

# Compost

The quality protocol for the production and use of quality compost from source-segregated biodegradable waste.



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This Quality Protocol was funded by Defra, the Welsh Assembly Government (WAG) and the Northern Ireland Environment Agency (NIEA) as a business resource efficiency activity. It was developed by the Environment Agency and WRAP (Waste & Resources Action Programme) in consultation with Defra, industry and other regulatory stakeholders. The Quality Protocol is applicable in England, Wales and Northern Ireland. It sets out criteria for the production of quality compost from source-segregated biodegradable waste (biowaste).

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# Foreword

## Background

The Waste Protocols Project is a joint Environment Agency and WRAP (Waste & Resources Action Programme) initiative in collaboration with industry, funded by the Department for Environment, Food and Rural Affairs (Defra), the Welsh Assembly Government (WAG) and the Northern Ireland Environment Agency (NIEA) as a business resource efficiency activity.

Uncertainty over the point at which waste has been fully recovered and ceases to be waste within the meaning of Article 1(1)(a) of the EU Waste Framework Directive (2006/12/EC) has inhibited the development and marketing of materials produced from waste which could be used beneficially without damaging human health and the environment. In some cases, this uncertainty has also inhibited the recovery and recycling of waste and its diversion from landfill.

Interpretation of EU legislation is ultimately a matter for the European Court of Justice and there is now a substantial body of case law on the interpretation of the definition of waste in Article 1(1)(a) of the Waste Framework Directive. Drawing on the principles established in this case law, it is possible to identify the point at which certain wastes cease to be waste and thus when the Waste Framework Directive's waste management controls no longer apply. This identification is the purpose of the waste protocols project.

More specifically, depending on the circumstances of the waste stream concerned, the project seeks to achieve the following outcomes:

- to produce a Quality Protocol identifying the point at which waste, having been fully recovered, may be regarded as a non-waste product that can be either reused by business or industry, or supplied into other markets, enabling it to be used without the need for waste management controls; and/or
- to produce a statement that confirms to the business community what legal obligations they must comply with to use the treated waste material.

## What is a Quality Protocol?

A Quality Protocol sets out criteria for the production of a product from a specific waste type. Compliance with these criteria is considered sufficient to ensure that the fully recovered product may be used without risk to the environment or harm to human health and therefore without the need for waste management controls. In addition, the Quality Protocol indicates how compliance may be demonstrated and points to good practice for the use of the fully recovered product.

The Quality Protocol further aims to provide increased market confidence in the quality of products made from waste and so encourage greater recovery and recycling.

# 1. Introduction

## 1.1 What is this Quality Protocol?

- 1.1.1 This Quality Protocol has been developed by WRAP (Waste & Resources Action Programme) and the Environment Agency in consultation with industry and other regulatory stakeholders. It is applicable in England, Wales and Northern Ireland.
- 1.1.2 It sets out criteria for the production of *quality compost* from source-segregated biodegradable waste (biowaste). If these criteria are met, quality compost will normally be regarded as having been fully recovered and to have ceased to be waste.
- 1.1.3 *Producers* and *users* are not obliged to comply with the Quality Protocol. But if they do not, the *compost* will be considered to be a waste and *waste management controls* will apply to its handling, transport and application.
- 1.1.4 Definitions of terms that appear in *italics* when they are first used in the Quality Protocol are given in Appendix A.

## 1.2 The purpose of the Quality Protocol

- 1.2.1 This Quality Protocol has three main purposes:
  - i. to clarify the point at which waste management controls are no longer required;
  - ii. to provide users with confidence that the compost they purchase conforms with an *approved standard*;
  - iii. to protect the environment (including soil) and human health by describing acceptable good practice for the use of quality compost on land used for agriculture or soil-grown horticulture.

## 1.3 Complying with the Quality Protocol to produce a quality compost

- 1.3.1 Details of how quality compost may be produced are given in Section 2. In summary, compost will normally be regarded as having been fully recovered and to have ceased to be waste, and therefore no longer subject to waste management controls when dispatched to the customer, provided the following criteria are met:
  - the compost is produced using only those source-segregated *input materials* listed in Appendix B;
  - the compost meets the requirements of an approved standard; and
  - the compost is destined for appropriate use, in accordance with Section 4, in one of the *designated market sectors*.

Quality compost must not be used in such a way as to adversely affect human health or the environment.

- 1.3.2 Producers must demonstrate that these criteria have been met. They can do this in the ways set out in Section 3, that is:
  - by obtaining *certification* from an *independent certification body*; and
  - by producing and keeping copies of *contracts of supply* or information to customers which includes a declaration of conformance with this Quality Protocol.
- 1.3.3 Producers should note that, regardless of whether the criteria set out in 1.3.1 are met, a site where a *composting* activity is carried out will require an *environmental permit* (or in Northern Ireland a *waste management licence or exemption*) to operate.
- 1.3.4 If quality compost is mixed with other waste materials, all resulting mixes will be considered to be a waste and subject to regulatory controls.
- 1.3.5 If quality compost which is compliant with Quality Protocol is mixed with non-waste materials the resulting mix will not be waste. However, regulatory controls (other than waste management controls) may apply to the blending activity, e.g. where quality compost is transferred to a brownfield site to be mixed with soils to improve their quality.<sup>1</sup>

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<sup>1</sup> Further information on the treatment of soils *in situ* can be found in *The Definition of Waste: Developing Greenfield and Brownfield Sites*. Available from <http://www.environment-agency.gov.uk/business/sectors/32731.aspx> [Accessed 21 June 2010].

## 1.4 Failure to comply with the Quality Protocol

- 1.4.1 If the criteria in 1.3.1 are not met, the compost produced will be considered to be waste. For example, if the compost does not meet an approved standard or the producer cannot demonstrate evidence of compliance (e.g. certification is lost because of misconduct). In such circumstances, the appropriate waste management controls<sup>2</sup> will apply to the transportation, storage and use of the compost and failure to do so would constitute an offence.
- 1.4.2 Detailed guidance on waste management controls can be obtained from the Environment Agency's National Customer Contact Centre on 08708 506 506 or from its website (<http://www.environment-agency.gov.uk>). In Northern Ireland guidance can be obtained from NIEA's website (<http://www.ni-environment.gov.uk/waste-home.htm>).
- 1.4.3 It must be demonstrated that the compost will actually be used in one of the designated market sectors. Producers and users of quality compost should therefore note that, even if quality compost has been produced, it will still be waste and subject to regulatory waste controls if, for example, it is at any stage:
- disposed of;
  - used for any market other than those for which this Quality Protocol has been approved;
  - stored indefinitely with little prospect of being used; or
  - used in a way that poses a risk to human health or the environment.

