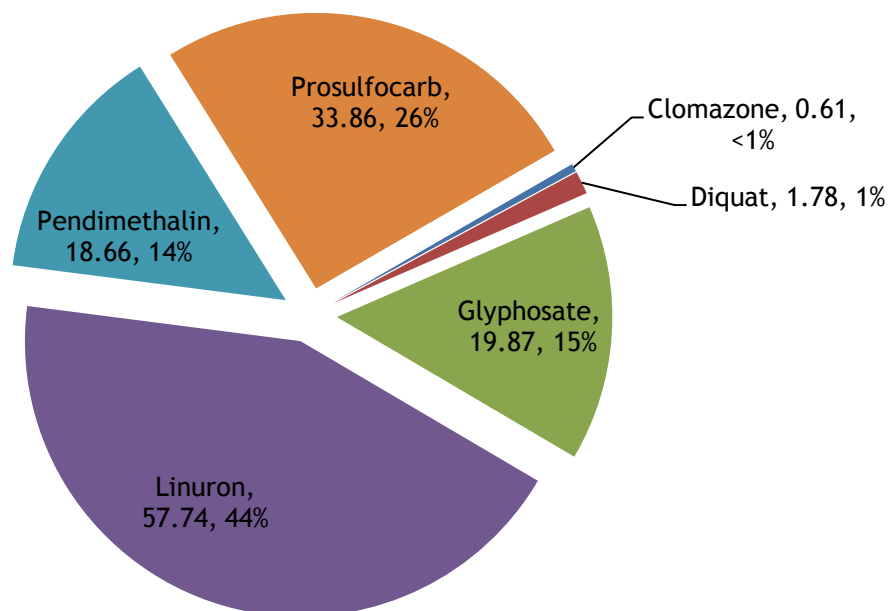


Figure 375: Weight of herbicide & desiccant active substances applied to parsley crops in Northern Ireland (kg), 2013.

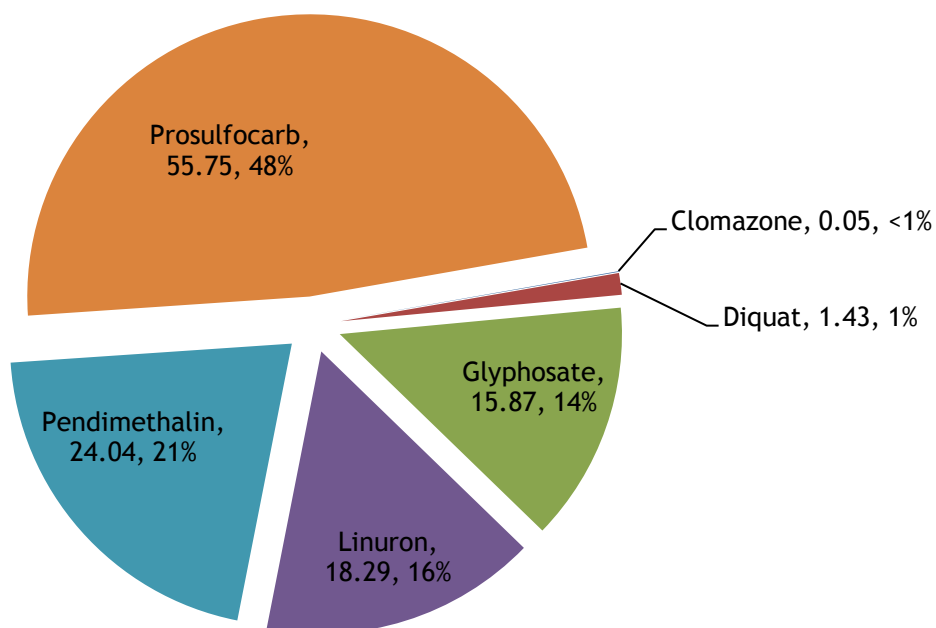
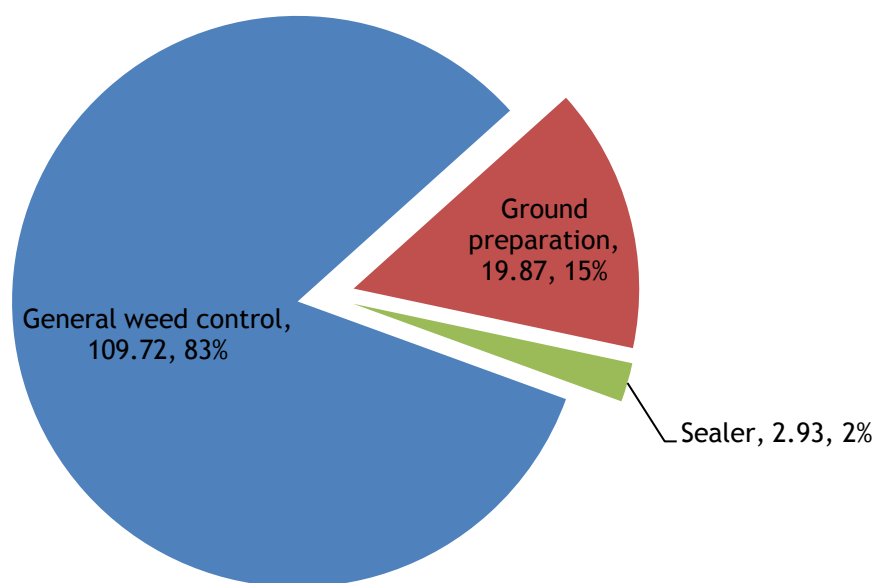


Figure 376: Parsley: reasons for herbicide & desiccant use (spha).



Insecticides - parsley

Basic area treated: 5.95 hectares

Area treated: 10.17 spray hectares

Weight of active substances applied: 0.32 kg

25.03% of the area grown treated with insecticides

All applications were for general insect control

The commonly applied active substances were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Lambda-cyhalothrin	8.39	4.17	0.07	82.50
Pirimicarb	1.78	1.78	0.25	17.50

Figure 377: Insecticide active substance usage on parsley crops in Northern Ireland (spha), 2013.

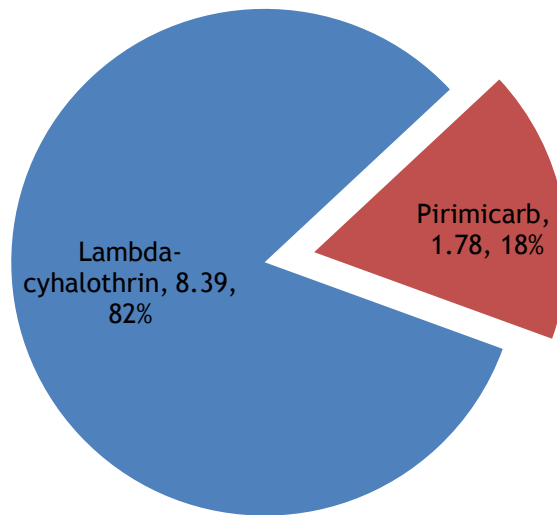
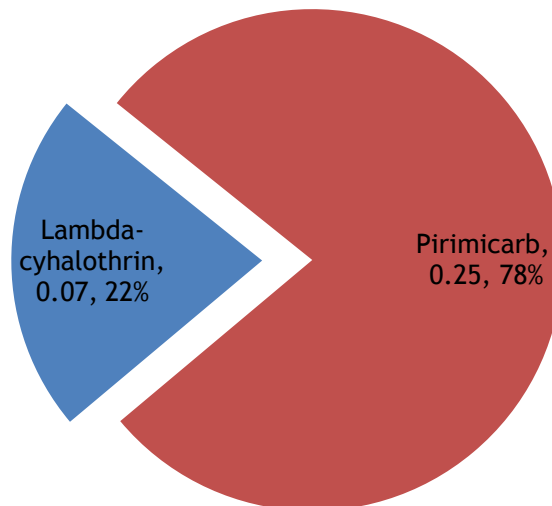
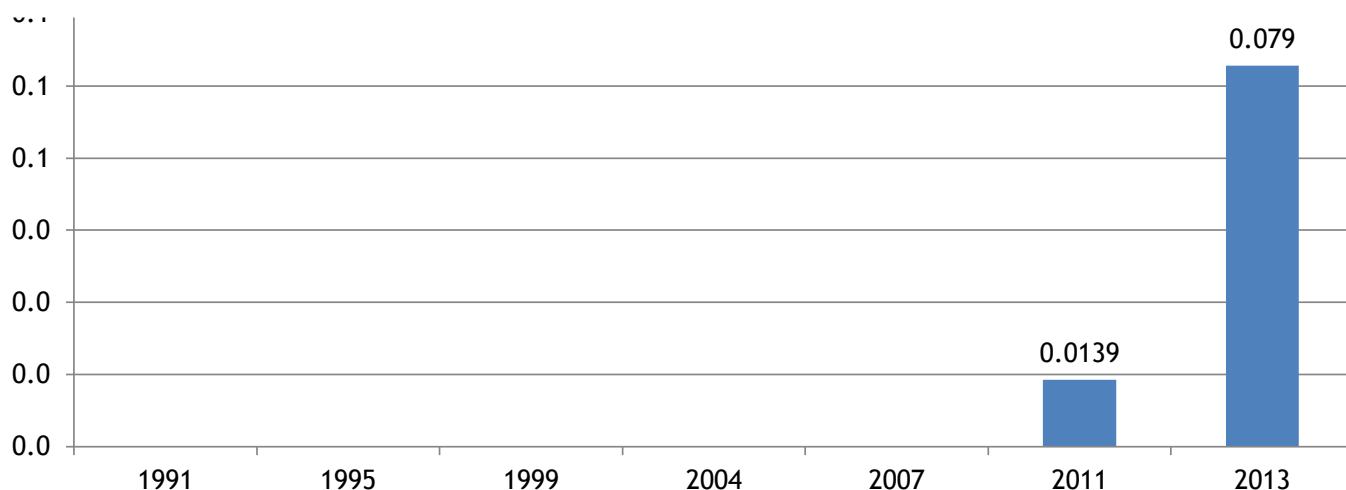


Figure 378: Weight of insecticide active substances applied to parsley crops in Northern Ireland (kg), 2013.



Celeriac crops

Figure 379: Comparison of the area of celeriac crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on celeriac crops:

0.08 hectares of celeriac crops grown in Northern Ireland all of which grown in County Down

0.16 treated hectares

0.287kg applied

100% of crops received at least one treatment

Celeriac crops received on average 2.0 fungicide application.

The commonly applied fungicides were:

	Treated area (spha)	Basic area treated (ha)	Quantity applied (kgs)	% of the treated area
Propamocarb hydrochloride	0.08	0.08	0.29	50
Thiram	0.08	0.08	<0.001	50

Figure 380: Fungicide active substance usage on celeriac crops in Northern Ireland (spha), 2013.

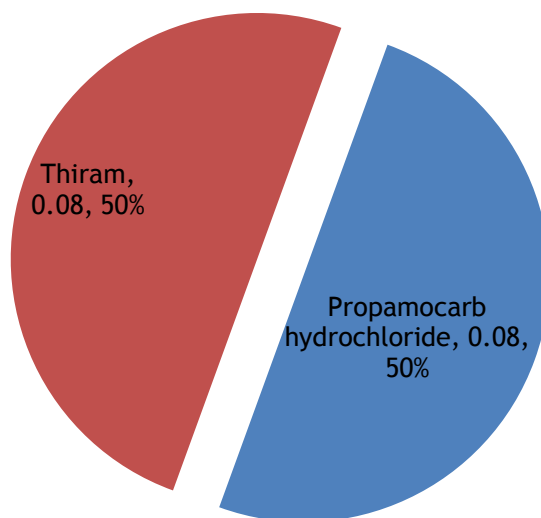


Figure 381: Weight of fungicide active substances applied to celeriac crops in Northern Ireland (kg), 2013.

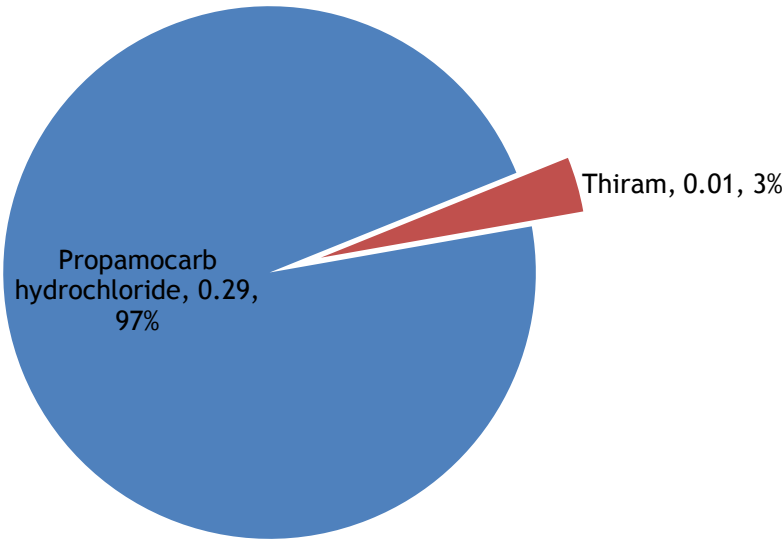
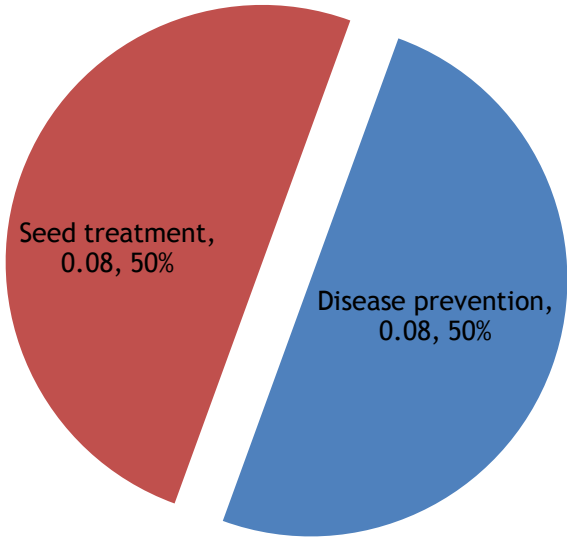
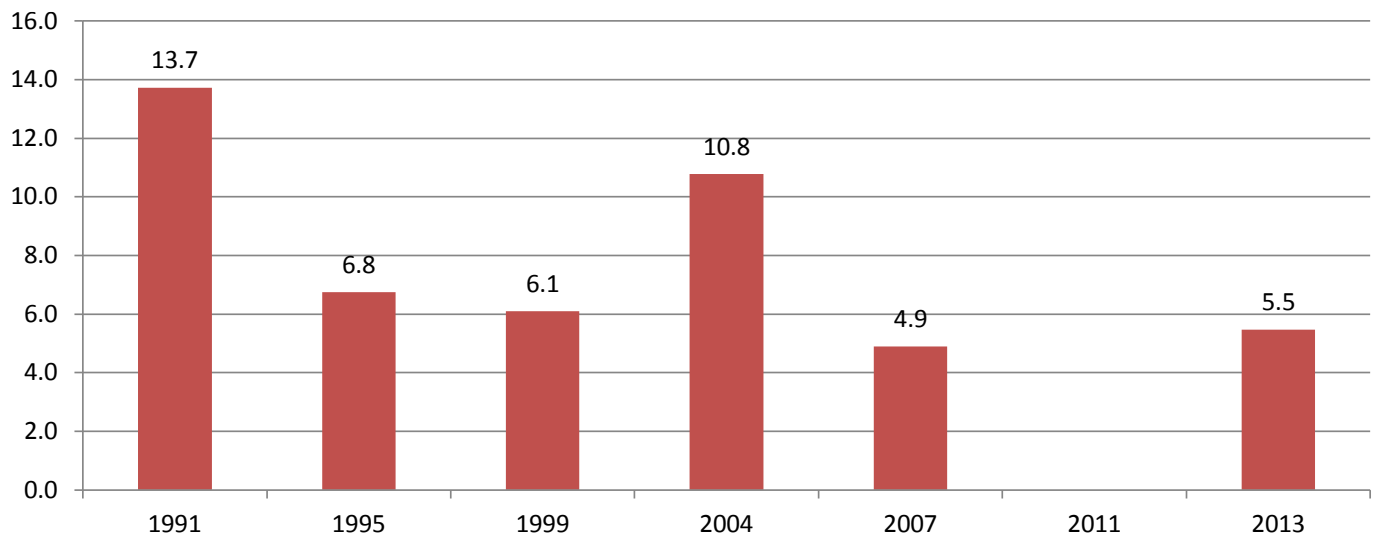


Figure 382: Parsley: reasons for fungicide use (spha).



Rhubarb crops

Figure 383: Comparison of the area of rhubarb crops grown in Northern Ireland (ha), 1991 - 2013.



Pesticide Usage on rhubarb crops:

5.48 hectares of rhubarb crops grown in Northern Ireland all of which grown in County Armagh

10.95 treated hectares

5.48kg applied

100% of crops received at least one treatment

Glyphosate was the only herbicide applied to control grass

Rhubarb crops received on average 2.0 herbicide applications.

Table 1: The total number of farms in each size group with vegetable crops in the June 2013 census and number of samples from each size group

<i>County</i>	Size group (hectares)									
	< 5		5 < 15		15 < 40		40+		Total	
	A	B	A	B	A	B	A	B	A	B
Antrim	13	5	2	1	1	1	0	0	16	7
Armagh	14	5	4	3	4	3	3	1	25	12
Down	25	6	9	9	12	4	7	4	53	22
Fermanagh	5	0	0	0	0	0	0	0	5	0
Londonderry	4	1	3	2	1	1	0	0	8	4
Tyrone	4	2	1	3	1	0	0	0	6	5
<i>Northern Ireland</i>	65	19	19	18	19	9	10	5	113	51

Legend

A = Total number of holdings in strata

B = Number of holdings surveyed

Table 2: Total number and area of crops surveyed (hectares) in Northern Ireland, 2013

<i>Crop</i>	<i>Number of Crops Surveyed</i>	<i>Surveyed area (ha)</i>
Broccoli	14	17.9
Calabrese	2	14.6
Brussel sprouts	12	17.3
Autumn cabbage	2	6.1
Spring cabbage	6	3.5
Winter cabbage	5	3.6
Summer cabbage	7	8.8
Savoy cabbage	25	70.3
White cabbage	10	15.3
Red cabbage	5	12.0
Autumn cauliflower	7	6.4
Summer cauliflower	23	25.5
Winter cauliflower	4	4.8
Peas (not for animals)	6	2.3
Broad beans	22	16.2
Runner beans	1	0.0
Courgettes	1	0.002
Pumpkin	1	0.014
Carrots	37	230.0
Parsnips	33	120.8
Turnips	11	79.5
Swedes	5	82.0
Beetroot	9	10.9
Onions	1	8.1
Summer scallions	8	4.6
Soup leeks	10	26.0
Table leeks	19	45.6
Lettuce	21	28.8
Table celery	10	20.7
Soup celery	9	11.0
Parsley	12	13.4
Rhubarb	1	1.8
Celeriac	1	0.026
<i>All crops</i>	340	907.9

Table 3: Estimated area (hectares) of vegetable crops grown regionally in Northern Ireland 2013.

