

Appendix 1

Glossary

Aerobic - in the presence of oxygen

Anaerobic - in the absence of oxygen

Anaerobic digestion - The decomposition of plant or animal material in the absence of oxygen. Methane and carbon dioxide are produced

Biodynamic Agriculture - A specialised form of organic agriculture which emphasises the importance of cosmic forces within a wider spiritual context of human beings. Certified by Demeter (UK code 6).

Biosolids – sewage sludge which has gone through primary treatment (see sewage sludge)

Biowaste (biodegradable waste) – any waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, paper and paperboard.

Compost - Solid particulate material that is the result of composting, that has been sanitized and stabilized and that confers beneficial effects when added to soil and/or used in conjunction with plants.

Composting - Process of controlled biological decomposition of biodegradable materials under managed conditions that are predominantly aerobic and that allow the development of thermophilic temperatures as a result of biologically produced heat, in order to achieve compost that is sanitary and stable.

Compost extract - the filtered product of compost mixed with any solvent (usually water), but not fermented. This term has been used in the past to define water extracts prepared using a very wide range of different methods. In the past, the terms "compost extract", "watery fermented compost extract", "amended extract", "compost steepage" and "compost slurry" have all been used to refer to non-aerated fermentations. "Compost extract", "watery fermented compost extract" and "steepages" are approximate synonyms defined as a 1:5 to 1:10 (v:v) ratio of compost to water that is fermented without stirring at room temperature for a defined length of time. "Amended extracts" are compost extracts that have been fermented with the addition of specific nutrients or microorganisms prior to application.

Compost tea - The product of showering recirculated water through a porous bag of compost suspended over an open tank with the intention of maintaining aerobic conditions. The product of this method has also been termed "aerated compost tea" and "organic tea".

In the past, the term "compost tea" has not always been associated with an aerated fermentation process. It is important to distinguish between compost teas prepared using aerated and non-aerated processes, therefore the terms aerated compost tea (ACT) and non-aerated compost tea (NCT) are used in this review to refer to the two dominant compost fermentation methods. ACT will refer to any method in which the water extract is actively aerated during the fermentation process. NCT will refer to methods where the water extract is not aerated or receives minimal aeration during fermentation apart from during the initial mixing.

Green manure - crop grown for the sole purpose of being incorporated into the soil to improve soil fertility.

Green and wood waste – vegetable waste from gardens and municipal parks, tree cuttings, branches, grass, leaves (with the exception of street sweepings), sawdust, wood chips and other wood waste not treated with heavy metals or organic compounds.

Growing medium - material other than soils *in situ*, in which plants are grown.

Humus - The more or less stable dark coloured fraction of the soil organic matter remaining after the major portions of added plant and animal residues have been decomposed.

Manure – Animal excrement which may contain large amounts of bedding.

Maturity - Degree of biodegradation at which compost is not phytotoxic or exerts negligible phytotoxicity in any plant growing situation when used as directed.

Municipal Solid Waste (MSW) – solid waste from households

Organic farming - A form of sustainable agriculture defined in EU law. Organic farming is a production system which excludes the use of synthetically compounded fertilisers, pesticides, growth regulators and livestock feed additives. To the maximum extent feasible, organic systems rely on crop rotations, residues, animal manures, legumes, green manures, off-farm organic wastes and aspects of biological control to maintain soil productivity and tilth, to supply plant nutrients and to control insects, weeds and other pests.

Organic standards - The set of regulations which is issued by each certification body. The standards of some certification bodies (e.g. UKROFS) are essentially the same as those of the EU as defined in 2092/91 and 1804/99. Others (e.g. Soil Association Certification Ltd.) are more detailed and more prescriptive.

Organic farming system - A farming system run in accordance with the organic standards.

Sewage sludge – i) residual sludge from sewage plants treating domestic or urban waste water and from other sewage plants treating waste waters of composition similar to domestic and urban waste waters;

ii) residual sludge from septic tanks and other similar installations for the treatment of sewage

iii) residual sludge from sewage plants other than those referred to in i) and ii) provided that its use is regulated by the member states concerned.

Slurry – contains dung, urine and water with only small amounts of bedding. It flows by gravity and can be collected in slatted floor systems, below ground tanks or reception pits. You can store it for a long time in an above ground slurry store, or in an earth-banked structure.

Soil Association Certification Ltd. - The largest UK organic certification body (UK Code 5).

Soil fertility - the capacity of the soil to support the crop being grown.

Soil health – the capacity of a specific kind of soil to function as a vital living system within natural or managed ecosystem boundaries, to sustain plant and animal productivity, to maintain or enhance water and air quality, and support human health and habitation.

Soil quality - the capacity of a soil to function within natural or managed ecosystem boundaries, to sustain biological productivity, maintain environmental quality and promote plant and animal health

Stabilization - Process of biological activities that together with conditions in the composting mass give rise to compost that is stable.

Stable, stabilized, stability - Degree of biodegradation at which the rate of biological activity under conditions favourable for aerobic biodegradation has slowed and microbial respiration will not resurge under altered conditions, such as manipulation of moisture and oxygen levels or temperature.

UKROFS - (The United Kingdom Register of Food Standards) The UK certifying authority appointed by the EU to ensure that the standards of other UK certification bodies meet the minimum EU organic standards.

Vermicompost – The material that is egested from earthworms as casts then further decomposed and matured in the vermicomposting system.

Appendix 2

Objective 1

Documentation of the standards, regulations and legislation relevant to recycling, compost and manure preparation and application and a review of common UK practices relating to the preparation and application of uncomposted materials, manures, composts and compost extracts.

Appendix 3

Objective 2

A review of the effects of different composting processes on chemical and biological parameters in the finished compost or compost extract.

Appendix 4

Objective 3

A review of the effects of uncomposted materials, composts and manures on soil health and quality, soil fertility, crop development and nutrition.

Appendix 5

Objective 4

A review of the effects of uncomposted materials, composts, manures and compost extracts on beneficial microorganisms, pest and disease incidence and severity in agricultural and horticultural crops.