## 1.5 Updating the Quality Protocol

- 1.5.1 It is proposed to review and update this document in May 2009 and biennially thereafter.
- 1.5.2 However, this document may be subject to change before those review dates. Triggers for such a change could include a change in legislation or case law.
- 1.5.3 This Quality Protocol may be withdrawn if it becomes apparent that it is generally being misapplied and/or misused.
- 1.5.4 This Quality Protocol will be adopted as a technical regulation under *Technical Standards and Regulations Directive 98/34/EC* as amended. We recognise that there may be codes of practice or standards which apply in *European Economic Area* (EEA) States other than the UK setting out requirements for the production of and use of quality compost from source-segregated biodegradable waste. We accept that quality compost may cease to be waste when dispatched to a customer provided that it has been produced in compliance with:
- a relevant standard or code of practice of a national standards body or equivalent body of any EEA State; or
  - any relevant international standard recognised for use in any EEA State; or
  - any relevant technical regulation with mandatory or de facto mandatory application for marketing or use in any EEA State
- giving levels of product performance, protection of human health and the environment which are equivalent to those required to ensure compliance with this Quality Protocol.

<sup>2</sup> For example, in compliance with Article 11 of the Waste Framework Directive, the user might need to register an environmental permit or exemption (waste management licence or exemption in Northern Ireland) with the Environment Agency or the NIEA [under paragraph 7A or 9A of Schedule 3 to the Environmental Permitting (England and Wales) Regulations 2007] before applying the waste to land and to pay the appropriate fee.



## 2. Producing a quality compost

### 2.1 Regulating the composting process

- 2.1.1 The process of turning waste into compost is classified as a waste recovery operation and is subject to the waste management controls in the Waste Framework Directive. This Quality Protocol does not affect the obligation by producers to comply with all the conditions of the environmental permit or in Northern Ireland a waste management licence or exemption for composting the waste.

### 2.2 Criteria for producing compost that may cease to be waste

- 2.2.1 The following criteria must be met in order to produce compost.

2.2.2 Input materials:

- i. Only those waste types listed in Appendix B may be used and they must be source-segregated, i.e. they must have been kept separate from any other wastes. (The conditions of the environmental permit or in Northern Ireland a waste management licence or exemption under which the composting is carried out, or the approved standard, may further restrict the waste types that can be used.)
- ii. The transformation of any waste types listed in Appendix B that are classified as animal by-products<sup>3</sup> must be carried out in a suitable composting facility subject to approval under Article 15 of the EU Animal By-Products Regulation (ABPR)<sup>4</sup> and the UK legislation making provision for the administration and enforcement of the ABPR<sup>5</sup>.

2.2.3 Requirements of approved standard to be observed:

- i. The producer must also comply with all the requirements of an approved standard. Appendix C lists the only approved standard at the time of publishing this Protocol. Additional standards may be approved by the Environment Agency for inclusion to this Quality Protocol when it is reviewed. Standards will be approved only if they contain the important elements set out in Appendix D.
- ii. Producers should be aware that standards are subject to regular periodic review and should ensure they comply with the latest version.

2.2.4 Designated market sectors:

- i. Compost must be destined for appropriate use within one or more of the following market sectors:
  - *land restoration and soft landscape operations;*
  - *horticulture (this includes domestic use); or*
  - *agriculture and soil-grown horticulture.*

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<sup>3</sup> Other than manure and milk.

<sup>4</sup> Regulation (EC) No 1774/2002 laying down health rules concerning animal by-products not intended for human consumption.

<sup>5</sup> Regulations 13 and 14 of the Animal By-Products Regulations 2005 in England and Regulations 13 and 14 of the Animal By-Products (Wales) Regulations 2006 No 1293 (W.127) in Wales. Regulations 13 and 14 of Animal By-Products Regulations (Northern Ireland) 2003 SR 495.

## 3. Providing evidence that quality compost has been produced

### 3.1 Certification

- 3.1.1 Producers must demonstrate compliance with the requirements of this Protocol and of the approved standard. Compliance can be demonstrated by obtaining a certificate from an independent certification body. The independent certification body will obtain *accreditation* on an annual basis from the United Kingdom Accreditation Service (UKAS) to BS EN 45011: 1998 *General requirements for bodies operating certification systems* (or any subsequent amendments). The certification and accreditation process is illustrated in Appendix F.
- 3.1.2 As part of the certification process, the compost producer will normally be expected to:
- keep and retain specified records for a minimum of four years; and
  - make them available to the certification body for certification purposes.
- Full details of the records to be kept are contained in Appendix E.
- 3.1.3 These requirements are additional to any statutory record-keeping requirements under waste management controls.

### 3.2 Contracts of supply

- 3.2.1 Producers may demonstrate that quality compost is destined for appropriate use in a designated market sector by providing the customer with *contracts of supply* for each consignment of compost and keeping copies of them. Such contracts of supply must meet the conditions laid down in Appendix G.
- 3.2.2 The producer would not be expected to make or retain contracts of supply when quality compost is sent for domestic use or is for the producer's own use. However, delivery should be accompanied by the *compost certification number*, and a declaration that the compost was produced in conformance with this Quality Protocol.

## 4. Application and use of quality compost

### 4.1 Designated market sectors

- 4.1.1 This section provides further detail on the designated market sectors, that is:
- land restoration and soft landscape operations;
  - horticulture; and
  - agriculture and soil-grown horticulture.
- 4.1.2 If good practice is followed, the Environment Agency and NIEA considers that quality compost will not pose a risk to human health or the environment in the quantities and frequencies at which it is likely to be applied in these sectors. Good practice means that anyone who uses the compost takes account of all potential environmental issues such as application rates, impacts on soil function, potential for water pollution, etc.