<i>Crop type</i>	County					Northern Ireland
	Antrim	Armagh	Down	Londonderry	Tyrone	
Broccoli	1.40	1.37	23.44	0.25	0.74	27.20
Calabrese	.	.	28.23	.	.	28.23
Brussel sprouts	2.46	14.66	6.68	1.96	3.71	29.47
Autumn cabbage	.	.	8.97	.	.	8.97
Spring cabbage	.	3.63	1.32	.	.	4.95
Winter cabbage	.	.	3.94	0.39	.	4.33
Summer cabbage	.	2.74	6.62	.	0.15	9.52
Savoy cabbage	.	3.75	97.42	.	3.71	104.89
White cabbage	.	.	26.88	.	0.20	27.08
Red cabbage	.	.	17.71	.	.	17.71
Autumn cauliflower	.	0.31	8.31	.	.	8.62
Summer cauliflower	0.78	1.29	31.30	.	1.56	34.93
Winter cauliflower	.	.	7.25	.	.	7.25
Peas (not for animals)	1.67	.	3.09	0.25	.	5.01
Broad beans	1.58	3.49	20.41	0.25	0.50	26.21
Runner beans	.	.	0.02	.	.	0.02
Courgettes	.	.	0.0073	.	.	0.0073
Pumpkin	.	.	0.0423	.	.	0.0423
Carrots	2.94	77.00	191.33	55.34	8.77	335.39
Parsnips	4.26	1.23	173.78	2.32	2.50	184.10
Turnips	1.17	23.82	84.08	0.25	9.80	119.11
Swedes	37.92	.	91.43	.	.	129.35
Beetroot	.	0.62	12.16	.	0.15	12.93
Onions	.	.	.	7.84	.	7.84
Summer scallions	0.91	.	10.69	.	0.20	11.79
Soup leeks	.	.	38.80	0.19	5.48	44.47
Table leeks	0.20	27.67	37.21	.	0.39	65.47
Lettuce	.	54.47	.	0.25	.	54.71
Table celery	.	36.17	2.30	.	.	38.47
Soup celery	.	0.61	18.30	0.19	.	19.10
Parsley	.	3.04	20.55	0.19	.	23.78
Rhubarb	.	5.48	.	.	.	5.48
Celeriac	.	.	0.08	.	.	0.08
All vegetable crops	55.31	261.33	972.34	69.66	37.86	1,396.50

Table 4a: Estimated area (spray hectares) of vegetable crops treated regionally in Northern Ireland 2013 with each pesticide type.

<i>Pesticide type</i>	<i>County</i>					<i>Northern Ireland</i>
	<i>Antrim</i>	<i>Armagh</i>	<i>Down</i>	<i>Londonderry</i>	<i>Tyrone</i>	
Fungicides	34.17	720.48	2,243.46	108.62	68.67	3,175.41
Herbicides	120.28	1,017.27	4,333.01	233.91	115.91	5,820.38
Insecticides	39.92	918.32	2,283.13	227.88	68.29	3,537.54
Molluscicides	.	2.55	83.94	.	.	86.49
Biological Controls	.	0.37	.	.	.	0.37
Growth Regulators	3.04	.	9.13	.	.	12.17
Other	75.85	.	.	.	.	75.85
Seed treatments	86.05	117.47	803.10	57.66	20.79	1,085.07
<i>All pesticides</i>	<i>359.31</i>	<i>2,776.47</i>	<i>9,755.77</i>	<i>628.06</i>	<i>273.67</i>	<i>13,793.27</i>

Table 4b: Estimated weight (kgs) of pesticide applied regionally in Northern Ireland 2013 with each pesticide type.

<i>Pesticide type</i>	<i>County</i>					<i>Northern Ireland</i>
	<i>Antrim</i>	<i>Armagh</i>	<i>Down</i>	<i>Londonderry</i>	<i>Tyrone</i>	
Fungicides	8.61	277.23	773.93	64.87	42.48	1,167.11
Herbicides	121.51	525.88	2,854.32	114.94	83.09	3,699.74
Insecticides	24.81	114.93	787.52	68.17	26.69	1,022.13
Molluscicides	.	0.15	4.67	.	.	4.82
Biological Controls	.	0.02	.	.	.	0.02
Growth Regulators	14.61	.	43.82	.	.	58.42
Other	1.90	.	.	.	.	1.90
Seed treatments	2.95	3.21	9.48	0.16	0.04	15.84
<i>All pesticides</i>	<i>174.39</i>	<i>921.42</i>	<i>4,473.74</i>	<i>248.15</i>	<i>152.30</i>	<i>5,969.99</i>

Table 5: The total area (spray hectares) and the basic area (hectares), of vegetable crops in Northern Ireland 2013 treated with each pesticide type.

<i>Crop type</i>	Pesticide Type																	
	Herbicides				Insecticides		Molluscicides		Biological controls		Growth regulators		Other		Seed treatments		All pesticides	
	Fungicides	& desiccants	Insecticides	Molluscicides	Biological controls	Growth regulators	Other	Seed treatments	All pesticides	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	
Broccoli	53.83	24.66	49.60	26.17	66.11	26.22	.	.	.	.	.	.	.	0.04	0.02	169.58	26.81
Calabrese	35.02	28.23	80.61	26.87	55.10	28.23	.	.	.	.	.	.	.	.	.	170.73	28.23
Brussel sprouts	89.02	27.31	52.19	29.03	62.52	27.46	3.52	3.52	.	.	.	.	.	0.06	0.05	207.32	29.47
Autumn cabbage	35.95	8.97	17.87	8.94	35.78	8.97	.	.	.	.	.	.	.	.	.	89.61	8.97
Spring cabbage	1.45	0.25	5.77	4.70	2.78	2.78	1.76	1.76	.	.	.	.	.	0.01	0.01	11.78	4.95
Winter cabbage	19.95	3.78	7.91	3.96	11.42	3.94	2.74	2.74	.	.	.	.	.	.	.	42.03	4.33
Summer cabbage	11.33	8.58	21.26	9.11	25.72	9.36	0.78	0.78	.	.	.	.	.	.	.	59.09	9.36
Savoy cabbage	246.88	101.46	231.16	103.13	309.62	103.12	5.49	5.49	.	.	.	.	.	19.00	9.50	812.16	104.89
White cabbage	84.55	26.88	58.18	26.44	128.33	26.88	.	.	.	.	.	.	.	0.04	0.02	271.10	27.08
Red cabbage	9.67	3.87	51.83	17.52	21.39	3.87	.	.	.	.	.	.	.	.	.	82.88	17.71
Autumn cauliflower	27.42	7.34	15.54	8.41	24.67	6.48	.	.	.	.	.	.	.	0.01	0.01	67.65	8.62
Summer cauliflower	55.34	27.86	69.95	33.69	82.93	34.54	.	.	.	.	.	.	.	0.05	0.03	208.28	34.93
Winter cauliflower	29.96	7.25	15.59	5.59	28.16	6.08	.	.	.	.	.	.	.	.	.	73.71	7.25
Peas (not for animals)	1.22	0.61	10.79	4.76	1.78	1.78	.	.	.	.	.	.	.	2.83	2.83	16.62	4.76
Broad beans	40.90	22.24	55.41	25.62	57.37	23.60	.	.	.	.	.	.	.	2.75	2.71	156.43	26.61
Runner beans	0.11	0.02	.	.	0.02	0.02	.	.	.	.	.	.	.	.	.	0.13	0.02
Courgettes	0.0146	0.0073	.	.	.	.	.	.	.	.	.	.	.	.	.	0.0146	0.0073
Pumpkin	0.0846	0.0423	.	.	.	.	.	.	.	.	.	.	.	.	.	0.0846	0.0423
Carrots	1,140.02	312.30	2,129.98	335.23	1,656.72	335.23	0.67	0.67	.	.	.	.	.	400.75	335.23	5,328.14	335.23
Parsnips	584.21	116.27	1,079.96	183.95	647.35	183.95	.	.	.	.	12.17	12.17	.	234.74	183.95	2,558.44	183.95
Turnips	5.88	5.88	336.02	117.69	68.49	23.52	71.53	71.53	.	.	.	.	.	118.87	118.87	600.78	118.87
Swedes	0.35	0.17	258.36	129.18	75.85	37.92	167.10	129.18	501.66	129.35
Beetroot	3.74	3.74	47.78	12.78	0.15	0.15	.	.	.	.	.	.	.	38.33	12.78	90.00	12.78
Onions	54.88	7.84	54.88	7.84	.	.	.	.	.	.	.	.	.	.	.	109.76	7.84
Summer scallions	17.01	9.61	58.54	11.79	.	.	.	.	.	.	.	.	.	7.15	7.15	82.70	11.79

Table 5 cont: The total area (spray hectares) and the basic area (hectares), of vegetable crops in Northern Ireland 2013 treated with each pesticide type.

<i>Crop type</i>	Pesticide Type																	
	Herbicides				Insecticides		Molluscicides		Biological controls		Growth regulators		Other		Seed treatments		All pesticides	
	Fungicides		& desiccants															
	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)	(sp ha)	(ha)
Soup leeks	200.28	44.23	353.31	43.47	.	.	.	.	.	.	.	.	.	.	33.08	33.08	586.67	44.47
Table leeks	163.51	57.31	280.91	64.74	0.15	0.15	.	.	.	.	.	.	.	.	20.89	20.89	465.46	65.47
Lettuce	126.25	50.82	107.28	53.64	158.71	53.09	.	.	0.37	0.37	.	.	.	.	0.43	0.43	393.04	54.47
Table celery	48.35	38.13	107.28	37.73	79.49	35.74	.	.	.	.	.	.	.	.	0.34	0.34	235.46	38.47
Soup celery	44.35	18.30	118.92	18.92	2.58	1.19	.	.	.	.	.	.	.	.	18.42	18.42	184.27	19.10
Parsley	43.71	19.41	132.53	23.68	10.17	5.95	.	.	.	.	.	.	.	.	20.18	20.18	206.59	23.78
Rhubarb	.	.	10.95	5.48	.	.	.	.	.	.	.	.	.	.	.	.	10.95	5.48
Celeriac	0.16	0.08	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.16	0.08
<i>All vegetable crops</i>	3,175.41	983.44	5,820.38	1,380.04	3,537.54	952.32	86.49	86.49	0.37	0.37	12.17	12.17	75.85	37.92	1,085.07	895.66	13,793.27	1,395.15

Table 6: The total quantities (kilograms) of each pesticide type used on vegetable crops in Northern Ireland 2013.

<i>Crop type</i>	Pesticide type								Total weight applied (kg)
	Fungicides Quantity (kg)	Herbicides Quantity (kg)	Insecticides Quantity (kg)	Molluscicides Quantity (kg)	Biological Controls Quantity (kg)	Growth Regulators Quantity (kg)	Other Quantity (kg)	Seed treatments Quantity (kg)	
Broccoli	10.37	40.41	4.35	.	.	.	.	0.00	55.13
Calabrese	11.00	51.11	87.83	.	.	.	.	.	149.93
Brussel sprouts	26.28	51.66	29.10	0.73	.	.	.	0.00	107.78
Autumn cabbage	8.50	19.57	5.56	.	.	.	.	.	33.63
Spring cabbage	1.57	4.33	14.49	0.11	.	.	.	0.00	20.49
Winter cabbage	5.27	5.80	22.93	0.57	.	.	.	.	34.56
Summer cabbage	2.93	10.24	17.46	0.05	.	.	.	.	30.68
Savoy cabbage	44.79	154.98	136.25	1.1410	.	.	.	3.38	340.55
White cabbage	16.23	35.56	47.49	.	.	.	.	0.00	99.27
Red cabbage	3.37	25.72	12.76	.	.	.	.	.	41.86
Autumn cauliflower	7.64	16.73	14.98	.	.	.	.	0.00	39.36
Summer cauliflower	18.39	49.15	81.19	.	.	.	.	0.00	148.73
Winter cauliflower	15.01	8.53	100.05	.	.	.	.	.	123.59
Peas (not for animals)	1.57	12.66	0.01	.	.	.	.	0.18	14.42
Broad beans	11.78	40.56	3.46	.	.	.	.	0.20	56.00
Runner beans	0.12	.	1.09	.	.	.	.	.	1.21
Courgettes	0.0411	.	.	.	.	.	.	.	0.0411
Pumpkin	0.2550	.	.	.	.	.	.	.	0.2550
Carrots	399.91	1,146.90	164.21	0.08	.	.	.	3.65	1,714.76
Parsnips	239.06	816.52	92.29	.	.	58.42	.	1.14	1,207.43
Turnips	1.36	137.59	114.35	2.15	.	.	.	0.07	255.52
Swedes	0.64	156.42	.	.	.	.	1.90	2.96	161.91
Beetroot	3.14	80.40	0.00	.	.	.	.	0.36	83.91
Onions	51.43	27.35	.	.	.	.	.	.	78.79
Summer scallions	19.11	34.43	.	.	.	.	.	0.17	53.71
Soup leeks	85.76	169.16	.	.	.	.	.	0.04	254.96
Table leeks	89.96	163.76	0.00	.	.	.	.	0.02	253.74
Lettuce	42.16	78.72	47.26	.	0.02	.	.	2.98	171.15
Table celery	17.01	136.89	24.67	.	.	.	.	0.00	178.58
Soup celery	14.57	103.67	0.02	.	.	.	.	0.25	118.51

Table 6 cont: The total quantities (kilograms) of each pesticide type used on vegetable crops in Northern Ireland 2013.

<i>Crop type</i>	Pesticide type								Total weight applied (kg)
	Fungicides Quantity (kg)	Herbicides Quantity (kg)	Insecticides Quantity (kg)	Molluscicides Quantity (kg)	Biological Controls Quantity (kg)	Growth Regulators Quantity (kg)	Other Quantity (kg)	Seed treatments Quantity (kg)	
Parsley	17.60	115.44	0.32	.	.	.	.	0.41	133.78
Rhubarb	.	5.48	.	.	.	.	.	.	5.48
Celeriac	0.2870	.	.	.	.	.	.	.	0.2870
<i>All vegetable crops</i>	<i>1,167.11</i>	<i>3,699.74</i>	<i>1,022.13</i>	<i>4.82</i>	<i>0.02</i>	<i>58.42</i>	<i>1.90</i>	<i>15.84</i>	<i>5,969.99</i>

Table 7: The proportional area (%) of each crop treated with pesticides and the number of spray applications (in parentheses) in Northern Ireland, 2013.

<i>Crop type</i>	Pesticide type																	
	Fungicides		Herbicides & desiccants		Insecticides		Molluscicides		Biological controls		Growth regulators		Other		Seed treatments		All pesticides	
	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps
Broccoli	90.7%	(1.68)	96.2%	(1.81)	96.38%	(2.17)	.	.	.	.	.	.	.	.	0.07%	(2.00)	98.5%	(1.93)
Calabrese	100.0%	(4.08)	95.2%	(3.00)	100.00%	(1.38)	.	.	.	.	.	.	.	.	.	.	100.0%	(2.78)
Brussel sprouts	92.7%	(4.17)	98.5%	(1.80)	93.20%	(2.68)	11.96%	(1.00)	.	.	.	.	.	.	0.17%	(1.62)	100.0%	(2.74)
Autumn cabbage	100.0%	(5.35)	99.6%	(2.00)	100.00%	(1.98)	.	.	.	.	.	.	.	.	.	.	100.0%	(3.43)
Spring cabbage	5.1%	(3.50)	94.9%	(1.38)	56.30%	(1.00)	35.62%	(1.00)	.	.	.	.	.	.	0.22%	(1.00)	100.0%	(1.82)
Winter cabbage	87.4%	(5.86)	91.4%	(2.00)	90.95%	(2.10)	63.27%	(1.00)	.	.	.	.	.	.	.	.	100.0%	(3.04)
Summer cabbage	90.2%	(3.11)	95.7%	(2.09)	98.40%	(2.43)	8.24%	(1.00)	.	.	.	.	.	.	.	.	98.4%	(2.51)
Savoy cabbage	96.7%	(2.81)	98.3%	(1.81)	98.32%	(2.52)	5.23%	(1.00)	.	.	.	.	.	.	9.06%	(1.55)	100.0%	(2.30)
White cabbage	99.3%	(3.34)	97.7%	(2.21)	99.28%	(4.12)	.	.	.	.	.	.	.	.	0.08%	(2.00)	100.0%	(3.26)
Red cabbage	21.8%	(3.63)	98.9%	(2.75)	21.85%	(3.57)	.	.	.	.	.	.	.	.	.	.	100.0%	(3.36)
Autumn cauliflower	85.2%	(4.34)	97.6%	(1.38)	75.15%	(1.87)	.	.	.	.	.	.	.	.	0.09%	(1.24)	100.0%	(2.28)
Summer cauliflower	79.8%	(3.19)	96.4%	(2.00)	98.87%	(2.00)	.	.	.	.	.	.	.	.	0.08%	(1.56)	100.0%	(2.30)
Winter cauliflower	100.0%	(5.20)	77.1%	(2.60)	83.84%	(1.97)	.	.	.	.	.	.	.	.	.	.	100.0%	(3.54)
Peas (not for animals)	12.1%	(2.00)	95.1%	(1.66)	35.56%	(1.00)	.	.	.	.	.	.	.	.	56.52%	(1.00)	95.1%	(1.47)
Broad beans	84.8%	(1.69)	97.7%	(1.64)	90.02%	(2.13)	.	.	.	.	.	.	.	.	10.33%	(1.15)	101.5%	(1.72)
Runner beans	100.0%	(6.00)	.	.	100.00%	(1.00)	.	.	.	.	.	.	.	.	.	.	100.0%	(3.50)
Courgettes	100.0%	(2.00)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100.0%	(2.00)
Pumpkin	100.0%	(2.00)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100.0%	(2.00)
Carrots	93.1%	(4.22)	100.0%	(5.43)	99.95%	(4.06)	0.20%	(1.00)	.	.	.	.	.	.	99.95%	(1.30)	100.0%	(3.67)
Parsnips	63.2%	(4.34)	99.9%	(5.24)	99.92%	(3.98)	.	.	.	.	6.6%	(1.00)	.	.	99.92%	(1.34)	99.9%	(3.62)
Turnips	4.9%	(1.00)	98.8%	(2.35)	19.75%	(2.05)	60.05%	(1.00)	.	.	.	.	.	.	99.79%	(1.00)	99.8%	(1.71)
Swedes	0.1%	(2.00)	99.9%	(2.00)	.	.	.	.	.	.	.	.	29.3%	(2.00)	99.87%	(1.56)	100.0%	(1.92)
Beetroot	29.0%	(1.00)	98.8%	(2.59)	1.18%	(1.00)	.	.	.	.	.	.	.	.	98.82%	(3.00)	98.8%	(2.48)
Onions	100.0%	(7.00)	100.0%	(7.00)	.	.	.	.	.	.	.	.	.	.	.	.	100.0%	(7.00)

Table 7 cont: The proportional area (%) of each crop treated with pesticides and the number of spray applications (in parentheses) in Northern Ireland, 2013.

<i>Crop type</i>	Pesticide type																	
	Fungicides		Herbicides & desiccants		Insecticides		Molluscicides		Biological controls		Growth regulators		Other		Seed treatments		All pesticides	
	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps	%	sp apps
Summer scallions	81.5%	(1.90)	100.0%	(4.28)	.	.	.	.	.	.	.	.	.	.	60.60%	(1.00)	100.0%	(2.92)
Soup leeks	99.5%	(4.28)	97.7%	(5.71)	.	.	.	.	.	.	.	.	.	.	74.38%	(1.00)	100.0%	(4.21)
Table leeks	87.5%	(2.32)	98.9%	(3.40)	0.23%	(1.00)	.	.	.	.	.	.	.	.	31.90%	(1.00)	100.0%	(2.41)
Lettuce	92.9%	(2.79)	98.0%	(2.00)	97.03%	(3.00)	.	.	0.68%	(1.00)	.	.	.	.	0.78%	(1.00)	99.5%	(2.49)
Table celery	99.1%	(2.23)	98.1%	(2.41)	92.92%	(2.97)	.	.	.	.	.	.	.	.	0.88%	(1.00)	100.0%	(2.35)
Soup celery	95.8%	(4.02)	99.0%	(2.95)	6.25%	(2.12)	.	.	.	.	.	.	.	.	96.44%	(1.00)	100.0%	(2.59)
Parsley	81.6%	(3.28)	99.6%	(3.06)	25.03%	(1.74)	.	.	.	.	.	.	.	.	84.85%	(1.00)	100.0%	(2.29)
Rhubarb	.	.	100.0%	(2.00)	.	.	.	.	.	.	.	.	.	.	.	.	100.0%	(2.00)
Celeriac	100.0%	(2.00)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	100.0%	(2.00)
All crops	70.42%	(3.30)	98.82%	(3.08)	68.19%	(2.80)	6.19%	(1.00)	0.03%	(1.00)	0.872%	(1.00)	2.72%	(2.00)	64.14%	(1.34)	99.9%	(2.75)

Table 8: Estimated area (spray hectares) of vegetable crops treated with pesticide formulations in Northern Ireland 2013

Pesticide type & formulation	Leafy brassic	Carrot	Celery	Leek	Lettuce	Onions & spring onions	Other vegetables	Parsley	Parsnip	Peas & beans	Turnip & swede	All curcurbit	Total Area (spha)
<i>Fungicides</i>													
Azoxystrobin	21.59	131.70	31.25	45.60	67.73	16.68	.	17.14	43.25	5.01	1.57	.	381.51
Azoxystrobin/difenoconazole	77.33	213.97	27.48	31.68	.	.	.	0.61	85.58	2.65	.	.	439.30
Benthiavalicarb-isopropyl/mancozeb	.	.	.	.	.	7.84	.	.	.	.	.	.	7.84
Boscalid/pyraclostrobin	42.92	256.72	1.78	12.03	.	.	.	.	64.91	1.78	.	.	380.13
Chlorothalonil	2.16	.	.	7.36	.	13.99	.	.	.	0.04	.	.	23.56
Chlorothalonil/metalaxyl-M	27.96	.	0.61	4.23	.	.	.	0.61	.	1.78	.	.	35.18
Copper oxychloride	.	.	1.78	.	.	7.84	.	.	.	.	.	.	9.62
Cyprodinil/fludioxonil	8.27	11.19	.	.	.	.	.	.	4.12	0.02	.	.	23.60
Difenoconazole	366.82	.	25.49	4.61	.	.	.	18.87	.	21.73	.	.	437.52
Dimethomorph	8.27	.	.	.	.	.	.	.	.	0.02	.	.	8.29
Dimethomorph/mancozeb	.	.	0.78	56.25	.	7.84	.	2.57	.	.	.	.	67.44
Fenpropimorph	.	51.17	.	.	.	.	3.14	.	84.04	.	.	.	138.35
Fosetyl-aluminium/propamocarb hydrochloride	8.27	.	.	.	.	.	.	.	.	0.02	.	.	8.29
Iprodione	8.28	.	.	.	.	.	.	0.11	.	0.02	0.17	.	8.58
Mancozeb	.	.	.	11.08	.	7.84	.	.	.	.	.	.	18.92
Mancozeb/metalaxyl-M	.	.	2.43	21.91	15.38	9.86	0.61	3.61	.	1.83	.	.	55.63
Mandipropamid	.	.	.	.	43.14	.	.	.	.	.	.	.	43.14
Metalaxyl-M	.	184.93	.	.	.	.	.	.	109.43	.	.	.	294.37
Propamocarb hydrochloride	8.36	.	0.55	1.68	.	.	0.08	0.11	.	0.06	0.17	0.05	11.05
Prothioconazole	91.48	186.60	.	89.00	.	.	.	.	49.85	2.65	.	.	419.59
Tebuconazole	12.85	66.70	.	46.89	.	.	.	.	91.95	4.60	4.31	.	227.30
Tebuconazole/trifloxystrobin	7.51	37.04	.	29.80	.	.	.	.	51.07	.	.	.	125.42
Thiram	8.27	.	0.55	1.68	.	.	0.08	0.11	.	0.02	.	0.05	10.75
Tolclofos-methyl	0.02	.	.	.	.	.	.	.	.	.	0.00	.	0.02
<i>All fungicides</i>	700.38	1,140.02	92.71	363.79	126.25	71.89	3.90	43.71	584.21	42.22	6.23	0.10	3,175.41

Table 8 cont: Estimated area (spray hectares) of vegetable crops treated with pesticide formulations in Northern Ireland 2013

Pesticide type & formulation	Leafy		Celery	Leek	Lettuce	Onions &	Other	Parsley	Parsnip	Peas &	Turnip &	All	Total
	brassic	Carrot				spring onions	vegetables			beans	swede	curcurbit		Area (spha)
<i>Herbicides & dessicants</i>													
Bentazone	.	.	.	.	.	.	.	.	.	2.25	.	.	2.25
Chloridazon	.	.	.	41.66	.	9.77	.	.	.	.	.	.	51.42
Clomazone	155.57	190.99	0.61	.	.	.	.	0.61	.	10.75	187.57	.	546.10
Clopyralid	.	.	.	.	.	.	.	.	.	.	28.13	.	28.13
Cycloxydim	.	.	.	21.91	.	.	.	.	.	.	.	.	21.91
Desmedipham/ethofumesate/phenmedipham	.	.	.	.	.	.	0.62	.	.	.	.	.	0.62
Dimethenamid-P/Pendimethalin	.	.	.	21.92	44.43	0.15	.	.	.	.	.	.	66.50
Diquat	.	69.82	1.78	4.17	.	0.30	1.17	1.78	56.59	3.56	.	.	139.18
Ethametsulfuron-methyl	.	.	.	.	.	.	.	.	.	.	10.75	.	10.75
Ethofumesate	.	.	.	.	.	.	3.14	.	.	.	.	.	3.14
Fluroxypyr	.	.	.	11.61	.	.	.	.	.	.	.	.	11.61
Glyphosate	144.26	87.24	46.35	89.18	9.21	5.93	19.85	19.87	98.96	13.47	121.29	.	655.62
Imazamox/pendimethalin	.	.	.	.	.	.	.	.	.	3.56	.	.	3.56
Ioxynil	.	.	.	271.34	.	48.38	.	.	.	.	.	.	319.72
Lenacil	.	.	.	.	.	.	7.42	.	.	.	.	.	7.42
Linuron	0.78	647.88	84.62	.	.	.	0.15	57.74	415.22	0.91	0.16	.	1207.46
MCPB	.	.	.	.	.	.	.	.	.	1.23	.	.	1.23
Metamitron	.	.	.	.	.	.	15.57	.	67.72	.	.	.	83.28
Metazachlor	343.83	.	.	39.59	.	.	0.15	.	.	22.18	242.56	.	648.30
Metribuzin	.	334.43	.	.	.	.	.	.	.	.	.	.	334.43
Paraquat	.	1.54	.	.	.	.	.	.	1.23	.	.	.	2.77
Pendimethalin	.	397.49	23.96	63.49	44.43	27.22	.	18.66	180.81	0.61	.	.	756.66
Phenmedipham	.	.	.	.	.	.	7.53	.	.	.	.	.	7.53
Propachlor	.	.	.	.	.	2.77	.	.	.	.	.	.	2.77
Propaquizafop	.	124.11	.	.	.	0.91	.	.	31.08	.	.	.	156.11
Propyzamide	26.87	.	.	.	9.21	.	.	.	.	7.68	.	.	43.77
Prosulfocarb	.	187.60	68.87	59.73	.	9.57	.	33.86	186.09	.	.	.	545.74
Pyridate	6.16	.	.	.	.	.	.	.	.	.	.	.	6.16
Tepraloxymid	.	88.86	.	9.63	.	8.43	.	.	42.26	.	3.92	.	153.09
Triflurosulfuron-methyl	.	.	.	.	.	.	3.14	.	.	.	.	.	3.14
All herbicides & dessicants	677.47	2129.98	226.20	634.22	107.28	113.42	58.73	132.53	1079.96	66.20	594.37	.	5820.38

Table 8 cont: Estimated area (spray hectares) of vegetable crops treated with pesticide formulations in Northern Ireland 2013

Pesticide type & formulation	Leafy brassiccas	Carrot	Celery	Leek	Lettuce	Onions & spring onions	Other vegetables	Parsley	Parsnip	Peas & beans	Turnip & swede	All curcurbit	Total Area (spha)
<i>Insecticides</i>													
Chlorpyrifos	19.09	1.54	.	.	.	.	.	.	1.23	0.68	8.62	.	31.16
Cypermethrin	162.89	.	.	.	.	.	.	.	.	2.77	.	.	165.66
Deltamethrin	20.52	163.69	3.03	.	34.08	.	.	.	10.01	7.09	.	.	238.42
Diflubenzuron	0.00	.	.	.	3.79	.	.	.	.	.	.	.	3.79
Dimethoate	2.46	.	.	.	.	.	.	.	.	.	.	.	2.46
Garlic Extract	.	.	11.76	.	22.28	.	.	.	.	.	56.58	.	90.62
Indoxacarb	28.27	.	.	.	.	.	.	.	10.31	5.45	.	.	44.02
Lambda-cyhalothrin	205.54	886.45	29.60	0.15	9.21	.	0.15	8.39	498.34	27.33	3.29	.	1668.45
Lambda-cyhalothrin/pirimicarb	4.32	10.02	.	.	.	.	.	.	0.61	.	.	.	14.95
Oxamyl	.	77.15	.	.	.	.	.	.	43.25	.	.	.	120.40
Pirimicarb	225.20	210.85	26.87	.	9.21	.	.	1.78	3.52	10.40	.	.	487.83
Pymetrozine	6.18	.	10.81	.	50.02	.	.	.	.	2.21	.	.	69.22
Spirotetramat	73.63	.	.	.	30.11	.	.	.	.	.	.	.	103.74
Thiacloprid	106.45	307.03	.	.	.	.	.	.	80.08	3.24	.	.	496.80
All insecticides	854.55	1,656.72	82.07	0.15	158.71	.	0.15	10.17	647.35	59.17	68.49	.	3,537.54
<i>Molluscicides</i>													
Ferric phosphate	11.75	.	.	.	.	.	.	.	.	.	71.53	.	83.28
Methiocarb	2.55	0.67	.	.	.	.	.	.	.	.	.	.	3.22
All molluscicides	14.30	0.67	.	.	.	.	.	.	.	.	71.53	.	86.49
<i>Growth regulators</i>													
Maleic hydrazide	.	.	.	.	.	.	.	.	12.17	.	.	.	12.17
All growth regulators	.	.	.	.	.	.	.	.	12.17	.	.	.	12.17
<i>Seed Treatments</i>													
Cymoxanil/fludioxonil/metalaxyl-M	.	279.79	.	.	.	.	12.78	.	182.41	.	.	.	474.98
Imidacloprid	.	.	.	.	0.06	.	.	.	.	.	.	.	0.06
Iprodione	9.58	.	.	.	.	.	12.78	.	.	0.04	186.15	.	208.54

Table 8 cont: Estimated area (spray hectares) of vegetable crops treated with pesticide formulations in Northern Ireland 2013

Pesticide type & formulation	Leafy brassic	Carrot	Celery	Leek	Lettuce	Onions & spring onions	Other vegetables	Parsley	Parsnip	Peas & beans	Turnip & swede	All curcurbit	Total Area (spha)
Tefluthrin	.	65.52	.	.	.	.	.	.	50.79	.	.	.	116.31
Thiamethoxam	.	.	.	.	.	.	.	.	.	.	37.92	.	37.92
Thiram	9.64	55.44	18.757201	53.96	0.37	7.15	12.78	20.18	1.54	5.54	61.90	.	247.25
All seed treatments	19.21	400.75	18.76	53.96	0.43	7.15	38.33	20.18	234.74	5.58	285.97	.	1,085.07
Biological controls													
Bacillus subtilis	.	.	.	.	0.37	.	.	.	.	.	.	.	0.37
All biological controls	.	.	.	.	0.37	.	.	.	.	.	.	.	0.37
Adjuvants													
Alcohol ethoxylates/fatty acids	.	5.96	1.78	4.17	.	.	.	1.78	.	3.56	.	.	17.26
Polyalkylene oxide modified heptamethyl siloxane	.	9.80	.	.	.	.	.	.	.	.	.	.	9.80
Rapeseed fatty acid esters	.	.	.	.	.	.	0.62	.	.	.	.	.	0.62
All adjuvants	.	15.76	1.78	4.17	.	.	0.62	1.78	.	3.56	.	.	27.67
Other													
Calcium chloride	.	.	.	.	.	.	.	.	.	.	75.85	.	75.85
All other	.	.	.	.	.	.	.	.	.	.	75.85	.	75.85
All pesticides (inc. adjuvants)	2,265.91	5,343.90	421.51	1,056.30	393.04	192.46	101.73	208.37	2,558.44	176.74	1,102.43	0.10	13,820.94

Table 9: Estimated quantities (kilograms) of pesticide formulations used on vegetable crops in Northern Ireland 2013.

Pesticide type & formulation	Leafy brassic	Carrot	Celery	Leek	Lettuce	Onions & spring onions	Other vegetables	Parsley	Parsnip	Peas & beans	Turnip & swede	All curcurbit	Total Area (spha)
<i>Fungicides</i>													
Azoxystrobin	3.77	32.92	7.32	11.40	16.93	3.39	.	4.28	10.81	1.25	0.39	.	92.46
Azoxystrobin/difenoconazole	25.13	69.50	8.93	10.30	.	.	.	0.20	27.81	0.86	.	.	142.73
Benthiavdicarb-isopropyl/mancozeb	.	.	.	.	.	8.44	.	.	.	.	.	.	8.44
Boscalid/pyraclostrobin	14.33	85.70	0.60	4.41	.	.	.	.	21.25	0.60	.	.	126.89
Chlorothalonil	2.2	.	.	7.36	.	13.99	.	.	.	0.04	.	.	23.6
Chlorothalonil/metalaxyl-M	16.03	.	0.65	4.54	.	.	.	0.65	.	1.92	.	.	23.79
Copper oxychloride	.	.	3.10	.	.	7.84	.	.	.	.	.	.	10.94
Cyprodinil/fludioxonil	4.14	5.59	.	.	.	.	.	.	2.06	0.01	.	.	11.80
Difenoconazole	27.40	.	4.70	0.35	.	.	.	4.10	.	1.63	.	.	38.18
Dimethomorph	1.49	.	.	.	.	.	.	.	.	.	.	.	1.49
Dimethomorph/mancozeb	.	.	1.16	50.15	.	11.63	.	3.81	.	.	.	.	66.76
Fenpropimorph	.	38.38	.	.	.	.	2.35	.	63.03	.	.	.	103.76
Fosetyl-aluminium/propamocarb hydrochloride	17.38	.	.	.	.	.	.	.	.	0.04	.	.	17.41
Iprodione	0.58	.	.	.	.	.	.	0.00	.	.	0.01	.	0.59
Mancozeb	.	.	.	16.61	.	12.54	.	.	.	.	.	.	29.16
Mancozeb/metalaxyl-M	.	.	3.14	28.26	19.83	12.71	0.78	4.17	.	2.35	.	.	71.26
Mandipropamid	.	.	.	.	5.39	.	.	.	.	.	.	.	5.39
Metalaxyl-M	.	109.38	.	.	.	.	.	.	70.04	.	.	.	179.42
Propamocarb hydrochloride	36.02	.	1.97	6.06	.	.	0.29	0.38	.	3.21	0.63	0.18	48.73
Prothioconazole	17.56	35.77	.	15.43	.	.	.	.	9.57	0.51	.	.	78.85
Tebuconazole	2.90	13.50	.	11.72	.	.	.	.	22.99	1.04	0.97	.	53.12
Tebuconazole/trifloxystrobin	1.69	9.17	.	8.94	.	.	.	.	11.49	.	.	.	31.29
Thiram	0.55	.	0.01	0.18	.	.	0.0009	0.01	.	.	.	0.12	0.86
Tolclofos-methyl	0.22	.	.	.	.	.	.	.	.	.	.	.	0.22
All fungicides	171.35	399.91	31.58	175.72	42.16	70.54	3.42	17.60	239.06	13.47	2.00	0.30	1167.11

Table 9 cont: Estimated quantities (kilograms) of pesticide formulations used on vegetable crops in Northern Ireland 2013.

Pesticide type & formulation	Leafy brassicas	Carrot	Celery	Leek	Lettuce	Onions & spring onions	Other vegetables	Parsley	Parsnip	Peas & beans	Turnip & swede	All curcubit	Total Area (spha)
<i>Herbicides & desiccants</i>													
Bentazone	.	.	.	.	.	.	.	.	.	3.23	.	.	3.23
Chloridazon	.	.	.	19.88	.	3.60	.	.	.	.	.	.	23.48
Clomazone	9.84	13.40	0.05	.	.	.	.	0.05	.	0.74	11.42	.	35.51
Clopyralid	.	.	.	.	.	.	.	.	.	.	1.72	.	1.72
Cycloxydim	.	.	.	9.86	.	.	.	.	.	.	.	.	9.86
Desmedipham/ethofumesate/phenmedipham	.	.	.	.	.	.	0.32	.	.	.	.	.	0.32
Dimethenamid-P/Pendimethalin	.	.	.	35.40	24.66	0.12	.	.	.	.	.	.	60.18
Diquat	.	30.31	1.43	1.67	.	0.12	0.23	1.43	21.62	2.85	.	.	59.66
Ethametsulfuron-methyl	.	.	.	.	.	.	.	.	.	.	0.20	.	0.20
Ethofumesate	.	.	.	.	.	.	3.14	.	.	.	.	.	3.14
Fluroxypyr	.	.	.	0.58	.	.	.	.	.	.	.	.	0.58
Glyphosate	168.36	84.00	63.68	59.93	16.58	3.88	12.45	15.87	88.22	13.08	118.89	.	644.94
Imazamox/pendimethalin	.	.	.	.	.	.	.	.	.	4.28	.	.	4.28
Ioxynil	.	.	.	46.01	.	7.13	.	.	.	.	.	.	53.13
Lenacil	.	.	.	.	.	.	13.24	.	.	.	.	.	13.24
Linuron	0.47	196.05	26.96	.	.	.	0.09	18.29	120.11	0.33	0.09	.	362.39
MCPB	.	.	.	.	.	.	.	.	.	1.85	.	.	1.85
Metamitron	.	.	.	.	.	.	53.54	.	90.96	0.00	.	.	144.51
Metazachlor	256.85	.	.	29.69	.	.	0.11	.	.	16.53	161.39	.	464.59
Metribuzin	.	70.24	.	.	.	.	.	.	.	.	.	.	70.24
Paraquat	.	0.37	.	.	.	.	.	.	0.30	.	.	.	0.67
Pendimethalin	.	434.68	26.06	43.53	24.58	24.95	.	24.04	217.22	0.80	.	.	795.87
Phenmedipham	.	.	.	.	.	.	2.71	.	.	.	.	.	2.71
Propachlor	.	.	.	.	.	6.35	.	.	.	.	.	.	6.35
Propaquizafop	.	16.01	.	.	.	0.14	.	.	3.73	.	.	.	19.87
Propyzamide	33.32	.	.	.	12.90	.	.	.	.	9.52	.	.	55.75
Prosulfocarb	.	295.18	122.39	85.87	.	14.86	.	55.75	271.41	.	.	.	845.46
Pyridate	4.93	.	.	.	.	.	.	.	.	.	.	.	4.93
Tepraloxymid	.	6.67	.	0.51	.	0.63	.	.	2.95	.	0.29	.	11.05
Triflurosulfuron-methyl	.	.	.	.	.	.	0.05	.	.	.	.	.	0.05
All herbicides & desiccants	473.78	1146.90	240.57	332.92	78.72	61.78	85.89	115.44	816.52	53.22	294.01	.	3699.74

Table 9 cont: Estimated quantities (kilograms) of pesticide formulations used on vegetable crops in Northern Ireland 2013.

Pesticide type & formulation	Leafy brassicas	Carrot	Celery	Leek	Lettuce	Onions & spring onions	Other vegetables	Parsley	Parsnip	Peas & beans	Turnip & swede	All curcurbit	Total Area (spha)
<i>Insecticides</i>													
Chlorpyrifos	505.10	1.03	.	.	.	.	.	.	0.83	1.69	4.66	.	513.31
Cypermethrin	4.27	.	.	.	.	.	.	.	.	0.07	.	.	4.34
Deltamethrin	0.15	1.23	0.020479	.	0.26	.	.	.	0.08	0.053	.	.	1.79
Diflubenzuron	.	.	.	.	0.36	.	.	.	.	.	.	.	0.36
Dimethoate	0.99	.	.	.	.	.	.	.	.	.	.	.	0.99
Garlic Extract	.	.	18.81	.	35.65	.	.	.	.	.	109.65	.	164.11
Indoxacarb	0.72	.	.	.	.	.	.	.	0.26	0.14	.	.	1.12
Lambda-cyhalothrin	2.00	9.56	0.227523	0.0023	0.03	.	0.0023	0.07	5.78	0.26	0.05	.	18.00
Lambda-cyhalothrin/pirimicarb	0.91	1.58	.	.	.	.	.	.	0.10	.	.	.	2.58
Oxamyl	.	98.42	.	.	.	.	.	.	77.01	.	.	.	175.44
Pirimicarb	43.32	22.91	3.76	.	1.15	.	.	0.25	0.55	1.59	.	.	73.52
Pymetrozine	1.24	.	1.88	.	7.55	.	.	.	.	0.44	.	.	11.10
Spirotetramat	5.52	.	.	.	2.26	.	.	.	.	.	.	.	7.78
Thiacloprid	10.22	29.47	.	.	.	.	.	.	7.69	0.31	.	.	47.69
<i>All insecticides</i>	<i>574.44</i>	<i>164.21</i>	<i>24.70</i>	<i>0.0023</i>	<i>47.26</i>	<i>.</i>	<i>0.0023</i>	<i>0.32</i>	<i>92.29</i>	<i>4.55</i>	<i>114.35</i>	<i>.</i>	<i>1,022.13</i>
<i>Molluscicides</i>													
Ferric phosphate	2.44	.	.	.	.	.	.	.	.	.	2.15	.	4.59
Methiocarb	0.15	0.08	.	.	.	.	.	.	.	.	0.00	.	0.23
<i>All molluscicides</i>	<i>2.60</i>	<i>0.08</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>2.15</i>	<i>.</i>	<i>4.82</i>
<i>Growth regulators</i>													
Maleic hydrazide	.	.	.	.	.	.	.	.	58.42	.	.	.	58.42
<i>All growth regulators</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>58.42</i>	<i>.</i>	<i>.</i>	<i>.</i>	<i>58.42</i>
<i>Seed treatments</i>													
Cymoxanil/fludioxonil/metalaxyl-M	.	0.39	.	.	.	.	0.02	.	0.11	.	.	.	0.53
Imidacloprid	.	.	.	.	2.97	.	.	.	.	.	.	.	2.97
Iprodione	1.73	.	.	.	.	.	0.15	.	.	0.0034	0.15	.	2.03

Table 9 cont: Estimated quantities (kilograms) of pesticide formulations used on vegetable crops in Northern Ireland 2013.