### 4.2 Land restoration and soft landscape operations

- 4.2.1 Examples of the ways in which quality compost may be used in these sectors are:
- soil manufacture and/or blending operations (including manufacture of turf dressings and root zone media);
  - *land reclamation* and *land remediation*; and
  - soft landscape operations (including soil improvement, turf maintenance, turf establishment and as a *mulch*).

### 4.3 Horticulture

- 4.3.1 Examples of the way in which quality compost may be used in this sector are:
- as a direct *soil improver/soil conditioner* for domestic use; and
  - blending with other non-waste materials to produce a horticultural grade *growing medium* for domestic use and professional applications.

### 4.4 Agriculture and soil-grown horticulture

- 4.4.1 Under this Protocol, quality compost can be used in agriculture and soil-grown horticulture as a soil improver or mulch provided it is used in such a way that:
- it does not pose a risk to the environment; and
  - its use does not compromise the future sustainable use of the soil to which it is applied.
- 4.4.2 The compost producer or user must be able to demonstrate that they have taken full account of any environmental impact resulting from its use.
- 4.4.3 Details of good practice for the testing, record-keeping (including responsibility for record-keeping) and application of quality compost in relation to agriculture and soil-grown horticulture are given in Appendix E and H.



## Appendix A Definitions

In this Quality Protocol, the words and phrases below have the following meanings:

**Accreditation:** third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks<sup>6</sup>.

**Approved standard:** the standard listed in Appendix C and any other standard that is approved by the Environment Agency and NIEA for inclusion in this Quality Protocol.

**Agriculture:** includes: horticulture; fruit growing; seed growing; dairy farming; livestock breeding and keeping; the use of land as grazing land, meadow land, osier land (osier land is excluded from this definition in Northern Ireland), market gardens and nursery grounds; and the use of the land for woodlands where that use is ancillary to the farming of land for other agricultural purposes<sup>7</sup>.

**Note:** In the context of this Quality Protocol only, agriculture includes land used for growing arable crops (such as cereals, oil seed rape and some types of vegetables) and biofuels (such as willow and miscanthus).

**Batch:** quantity of product manufactured by the same process under the same conditions, labelled in the same manner and assumed to have the same characteristics. Where the composting system operates on a continuous basis, batches may also be referred to as 'portions of production'.

**Biowaste:** source-segregated biodegradable waste.

**Certification:** third-party attestation related to products, processes, systems or persons<sup>8</sup>.

**Note:** In the context of this Quality Protocol, the scope of assessment by the independent certification body must cover compost product, the composting process, the producing organisation's quality management system and training of those persons who affect compost quality. Certification provides verification that the product meets the approved standard and the requirements of the Quality Protocol.

**Compost:** is defined as solid particulate material that is the result of composting, which has been sanitised and stabilised, and which confers beneficial effects when it is added to soil, used as a component of growing media, or used in another way in conjunction with plants.

**Compost certification number:** a unique certification number awarded to the producer annually by a certification body.

**Composting:** a process of controlled decomposition of biodegradable materials under managed conditions, which are predominantly aerobic and which allow the development of temperatures suitable for thermophilic bacteria as a result of biologically produced heat.

**Contracts of supply:** records of delivery showing who the quality compost is supplied to. For the purposes of this Quality Protocol, these records should also detail how the product should and should not be used in its designated market sector. The information that must be included in contracts of supply is detailed in Appendix G.

**Designated market sector(s):** the sector(s) in which quality compost can be used, consistent with this Quality Protocol.

**Domestic use:** compost use by members of the public in their own gardens, communal or shared gardens, and allotments.

**European Economic Area (EEA):** The EEA States consist of the members of the EU (Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK) together with Iceland, Liechtenstein, Norway and Switzerland. Although the Channel Islands and the Isle of Man are part of the UK, they are not part of the EU and businesses registered there are subject to different licencing legislation.

<sup>6</sup> EN ISO/IEC 17000: 2004 *Conformity assessment. Vocabulary and general principles*.

<sup>7</sup> Source: Agriculture Act 1947

<sup>8</sup> EN ISO/IEC 17000: 2004 *Conformity assessment. Vocabulary and general principles*.

**Environmental permit:** for the purposes of this document an environmental permit is a permit or exemptions issued under the Environmental Permitting (England and Wales) Regulations 2007, which came into force on 6 April 2008, or low risk waste activities in accordance with Environment Agency guidance.

From 6 April 2008, the following automatically became environmental permits:

- PPC permits issued under the Pollution Prevention and Control (England and Wales) Regulations 2000 (as amended); and
- Waste Management Licences (WMLs) issued under the Environmental Protection Act 1990 (as amended).

Exemptions from the need for a Waste Management Licence, registered under Regulation 18 and Schedule 3 of the Waste Management Licensing Regulations 1994 (as amended) will now come under schedule 3 of the Environmental Permitting (England and Wales) Regulations 2007.

**Environmental Permitting (England and Wales) Regulations:**<sup>9</sup> a single set of regulations that replaces over 40 statutory instruments, thus streamlining the waste management licencing and pollution control regimes in England and Wales.

Note: The Regulations are effective from 6 April 2008. Their implementation comprises the first phase (EPP1) of the Environment Agency, Defra and Welsh Assembly Government's Environmental Permitting Programme. Read more about the Environmental Permitting Programme on the following websites:

- Defra (<http://www.defra.gov.uk/environment/policy/permits/index.htm>);
- Environment Agency (<http://www.environment-agency.gov.uk/business/>).

**Growing medium:** material, other than soils *in situ*, in which plants are grown<sup>10</sup>.

**Hazard Analysis and Critical Control Point (HACCP):** a system that identifies, evaluates and controls hazards that are significant for safety.

**Horticulture:** The growing of crops in a growing medium. This includes vegetables for human consumption, fruit, flowers and bulbs, hardy and other nursery stock, protected crops and herbs.

Note: for the purposes of this protocol, horticulture is split into two parts, the use of growing medium, which includes domestic use, and soil-grown horticulture.

**Independent certification body:** a third party, independent of the producer, that is approved by UKAS. The independent certification body provides certification that the product meets the approved standard and the requirements of the Quality Protocol.