Pesticide type & formulation	Leafy brassic	Carrot	Celery	Leek	Lettuce	Onions & spring onions	Other vegetables	Parsley	Parsnip	Peas & beans	Turnip & swede	All curcurbit	Total Area (spha)
Tefluthrin	.	3.11	.	.	.	.	.	.	1.02	.	.	.	4.13
Thiamethoxam	.	.	.	.	.	.	.	.	.	.	2.82	.	2.82
Thiram	1.67	0.15	0.25	0.06	0.01	0.17	0.20	0.41	0.02	0.38	0.06	.	3.37
All seed treatments	3.40	3.65	0.25	0.06	2.98	0.17	0.36	0.41	1.14	0.38	3.03	.	15.84
Biological controls													
Bacillus subtilis	.	.	.	.	0.02	.	.	.	.	.	.	.	0.02
All biological controls	.	.	.	.	0.02	.	.	.	.	.	.	.	0.02
Adjuvants													
Alcohol ethoxylates/fatty acids	.	5.37	1.60	3.75	.	.	.	1.60	.	3.21	.	.	15.53
Polyalkylene oxide modified heptamethyl siloxane	.	3.27	.	.	.	.	.	.	.	.	.	.	3.27
Rapeseed fatty acid esters	.	.	.	.	.	.	0.29	.	.	.	.	.	0.29
All adjuvants	.	8.63	1.60	3.75	.	.	0.29	1.60	.	3.21	.	.	19.09
Other													
Calcium chloride	.	.	.	.	.	.	.	.	.	.	1.90	.	1.90
All other	.	.	.	.	.	.	.	.	.	.	1.90	.	1.90
All pesticides (inc. adjuvants)	1,225.55	1,723.39	298.70	512.45	171.15	132.50	89.97	135.38	1,207.43	74.83	417.43	0.30	5,989.08
All pesticides (no adjuvants)	1225.55	1714.76	297.09	508.70	171.15	132.50	89.68	133.78	1207.43	71.62	417.43	0.30	5969.99

Table 10: The fifty active ingredients most extensively used on vegetable crops in Northern Ireland 2013, ranked by treated area (spray hectares).

	Active ingredient	Treated area (sp ha)
1.	Lambda-cyhalothrin	1,683.39
2.	Linuron	1,207.45
3.	Difenoconazole	876.81
4.	Pendimethalin	826.72
5.	Azoxystrobin	820.80
6.	Glyphosate	655.61
7.	Metazachlor	648.30
8.	Clomazone	546.10
9.	Prosulfocarb	545.74
10.	Pirimicarb	502.78
11.	Thiacloprid	496.80
12.	Prothioconazole	419.59
13.	Metalaxyl-m	385.18
14.	Pyraclostrobin	380.13
15.	Boscalid	380.13
16.	Tebuconazole	352.72
17.	Metribuzin	334.43
18.	Ioxynil	319.72
19.	Deltamethrin	238.42
20.	Cypermethrin	165.66
21.	Propaquizafop	156.11
22.	Tepraloxydim	153.09
23.	Mancozeb	149.83
24.	Diquat	139.18
25.	Fenpropimorph	138.35
26.	Trifloxystrobin	125.42
27.	Oxamyl	120.40
28.	Spirotetramat	103.74
29.	Garlic extract	90.62
30.	Metamitron	83.28
31.	Ferric phosphate	83.28
32.	Dimethomorph	75.73
33.	Pymetrozine	69.22
34.	Dimethenamid-P	66.50
35.	Chlorothalonil	58.74
36.	Chloridazon	51.42
37.	Indoxacarb	44.02
38.	Propyzamide	43.77
39.	Mandipropamid	43.14
40.	Chlorpyrifos	31.16
41.	Clopyralid	28.13
42.	Cyprodinil	23.60
43.	Fludioxonil	23.60
44.	Cycloxydim	21.91
45.	Propamocarb hydrochloride	19.34
46.	Maleic hydrazide	12.17
47.	Fluroxypyr	11.62
48.	Ethametsulfuron-methyl	10.75
49.	Thiram	10.75
50.	Copper oxychloride	9.62

Table 11: The fifty active ingredients most extensively used on vegetable crops in Northern Ireland 2013 ranked by weight (kilograms).

	Active ingredient	Quantity applied (kg)
1.	Prosulfocarb	845.46
2.	Pendimethalin	832.40
3.	Glyphosate	644.94
4.	Chlorpyrifos	513.31
5.	Metazachlor	464.58
6.	Linuron	362.40
7.	Metalaxyl-m	185.15
8.	Azoxystrobin	180.30
9.	Oxamyl	175.44
10.	Mancozeb	164.59
11.	Garlic extract	164.11
12.	Metamitron	144.50
13.	Fenpropimorph	103.76
14.	Boscalid	101.43
15.	Difenoconazole	93.06
16.	Prothioconazole	78.85
17.	Pirimicarb	75.98
18.	Tebuconazole	73.98
19.	Metribuzin	70.24
20.	Propamocarb hydrochloride	59.72
21.	Diquat	59.66
22.	Maleic hydrazide	58.42
23.	Propyzamide	55.75
24.	Ioxynil	53.13
25.	Thiacloprid	47.69
26.	Chlorothalonil	45.69
27.	Clomazone	35.50
28.	Dimethenamid-P	27.65
29.	Pyraclostrobin	25.46
30.	Chloridazon	23.49
31.	Propaquizafop	19.87
32.	Lambda-cyhalothrin	18.13
33.	Lenacil	13.24
34.	Pymetrozine	11.10
35.	Tepraloxymid	11.05
36.	Copper oxychloride	10.94
37.	Trifloxystrobin	10.43
38.	Cycloxydim	9.86
39.	Dimethomorph	8.24
40.	Spirotetramat	7.78
41.	Cyprodinil	7.08
42.	Fosetyl-aluminium	6.43
43.	Propachlor	6.35
44.	Mandipropamid	5.39
45.	Pyridate	4.93
46.	Fludioxonil	4.72
47.	Ferric phosphate	4.59
48.	Cypermethrin	4.34
49.	Ethofumesate	3.31
50.	Bentazone	3.23

Table 12a: Broccoli pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Aphids	Caterpillars	General fungal control	General insect control	General weed control	Ground preparation	Sealer	All reasons	Basic area (ha)	Quantity (kgs)
									of treatment	
<i>Fungicides</i>										
Azoxystrobin/difenoconazole	.	.	9.36	.	.	.	.	9.36	9.36	3.04
Boscalid/pyraclostrobin	.	.	7.16	.	.	.	.	7.16	7.16	2.39
Chlorothalonil	.	.	0.02	.	.	.	.	0.02	0.02	0.02
Difenoconazole	.	.	30.12	.	.	.	.	30.12	22.44	2.26
Propamocarb hydrochloride	.	.	0.02	.	.	.	.	0.02	0.02	1.29
Prothioconazole	.	.	7.16	.	.	.	.	7.16	7.16	1.37
All fungicides	.	.	53.83	.	.	.	.	53.83		10.37
<i>Herbicides</i>										
Clomazone	7.55	.	.	7.55	7.55	0.42
Glyphosate	8.04	.	8.04	8.04	10.94
Linuron	0.16	.	.	0.16	0.16	0.09
Metazachlor	17.71	.	8.46	26.17	26.17	19.43
Propyzamide	7.68	.	.	7.68	7.68	9.52
All herbicides	33.1	8.04	8.46	49.6		40.41

Table 12a cont: Broccoli pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Aphids	Caterpillars	General fungal control	General insect control	General weed control	Ground preparation	Sealer	All reasons	Basic area (ha) of treatment	Quantity (kgs)
<i>Insecticides</i>										
Chlorpyrifos	.	.	.	0.02	.	.	.	0.02	0.02	0.01
Cypermethrin	.	.	.	6.84	.	.	.	6.84	6.84	0.2
Indoxacarb	.	2.21	.	.	.	.	.	2.21	2.21	0.06
Lambda-cyhalothrin	2.21	3.53	.	22.67	.	.	.	28.41	19.36	0.3
Pirimicarb	2.75	2.21	.	7.16	.	.	.	12.11	10.74	2.36
Spirotetramat	.	.	.	7.16	.	.	.	7.16	7.16	0.54
Thiacloprid	2.21	.	.	7.16	.	.	.	9.36	9.36	0.9
All insecticides	7.17	7.95	.	51	.	.	.	66.11		4.35

Table 12b: Calabrese: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Aphids & caterpillars	Botrytis	Cabbage root fly	Disease prevention	Downy mildew	General			Seed treatment	All reasons	Basic area (ha) of treatment	Quantity (kgs)
						fungal control	Ground preparation	Sealer				
<i>Fungicides</i>												
Cyprodinil/fludioxonil	.	1.36	.	.	.	.	.	.	.	1.36	1.36	0.68
Difenoconazole	26.87	.	.	.	26.87	26.87	2.02
Dimethomorph	1.36	.	.	.	.	1.36	1.36	0.24
Fosetyl-aluminium/propamocarb hydrochloride	.	.	.	1.36	.	.	.	.	.	1.36	1.36	2.85
Iprodione	1.36	1.36	1.36	0.15
Propamocarb hydrochloride	.	.	.	1.36	.	.	.	.	.	1.36	1.36	4.9
Thiram	1.36	1.36	1.36	0.15
All fungicides	.	1.36	.	2.72	1.36	26.87	.	.	2.72	35.02		11.00
<i>Herbicides & desiccants</i>												
Clomazone	26.87	.	26.87	26.87	1.93
Glyphosate	26.87	.	.	26.87	26.87	29.02
Metazachlor	26.87	.	26.87	26.87	20.15
All herbicides & desiccants	26.87	53.74	.	80.61		51.11
<i>Insecticides</i>												
Chlorpyrifos	.	.	1.36	.	.	.	.	.	.	1.36	1.36	81.52
Cypermethrin	26.87	.	.	.	.	.	.	.	.	26.87	26.87	0.67
Pirimicarb	26.87	.	.	.	.	.	.	.	.	26.87	26.87	5.64
All insecticides	53.74	.	1.36	.	.	.	.	.	.	55.1		87.83

Table 13: Brussels sprouts: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease			General			General			All reasons	Basic area (ha) of treatment	Quantity (kgs)	
	Blackspot	Botrytis	prevention	Downy mildew	fungal control	Seed treatment	White blister	weed control	Ground preparation				Sealer
<i>Fungicides</i>													
Azoxystrobin	13.05	.	.	.	.	.	13.05	13.05	1.63
Chlorothalonil	0.76	.	.	.	.	.	0.76	0.76	0.76
Chlorothalonil/metalaxyl-M	1.86	.	26.1	.	.	.	27.96	14.91	16.03
Cyprodinil/fludioxonil	.	0.39	.	.	.	.	.	.	.	.	0.39	0.39	0.19
Difenoconazole	3.7	.	4.93	.	21.56	.	.	.	.	.	30.18	13.87	2.26
Dimethomorph	.	.	.	0.39	.	.	.	.	.	.	0.39	0.39	0.07
Fosetyl-aluminium/propamocarb hydrochloride	.	.	0.39	.	.	.	.	.	.	.	0.39	0.39	0.81
Iprodione	0.39	.	.	.	.	0.39	0.39	0.03
Propamocarb hydrochloride	.	.	0.39	.	.	.	.	.	.	.	0.39	0.39	1.40
Prothioconazole	10.76	.	.	.	.	.	10.76	5.38	2.07
Tebuconazole	.	.	2.46	.	1.52	.	.	.	.	.	3.99	3.23	1.00
Thiram	0.39	.	.	.	.	0.39	0.39	0.03
All fungicides	3.70	0.39	8.17	0.39	49.50	0.78	26.10	.	.	.	89.02		26.28
<i>Herbicides & desiccants</i>													
Clomazone	1.86	1.86	1.86	0.17
Glyphosate	21.15	.	21.15	21.15	29.32
Linuron	0.16	.	.	0.16	0.16	0.09
Metazachlor	7.96	.	14.91	22.87	22.87	17.15
Pyridate	6.16	.	.	6.16	6.16	4.93
All herbicides & desiccants								14.28	21.15	16.76	52.19		51.66

Table 13 cont: Brussels sprouts: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Cabbage			General insect	Slugs	All reasons	Basic area (ha)	Quantity (kgs)
	Aphids	root fly	Caterpillars	control			of treatment	
<i>Insecticides</i>								
Chlorpyrifos	.	0.39	.	2.46	.	2.85	2.85	23.46
Cypermethrin	.	.	2.46	.	.	2.46	2.46	0.06
Dimethoate	2.46	.	.	.	.	2.46	2.46	0.99
Lambda-cyhalothrin	.	.	4.7	12.29	.	16.99	7.86	0.17
Lambda-cyhalothrin/pirimicarb	.	.	.	1.86	.	1.86	1.86	0.39
Pirimicarb	17.76	.	.	.	.	17.76	14.62	2.36
Spirotetramat	.	.	.	3.52	.	3.52	3.52	0.26
Thiacloprid	11.09	.	.	3.52	.	14.61	7.22	1.4
All insecticides	31.31	0.39	7.17	23.66	.	62.52	.	29.1
<i>Molluscicides</i>								
Ferric phosphate	.	.	.	.	3.52	3.52	3.52	0.73
All molluscicides	.	.	.	.	3.52	3.52	.	0.73

Table 14: Autumn cabbage: pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Botrytis	Cabbage root fly	Disease prevention	Downy mildew	General	General	General	Ground preparation	Seed treatment	All reasons	Basic area (ha) of treatment	Quantity (kgs)
					fungal control	insect control	weed control					
<i>Fungicides</i>												
Azoxystrobin/difenoconazole	8.94	.	.	.	.	8.94	8.94	2.9
Boscalid/pyraclostrobin	8.94	.	.	.	.	8.94	8.94	2.98
Cyprodinil/fludioxonil	0.03	.	.	.	.	.	.	.	.	0.03	0.03	0.02
Difenoconazole	8.94	.	.	.	.	8.94	8.94	0.67
Dimethomorph	.	.	.	0.03	.	.	.	.	.	0.03	0.03	0.01
Fosetyl-aluminium/propamocarb hydrochloride	.	.	0.03	.	.	.	.	.	.	0.03	0.03	0.07
Iprodione	0.03	0.03	0.03	<0.01
Propamocarb hydrochloride	.	.	0.03	.	.	.	.	.	.	0.03	0.03	0.12
Prothioconazole	8.94	.	.	.	.	8.94	8.94	1.72
Thiram	0.03	0.03	0.03	<0.01
All fungicides	0.03	.	0.07	0.03	35.75	.	.	.	0.07	35.95		8.5
<i>Herbicides & desiccants</i>												
Glyphosate	8.94	.	8.94	8.94	12.87
Metazachlor	8.94	.	.	8.94	8.94	6.7
All herbicides & desiccants	8.94	8.94	.	17.87		19.57

Table 14 cont: Autumn cabbage: pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Botrytis	Cabbage root fly	Disease prevention	Downy mildew	General fungal control	General insect control	General weed control	Ground preparation	Seed treatment	All reasons	Basic area (ha)	Quantity (kgs)
											of treatment	
<i>Insecticides</i>												
Chlorpyrifos	.	0.03	.	.	.	.	.	.	.	0.03	0.03	2.06
Lambda-cyhalothrin	8.94	.	.	.	8.94	8.94	0.09
Pirimicarb	8.94	.	.	.	8.94	8.94	1.88
Spirotetramat	8.94	.	.	.	8.94	8.94	0.67
Thiacloprid	8.94	.	.	.	8.94	8.94	0.86
<i>All insecticides</i>	.	<i>0.03</i>	.	.	.	<i>35.75</i>	.	.	.	<i>35.78</i>		<i>5.56</i>

Table 15: Spring cabbage: pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Botrytis	Cabbage root fly	Disease prevention	Downy mildew	General	General	Ground preparation	Seed treatment	Slugs	All reasons	Basic area (ha) of treatment	Quantity (kgs)
					insect control	weed control						
<i>Fungicides</i>												
Cyprodinil/fludioxonil	0.24	.	.	.	.	.	.	.	.	0.24	0.24	0.12
Dimethomorph	.	.	.	0.24	.	.	.	.	.	0.24	0.24	0.04
Fosetyl-aluminium/propamocarb hydrochloride	.	.	0.24	.	.	.	.	.	.	0.24	0.24	0.5
Iprodione	0.25	.	0.25	0.25	0.02
Propamocarb hydrochloride	.	.	0.24	.	.	.	.	.	.	0.24	0.24	0.86
Thiram	0.24	.	0.24	0.24	0.02
All fungicides	0.24	.	0.48	0.24	.	.	.	0.49	.	1.45	0.24	1.57
<i>Herbicides & desiccants</i>												
Clomazone	0.29	.	.	.	0.29	0.29	0.02
Glyphosate	2.64	.	.	2.64	2.64	2.21
Metazachlor	2.84	.	.	.	2.84	2.84	2.09
All herbicides & desiccants	3.13	2.64	.	.	5.77	0.29	4.33
<i>Insecticides</i>												
Chlorpyrifos	.	0.24	.	.	.	.	.	.	.	0.24	0.24	14.35
Cypermethrin	1.76	.	.	.	.	1.76	1.76	0.04
Pirimicarb	0.78	.	.	.	.	0.78	0.78	0.1
All insecticides	.	0.24	.	.	2.55	.	.	.	.	2.78	0.24	14.49

Table 15 cont: Spring cabbage: pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Botrytis	Cabbage root fly	Disease prevention	Downy mildew	General insect control	General weed control	Ground preparation	Seed treatment	Slugs	All reasons	Basic	Quantity (kgs)
											area (ha) of treatment	
<i>Molluscicides</i>												
Methiocarb	1.76	1.76	1.76	0.11
<i>All molluscicides</i>	<i>1.76</i>	<i>1.76</i>		<i>0.11</i>

Table 16: Winter cabbage: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Cabbage Botrytis	Cabbage root fly	Disease prevention	Downy mildew	General	General	General	Ground preparation	Seed treatment	Slugs	All reasons	Basic	Quantity (kgs)
					fungal control	insect control	weed control					area (ha) of treatment	
<i>Fungicides</i>													
Chlorothalonil	0.67	.	.	.	.	.	0.67	0.67	0.67
Cyprodinil/fludioxonil	0.37	.	.	.	.	.	.	.	.	.	0.37	0.37	0.19
Difenoconazole	10.23	.	.	.	.	.	10.23	3.41	0.77
Dimethomorph	.	.	.	0.37	.	.	.	.	.	.	0.37	0.37	0.07
Fosetyl-aluminium/propamocarb hydrochloride	.	.	0.37	.	.	.	.	.	.	.	0.37	0.37	0.78
Iprodione	0.37	.	0.37	0.37	0.03
Propamocarb hydrochloride	.	.	0.37	.	.	.	.	.	.	.	0.37	0.37	1.35
Prothioconazole	5.48	.	.	.	.	.	5.48	2.74	1.05
Tebuconazole	1.34	.	.	.	.	.	1.34	0.67	0.33
Thiram	0.37	.	0.37	0.37	0.03
All fungicides	0.37	.	0.75	0.37	17.71	.	.	.	0.75	.	19.95	.	5.27
<i>Herbicides & desiccants</i>													
Glyphosate	3.8	.	.	3.8	3.8	2.74
Linuron	0.16	.	.	.	0.16	0.16	0.09
Metazachlor	3.96	.	.	.	3.96	3.96	2.97
All herbicides & desiccants	4.11	3.8	.	.	7.91	.	5.8

Table 16 cont: Winter cabbage: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Botrytis	Cabbage root fly	Disease prevention	Downy mildew	General	General	General	Ground preparation	Seed treatment	Slugs	All reasons	Basic	Quantity (kgs)
					fungal control	insect control	weed control					area (ha) of treatment	
<i>Insecticides</i>													
Chlorpyrifos	.	0.37	.	.	.	.	.	.	.	.	0.37	0.37	22.4
Lambda-cyhalothrin	5.57	.	.	.	.	5.57	3.56	0.06
Spirotetramat	2.74	.	.	.	.	2.74	2.74	0.21
Thiacloprid	2.74	.	.	.	.	2.74	2.74	0.26
All insecticides	.	0.37	.	.	.	11.05	.	.	.	.	11.42		22.93
<i>Molluscicides</i>													
Ferric phosphate	2.74	2.74	2.74	0.57
All molluscicides	2.74	2.74		0.57

Table 17: Summer cabbage: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	General		General			General			Basic		Quantity (kgs)		
	Disease Botrytis prevention	Downy mildew	fungal control	Ringspot	Seed treatment	weed control	Ground preparation	Cabbage Aphids root fly Caterpillars	insect control	Slugs		All reasons	of treatment
<i>Fungicides</i>													
Azoxystrobin	.	.	1.47	.	.	.	.	.	.	.	1.47	1.47	0.37
Azoxystrobin/difenoconazole	.	.	0.59	.	.	.	.	.	.	.	0.59	0.59	0.19
Cyprodinil/fludioxonil	0.26	.	.	.	.	.	.	.	.	.	0.26	0.26	0.13
Difenoconazole	.	.	1.96	4.31	.	.	.	.	.	.	6.26	6.26	0.42
Dimethomorph	.	0.26	.	.	.	.	.	.	.	.	0.26	0.26	0.05
Fosetyl-aluminium/propamocarb hydrochloride	.	0.26	.	.	.	.	.	.	.	.	0.26	0.26	0.54
Iprodione	0.26	.	.	.	.	.	0.26	0.26	0.02
Propamocarb hydrochloride	.	0.26	.	.	.	.	.	.	.	.	0.26	0.26	0.92
Prothioconazole	.	.	1.47	.	.	.	.	.	.	.	1.47	1.47	0.28
Thiram	0.26	.	.	.	.	.	0.26	0.26	0.02
All fungicides	0.26	0.51	0.26	5.49	4.31	0.51	.	.	.	.	11.33	11.33	2.93
<i>Herbicides & desiccants</i>													
Clomazone	6.37	.	.	.	.	6.37	6.37	0.33
Glyphosate	5.78	.	.	.	5.78	5.78	4.16
Metazachlor	9.11	.	.	.	.	9.11	9.11	5.75
All herbicides & desiccants	15.48	5.78	.	.	.	21.26	21.26	10.24

Table 17 cont: Summer cabbage: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	General			General			General			Basic area (ha)		Quantity (kgs)			
	Disease Botrytis prevention	Downy mildew	fungal control	Seed treatment	weed control	Ground preparation	Cabbage Aphids root fly	Caterpillars	insect control	Slugs	All reasons		of treatment		
<i>Insecticides</i>															
Chlorpyrifos	0.26	.	.	0.26	0.26	15.37
Cypermethrin	0.78	.	0.78	0.78	0.02
Deltamethrin	1.47	.	1.47	1.47	0.01
Indoxacarb	2.06	.	2.06	2.06	0.05
Lambda-cyhalothrin	0.59	.	3.91	4.31	.	.	8.81	6.85	0.08
Pirimicarb	5.38	.	0.59	4.31	.	.	10.28	8.32	1.72
Thiacloprid	2.06	.	.	.	.	.	2.06	2.06	0.2
All insecticides	8.03	0.26	8.03	9.4	.	.	25.72		17.46
<i>Molluscicides</i>															
Methiocarb	0.78	0.78	0.78	0.05
	0.78	0.78		0.05

Table 18: Savoy: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease			General			General			Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)	
	Botrytis	prevention	Downy mildew	fungal control	Leaf spot	Ringspot	Seed treatment	weed control	Ground preparation					Sealer
<i>Fungicides</i>														
Azoxystrobin/difenoconazole	.	.	.	26.7	.	.	.	.	.	.	.	26.7	24.35	8.68
Boscalid/pyraclostrobin	.	.	.	14.9	.	.	.	.	.	.	.	14.9	14.9	4.98
Chlorothalonil	.	.	.	0.69	.	.	.	.	.	.	.	0.69	0.69	0.69
Cyprodinil/fludioxonil	1.74	.	.	.	.	.	.	.	.	.	.	1.74	1.74	0.87
Difenoconazole	.	.	.	161.42	0.78	4.7	.	.	.	.	.	166.91	91.81	12.46
Dimethomorph	.	.	1.74	.	.	.	.	.	.	.	.	1.74	1.74	0.31
Fosetyl-aluminium/propamocarb hydrochloride	.	1.74	.	.	.	.	.	.	.	.	.	1.74	1.74	3.66
Iprodione	1.74	.	.	.	.	1.74	1.74	0.14
Propamocarb hydrochloride	.	1.74	.	0.02	.	.	.	.	.	.	.	1.76	1.76	7.58
Prothioconazole	.	.	.	25.88	.	.	.	.	.	.	.	25.88	20.39	4.97
Tebuconazole	.	.	.	1.34	.	.	.	.	.	.	.	1.34	0.67	0.33
Thiram	1.74	.	.	.	.	1.74	1.74	0.13
<i>All fungicides</i>	<i>1.74</i>	<i>3.48</i>	<i>1.74</i>	<i>230.94</i>	<i>0.78</i>	<i>4.7</i>	<i>3.48</i>					<i>246.88</i>		<i>44.79</i>

Table 18 cont: Savoy: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Botrytis	Disease prevention	Downy mildew	General			Seed treatment	General			Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
				fungal control	Leaf spot	Ringspot		weed control	Ground preparation	Sealer				
<i>Herbicides & desiccants</i>														
Clomazone	34.16	.	16.9	.	51.05	48.84	3.12
Glyphosate	1.96	36.52	.	.	38.47	38.47	42.12
Linuron	0.16	.	.	.	0.16	0.16	0.09
Metazachlor	107.83	.	25.36	0.61	133.8	102.73	100.12
Propyzamide	7.68	.	.	.	7.68	7.68	9.52
<i>All herbicides & desiccants</i>								<i>151.77</i>	<i>36.52</i>	<i>42.25</i>	<i>0.61</i>	<i>231.16</i>		<i>154.98</i>

Pesticide type and formulation	Aphids	Aphids and caterpillars	Cabbage root fly	General			Slugs	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
				Caterpillars	insect control	Seed treatment				
<i>Insecticides</i>										
Chlorpyrifos	.	.	1.74	.	5.88	0.61	.	8.24	5.89	110.41
Cypermethrin	.	50.69	.	.	28.86	.	.	79.54	45.75	2.13
Deltamethrin	.	.	.	0.61	.	.	.	0.61	0.61	<0.01
Indoxacarb	.	.	.	3.98	.	.	.	3.98	3.98	0.1
Lambda-cyhalothrin	3.98	.	.	15.75	40.93	.	.	60.66	46.66	0.62
Lambda-cyhalothrin/pirimicarb	2.46	.	.	2.46	2.46	0.52

Table 18 cont: Savoy: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	General							Total area treated	Basic area treated	Total quantity applied
	Aphids	Aphids and caterpillars	Cabbage root fly	Caterpillars	insect control	Seed treatment	Slugs	(sp ha)	(ha)	(kgs)
Pirimicarb	6.27	50.69	.	3.98	20	.	.	80.93	41.65	16.26
Spirotetramat	18.96	.	.	.	20.39	.	.	39.35	29.87	2.95
Thiacloprid	13.46	.	.	.	20.39	.	.	33.84	33.84	3.25
<i>All insecticides</i>	<i>42.67</i>	<i>101.37</i>	<i>1.74</i>	<i>24.32</i>	<i>138.91</i>	<i>0.61</i>	<i>.</i>	<i>309.62</i>		<i>136.25</i>
<i>Molluscicides</i>										
Ferric phosphate	.	.	.	.	.	.	5.49	5.49	5.49	1.14
<i>All molluscicides</i>	.	.	.	.	.	.	<i>5.49</i>	<i>5.49</i>		<i>1.14</i>

Table 19: Hard/white cabbage: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation				General	Seed	General	Ground		Total	Basic	Total
	Botrytis	Disease prevention	Downy mildew	fungal control	treatment	weed control	preparation	Sealer	area treated (sp ha)	area treated (ha)	quantity applied (kgs)
<i>Fungicides</i>											
Azoxystrobin	.	.	.	1.47	.	.	.	.	1.47	1.47	0.37
Azoxystrobin/difenoconazole	.	.	.	6.28	.	.	.	.	6.28	6.28	2.04
Chlorothalonil	.	.	.	0.02	.	.	.	.	0.02	0.02	0.02
Cyprodinil/fludioxonil	0.61	.	.	.	.	.	.	.	0.61	0.61	0.31
Difenoconazole	.	.	.	50.68	.	.	.	.	50.68	19.96	3.8
Dimethomorph	.	.	0.61	.	.	.	.	.	0.61	0.61	0.11
Fosetyl-aluminium/propamocarb hydrochloride	.	0.61	.	.	.	.	.	.	0.61	0.61	1.29
Iprodione	0.61	.	.	.	0.61	0.61	0.05
Propamocarb hydrochloride	.	0.61	.	0.02	.	.	.	.	0.64	0.64	3.76
Prothioconazole	.	.	.	15.46	.	.	.	.	15.46	13.84	2.97
Tebuconazole	.	.	.	3.83	.	.	.	.	3.83	3.83	0.77
Tebuconazole/trifloxystrobin	.	.	.	3.09	.	.	.	.	3.09	3.09	0.7
Thiram	0.61	.	.	.	0.61	0.61	0.05
All fungicides	0.61	1.23	0.61	80.86	1.23	.	.	.	84.55		16.23
<i>Herbicides & desiccants</i>											
Clomazone	8.1	.	10.75	18.85	16.64	1.32
Glyphosate	1.86	.	1.86	1.86	1.62
Metazachlor	8.29	.	19.96	28.26	26.05	21.19
Propyzamide	9.21	.	.	9.21	9.21	11.42
All herbicides & desiccants	25.6	1.86	30.72	58.18		35.56

Table 19 cont: Hard/white cabbage: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation					General	All	Basic	Quantity (kgs)
	Aphids	Aphids and caterpillars	Cabbage root fly	Caterpillars	insect control	reasons	area (ha) of treatment	
<i>Insecticides</i>								
Chlorpyrifos	.	.	0.61	.	0.02	0.64	0.64	36.91
Cypermethrin	.	32.25	.	.	.	32.25	10.75	0.81
Deltamethrin	.	.	.	4.56	1.62	6.18	3.09	0.05
Indoxacarb	1.62	.	.	8.1	.	9.72	5.89	0.25
Lambda-cyhalothrin	4.27	.	.	1.62	22.3	28.19	15.49	0.26
Pirimicarb	3.09	32.25	.	2.8	0.39	38.54	17.03	7.59
Pymetrozine	3.83	.	.	.	.	3.83	3.83	0.77
Thiacloprid	7.36	.	.	1.62	.	8.98	5.89	0.86
All insecticides	20.17	64.51	0.61	18.7	24.33	128.33		47.49

Table 20: Red cabbage: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Cabbage				Disease prevention	Downy mildew	General fungal control	General weed control	Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
	Aphids	Botrytis	root fly	Caterpillars								
<i>Fungicides</i>												
Azoxystrobin/difenoconazole	3.68	.	.	3.68	3.68	1.2
Cyprodinil/fludioxonil	.	0.19	.	.	.	.	.	.	.	0.19	0.19	0.09
Dimethomorph	0.19	.	.	.	0.19	0.19	0.03
Fosetyl-aluminium/propamocarb hydrochloride	0.19	.	.	.	.	0.19	0.19	0.39
Iprodione	0.19	0.19	0.19	0.01
Propamocarb hydrochloride	0.19	.	.	.	.	0.19	0.19	0.68
Prothioconazole	3.24	.	.	3.24	1.62	0.62
Tebuconazole	1.62	.	.	1.62	1.62	0.32
Thiram	0.19	0.19	0.19	0.01
<i>All fungicides</i>	.	<i>0.19</i>	.	.	<i>0.38</i>	<i>0.19</i>	<i>8.54</i>	.	<i>0.38</i>	<i>9.67</i>		<i>3.37</i>
<i>Herbicides & desiccants</i>												
Clomazone	18.99	.	18.99	17.52	1.1
Metazachlor	32.83	.	32.83	17.52	24.62
<i>All herbicides & desiccants</i>	<i>51.83</i>	.	<i>51.83</i>		<i>25.72</i>

Table 20 cont: Red cabbage: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Aphids	Botrytis	Cabbage root fly	Caterpillars	Disease prevention	Downy mildew	General	General	Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
							fungal control	weed control				
<i>Insecticides</i>												
Chlorpyrifos	.	.	0.19	.	.	.	.	.	.	0.19	0.19	11.28
Deltamethrin	.	.	.	1.62	.	.	.	.	.	1.62	1.62	0.01
Indoxacarb	1.62	.	.	3.68	.	.	.	.	.	5.3	3.68	0.14
Lambda-cyhalothrin	2.06	.	.	1.62	.	.	.	.	.	3.68	3.68	0.04
Pirimicarb	1.62	.	.	2.06	.	.	.	.	.	3.68	3.68	0.46
Pymetrozine	1.62	.	.	.	.	.	.	.	.	1.62	1.62	0.32
Thiacloprid	3.68	.	.	1.62	.	.	.	.	.	5.3	3.68	0.51
All insecticides	10.6	.	0.19	10.6	.	.	.	.	.	21.39		12.76

Table 21: Autumn cauliflower: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Cabbage			Disease prevention	Downy mildew	General	General	General	Ground preparation	Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity used (kgs)
	Botrytis	root fly	Caterpillars			fungal control	insect control	weed control					
<i>Fungicides</i>													
Azoxystrobin/difenoconazole	7.13	.	.	.	.	7.13	7.13	2.32
Boscalid/pyraclostrobin	5.96	.	.	.	.	5.96	5.96	1.99
Cyprodinil/fludioxonil	0.2	.	.	.	.	.	.	.	.	.	0.2	0.2	0.1
Difenoconazole	7.13	.	.	.	.	7.13	7.13	0.54
Dimethomorph	0.2	.	.	.	.	.	0.2	0.2	0.04
Fosetyl-aluminium/propamocarb hydrochloride	.	.	.	0.2	.	.	.	.	.	.	0.2	0.2	0.43
Iprodione	0.2	0.2	0.2	0.01
Propamocarb hydrochloride	.	.	.	0.2	.	0	.	.	.	.	0.21	0.21	1.03
Prothioconazole	5.96	.	.	.	.	5.96	5.96	1.14
Thiram	0.2	0.2	0.2	0.01
Tolclofos-methyl	0	.	.	.	.	0	0	0.04
All fungicides	0.2	.	.	0.41	0.2	26.2	.	.	.	0.41	27.42	.	7.64
<i>Herbicides & desiccants</i>													
Glyphosate	8.1	.	8.1	8.1	11.15
Metazachlor	7.13	0.31	.	7.44	7.44	5.58
All herbicides & desiccants	7.13	8.41	.	15.54	.	16.73

Table 21 cont: Autumn cauliflower: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Cabbage		Disease prevention	Downy mildew	General fungal control	General insect control	General weed control	Ground preparation	Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity used (kgs)
	Botrytis	root fly											Caterpillars
<i>Insecticides</i>												
Chlorpyrifos	.	0.51	.	.	.	<0.01	.	.	.	0.51	0.51	12.65
Deltamethrin	.	.	0.31	.	.	.	.	.	.	0.31	0.31	<0.01
Lambda-cyhalothrin	5.96	.	.	.	5.96	5.96	0.06
Pirimicarb	5.96	.	.	.	5.96	5.96	1.25
Spirotetramat	5.96	.	.	.	5.96	5.96	0.45
Thiacloprid	5.96	.	.	.	5.96	5.96	0.57
<i>All insecticides</i>	.	<i>0.51</i>	<i>0.31</i>	.	.	.	<i>23.86</i>	.	.	.	<i>24.67</i>	14.98

Table 22: Summer cauliflower: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease		General	General	Ground		Cabbage			General	Total	Basic	Total	
	Botrytis prevention	Downy mildew	fungal control	Seed treatment	weed control	preparation	Sealer	Aphids	root fly	Caterpillars	insect control	area treated (sp ha)	area treated (ha)	quantity applied (kgs)
<i>Fungicides</i>														
Azoxystrobin	.	.	1.18	.	.	.	.	.	.	.	.	1.18	1.18	0.29
Azoxystrobin/difenoconazole	.	.	9.05	.	.	.	.	.	.	.	.	9.05	9.05	2.94
Boscalid/pyraclostrobin	.	.	5.96	.	.	.	.	.	.	.	.	5.96	5.96	1.99
Chlorothalonil	.	.	0.01	.	.	.	.	.	.	.	.	0.01	0.01	0.01
Cyprodinil/fludioxonil	1.22	.	.	.	.	.	.	.	.	.	.	1.22	1.22	0.61
Difenoconazole	.	.	23.91	.	.	.	.	.	.	.	.	23.91	21.61	1.79
Dimethomorph	.	1.22	.	.	.	.	.	.	.	.	.	1.22	1.22	0.22
Fosetyl-aluminium/propamocarb hydrochloride	.	1.22	.	.	.	.	.	.	.	.	.	1.22	1.22	2.56
Iprodione	.	.	.	1.22	.	.	.	.	.	.	.	1.22	1.22	0.07
Propamocarb hydrochloride	.	1.22	0.02	.	.	.	.	.	.	.	.	1.24	1.24	6.13
Prothioconazole	.	.	7.14	.	.	.	.	.	.	.	.	7.14	7.14	1.37
Tebuconazole	.	.	0.74	.	.	.	.	.	.	.	.	0.74	0.74	0.15
Thiram	.	.	.	1.22	.	.	.	.	.	.	.	1.22	1.22	0.07
Tolclofos-methyl	.	.	0.02	.	.	.	.	.	.	.	.	0.02	0.02	0.18
<i>All fungicides</i>	1.22	2.44	1.22	48.03	2.44	.	.	.	.	.	.	55.34		18.39
<i>Herbicides</i>														
Clomazone	19.32	.	.	.	.	.	.	19.32	17.84	1.12
Glyphosate	13.02	.	.	.	.	.	13.02	13.02	18.17
Linuron	0.16	.	.	.	.	.	.	0.16	0.16	0.09
Metazachlor	31.76	0.31	3.09	.	.	.	.	35.16	33.69	26.9
Propyzamide	2.3	.	.	.	.	.	.	2.3	2.3	2.86
<i>All herbicides</i>	53.54	13.33	3.09	.	.	.	69.95		49.15

Table 22 cont: Summer cauliflower: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease		General fungal		General Seed		weed		Ground		Cabbage		General	Total	Basic	Total
	Botrytis prevention	Downy mildew	control	treatment	control	preparation	Sealer	Aphids	root fly	Caterpillars	insect control	(sp ha)	(ha)	(kgs)		
<i>Insecticides</i>																
Chlorpyrifos	1.53	.	.	1.2	2.72	2.72		75.18
Cypermethrin	12.37	12.37	12.37		0.33
Deltamethrin	1.49	.	1.49	1.49		0.01
Indoxacarb	5.01	.	5.01	5.01		0.13
Lambda-cyhalothrin	3.09	.	2.74	19.24	25.07	17.53		0.26	
Pirimicarb	3.13	.	3.09	13.13	19.35	15.47		3.7	
Pymetrozine	0.74	.	.	.	0.74	0.74		0.15	
Spirotetramat	5.96	5.96	5.96		0.45	
Thiacloprid	4.27	.	.	5.96	10.23	10.23		0.98	
All insecticides	11.23	1.53	12.32	57.86	82.93		81.19	