**Input material:** biodegradable material going into a composting process. A full list of acceptable source-segregated waste types for the production of quality compost is provided in Appendix B.

**Land manager if in England and Wales or the controller of the land if in Northern Ireland:** the person responsible for the exploitation of the agricultural land concerned, on his or her own account, directly and/or through the use of agents or contractors.

**Land reclamation:** the recovery of land from a brownfield, previously developed or underutilised state to make it suitable for reuse achieved through the stabilisation, contouring, maintenance, conditioning, reconstruction and revegetation of the land.

**Land remediation:** the process of making a site fit-for-purpose through the destruction, removal or containment of contaminants. Environmental damage is reversed or treated through the management, removal, sealing or treatment of dangerous substances or stabilisation in order to render the site safe for a specific use, but not necessarily for all possible uses.

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9 SI 2007, No. 3538; [http://www.opsi.gov.uk/si/si2007/ukSI\\_20073538\\_en\\_1](http://www.opsi.gov.uk/si/si2007/ukSI_20073538_en_1)

10 PD CR 13456: 1999 *Soil improvers and growing media. Labelling, specifications and product schedules.*

**Land restoration:** the process of making a site fit-for-purpose through, among activities carried out, amelioration of the site's soil or soil-forming materials.

**Note:** In the context of this Quality Protocol only, this definition includes land reclamation and land remediation.

**MCERTS:** the monitoring certification scheme established by the Environment Agency to deliver high quality environmental measurements. The scheme includes a performance standard for laboratories undertaking chemical testing of soil.

**Mulch:** substance spread, and allowed to remain on, the soil surface to conserve soil moisture, suppress weeds and shield soil particles from the erosive forces of raindrops and runoff<sup>11</sup>.

**Potentially Toxic Element (PTE):** chemical element that has the potential to cause toxicity to humans, flora and/or fauna. The majority are also known as 'heavy metals' or 'transition metals' (e.g. lead, cadmium, mercury, copper, zinc, nickel).

**Producer:** the operator who undertakes the composting process.

**Quality compost:** is compost that meets the criteria of the quality protocol and therefore will normally be regarded as having ceased to be waste.

**Quality control (QC):** is the maintenance of checks on accuracy and error correction throughout every stage of processing. QC is implemented through a series of systems and activities, which are integrated in daily work, and enable continuous verification of quality levels.

**Quality management system (QMS):** is a system that demonstrates effective control of all operations and associated quality management activities necessary to achieve compost that is fit for its intended purposes. Where specific controls are applied, they must be monitored and recorded, and their efficacy evaluated both during and after process validation. Corrective actions must be defined.

**Soft landscape operations:** these include the preparation and cultivation of soils or other growing media, the manufacture of soils, turf dressings and root zone media, planting implementation and aftercare in respect of plants, seed and turf. Subject to the suitability of the product for site conditions and future use, compost may be used to improve soil structure or as a mulch or top-dressing in commercial and amenity landscape operations.

**Soil-grown horticulture:** the commercial production of horticultural crops in soil, in a field, or under protective cover.

**Soil improver/soil conditioner:** material added to soil *in situ* primarily to maintain or improve its physical properties, and which may improve its chemical and/or biological properties or activity<sup>11</sup>.

**Technical Standards and Regulations Directive 98/34/EC:** Seeks to ensure the transparency of technical regulations and is intended to help avoid the creation of new technical barriers to trade within the European Community.

**Test methods:** product and process testing that complies with recognised national or international standards issued by organisations such as BSI or CEN.

**User(s):** the individuals or organisations that obtain compost from a producer or third party with the intention of using that compost.

**Waste management controls:** controls under legislation that govern the treatment, handling, containment and storage of waste, e.g. the Waste Management Licencing Regulations 1994 (as amended).

**Waste management licencing:** Covers applications for waste management licences in Northern Ireland, which authorise the deposit, disposal and treatment of controlled waste under the Waste Management Licencing Regulations (Northern Ireland) 2003. Includes conditions on the use of certain mobile plant.

11 PD CR 13456: 1999 *Soil improvers and growing media. Labelling, specifications and product schedules.*

## Appendix B Acceptable biowaste types for the production of quality compost

Input materials must be biodegradable materials that have been separately collected from non-biodegradables and that have not been mixed, combined or contaminated with other potentially polluting wastes, products or materials including invasive species. This requirement applies to each of the waste types listed below.

If producers have any doubt over whether an input material is compliant, they should discuss the issue with the certification body.

The Waste Protocols Project are working with the certification body to agree a methodology which will allow additional input materials to be added in the future. Please check the Environment Agency and NIEA's website for the most up to date list.

Guidance associated with this list covers composting process additives such as those used for odour control.

1. Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing	
Type	EWG code <sup>12</sup>
Animal tissue waste	02 01 02
Category 3 animal by-products or rendered Category 2 animal by-products composted in accordance with Article 15 of the ABPR at a facility subject to approval under the ABPR and the UK legislation making provision for the administration and enforcement of the ABPR <sup>13</sup> .	
Plant tissue waste	02 01 03
Includes straw, other crop residues, riverine vegetation and spent growing media based on plant tissues such as compost derived from source-segregated biowaste, peat and bark.	
Animal faeces, urine and manure <sup>14</sup>	02 01 06
Slurry and used animal bedding of the following types are allowed: straw; shredded paper; paper pulp; sawdust; wood shavings; and chipped wood. Not allowed if contains veneers, other coatings or preserving substances. Farmed animals (livestock) are the main source. Composts derived from these wastes are subject to ABPR requirements.	
Wastes from forestry	02 01 07
Allowed only if plant material.	

<sup>12</sup> European Waste Catalogue code

<sup>13</sup> Regulations 13 and 14 of the Animal By-Products Regulations 2005 in England and Regulations 13 and 14 of the Animal By-Products (Wales) Regulations 2006 No 1293 (W.127) in Wales and Regulations 13 and 14 of the ABPR (Northern Ireland) 2003 No. 495 in Northern Ireland.