Table 23: Winter cauliflower: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease		General	Seed	General	Ground	Cabbage			General	Total	Basic	Total	
	Botrytis	prevention	Downy mildew	fungal control	treatment	weed control	preparation	Aphids	root fly	Caterpillars	insect control	area treated (sp ha)	area treated (ha)	quantity applied (kgs)
<i>Fungicides</i>														
Azoxystrobin	.	.	.	4.42	.	.	.	.	.	.	.	4.42	4.42	1.1
Azoxystrobin/difenoconazole	.	.	.	5.59	.	.	.	.	.	.	.	5.59	5.59	1.82
Cyprodinil/fludioxonil	1.66	.	.	.	.	.	.	.	.	.	.	1.66	1.66	0.83
Difenoconazole	.	.	.	5.59	.	.	.	.	.	.	.	5.59	5.59	0.42
Dimethomorph	.	.	1.66	.	.	.	.	.	.	.	.	1.66	1.66	0.3
Fosetyl-aluminium/propamocarb hydrochloride	.	1.66	.	.	.	.	.	.	.	.	.	1.66	1.66	3.48
Iprodione	1.66	.	.	.	.	.	.	1.66	1.66	0.04
Propamocarb hydrochloride	.	1.66	.	.	.	.	.	.	.	.	.	1.66	1.66	5.99
Tebuconazole/trifloxystrobin	.	.	.	4.42	.	.	.	.	.	.	.	4.42	4.42	0.99
Thiram	1.66	.	.	.	.	.	.	1.66	1.66	0.04
All fungicides	1.66	3.32	1.66	20.01	3.32	.	.	.	.	.	.	29.96	29.96	15.01
<i>Herbicides</i>														
Clomazone	4.42	.	.	.	.	.	4.42	4.42	0.32
Glyphosate	5.59	.	.	.	.	5.59	5.59	4.02
Metazachlor	5.59	.	.	.	.	.	5.59	5.59	4.19
All herbicides	10.01	5.59	.	.	.	.	15.59	15.59	8.53

Table 23 cont: Winter cauliflower: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Botrytis	Disease prevention	Downy mildew	General		Seed treatment	General		Ground preparation	Cabbage		General insect control	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
				fungal control	weed control		Aphids	root fly		Caterpillars					
<i>Insecticides</i>															
Chlorpyrifos	1.66	.	.	1.66	1.66	99.49
Deltamethrin	4.42	4.42	8.83	4.42	0.07
Lambda-cyhalothrin	4.42	.	.	8.83	13.25	4.42	0.07
Thiacloprid	4.42	.	.	.	4.42	4.42	0.42
All insecticides	8.83	1.66	4.42	13.25	28.16		100.05

Table 25: Peas: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	General insect control	General weed control	Ground preparation	Rust & mildew	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>							
Mancozeb/metalaxyl-M	.	.	.	1.22	1.22	0.61	1.57
All fungicides	.	.	.	1.22	1.22		1.57
<i>Herbicides & desiccants</i>							
Bentazone	.	1.67	.	.	1.67	1.67	2.4
Diquat	.	1.78	.	.	1.78	1.78	1.43
Glyphosate	.	1.23	2.48	.	3.71	3.71	4.62
Imazamox/pendimethalin	.	1.78	.	.	1.78	1.78	2.14
Linuron	.	0.61	.	.	0.61	0.61	0.22
MCPB	.	1.23	.	.	1.23	1.23	1.85
All herbicides & desiccants	.	8.31	2.48	.	10.79		12.66
<i>Insecticides</i>							
Lambda-cyhalothrin	1.78	.	.	.	1.78	1.78	0.01
All insecticides	1.78	.	.	.	1.78		0.01

Table 26: Broad beans: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Cabbage			Disease prevention	General	General	General	Ground preparation	Rust &	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
	Aphids	root fly	Caterpillars		fungal control	insect control	weed control		mildew				
<i>Fungicides</i>													
Azoxystrobin	5.01	.	.	.	.	.	5.01	5.01	1.25
Azoxystrobin/difenoconazole	2.65	.	.	.	.	.	2.65	2.65	0.86
Boscalid/pyraclostrobin	1.78	.	.	.	.	.	1.78	1.78	0.6
Chlorothalonil	0.04	.	.	.	.	.	0.04	0.04	0.04
Chlorothalonil/metalaxyl-M	1.78	.	.	.	.	.	1.78	1.78	1.92
Difenoconazole	21.73	.	.	.	.	.	21.73	14.05	1.63
Mancozeb/metalaxyl-M	0.61	.	0.61	0.3	0.78
Propamocarb hydrochloride	0.04	.	.	.	.	.	0.04	0.04	3.15
Prothioconazole	2.65	.	.	.	.	.	2.65	2.65	0.51
Tebuconazole	.	.	.	0.61	3.99	.	.	.	.	.	4.6	4.6	1.04
All fungicides	.	.	.	0.61	39.68	.	.	.	0.61	.	40.9		11.78
<i>Herbicides & desiccants</i>													
Bentazone	0.58	.	.	.	0.58	0.58	0.83
Clomazone	10.75	.	.	.	10.75	9.28	0.74
Diquat	1.78	.	.	.	1.78	1.78	1.43
Glyphosate	9.76	.	.	9.76	9.76	8.46
Imazamox/pendimethalin	1.78	.	.	.	1.78	1.78	2.14
Linuron	0.3	.	.	.	0.3	0.3	0.11
Metazachlor	13.49	0.61	.	8.07	22.18	20.7	16.53
Pendimethalin	0.61	0.61	0.61	0.8
Propyzamide	7.68	.	.	.	7.68	7.68	9.52
All herbicides & desiccants	36.36	10.37	.	8.68	55.41		40.56

Table 26 cont: Broad beans: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Aphids	Cabbage root fly	Caterpillars	Disease prevention	General	General	General	Ground preparation	Rust & mildew	Sealer	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
					fungal control	insect control	weed control						
<i>Insecticides</i>													
Chlorpyrifos	.	0.61	.	.	.	0.04	.	.	.	.	0.66	0.66	0.61
Cypermethrin	2.77	.	.	.	.	.	.	.	.	.	2.77	1.38	0.07
Deltamethrin	.	.	7.09	.	.	.	.	.	.	.	7.09	7.09	0.05
Indoxacarb	.	.	5.45	.	.	.	.	.	.	.	5.45	5.45	0.14
Lambda-cyhalothrin	5.89	.	4.3	.	.	15.36	.	.	.	.	25.55	15.92	0.25
Pirimicarb	6.56	.	2.06	.	.	1.78	.	.	.	.	10.4	8.45	1.59
Pymetrozine	2.21	.	.	.	.	.	.	.	.	.	2.21	2.21	0.44
Thiacloprid	3.24	.	.	.	.	.	.	.	.	.	3.24	3.24	0.31
All insecticides	20.67	0.61	18.9	.	.	17.18	.	.	.	.	57.37		3.46

Table 27: Runner beans: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Botrytis	Cabbage root fly	Disease prevention	Downy mildew	Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>								
Cyprodinil/fludioxonil	0.02	.	.	.	.	0.02	0.02	0.01
Dimethomorph	.	.	.	0.02	.	0.02	0.02	<0.01
Fosetyl-aluminium/propamocarb hydrochloride	.	.	0.02	.	.	0.02	0.02	0.04
Iprodione	.	.	.	.	0.02	0.02	0.02	<0.01
Propamocarb hydrochloride	.	.	0.02	.	.	0.02	0.02	0.07
Thiram	.	.	.	.	0.02	0.02	0.02	<0.01
<i>All fungicides</i>	0.02	.	0.04	0.02	0.04	0.11		0.12
<i>Insecticides</i>								
Chlorpyrifos	.	0.02	.	.	.	0.02	0.02	1.09
<i>All insecticides</i>	.	0.02	.	.	.	0.02		1.09

Table 28: Carrots: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Cavity spot	General fungal control	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>					
Azoxystrobin	.	131.7	131.7	131.7	32.92
Azoxystrobin/difenoconazole	.	213.97	213.97	129.32	69.5
Boscalid/pyraclostrobin	.	256.72	256.72	192.39	85.7
Cyprodinil/fludioxonil	.	11.19	11.19	11.19	5.59
Fenpropimorph	4.93	46.24	51.17	36	38.38
Metalaxyl-M	95.06	89.88	184.93	184.93	109.38
Prothioconazole	9.86	176.74	186.6	145.3	35.77
Tebuconazole	.	66.7	66.7	51.53	13.5
Tebuconazole/trifloxystrobin	.	37.04	37.04	37.04	9.17
All fungicides	109.85	1030.17	1140.02		399.91

Pesticide type and formulation	General weed control	Grass	Ground preparation	Mayweed	Sealer	Seed treatment	Volunteer potatoes	All reasons	Basic area (ha) of treatment	Quantity (kgs)
<i>Herbicides</i>										
Clomazone	190.99	.	.	.	.	.	.	190.99	190.99	13.4
Diquat	69.82	.	.	.	.	.	.	69.82	69.82	30.31
Glyphosate	1.57	.	85.68	.	.	.	.	87.24	86.46	84
Linuron	611.11	.	.	.	12.77	6.63	17.37	647.88	334.45	196.05
Metribuzin	292.77	26.21	.	15.46	.	.	.	334.43	231.68	70.24
Paraquat	1.54	.	.	.	.	.	.	1.54	1.54	0.37
Pendimethalin	378.09	.	.	.	12.77	6.63	.	397.49	311.33	434.68

Table 28 cont: Carrots: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	General		Ground preparation	Mayweed	Sealer	Seed treatment	Volunteer potatoes	All reasons	Basic area (ha) of treatment	Quantity (kgs)
	weed control	Grass								
Propaquizafop	116.53	7.58	124.11	124.11	16.01
Prosulfocarb	184.36	3.24	187.6	159.93	295.18
Tepraloxymid	32.24	56.61	88.86	88.86	6.67
<i>All herbicides & desiccants</i>	<i>1879.02</i>	<i>90.41</i>	<i>85.68</i>	<i>15.46</i>	<i>25.54</i>	<i>13.26</i>	<i>20.61</i>	<i>2129.98</i>		<i>1146.9</i>
Pesticide type and formulation	Aphids	Aphids and carrot fly	Carrot fly	Carrot fly & willow aphid	General insect control	Nematodes	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)	
		Carrot fly								
<i>Insecticides</i>										
Chlorpyrifos	1.54	.	.	.	.	.	1.54	1.54	1.03
Deltamethrin	35.04	.	.	.	128.65	.	163.69	99.37	1.23	
Lambda-cyhalothrin	.	43.43	238.72	9.8	594.5	.	886.45	334.45	9.56	
Lambda-cyhalothrin/pirimicarb	.	.	4.93	.	5.09	.	10.02	10.02	1.58	
Oxamyl	.	.	.	.	.	77.15	77.15	77.15	98.42
Pirimicarb	2.94	.	.	.	207.91	.	210.85	141.82	22.91	
Thiacloprid	98.35	.	.	9.8	198.88	.	307.03	213.11	29.47	
<i>All insecticides</i>	<i>137.87</i>	<i>43.43</i>	<i>243.65</i>	<i>19.59</i>	<i>1135.03</i>	<i>77.15</i>	<i>1,656.72</i>		<i>164.21</i>	

Table 28 cont: Carrots: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Slugs	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Molluscicides</i>				
Methiocarb	0.67	0.67	0.67	0.08
<i>All molluscicides</i>	0.67	0.67		0.08

Table 29: Parsnips: pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Cavity spot	Crown rot	General fungal control	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>						
Azoxystrobin	.	.	43.25	43.25	43.25	10.81
Azoxystrobin/difenoconazole	.	.	85.58	85.58	56.72	27.81
Boscalid/pyraclostrobin	.	.	64.91	64.91	60.65	21.25
Cyprodinil/fludioxonil	.	.	4.12	4.12	4.12	2.06
Fenpropimorph	0.61	.	83.43	84.04	42.33	63.03
Metalaxyl-M	109.43	.	.	109.43	109.43	70.04
Prothioconazole	1.22	.	48.63	49.85	36.88	9.57
Tebuconazole	.	.	91.95	91.95	45.98	22.99
Tebuconazole/trifloxystrobin	.	5.87	45.2	51.07	49.11	11.49
All fungicides	111.26	5.87	467.09	584.21		239.06

	General weed control	Grass	Ground preparation	Sealer	Seed treatment	Volunteer potatoes	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Herbicides</i>									
Diquat	56.59	.	.	.	.	.	56.59	56.59	21.62
Glyphosate	1.57	.	97.39	.	.	.	98.96	98.96	88.22
Linuron	400	.	.	5.3	1.23	8.69	415.22	183.95	120.11
Metamitron	67.72	.	.	.	.	.	67.72	67.72	90.96
Paraquat	1.23	.	.	.	.	.	1.23	1.23	0.3
Pendimethalin	168.5	.	.	11.08	1.23	.	180.81	180.81	217.22
Propaquizafop	1.54	29.55	.	.	.	.	31.08	31.08	3.73
Prosulfocarb	186.09	.	.	.	.	.	186.09	170.78	271.41

Table 29 cont: Parsnips: pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

	General weed control	Grass	Ground preparation	Sealer	Seed treatment	Volunteer potatoes	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)	
<i>Herbicides</i>										
Tepraloxydim	2.8	39.46	.	.	.	.	42.26	42.26	2.95	
All herbicides & desiccants	886.03	69	97.39	16.38	2.46	8.69	1079.96		816.52	
	Aphids	Aphids and carrot fly	Carrot fly	Caterpillars	General insect control	General weed control	Nematodes	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Insecticides</i>										
Chlorpyrifos	1.23	.	.	.	.	.	.	1.23	1.23	0.83
Deltamethrin	10.01	.	.	.	.	.	.	10.01	10.01	0.08
Indoxacarb	.	.	.	10.31	.	.	.	10.31	10.31	0.26
Lambda-cyhalothrin	.	60.51	334.09	.	102.16	1.57	.	498.34	183.95	5.78
Lambda-cyhalothrin/pirimicarb	.	.	0.61	.	.	.	.	0.61	0.61	0.1
Oxamyl	.	.	.	.	.	.	43.25	43.25	43.25	77.01
Pirimicarb	.	.	.	.	3.52	.	.	3.52	3.52	0.55
Thiacloprid	80.08	.	.	.	.	.	.	80.08	54.47	7.69
All insecticides	91.33	60.51	334.7	10.31	105.69	1.57	43.25	647.35		92.29

Table 29 cont: Parsnips: pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

	Growth regulation	Growth suppressant	All reasons	Basic area (ha) of treatment	Quantity (kgs)
<i>Growth Regulators</i>					
Maleic hydrazide	3.04	9.13	12.17	12.17	58.42
<i>All growth regulators</i>	<i>3.04</i>	<i>9.13</i>	<i>12.17</i>		<i>58.42</i>

Table 30: Turnips: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	General fungal control	General weed control	Charlock	General weed control	Grass	Ground preparation	Sealer	Aphids	Biostimulant/ crop defence	General insect control	Turnip fly	Slugs	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>															
Azoxystrobin	1.57	.	.	.	.	.	.	.	.	.	.	.	1.57	1.57	0.39
Tebuconazole	4.31	.	.	.	.	.	.	.	.	.	.	.	4.31	4.31	0.97
All fungicides	5.88	.	.	.	.	.	.	.	.	.	.	.	5.88		1.36
<i>Herbicides & desiccants</i>															
Clomazone	.	.	.	96.32	.	.	.	.	.	.	.	.	96.32	96.32	6.49
Clopyralid	.	.	.	28.13	.	.	.	.	.	.	.	.	28.13	28.13	1.72
Ethametsulfuron-methyl	.	.	10.75	.	.	.	.	.	.	.	.	.	10.75	10.75	0.2
Glyphosate	.	.	.	8.62	.	74.74	.	.	.	.	.	.	83.36	79.05	64.28
Linuron	.	.	.	0.16	.	.	.	.	.	.	.	.	0.16	0.16	0.09
Metazachlor	.	.	.	101.96	.	.	11.42	.	.	.	.	.	113.38	113.38	64.51
Tepraloxymid	.	.	.	.	3.92	.	.	.	.	.	.	.	3.92	3.92	0.29
All herbicides & desiccants	.	.	10.75	235.18	3.92	74.74	11.42	.	.	.	.	.	336.02		137.59

Table 30 cont: Turnips: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	General fungal control	General weed control	Charlock	General weed control	Grass	Ground preparation	Sealer	Aphids	Biostimulant/ crop defence	General insect control	Turnip fly	Slugs	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Insecticides</i>															
Chlorpyrifos	8.62	.	.	8.62	4.31	4.66
Garlic Extract	3.92	1.96	0.67	50.03	.	56.58	17.49	109.65
Lambda-cyhalothrin	3.29	.	.	3.29	1.72	0.05
All insecticides	3.92	1.96	12.58	50.03	.	68.49		114.35
<i>Molluscicides</i>															
Ferric phosphate	71.53	71.53	71.53	2.15
All molluscicides	71.530	71.53	71.53	2.15

Table 31: Swedes: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease prevention	General weed control	Ground preparation	Seed treatment	Vertebrate deterrent	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>								
Iprodione	.	.	.	0.17	.	0.17	0.17	0.01
Propamocarb hydrochloride	0.17	.	.	.	.	0.17	0.17	0.63
All fungicides	0.17	.	.	0.17	.	0.35		0.64
<i>Herbicides & desiccants</i>								
Clomazone	.	91.25	.	.	.	91.25	91.25	4.93
Glyphosate	.	.	37.92	.	.	37.92	37.92	54.61
Metazachlor	.	129.18	.	.	.	129.18	129.18	96.88
All herbicides & desiccants	.	220.43	37.92	.	.	258.36		156.42

Table 32: Beetroot: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Downy mildew	General	General	General	Ground preparation	Sealer	Total	Basic	Total
		fungal control	insect control	weed control			area treated (sp ha)	area treated (ha)	quantity applied (kgs)
<i>Fungicides</i>									
Fenpropimorph	.	3.14	.	.	.	.	3.14	3.14	2.35
Mancozeb/metalaxyl-M	0.61	.	.	.	.	.	0.61	0.61	0.78
All fungicides	0.61	3.14	.	.	.	.	3.74	3.74	3.14
<i>Herbicides & desiccants</i>									
Desmedipham/ethofumesate/phenmedipham	.	.	.	0.62	.	.	0.62	0.62	0.32
Diquat	.	.	.	1.17	.	.	1.17	1.17	0.23
Ethofumesate	.	.	.	3.14	.	.	3.14	3.14	3.14
Glyphosate	8.9	.	8.9	8.9	6.97
Lenacil	.	.	.	6.81	.	0.61	7.42	7.42	13.24
Linuron	.	.	.	0.15	.	.	0.15	0.15	0.09
Metamitron	.	.	.	3.81	.	11.76	15.57	7.73	53.54
Metazachlor	.	.	.	0.15	.	.	0.15	0.15	0.11
Phenmedipham	.	.	.	7.53	.	.	7.53	7.53	2.71
Triflusalufuron-methyl	.	.	.	3.14	.	.	3.14	3.14	0.05
All herbicides & desiccants	.	.	.	26.51	8.9	12.37	47.78	47.78	80.4
<i>Insecticides</i>									
Lambda-cyhalothrin	.	.	0.15	.	.	.	0.15	0.15	<0.01
All insecticides	.	.	0.15	.	.	.	0.15	0.15	<0.01

Table 33: Bulb onion: pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	General fungal control	General weed control	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>					
Azoxystrobin	15.68	.	15.68	7.84	3.14
Benthiavalicarb-isopropyl/mancozeb	7.84	.	7.84	7.84	8.44
Chlorothalonil	7.84	.	7.84	7.84	7.84
Copper oxychloride	7.84	.	7.84	7.84	7.84
Dimethomorph/mancozeb	7.84	.	7.84	7.84	11.63
Mancozeb	7.84	.	7.84	7.84	12.54
All fungicides	54.88	.	54.88		51.43
<i>Herbicides & desiccants</i>					
Chloridazon	.	7.84	7.84	7.84	2.55
Ioxynil	.	15.68	15.68	7.84	0.97
Pendimethalin	.	15.68	15.68	7.84	10.7
Prosulfocarb	.	7.84	7.84	7.84	12.54
Tepraloxymid	.	7.84	7.84	7.84	0.59
All herbicides & desiccants	.	54.88	54.88		27.35

Table 34: Summer scallions: Pesticide treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease prevention	Downy mildew	General fungal control	General weed control	Grass	Ground preparation	Pre-emergence weed control	Sealer	Total area treated (sp ha)	Basic area treated (sp ha)	Total quantity applied (kgs)
<i>Fungicides</i>											
Azoxystrobin	0.61	.	0.39	.	.	.	.	.	1	1	0.25
Chlorothalonil	.	.	6.15	.	.	.	.	.	6.15	6.15	6.15
Mancozeb/metalaxyl-M	.	9.86	.	.	.	.	.	.	9.86	2.46	12.71
All fungicides	0.61	9.86	6.54	.	.	.	.	.	17.01		19.11
<i>Herbicides & dessicants</i>											
Chloridazon	.	.	.	0.39	.	.	.	1.54	1.93	1.93	1.06
Dimethenamid-P/Pendimethalin	.	.	.	0.15	.	.	.	.	0.15	0.15	0.12
Diquat	0.3	0.3	0.3	0.12
Glyphosate	4.39	1.54	.	5.93	4.39	3.88
Ioxynil	.	.	.	32.7	.	.	.	.	32.7	11.79	6.16
Pendimethalin	.	.	.	8.07	.	.	.	3.47	11.54	11.15	14.25
Propachlor	2.77	2.77	2.77	6.35
Propaquizafop	.	.	.	0.91	.	.	.	.	0.91	0.91	0.14
Prosulfocarb	.	.	.	1.73	.	.	.	.	1.73	1.73	2.31
Tepraloxydim	.	.	.	0.39	0.2	.	.	.	0.59	0.59	0.04
All herbicides & desiccants	.	.	.	44.35	0.2	4.39	1.54	8.07	58.54		34.43

Table 35: Soup Leeks: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease prevention	General fungal control	General weed control	Ground preparation	Leaf blotch	Pre-emergence weed control	Rust	Sealer	Seed treatment	White tip	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>													
Azoxystrobin	.	34.74	.	.	.	.	.	.	.	.	34.74	34.74	8.69
Azoxystrobin/difenoconazole	.	24.38	.	.	.	.	.	.	.	.	24.38	7.94	7.92
Chlorothalonil/metalaxyl-M	2.46	.	.	.	.	0.59	3.06	3.06	3.28
Dimethomorph/mancozeb	.	34.55	.	.	.	.	.	.	.	.	34.55	34.55	17.94
Mancozeb/metalaxyl-M	.	21.91	.	.	.	.	.	.	.	.	21.91	5.48	28.26
Propamocarb hydrochloride	0.96	.	.	.	.	.	.	.	.	.	0.96	0.96	3.45
Prothioconazole	.	34.55	.	.	.	.	2.46	.	.	.	37.01	37.01	5.45
Tebuconazole	.	34.55	.	.	.	.	7.98	.	.	0.19	42.72	37.8	10.68
Thiram	0.96	.	0.96	0.96	0.08
All fungicides	0.96	184.67	.	.	2.46	.	10.45	.	0.96	0.78	200.28	.	85.76
<i>Herbicides & desiccants</i>													
Chloridazon	.	.	0.59	.	.	.	.	34.55	.	.	35.14	35.14	16.26
Cycloxydim	.	.	21.91	.	.	.	.	.	.	.	21.91	5.48	9.86
Glyphosate	.	.	.	35.52	.	32.24	.	.	.	.	67.77	35.52	40.67
Ioxynil	.	.	146.64	.	.	.	.	.	.	.	146.64	40.53	25.19
Metazachlor	.	.	7.94	.	.	.	.	.	.	.	7.94	7.94	5.96
Pendimethalin	.	.	37.6	.	.	.	.	0.78	.	.	38.39	37.8	28.64
Prosulfocarb	.	.	34.74	.	.	.	.	0.19	.	.	34.93	34.74	42.54
Tepraloxymid	.	.	0.59	.	.	.	.	.	.	.	0.59	0.59	0.04
All herbicides & desiccants	0.96	184.67	250.02	35.52	2.46	32.24	10.45	35.52	0.96	0.78	553.59	.	254.92

Table 36 : Table Leeks: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease prevention	General					General					Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)	
		fungal control	Rust	Seed treatment	White blotch	White tip	weed control	Grass	Ground preparation	Sealer	Stubble treatment				insect control
<i>Fungicides</i>															
Azoxystrobin	.	10.86	.	.	.	.	.	.	.	.	.	10.86	10.86	2.71
Azoxystrobin/difenoconazole	.	7.3	.	.	.	.	.	.	.	.	.	7.3	5.73	2.37
Boscalid/pyraclostrobin	.	10.86	.	.	1.17	.	.	.	.	.	.	12.03	12.03	4.41
Chlorothalonil	.	7.36	.	.	.	.	.	.	.	.	.	7.36	3.68	7.36
Chlorothalonil/metalaxyl-M	.	1.17	.	.	.	.	.	.	.	.	.	1.17	1.17	1.26
Difenoconazole	.	4.61	.	.	.	.	.	.	.	.	.	4.61	4.61	0.35
Dimethomorph/mancozeb	.	21.71	.	.	.	.	.	.	.	.	.	21.71	15.41	32.21
Mancozeb	.	11.08	.	.	.	.	.	.	.	.	.	11.08	11.08	16.61
Propamocarb hydrochloride	0.72	.	.	.	.	.	.	.	.	.	.	0.72	0.72	2.61
Prothioconazole	.	8.77	29.8	.	2.34	11.08	.	.	.	.	.	51.99	35.92	9.98
Tebuconazole	.	4.17	.	.	.	.	.	.	.	.	.	4.17	4.17	1.04
Tebuconazole/trifloxystrobin	.	.	29.8	.	.	.	.	.	.	.	.	29.8	14.9	8.94
Thiram	.	.	.	0.72	.	.	.	.	.	.	.	0.72	0.72	0.1
All fungicides	0.72	87.88	59.6	0.72	3.51	11.08	.	.	.	.	.	163.51		89.96
<i>Herbicides & desiccants</i>															
Chloridazon	2.35	.	.	4.17	.	.	6.52	5.34	3.63
Dimethenamid-P/Pendimethalin	6.24	.	.	15.68	.	.	21.92	21.92	35.4
Diquat	4.17	.	.	4.17	4.17	1.67
Fluroxypyr	11.61	11.61	11.61	0.58
Glyphosate	6.51	.	14.9	.	21.41	21.41	19.26
Ioxynil	124.7	124.7	63.14	20.82
Metazachlor	31.64	31.64	31.64	23.73
Pendimethalin	20.93	.	.	4.17	.	.	25.1	23.92	14.88

Table 36 cont: Table Leeks: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease prevention	General					General					Total insect control	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
		fungal control	Rust	Seed treatment	White blotch	White tip	weed control	Grass	Ground preparation	Sealer	Stubble treatment				
Prosulfocarb	24.8	.	.	.	.	.	24.8	20.63	43.33
Tepraloxydim	8.64	0.39	.	.	.	.	9.04	9.04	0.46
<i>All herbicides & desiccants</i>	<i>230.92</i>	<i>0.39</i>	<i>6.51</i>	<i>28.18</i>	<i>14.9</i>	.	<i>280.91</i>		<i>163.76</i>
<i>Insecticides</i>															
Lambda-cyhalothrin	0.15	0.15	0.15	<0.01
<i>All insecticides</i>	<i>0.15</i>	<i>0.15</i>		<i><0.01</i>

Table 37: Lettuce: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	General						Total area treated	Basic area treated	Total quantity applied
	Aphids	Biological control	fungal control	insect control	weed control	Ground preparation	(sp ha)	(ha)	(kgs)
<i>Fungicides</i>									
Azoxystrobin	.	.	67.73	.	.	.	67.73	50.82	16.93
Mancozeb/metalaxyl-M	.	.	15.38	.	.	.	15.38	15.38	19.83
Mandipropamid	.	.	43.14	.	.	.	43.14	27.13	5.39
All fungicides	.	.	126.25	.	.	.	126.25		42.16
<i>Herbicides & dessicants</i>									
Dimethenamid-P/Pendimethalin	44.43	.	44.43	44.43	24.66
Glyphosate	9.21	9.21	9.21	16.58
Pendimethalin	44.43	.	44.43	44.43	24.58
Propyzamide	9.21	.	9.21	9.21	12.9
All herbicides & desiccants	98.07	9.21	107.28		78.72
<i>Insecticides</i>									
Deltamethrin	.	.	.	34.08	.	.	34.08	28.5	0.26
Diflubenzuron	.	.	.	3.79	.	.	3.79	3.79	0.36
Garlic Extract	.	.	.	22.28	.	.	22.28	15.8	35.65
Lambda-cyhalothrin	9.21	.	.	.	.	.	9.21	9.21	0.03
Pirimicarb	9.21	.	.	.	.	.	9.21	9.21	1.15
Pymetrozine	.	.	.	50.02	.	.	50.02	41.6	7.55
Spirotetramat	.	.	.	30.11	.	.	30.11	30.11	2.26
All insecticides	18.42	.	.	140.28	.	.	158.71		47.26
<i>Biological control</i>									
Bacillus subtilis	.	0.37	.	.	.	.	0.37	0.37	0.02
All biological controls	.	0.37	.	.	.	.	0.37		0.02

Table 38: Table celery: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Aphids	Blight	Disease prevention	General fungal control	General insect control	General weed control	Ground preparation	Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>											
Azoxystrobin	.	.	.	13.54	.	.	.	.	13.54	10.5	2.89
Azoxystrobin/difenoconazole	.	26.87	.	.	.	.	.	.	26.87	26.87	8.73
Boscalid/pyraclostrobin	.	.	.	1.78	.	.	.	.	1.78	1.78	0.6
Copper oxychloride	.	.	.	1.78	.	.	.	.	1.78	1.78	3.1
Difenoconazole	.	.	.	3.65	.	.	.	.	3.65	2.48	0.38
Propamocarb hydrochloride	.	.	0.36	.	.	.	.	.	0.36	0.36	1.31
Thiram	0.36	0.36	0.36	0
All fungicides	.	26.87	0.36	20.75	.	.	.	0.36	48.35		17.01
<i>Herbicides</i>											
Diquat	1.78	.	.	1.78	1.78	1.43
Glyphosate	28.65	.	28.65	28.65	50.93
Linuron	33.82	.	.	33.82	32.04	11.95
Pendimethalin	5.84	.	.	5.84	5.84	2.48
Prosulfocarb	37.18	.	.	37.18	37.18	70.11
All herbicides & desiccants	78.63	28.65	.	107.28		136.89

Table 38 cont: Table celery: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease prevention			General fungal control	General insect control	General weed control	Ground preparation	Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
	Aphids	Blight									
<i>Insecticides</i>											
Deltamethrin	.	.	.	.	3.03	.	.	.	3.03	3.03	0.02
Garlic Extract	.	.	.	.	11.76	.	.	.	11.76	8.72	18.81
Lambda-cyhalothrin	26.87	.	.	.	0.15	.	.	.	27.02	27.02	0.2
Pirimicarb	26.87	.	.	.	.	.	.	.	26.87	26.87	3.76
Pymetrozine	.	.	.	.	10.81	.	.	.	10.81	8.72	1.88
<i>All insecticides</i>	53.74	.	.	.	25.75	.	.	.	79.49		24.67

Table 39: Soup celery: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Celery blight	Disease prevention	Downy mildew	General	General	General	Ground preparation	Leaf spot	Sealer	Seed treatment	Total	Basic	Total
				fungal control	insect control	weed control					area treated (sp ha)	area treated (ha)	quantity applied (kgs)
<i>Fungicides</i>													
Azoxystrobin	.	.	.	17.72	.	.	.	.	.	.	17.72	15.94	4.43
Azoxystrobin/difenoconazole	.	.	.	0.61	.	.	.	.	.	.	0.61	0.61	0.2
Chlorothalonil/metalaxyl-M	.	.	.	0.61	.	.	.	.	.	.	0.61	0.61	0.65
Difenoconazole	0.61	.	.	18.87	.	.	.	2.36	.	.	21.84	17.72	4.32
Dimethomorph/mancozeb	.	.	0.78	.	.	.	.	.	.	.	0.78	0.39	1.16
Mancozeb/metalaxyl-M	.	.	.	2.43	.	.	.	.	.	.	2.43	0.61	3.14
Propamocarb hydrochloride	.	0.18	.	.	.	.	.	.	.	.	0.18	0.18	0.66
Thiram	0.18	0.18	0.18	0
All fungicides	0.61	0.18	0.78	40.23	.	.	.	2.36	.	0.18	44.35		14.57
<i>Herbicides</i>													
Clomazone	0.61	.	.	.	.	0.61	0.61	0.05
Glyphosate	17.7	.	.	.	17.7	17.7	12.74
Linuron	49.63	.	.	1.17	.	50.8	18.92	15.01
Pendimethalin	16.35	.	.	1.76	.	18.12	18.12	23.58
Prosulfocarb	31.69	.	.	.	.	31.69	16.34	52.28
All herbicides & desiccants	98.29	17.7	.	2.93	.	118.92		103.67
<i>Insecticides</i>													
Lambda-cyhalothrin	2.58	.	.	.	.	.	2.58	1.19	0.02
All insecticides	2.58	.	.	.	.	.	2.58		0.02

Table 40: Celeriac: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease prevention	Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>					
Propamocarb hydrochloride	0.08	.	0.08	0.08	0.29
Thiram	.	0.08	0.08	0.08	<0.01
<i>All fungicides</i>	<i>0.08</i>	<i>0.08</i>	<i>0.16</i>		<i>0.29</i>

Table 41: Parsley: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease prevention	Downy mildew	General fungal control	General insect control	General weed control	Ground preparation	Rust	Rust & mildew	Sealer	Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>													
Azoxystrobin	.	.	17.14	.	.	.	.	.	.	.	17.14	17.14	4.28
Azoxystrobin/difenoconazole	.	.	0.61	.	.	.	.	.	.	.	0.61	0.61	0.2
Chlorothalonil/metalaxyl-M	0.61	.	.	.	0.61	0.61	0.65
Difenoconazole	.	.	18.87	.	.	.	.	.	.	.	18.87	16.53	4.1
Dimethomorph/mancozeb	.	0.78	1.78	.	.	.	.	.	.	.	2.57	2.17	3.81
Iprodione	0.11	0.11	0.11	0
Mancozeb/metalaxyl-M	.	.	1.78	.	.	.	.	1.83	.	.	3.61	2.39	4.17
Propamocarb hydrochloride	0.11	.	.	.	.	.	.	.	.	.	0.11	0.11	0.38
Thiram	0.11	0.11	0.11	0.01
All fungicides	0.11	0.78	40.17	.	.	.	0.61	1.83	.	0.21	43.71		17.6
<i>Herbicides & desiccants</i>													
Clomazone	0.61	.	.	.	.	.	0.61	0.61	0.05
Diquat	1.78	.	.	.	.	.	1.78	1.78	1.43
Glyphosate	19.87	.	.	.	.	19.87	19.87	15.87
Linuron	56.56	.	.	.	1.17	.	57.74	23.68	18.29
Pendimethalin	16.9	.	.	.	1.76	.	18.66	18.66	24.04
Prosulfocarb	33.86	.	.	.	.	.	33.86	18.51	55.75
All herbicides & desiccants	109.72	19.87	.	.	2.93	.	132.53		115.44

Table 41 cont: Parsley: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease prevention	Downy mildew	General fungal control	General insect control	General weed control	Ground preparation	Rust	Rust & mildew	Sealer	Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Insecticides</i>													
Lambda-cyhalothrin	.	.	.	8.39	.	.	.	.	.	.	8.39	4.17	0.07
Pirimicarb	.	.	.	1.78	.	.	.	.	.	.	1.78	1.78	0.25
<i>All insecticides</i>	.	.	.	<i>10.17</i>	.	.	.	.	.	.	<i>10.17</i>		<i>0.32</i>

Table 42: Courgettes: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease prevention	Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>					
Propamocarb hydrochloride	0.01	.	0.01	0.01	0.03
Thiram	.	0.01	0.01	0.01	0.01
All fungicides	0.01	0.01	0.01		0.04

Table 43: Pumpkin: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Disease prevention	Seed treatment	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Fungicides</i>					
Propamocarb hydrochloride	0.04	.	0.04	0.04	0.15
Thiram	.	0.04	0.04	0.04	0.1
All fungicides	0.04	0.04	0.08		0.26

Table 44: Rhubarb: pesticide-treated area (spray hectares), basic area treated (hectares), quantities used (kilograms) and reasons for use.

Pesticide type and formulation	Grass	Total area treated (sp ha)	Basic area treated (ha)	Total quantity applied (kgs)
<i>Herbicides</i>				
Glyphosate	10.95	10.95	5.48	5.48
All herbicides & desiccants	10.95	10.95	5.48	5.48

Table 45 Comparison of the area of vegetable crops grown (hectares) in Northern Ireland and the proportional differences (%) between 1991 - 2013.

Crop type	Survey year							% change in area 2011 / 2013
	1991 (ha)	1995 (ha)	1999 (ha)	2004 (ha)	2007 (ha)	2011 (ha)	2013 (ha)	
<i>Brassicas</i>								
Brussels sprouts	121.6	85.7	114.5	29.8	43.6	54.9	29.5	-46%
Cabbage (summer/autumn)	118.6	61.0	120.7	76.6	110.8	69.5	18.5	-73%
Cabbage (other)*	168.6	202.8	175.3	156.0	241.8	173.0	159.0	-8%
Calabrese/broccoli	50.6	55.8	60.6	147.5	159.5	96.3	55.4	-42%
Cauliflower	166.8	228.8	181.4	171.4	188.1	86.2	50.8	-41%
All leafy brassicas	626.2	634.1	652.5	581.3	743.8	479.8	313.1	-35%
Turnip & swede	127.6	121.9	121.5	280.8	223.5	253.3	248.5	-2%
<i>Peas & beans</i>								
Beans	11.8	11.7	9.4	6.6	5.0	2.0	26.2	1197%
Peas	13.2	6.9	5.5	2.4	2.7	15.8	5.0	-68%
All peas & beans	25.0	18.6	14.9	9.0	7.7	17.8	31.2	76%
<i>Leeks & onions</i>								
Leeks	39.3	63.5	68.1	89.9	109.3	104.2	109.9	6%
Onions	6.4	.	14.5	13.3	10.7	17.4	7.8	-55%
Spring onions	51.9	42.0	58.9	61.8	39.4	28.8	11.8	-59%
All leeks & onions	97.6	105.51	141.5	164.9	159.4	150.4	129.6	-14%
<i>Carrots & parsnips</i>								
Carrots	269.9	261.0	360.8	347.8	436.3	353.1	335.4	-5%
Parsnips	80.9	73.8	109.8	99.6	185.9	166.4	184.1	11%
All carrots and parsnips	350.8	334.8	470.6	447.4	622.2	519.5	519.5	0%

Table 45 cont: Comparison of the area of vegetable crops grown (hectares) in Northern Ireland and the proportional differences (%) between 1991 - 2013.

Crop type	Survey year							% change in area 2011 / 2013
	1991 (ha)	1995 (ha)	1999 (ha)	2004 (ha)	2007 (ha)	2011 (ha)	2013 (ha)	
Celery	24.5	27.1	45.5	32.2	57.8	44.1	57.6	31%
Lettuce	26.6	38.4	27.0	42.8	24.3	59.4	54.7	-8%
Parsley*	20.1	31.4	40.0	41.9	47.8	33.3	23.8	-29%
<i>Other vegetables</i>								
Cucurbits	0.1	1.5	1.8	.	1.8	0.0025	0.0496	1852%
Beetroot	3.6	3.1	6.9	3.8	6.7	8.2	12.9	58%
Rhubarb	13.7	6.8	6.1	10.8	4.9	.	5.5	
Kale	.	.	.	.	.	0.9	.	
Celariac	.	.	.	.	.	0.0139	0.1	472%
All other vegetables	17.5	11.3	14.8	14.6	13.4	9.0	18.5	105%
Total vegetable crops	1,316.0	1,323.2	1,528.0	1,614.9	1,900.0	1,566.7	1,396.5	-11%

* Cabbage other includes Spring & Winter cabbage and Savoys for 1999 & 2004.