<sup>14</sup> Quality compost derived from animal by-product wastes of this type is subject to the requirements of Article 5(2)(e) of the ABPR. Regulation 5(3) of the Animal By-Products Regulations (S.I. No. 2347) and Regulation 5(3) of the Animal By-Products (Wales) Regulations 2006 No. 1293 (W. 127) and Regulation 5(3) ABPR (Northern Ireland) 2003 No. 495 provide that these animal by-products may be applied to land provided the Secretary of State or the National Assembly for Wales or the Department of Agriculture (Northern Ireland) have not imposed any animal health restrictions in relation to them.

## 2. Wastes from the preparation and processing of meat, fish and other foods of animal origin

Type	EWC code
Animal tissue waste	02 02 02
<p>Allowed only if:</p> <ul style="list-style-type: none"> <li>■ Category 3 animal-by products, rendered Category 2 animal by-products or catering waste in either of these categories, composted in accordance with Article 15 of the ABPR at a facility subject to approval under the ABPR and the UK legislation making provision for the administration and enforcement of the ABPR<sup>15</sup>;</li> <li>■ former foodstuffs (Category 3 animal by-products) composted in accordance with Article 15 of the ABPR at a facility subject to approval under the ABPR and the UK legislation making provision for the administration and enforcement of the ABPR<sup>15</sup>;</li> <li>■ catering waste only, that comprises Category 3 material or rendered Category 2 material, composted in accordance with Article 15 of the ABPR at a facility subject to approval under the ABPR and the UK legislation making provision for the administration and enforcement of the ABPR<sup>15</sup>.</li> </ul> <p>EWC code 02 02 02 may include animal blood.</p>	
Material unsuitable for consumption or processing	02 02 03
May include gut contents, shells and shellfish wastes.	
Wastes not otherwise specified	02 02 09
Allowed only if animal manure, slurry or bedding of the types referred to in section 1 above.	

## 3. Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing, conserve production, yeast and yeast extract production, molasses preparation and fermentation

Type	EWC code
Materials unsuitable for consumption or processing	02 03 04
Allowed only if no chemical agents added and no toxin residues.	

## 4. Wastes from the dairy products industry

Type	EWC code
Materials unsuitable for consumption or processing	02 05 01
<p>Includes raw milk.</p> <p>May be Category 3 animal by-products or former foodstuffs that are allowed only if composted in accordance with Article 15 of the ABPR at a facility subject to approval under the ABPR and the UK legislation making provision for the administration and enforcement of the ABPR<sup>15</sup>.</p>	

## 5. Wastes from the baking and confectionery industry

Type	EWC code
Materials unsuitable for consumption or processing	02 06 01
May consist of or include former foodstuffs (Category 3 animal by-products), which are allowed only if composted in accordance with Article 15 of the ABPR at a facility subject to approval under the ABPR and the UK legislation making provision for the administration and enforcement of the ABPR <sup>15</sup> .	

#### 6. Wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)

Type	EWC code
Wastes from washing, cleaning and mechanical reduction of raw materials	02 07 01
Wastes from spirits distillation	02 07 02
Materials unsuitable for consumption or processing	02 07 04
Wastes not otherwise specified	02 07 99
Includes spent grains, hops and whisky filter sheets/cloths.	
Waste types in this section allowed if biodegradable material only, no chemical agents added, and no toxin residues present.	

#### 7. Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard

Type	EWC code
Waste bark and cork	03 01 01
Sawdust, shavings, cuttings, wood or particle board other than those wastes in EWC 03 01 04	03 01 05
Not allowed if it contains veneers, other coatings or preserving substances. Code 03 01 04 is 'sawdust, shavings, cuttings, wood, particle board and veneer containing dangerous substances'.	

#### 8. Wastes from pulp, paper, and cardboard production and processing

Type	EWC code
Waste bark and wood	03 03 01
Fibre rejects	03 03 10
The EWC description includes sludges from this type of source, but they are not allowed under this Quality Protocol.	

#### 9. Wastes from the leather and fur industry

Type	EWC code
Fleshings and lime split wastes	04 01 01
Fleshings may also be described as leather shavings. Allowed only if hides and skins, or parts of them, originating from animals that did not show clinical signs of any disease communicable through that product to humans or animals, and are composted in accordance with Article 15 of the ABPR at a facility subject to approval under the ABPR and the UK legislation making provision for the administration and enforcement of the ABPR <sup>15</sup> .	



### 10. Wastes from the textile industry

Type	EWG code
Organic matter from natural products	04 02 10
Examples are grease and wax.	

### 11. Wastes from the manufacture, formulation, supply and use of plastics, synthetic rubber and man-made fibres

Type	EWG code
Waste plastic	07 02 13
Allowed only if plastic that complies with restrictions applicable to EWG 15 01 02 in section 12 or EWG 20 01 39 in section 17 (see page 15).	

### 12. Waste packaging; absorbents, filter materials wiping cloths and protective clothing

Type	EWG code
Paper and cardboard packaging	15 01 01
Not allowed if any non-biodegradable coating or preserving substance present.	
Plastic packaging	15 01 02*
Plastics that are <b>not</b> packaging wastes are subject to restrictions on waste code 20 01 39 specified in section 17 (see page 15). Such plastics may be described as 'biodegradable', 'compostable' or 'degradable'.	
Wooden packaging	15 01 03
Not allowed if any non-biodegradable coating or preserving substance is present.	
Composite packaging	15 01 05*
Allowed only if all components comply with requirements of the chosen standard.	
Textile packaging	15 01 09
Allowed only if entirely natural fibres.	
<p>* Allowed only if independently certified as compliant with one or more of the following:</p> <ul style="list-style-type: none"> <li>■ BS EN 13432 <i>Packaging requirements for packaging recoverable through composting and biodegradation</i>.</li> <li>■ EN 13432 or EN 14995 in national standard form in any other EU Member State with independent compliance verification by a nationally recognised competent authority or certification body.</li> <li>■ German standard DIN V 54900 <i>Testing of the compostability of plastics</i>, which preceded European standard EN 13432.</li> <li>■ ASTM D6400 <i>Standard specifications for compostable plastics</i> (USA).</li> <li>■ Any variation upon the standards referred to above for 'home compostable' packaging agreed between the regulator, WRAP, the Association for Organics Recycling, the organisation(s) responsible for standards and the certification bodies associated with them.</li> </ul>	

### 13. Wood from construction and demolition wastes

Type	EWG code
Wood	17 02 01
Not allowed if any non-biodegradable coating or preserving substance present.	

**14. Soil (including excavated soil from contaminated sites), stones and dredging spoil**

Type	EWC code
Dredging spoil other than that in 17 05 05	17 05 06
May contain a significant amount of riverine vegetation. EWC 17 05 06 dredging spoil allowed only if <i>Hazard Analysis and Critical Control Point (HACCP)</i> assessment considers pollutants that may be present and adequate risk control is decided feasible. EWC 17 05 05 is defined as 'dredging spoil containing dangerous substances. For more information about 'dangerous' substances, refer to regulators WM2 Technical Guidance on 'Hazardous Waste – Interpretation of the definition and classification of hazardous waste' <sup>15</sup> .	

**15. Wastes from aerobic treatment of solid wastes**

Type	EWC code
Off-specification compost	19 05 03
Allowed only if the compost is derived from input types allowed by this Quality Protocol. This category includes oversize material resulting from screening such compost. These conditions apply to compost or oversize material from a process operated according to PAS 100 requirements or another approved standard.	
Wastes not otherwise specified	19 05 99
Allowed only if liquor/leachate from a composting process that accepts only the waste input types allowed by this Quality Protocol. These conditions apply to liquor/leachate from a process operated according to PAS 100 requirements.	

**16. Wastes from anaerobic treatment of wastes**

Type	EWC code
Liquor from anaerobic treatment of municipal waste	19 06 03
Digestate from anaerobic treatment of municipal waste	19 06 04
Digestate from anaerobic treatment of animal and vegetable waste	19 06 06
Liquor from anaerobic treatment of animal and vegetable waste	19 06 05
Waste types in this section are allowed only if derived from input types allowed by this Quality Protocol. If the input wastes to the anaerobic treatment system include animal by-products, they are allowed only if digested in accordance with Article 15 of the ABPR at a facility subject to approval under the ABPR and the UK legislation making provision for the administration and enforcement of the ABPR <sup>15</sup> .	

**17. Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions**

Type	EWC code
Paper and cardboard	20 01 01
Not allowed if any non-biodegradable coating or preserving substance present.	

## 17. Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions continued

Biodegradable kitchen and canteen waste	20 01 08
---	----------

Catering waste 'meat included' or 'meat excluded', and in either case, allowed only if composted in accordance with Article 15 of the ABPR at a facility subject to approval under the ABPR and the UK legislation making provision for the administration and enforcement of the ABPR<sup>15</sup>.

Edible oil and fat	20 01 25
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Allowed only if composted in accordance with Article 15 of the ABPR at a facility subject to approval under the ABPR and the UK legislation making provision for the administration and enforcement of the ABPR<sup>15</sup>.

Wood other than that mentioned in 20 01 37	20 01 38
--	----------

20 01 37 is described as 'wood containing dangerous substances'.

Plastics	20 01 39
----------	----------

Allowed only if independently certified compliant with European standard EN 14995 *Plastics – evaluation of compostability; test scheme and specification* and used for the collection of source-segregated biowaste. Examples are kitchen caddie liners, bin liners and biowaste collection sacks.

Other fractions not otherwise specified	20 01 99
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Allowed only if former foodstuffs (Category 3 animal by-product) composted in accordance with Article 15 of the ABPR at a facility subject to approval under the ABPR and the UK legislation making provision for the administration and enforcement of the ABPR<sup>15</sup>. If such former foodstuffs are packaged, this Quality Protocol's section 13 restrictions above on packaging wastes apply. An example is unsold food wrapped in compostable packaging that arises as retail food store waste.

## 18. Garden and park wastes (including cemetery waste)

Type	EWC code
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Biodegradable waste	20 02 01
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Allowed only if plant material.

## 19. Other municipal wastes

Type	EWC code
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Waste from markets	20 03 02
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- Allowed only if biodegradable fractions. Examples are plant material, fruit and vegetables.
- Former foodstuffs (Category 3 animal by-products) from a market source are allowed only if composted in accordance with Article 15 of the ABPR at a facility subject to approval under the ABPR and the UK legislation making provision for the administration and enforcement of the ABPR<sup>15</sup>.
- Packaging waste from a market source is allowed only if it complies with the restriction for the corresponding waste type in section 12 (see page 13).
- Plastic waste from a market source is allowed only if it complies with restrictions on waste code 20 01 39 specified in section 17 above.

## Appendix C Standards and specifications to which this Quality Protocol applies

At present this protocol applies only to the British Standards Institution's Publicly Available Specification for composted materials (BSI PAS 100: 2005).

Copies of BSI PAS 100: 2005 documentation can be obtained free from:

- WRAP – at <http://www.wrap.org.uk> or by phoning 0808 100 2040.
- The Association for Organics Recycling – at <http://www.organics-recycling.org.uk> or by phoning 0870 160 3270.

## Appendix D Important elements of a standard

The Environment Agency may approve further standards for inclusion in this Quality Protocol when it is reviewed. To be considered for inclusion, a standard must:

- be publicly available (and recognised nationally);
- be subject to independent periodic revision;
- permit only biowaste inputs of types specified in Appendix B of this Quality Protocol;
- contain a methodology detailing the waste recovery process and *quality management system* (QMS) procedures in place;
- specify that a quality management system be used that incorporates Hazard Analysis and Critical Control Point (HACCP) assessment;
- specify that all measurement and testing be carried out using recognised (national or international) *test methods*;
- include limit levels for a range of contaminants in compost including *potentially toxic elements* (PTEs); and
- specify that records be kept of the *quality control* procedures implemented at the composting site as part of the QMS, including instances of non-compliance and corrective actions undertaken.