* Parsley was included in the 'Other vegetables' category in 1991.

Table 33 Comparison of pesticide usage on *vegetable crops* in Northern Ireland 1991-2013, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

Pesticide type	Survey year															
	1991		1995		1999		2004		2007		2011		2013		% Differences 2013-2011	
	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	720	814	924	1304	2078	1243	2506	997	3765	2060	3480	1514	3175	1167	-9	-23
Herbicides & desiccants	2159	3558	2560	3723	3735	4707	4579	5449	4933	5728	5233	4533	5820	3700	11	-18
Insecticides																
<i>Azomethine</i>	.	.	.	.	.	.	.	.	.	.	215.12	40.22	69.22	11.1	-68	-72
<i>Benzoylurea</i>	.	.	.	.	.	.	.	.	.	.	.	.	3.79	0.36	.	.
<i>Carbazates</i>	.	.	.	.	.	.	.	.	.	.	0.87	0.21	.	.	.	.
<i>Carbamates</i>	104	108	269	188	949	649.3	722.2	178	723	263	537.03	282.35	608.23	248.96	13	-12
<i>Chloronicotinyl</i>	.	.	.	.	.	.	.	.	.	.	166.26	15.96	496.8	47.69	199	199
<i>Ketoenole</i>	.	.	.	.	.	.	.	.	.	.	27.89	2.09	.	.	.	.
<i>Organochlorines</i>	66	16	17	3	.	.	.	.	.	.	.	.	.	.	.	.
<i>Organophosphates</i>	1698	1211	2300	1756	737.9	424.1	153.3	337.7	75	199	19.45	170.58	33.62	514.3	73	202
<i>Oxadiazine</i>	.	.	.	.	.	.	.	.	.	.	59.48	1.52	44.02	1.12	-26	-26
<i>Pyrethroids</i>	274	7	579	13	2090.7	22.6868	2281.9	29.3	2807	31	2170.3	26.76	2072.53	24.13	-5	-10
<i>Carbamate/Pyrethroid</i>	.	.	.	.	.	.	.	.	288	53	169.58	32.34	14.95	2.58	-91	-92
<i>Tetramic acid</i>	.	.	.	.	.	.	.	.	.	.	.	.	103.74	7.78	.	.
<i>Unknown insecticides</i>	34	.	23	.	16.391	.	134.9	.	.	.	.	.	.	.	.	.
<i>Other</i>	.	.	.	.	4	16	4	16	172	22	286	501	91	164	-68	-67
All insecticides	2176	1342	3189	1961	3794	1096	3296	561	4065	569	3652	1073	3538	1022	-3	-5
Molluscicides	29	16	33	27	188	56	75	12	106	12	91.8	12.41	86.49	4.82	-6	-61
Rodenticides	.	.	.	.	50	159	.	.	.	.	.	.	.	.	.	.

Table 33 Comparison of pesticide usage on *vegetable crops* in Northern Ireland 1991-2013, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

Pesticide type	Survey year															
	1991		1995		1999		2004		2007		2011		2013		% Differences 2013-2011	
	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Growth regulators	.	.	.	.	.	.	.	.	.	.	15.17	88.87	12.17	58.42	-20	-34
Seed treatments	874	11	799	8.4	617	1	843	53	1039	110	1121	25.23	1085.07	15.84	-3	-37
Soil fumigants	4	1238	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Disinfectants	.	.	.	.	.	.	.	.	.	.	0.18	40.31	.	.	.	.
Biological controls	.	.	.	.	.	.	.	.	.	.	.	.	0.37	0.02	.	.
Other	.	.	.	.	.	.	.	.	.	.	.	.	75.85	1.9	.	.
Adjuvants	.	.	.	.	.	.	.	.	.	.	21.32	2.89	27.67	19.09	30	561
All pesticides	5,962	6,979	7,505	7,024	10,460	7,261	11,298	7,142	13,909	8,473	13,617	7,289	13,821	5,989	2	-18
<i>Area grown (ha)</i>	1,316		1,323		1,528		1,615		1,900		1,567		1,396			-11

Table 34 Comparison of pesticide usage on *leafy brassica crops* in Northern Ireland 1991-2013, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

Pesticide type	Survey year														% Differences	
	1991		1995		1999		2004		2007		2011		2013		2013-2011	
	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	399	391	449	479	1102	420	976	296	1577	586	1343	494	700	171	-48	-65
Herbicides & desiccants	541	1021	827	1044	976	1272	1156	1232	1447	1623	1132	1,276	677	474	-40	-63
Insecticides																
<i>Azomethine</i>	.	.	.	.	.	.	.	.	.	.	163.88	30	6	1	-96	-96
<i>Carbazates</i>	.	.	.	.	.	.	.	.	.	.	0.87	0.21	.	.	.	.
<i>Carbamates</i>	13	13	149	53	335	69	518	97	510	113	203	38	225	43	11	15
<i>Chloronicotinyl</i>	.	.	.	.	.	.	.	.	.	.	166	16	106	10	-36	-36
<i>Ketoenole</i>	.	.	.	.	.	.	.	.	.	.	28	2	.	.	.	.
<i>Organochlorines</i>	41	13	16	2	.	.	.	.	.	.	.	.	.	.	.	.
<i>Organophosphates</i>	908	452	1394	438	565	200	113	294	64	193	19	171	22	506	12	197
<i>Oxadiazine</i>	.	.	.	.	.	.	.	.	.	.	59.48	1.52	28.27	0.72	-52	-53
<i>Pyrethroids</i>	260	6	504	11	754	10	629	8	826	8	603	8.71	388.95	6.42	-35	-26
<i>Carbamate/Pyrethroid</i>	.	.	.	.	.	.	.	.	210	38	170	32	4	1	-97	-97
<i>Tetramic acid</i>	.	.	.	.	.	.	.	.	.	.	.	.	74	6	.	.
<i>Unknown insecticides</i>	25	.	18	.	15	.	3	.	.	.	.	.	.	.	.	.
<i>Other</i>	.	.	.	.	.	.	96	14	172	22	6.84	33.66	.	.	.	.
All insecticides	1247	485	2082	505	1668	278	1359	413	1782	375	1419	333	855	574	-40	73
Molluscicides	22	12	3	2	143	47	67	11	88	10	2.64	0.35	14.30	2.60	442	643
Rodenticides	.	.	.	.	50	159	.	.	.	.	.	.	.	.	.	.
Growth regulators	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Table 34 cont: Comparison of pesticide usage on *leafy brassica crops* in Northern Ireland 1991-2013, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

Pesticide type	Survey year															
	1991		1995		1999		2004		2007		2011		2013		% Differences 2013-2011	
	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Seed treatments	80	1	57	<0.5	7	<0.5	138	29	439	96	17.18	1.02	19.21	3.40	12	233
Soil fumigants	4	1238	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Disinfectants	.	.	.	.	.	.	.	.	.	.	0.18	40.31	.	.	.	.
Adjuvants	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
All pesticides	2,293	3,147	3,419	2,030	3,946	2,177	3,695	1,981	5,333	2,691	3,917	2,144	2,266	1,226	-42	-43
<i>Area grown (ha)</i>	628		635		652		581		744		480		313.14		-35	

Table 35 Comparison of pesticide usage on *turnip & swede crops* in Northern Ireland 1991-2013, area treated(spray hectares), quantity applied (kilograms), the proportional differences (%) and the area grown (hectares).

Pesticide type	Survey year															
	1991		1995		1999		2004		2007		2011		2013		% Differences 2013-2011	
	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	55	32	155	76	9.7	3.1	2	1	116	612	0.15	0.17	6.23	2	4053	1076
Herbicides & desiccants	170	445	159	239	209	353.2	575	698	393	546	493	382	594.37	294.01	21	-23
Insecticides																
<i>Carbamates</i>	46	51	65	86	87	109	3	3	0.3	0.2	52.37	11.54	.	.	.	.
<i>Organochlorines</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Organophosphates</i>	162	122	162	272	130	155	26	27	-	-	.	.	8.62	4.66	.	.
<i>Pyrethroids</i>	1	< 0.1	23	1	6	<0.1	3	<0.1	6	<1	31.36	0.24	3.29	0.05	-90	-79
<i>Other</i>	.	.	.	.	.	.	.	.	.	.	273	456	56.58	109.65	-79	-76
<i>Unknown insecticides</i>	2	.	1	-	1.4	.	.	.	.	.	.	.	.	.	.	.
All insecticides	210	173	252	358	225	264	32	40	6	0.3	357	467	68.49	114.35	-81	-76
Molluscicides	.	.	23	21	0	< 0.1	.	.	.	.	43.39	5.21	71.53	2.15	65	-59
Seed treatments	133	2	115	< 0.5	87	< 0.5	266	1	74	<1	228	1.98	285.97	3.03	26	53
Adjuvants	.	.	.	.	.	.	.	.	.	.	.	.	75.85	1.9	.	.
All pesticides	568	652	704	695	530	620.3	874	740	558	1,159	1,121	856	1,102	417	-2	-51
Area grown (ha)	128		122		121.5		255		224		253		248			-2

Table 36 Comparison of pesticide usage on *leek crops* in Northern Ireland 1991-2013, area treated (spray hectares), quantity applied (kilograms), the proportional differences (%) and the area grown (hectares).

Pesticide type	Survey year															
	1991		1995		1999		2004		2007		2011		2013		% Differences 2013-2011	
	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	64	54	90	57	93	49	143	73	374	150	302	110	364	175.72	20	59
Herbicides & desiccants	95	222	155	299	239	443	343	494	463	591	476	229	634	332.92	33	45
Insecticides																
<i>Carbamates</i>	.	.	.	.	0.5	0.7	.	.	.	.	.	.	.	.	.	.
<i>Organochlorines</i>	.	.	.	.	0.8	0.5	.	.	.	.	.	.	.	..	.	.
<i>Organophosphates</i>	7	4	3	3	-	-	2	0.5	4	3	.	.	.	.	.	.
<i>Pyrethroids</i>	.	.	3	< 0.5	0.4	< 0.1	.	.	.	.	0.81	0.01	0.15	0.0023	-81	-77
<i>Other</i>	.	.	.	.	.	.	.	.	.	.	0.06	2.29	.	.	.	.
<i>Unknown insecticides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
All insecticides	7	4	6	3	1.7	1.2	2	1	4	3	0.87	2.29	0.15	0.0023	-83	-100
Molluscicides	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.
Seed treatments	29	< 0.5	28	< 0.5	33.9	< 0.5	72	2	77	1	74	1.06	54	0.06	-27	-94
Adjuvants	.	.	.	.	.	.	.	.	.	.	.	.	4.17	3.75	.	.
All pesticides	195	280	280	360	368	494	560	568	918	744	854	343	1,056	512	24	49
<i>Area grown (ha)</i>	39		64		68		79		109		104		110		6	

Table 37 Comparison of pesticide usage on *carrot crops* in Northern Ireland 1991-2013, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

Pesticide type	Survey year															
	1991		1995		1999		2004		2007		2011		2013		% Differences 2013-2011	
	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	33	147	69.5	434	468	398	879	349	900	345	832	348	1140	400	37	15
Herbicides & desiccants	791	1104	884	1348	1266	1290	1502	1702	1460	1615	1742	1355	2130	1147	22	-15
Insecticides																
<i>Carbamates</i>	39	38	50	45	394	353	147	61	181	144	186.92	179.9	287.97	121.33	54	-33
<i>Organochlorines</i>	12	< 0.5	-	.	-	-	-	.	.	.	.	.	.	.	.	.
<i>Organophosphates</i>	465	492	506	778	23.9	54	1	<0.5	2	<1	.	.	1.54	1.03	.	.
<i>Pyrethroids</i>	-	-	-	-	943	8.7	1198	16	1303	15	873.23	10.1	1050.14	10.79	20	7
<i>Carbamates/pyrethroids</i>	.	.	.	.	.	.	.	.	.	.	.	.	10.02	1.58	.	.
<i>Chloronicotinyl</i>	.	.	.	.	.	.	.	.	.	.	.	.	307.03	29.47	.	.
<i>Unknown insecticides</i>	6	-	4	-	-	-	<0.5	-	<0.5	.	.	.	.	.	.	.
All insecticides	523	532	560	823	1361	415	1346	78	1485	160	1060	190	1657	164	56	-14
Molluscicides	3	1	-	-	2.3	0.5	1	<0.5	1	<0.1	0.31	0.04	0.67	0.08	116	100
Seed treatments	494	2	503	3	359	< 0.5	286	11	327	14	440	12	401	4	-9	-70
Adjuvants	.	.	.	.	.	.	.	.	.	.	11.6	.	15.76	8.63	.	.
All pesticides	1,844	1,784	2,017	2,607	3,455	2,103	4,013	2,210	4,174	2,124	4,086	1,905	5,344	1,723	31	-10
<i>Area grown (ha)</i>	270		261		361		314		436		353		335		-5	

Table 38 Comparison of pesticide usage on *parsnip crops* in Northern Ireland 1991-2013, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

Pesticide type	Survey year															
	1991		1995		1999		2004		2007		2011		2013		% Differences 2013-2011	
	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	8	30	17	115	120	89	197	75	307	113	510.48	266.68	584.21	239.06	14	-10
Herbicides & desiccants	219	252	194	242	398	343	412	497	620	727	726.45	658.1	1079.96	816.52	49	24
Insecticides																
<i>Carbamates</i>	5	5	4	4	115	103	10	12	3	<1	52.77	44.94	46.77	77.56	-11	73
<i>Organochlorines</i>	9	< 0.5	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Organophosphates</i>	85	99	135	200	2.7	5.8	.	.	.	.	.	.	1.23	0.83	.	.
<i>Pyrethroids</i>	.	.	.	.	293	2.8	344	3	524	7	574	6.48	508.35	5.78	-11	-11
<i>Carbamates/pyrethroids</i>	.	.	.	.	.	.	.	.	.	.	.	.	0.61	0.1	.	.
<i>Oxadiazine</i>	.	.	.	.	.	.	.	.	.	.	.	.	10.31	0.26	.	.
<i>Chloronicotinyl</i>	.	.	.	.	.	.	.	.	.	.	.	.	80.08	7.69	.	.
All insecticides	99	104	139	204	411	111	354	16	527	7	627	51.41	647.35	92.29	3	80
Molluscicides	.	.	.	.	32.7	< 0.5	.	.	2	<1	0.06	0.01	.	.	.	.
Growth regulators	.	.	.	.	.	.	.	.	.	.	15.17	88.87	12.17	58.42	-20	-34
Seed treatments	4	.	3	< 0.5	70.9	< 0.5	3	<0.1	9	<0.1	174	0.37	234.74	1.14	35	208
Adjuvants	.	.	.	.	.	.	.	.	.	.	9.73	2.89	.	.	.	.
All pesticides	330	386	353	561	1032	543	966	587	1,466	847	2,063	1,068	2,558	1,207	24	13
<i>Area grown (ha)</i>	81		74		110		89		186		166		184		11	

Table 39 Comparison of pesticide usage on *lettuce crops* in Northern Ireland 1991-2013, area treated (spray hectares), quantity applied (kilograms) and the area grown (hectares).

Pesticide type	Survey year															
	1991		1995		1999		2004		2007		2011		2013		% Differences 2013-2011	
	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)	Area (sp ha)	Quantity (kg)
Fungicides	57	48	36	41	41.5	49.3	86	54	118	50	119	91.27	126.25	42.16	6	-54
Herbicides & desiccants	25	45	52	70	78.6	144	102	150	66	60	150	203	107	79	-29	-61
Insecticides																
<i>Azomethine</i>	.	.	.	.	.	.	.	.	.	.	45.41	9.08	50.02	7.55	10	-17
<i>Carbamates</i>	.	.	.	.	1.1	< 0.3	44	4	2	1	3.47	13.87	9.21	1.15	165	-92
<i>Organochlorines</i>	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Organophosphates</i>	19	16	61	20	3.1	0.7	5	3	.	.	.	.	.	.	.	.
<i>Pyrethroids</i>	11	< 0.5	45	1	28.4	< 0.3	69	6	.	.	.	.	43.29	0.29	.	.
<i>Carbamates/pyrethroids</i>	.	.	.	.	.	.	.	.	39	6.4	.	.	.	.	.	.
<i>Tetramic acid</i>	.	.	.	.	.	.	.	.	.	.	.	.	30.11	2.26	.	.
<i>Benzoylurea</i>	.	.	.	.	.	.	.	.	.	.	.	.	3.79	0.36	.	.
<i>Other</i>	.	.	.	.	.	.	.	.	.	.	.	.	22.28	35.65	.	.
All insecticides	34	18	106	21	32.5	1.2	118	13	41	7	59.28	12.55	158.71	47.26	168	277
Molluscicides	3	3	6	2	2	1.4	5	1	2	< 1	45.41	6.81	.	.	.	.
Seed treatments	7	-	.	.	.	.	33	10	24	2	90.89	7.1	0.43	2.98	-100	-58
All pesticides	126	114	200	133	155	195	343	226	251	119	464	321	393	171	-15	-47
Area grown (ha)	27		38		27		39		24		59		55		-8	

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Northern Ireland Pesticide Usage Survey Published Reports Appendix 1

Report No.	Report title	ISBN
99	Grassland & Fodder Crops 1989	1-855 27 079 X
105	Arable Crops 1990	1-855 27 130 3
106	Soft Fruit Crops 1990	1-855 27 149 4
109	Vegetable Crops 1991	1-855 27 137 0
110	Protected Crops 1991 (edible & ornamental)	1-855 27 283 0
111	Mushroom Crops 1991	1-855 27 150 8
117	Arable Crops 1992	1-855 27 193 1
118	Top Fruit Crops 1992	1-855 27 194 X
124	Grassland & Fodder crops 1993	1-855 27 221 0
131	Forestry 1993	1-855 27 282 2
132	Arable Crops 1994	1-855 27 314 4
139	Vegetable Crops 1995	1-855 27 346 2
140	Mushroom Crops 1995	1-855 27 347 0
146	Arable Crops 1996	1-855 27 469 8
147	Top fruit 1996	1-855 27 470 1
156	Grassland & Fodder Crops 1997	1-855 27 506 6
157	Sheep Treatments 1997	1-855 27 425 6
167	Soft Fruit 1998	1-855 27 540 6
168	Arable Crops 1998	1-855 27 536 8
169	Vegetable Crops 1999	1-855 27 561 9
170	Mushroom Crops 1999	1-855 27 549 X
177	Arable Crops 2000	1-855 27 670 4

Northern Ireland Pesticide Usage Survey Published Reports Appendix 1 (contd.)

Report No.	Report title	ISBN
178	Top Fruit Crops 2002	1-855 27 618 6
194	Arable Crops 2002	1-855 27 674 7
198	Grassland & Fodder Crops 2003	1-855 27 797 2
199	Hardy Nursery Stock Crops 2003	1-855 27 789 1
201	Protected Ornamental Crops 2003	1-855 27 739 5
206	Arable Crops 2004	1-855 27 833 2
207	Vegetable crops 2004	1-855 27 869 3
208	Grassland & Fodder Crops 2005	1-855 27 998 8
209	Sheep Treatments 2005	1-855 27 999 5
216	Arable Crops 2006	1-848 07 035 6
217	Top Fruit Crops 2006	1-848 07 019 6
218	Soft Fruit Crops 2006	1-848 07 036 3
222	Vegetable Crops 2007	1-848 07 062 2
223	Mushroom Crops 2007	1 848 07 061 5
230	Arable Crops 2008	1 848 07 135 3
231	Top Fruit Crops 2008	1-848 07 134 6
238	Grassland & Fodder Crops 2009	1-848 07 186 5
239	Hardy Nursery Stock Crops 2009	1-848 07 187 2
240	Soft Fruit Crops 2010	1-848 07 251 0
241	Top Fruit Crops 2010	1-848 07 250 3
242	Arable Crops 2010	1-848 07 252 7
245	Mushroom crops 2011	1-84807-308-1
246	Vegetable Crops 2011	1-848 07 309 8
247	Arable Crops 2012	1-848 07 404 3

Northern Ireland Pesticide Usage Survey Published Reports Appendix 1 (contd.)

Report No.	Report title	ISBN
248	Soft Fruit Crops 2012	1-848 07 402 6
249	Top Fruit Crops 2012	1-848 07 403 3

ISBN 978-1-84807-486-6

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