In relation to certification, the body that operates the standard must make provision to ensure that:

- the method of certification demonstrates that users have met both its requirements and those of the Quality Protocol;
- compliance with both the standard and the Quality Protocol are certified annually by an independent certification body accredited by the United Kingdom Accreditation Service (UKAS) to BS EN 45011: 1998 (or any subsequent updates);
- certification verifies source documentation, evidence of site management procedures (including compliance with the quality management system) and laboratory test results;
- the certification body or its authorised contractor carries out at least one site inspection per year to verify on-site documentation and to oversee the sampling of at least one sample of compost for laboratory analysis; and
- certification is overseen by an impartial committee, which will adjudicate on matters of non-compliance in line with the requirements of BS EN 45011: 1998.

## Appendix E Records to be kept for certification purposes

Some of the record requirements for certification purposes may also form part of the requirements of an approved standard.

### 1. Records to be kept by the compost producer

- **Incoming wastes.** Records must be kept of all incoming wastes. The following must be recorded for each load delivered to the site:
  - date;
  - description of the waste type, including the EWC code (if known);
  - place of origin (where known);
  - quantity by weight/volume;
  - registered waste carrier;
  - supplier; and
  - whether the load was accepted.
- **Material leaving the site.** Records must be kept of all quality compost and all waste leaving a quality compost production site. In the case of quality compost, these records must correspond to the contracts of supply issued to the customer.

The following details of the destination of the material must be kept:

- date;
- quantity of weight/volume and *batch* code(s);
- name and address of receiving business/establishment; and
- designated market sector.

### 2. Records to be provided to the compost producer

In the case of agriculture and soil-grown horticulture, the compost producer is not responsible for applying the compost. Records should be made available or given to the original compost producer to allow the producer to demonstrate to the certification body that environmental harm did not occur when the compost was used.

### 3. Records to be kept in agriculture or soil-grown horticulture

When compost is to be used in agriculture or soil-grown horticulture, the details listed in Table E1 should be kept by the *land manager if in England or Wales or the controller of the land if in Northern Ireland* and made available to the compost producer/certification body.

Table E1 Records to be kept by the land manager and made available to the compost producer/certification		
Parameter		Format
Quantity of compost received		tonnes
Batch codes of compost received		code
Compost certification number		numerical
Typical compost PTE concentrations (provided by the compost producer)		mg/kg
Initial soil PTE analysis		mg/kg dry weight
Calculated soil PTE content (based on all subsequent additions of compost including this year's)		mg/kg dry weight
Soil nutrient analysis		mg/litre dry weight
Compost analysis		yes or no
Date of application		dd/mm/yyyy
Rate of application		tonne/ha fresh weight
Area over which compost is incorporated		ha
Incorporation depth		cm
Total quantity of compost applied		tonnes
Location of application	Whole field application	Rural Land Register – England (RLR) or Land Parcel Identification System – Wales (LPIS) number. Where this is not available an eight-figure grid reference for the centre of the field should be used.
	Part field application (including protected cropping structures)	Eight-figure grid reference for the centre of the area to which compost is applied.

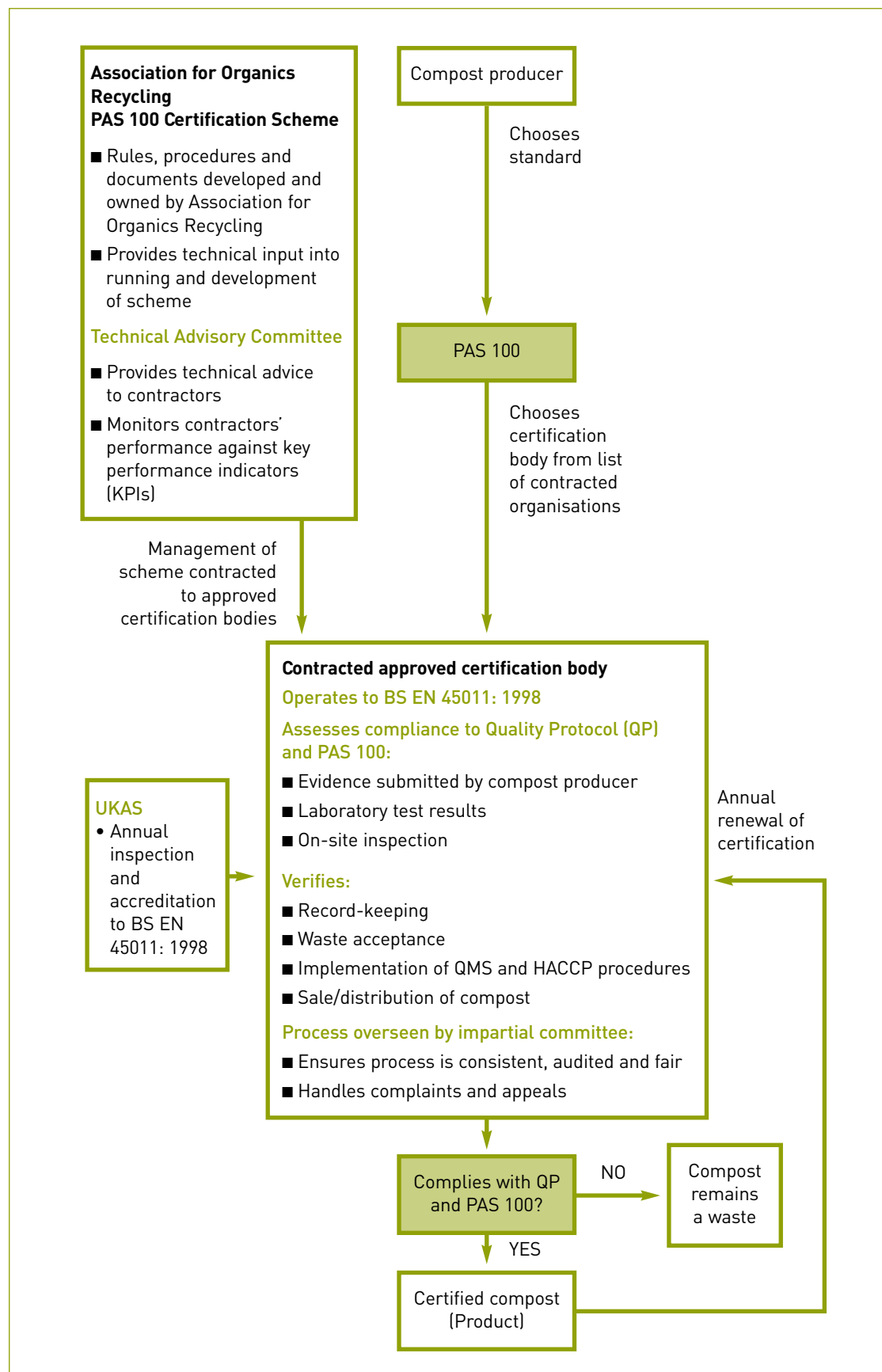
### 4. Responsibility for record-keeping

- To demonstrate that the material is used in the right way and that the environment is protected, the land manager if in England or Wales or the controller of the land if in Northern Ireland receiving the compost is responsible for ensuring that:
  - the records detailed in Table E1 are made; and
  - the records detailed in Table E1 are retained and supplied to the certification body.
 This applies even if a contractor (e.g. the compost producer) carries out the application of the compost and/or soil testing for the land manager if in England or Wales or the controller of the land if in Northern Ireland.
- Where the producer is not responsible for applying the compost, these records should be made available or given to the original compost producer so that the producer can demonstrate to the certification body that environmental harm did not occur when the compost was used.
- In the case of agriculture and soil-grown horticulture, the land manager if in England or Wales or the controller of the land if in Northern Ireland should also keep the records specified in Table E1 so as to be able to demonstrate that soil resources are being sufficiently protected.

Records of all compost applications should be submitted to the certification body within 12 months of receipt of compost.



## Appendix F Certification and accreditation diagram



## Appendix G Contract of supply

A contract of supply must include the elements listed below relevant to the end use.

### ■ **Contacts**

- Producer's contact details, including address of composting site; and
- Customer's contact details.

### ■ **Information about the product**

- Product types (e.g. soil conditioner, mulch, etc);
- What the compost has been made from (e.g. composted plant material);
- Compost grade and batch codes; and
- Quantity.

### ■ **Certification and declaration**

- Compost certification number; and
- Declaration that the compost meets with the approved standard and the Quality Protocol.

### ■ **Guidelines and conditions for use.** The contract of supply must specify that the product/compost:

- is for use solely in designated market sector applications: 'This product/compost shall not be sold or distributed for use, or used in any markets other than specified.'
- must be used in accordance with good practice guidelines; and
- must not **in any circumstances** be blended with any waste material. If material is blended with waste, then the resulting mix becomes a waste and is regulated as such.

It must also give guidelines for the use, storage and safe handling of the compost.

## Appendix H Application and testing requirements for use of quality compost in agriculture and soil-grown horticulture

### Application requirements

- Advice should be taken from an advisor qualified under the Fertiliser Advisers Certification and Training Scheme (FACTS).
- Any application of quality compost should conform to the requirements set out in the *Codes of Good Agricultural Practice* (CoGAP)<sup>16</sup> (or subsequent guidance) for air, water and soil and the Nitrates Action Programme Regulations (Northern Ireland) 2006. In particular, compost should not be spread on frozen, snow-covered or waterlogged ground, or within 10 metres of a watercourse.
- Applications should be made as described in *Single Farm Payment Scheme – Cross Compliance Guidance for Soil Management*<sup>17</sup>.
- Compost applications should be matched to crop nutrient requirement, growth stage and prevailing weather conditions, and be made in accordance with the guidance set out in *Fertiliser Recommendations for Agricultural and Horticultural Crops* (RB209)<sup>18</sup>.
- Compost applications should adhere to the soil PTE limit values set out in the *Code of Practice for the Agricultural Use of Sewage Sludge* (the 'Sludge Code'<sup>19</sup>).

### Sampling and analysis requirements

- All chemical analysis should be carried out by laboratories using appropriate methods that are accredited by UKAS to ISO/IEC 17025 for the Environment Agency's *MCERTS* performance standard for the chemical testing of soil<sup>20</sup>.
- Soil sampling for major nutrients should be carried out regularly. Compost should not be applied unless the soil has been analysed within the last five years (in accordance with RB209).
- Nutrient analysis should include extractable phosphorous (Olsen method), available potassium, available magnesium and total sulphur.
- Nitrogen should be calculated using Soil Nitrogen Supply except where RB209 requires soil analysis.
- The compost producer should arrange for the compost to be analysed, and the land manager if in England or Wales or the controller of the land if in Northern Ireland should arrange for the receiving soil to be analysed, for PTEs (lead, cadmium, mercury, copper, zinc, nickel) to ensure that the limit values set out in the Sludge (Use in Agriculture Regulations) 1989 if in England or Wales or the Sludge (Use in Agriculture) Regulations (Northern Ireland) 1990 if in Northern Ireland<sup>21</sup> are not exceeded.
- Soil analysis for PTEs should be carried out before the first application of compost and again when the predicted concentrations approach 75 per cent of the limit values set out in the *Code of Practice for the Agricultural Use of Sewage Sludge*.

16 For England and Wales the Code of Good Agricultural Practice (CoGAP) is available from <http://www.defra.gov.uk/foodfarm/landmanage/cogap/index.htm> [Accessed 24 June 2010]. In Northern Ireland the CoGAP is available from <http://www.ruralni.gov.uk/index/environment/countrysidemanagement/cogap.htm> [Accessed 24 June 2010].

17 Available from <http://www.rpa.gov.uk/rpa/index.nsf/7801c6143933bb248025713f003702eb/2ba694d4a8a991478025768e005e67c0!OpenDocument> [Accessed 24 June 2010].

18 Available from <http://www.defra.gov.uk/foodfarm/landmanage/land-soil/nutrient/nmu01.htm> [Accessed 24 June 2010].

19 Available from <http://www.defra.gov.uk/environment/quality/water/waterquality/sewage/documents/sludge-cop.pdf> [Accessed 24 June 2010].

20 Available from <http://publications.environment-agency.gov.uk/pdf/GEH00203BKAY-e-e.pdf> [Accessed 30 October 2007].

21 Available from [http://www.opsi.gov.uk/si/si1989/Uksi\\_19891263\\_en\\_1.htm](http://www.opsi.gov.uk/si/si1989/Uksi_19891263_en_1.htm) [Accessed 13 February 2007].

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