



Appendix EC.10

Safe Applications to Land

Guidance on application of manures, sludge or composts

Sewage Sludge

The application of untreated sewage sludge is not allowed. Treated sludges can only be used under strictly controlled conditions. Use of sludges must be registered and the soil must be tested by the sludge producer. Application must follow the 'Safe Sludge Matrix' and the way the sludge has been treated may affect where and when the sludge can be applied. The local Sewerage Operator will be able to provide more information.

Sludge	Untreated Sludge	Conventionally Treated Sludge	Enhanced Treated Sludge
Crop			
Fruit	X	X	✓ 10 month harvest interval
Salads	X	X 30 month harvest interval	✓ 10 month harvest interval
Vegetables	X	X 12 month harvest interval	✓ 10 month harvest interval
Horticulture	X	X	✓ 10 month harvest interval
Combinable & Animal Feed Crops	X	✓	✓
Grass & Forage - grazed	X	X But deep injected or ploughed down only. 3 week no-grazing / no-harvesting interval	✓ 3 week no-grazing / no-harvesting interval
Grass & Forage - harvested	X	✓ No grazing in season of application	✓ 3 week no-grazing / no-harvesting interval

Untreated Sludge: Has not been permitted on any agricultural land since the start of 2006.

Conventionally Treated Sludge: There is a range of different treatment processes used to reduce the fermentability and possible health hazards associated with sewage sludge. These rely on biological, chemical or heat treatment. The most common form of treatment is anaerobic digestion. Conventionally treated sludge has been subjected to defined treatment processes and standards that ensure at least 99% of pathogens have been destroyed.

Enhanced Treated Sludge: Enhanced treatment, originally referred to as "Advanced Treatment", is a term used to describe treatment processes which are capable of virtually eliminating any pathogens which may be present in the original sludge. Enhanced treated sludge will be free from Salmonella and will have been treated so as to ensure that 99.9999% pathogens have been destroyed (a 6-log reduction).



Appendix EC.10 (continued)

Safe Applications to Land

Composts

Composts produced from organic materials originating off farm are becoming increasingly available for application to land. These may be beneficial but the application must be appropriate to the source of the compost, how it has been treated and the land to which it is applied. Regulations apply.

Green Waste Compost

Compost produced from source-segregated 'Green' waste only can be applied to land provided:

- The composting facility is certified to the standard 'PAS100'
- and (in England & Wales) its use follows the 'Quality Protocol'

OR:

- Use of the material is subject to specific exemptions or permissions from the Environment Agency

Material from source-segregated green waste originating outside the holding that does not meet one of these conditions must not be applied.

Compost from Mixed Green Waste & Food Waste

Compost produced from source-segregated 'Mixed Food & Green' waste originating off the farm may include meat waste from catering and domestic premises and may include additional hazards. This should only be applied to land to be used for Combinable Crops:

Again it cannot be used unless:

- The composting facility is certified to the standard 'PAS100'
- and (in England & Wales) its use follows the 'Quality Protocol'

OR:

- The use of the material is subject to specific exemptions or permissions from the Environment Agency

Until the completion of risk assessments by government agencies during 2009/10 it is **not** recommended that this material is applied to **grazing land** and in fact minimum grazing intervals are specified in the legislation for this type of compost. These are:

- | | |
|-------------------|----------|
| ■ PIGS | 2 months |
| ■ OTHER LIVESTOCK | 3 weeks |

Similarly it is not recommended that this material is applied to land used to grow fresh produce and in particular land used for Fruit and Salad (ready to eat) crops identified in columns 1 and 2 of the 'Matrix of Cropping Categories'.

Assessment

Assessors will examine records of compost applications whether following the Quality Protocol or in accordance with permits from the Environment Agency or regional equivalents.

Note: Even where applications of sludge and compost are permitted by law and comply with codes of practice producers should also check with buyers to ensure their acceptance to particular customers.

There is more information at <http://www.wrap.org.uk/composting/>



Safe Applications to Land

USE OF MANURES ON LAND USED FOR READY TO EAT CROPS

Use of stored and treated manure

Batch storage of solid manures and slurries for at least 6 months (that is with no additions of fresh manure made to the store during this period) or 'active' treatment, are effective methods of killing pathogens.

Composting of solid manures is a particularly effective method of controlling microbial pathogens, but for best results the process needs to be actively managed. The manure should be treated as a batch and turned regularly (at least twice within the first 7 days) either with a front-end loader or preferably with a purpose-built compost turner. This should generate high temperatures over a period of time (e.g. above 55oC for 3 days) which are effective in killing pathogens and this temperature should be monitored. Allow the compost to mature as part of the treatment process. The whole process should last at least 3 months. Information on composting is available from a number of organisations; see <http://food.gov.uk/multimedia/pdfs/manuresguidance.pdf> for more details.

Lime treatment of slurry (addition of quick lime or slaked lime to raise the pH to 12 for at least 2 hours) is an effective method of inactivating bacterial pathogens. Allow the slurry to mature as part of the batch treatment process for at least 3 months prior to land spreading.

Manures that have been batch stored or treated in the ways described can be applied to land where you intend to grow ready-to-eat crops before drilling/planting.

Use of fresh manure

You should NOT apply fresh solid manure or slurry (i.e. manure that has not been batch stored or treated) within 12 months of harvesting a ready-to-eat crop, including a minimum period of 6 months between the manure application and drilling/planting of the crop.

Dung deposited by livestock should also be considered as a potential source of pathogens.

You should ensure that there is a 12 months gap between livestock last grazing in the field and harvesting of a ready-to-eat crop, including a minimum period of 6 months between the last grazing and drilling/planting of the crop.

Summary of Farm Manure Guidance for Ready-To-Eat Crops

Source	Management
Spreading treated or batch stored solid manure or slurry	✓ Anytime before drilling/planting
Spreading fresh solid manure or slurry	✗ NOT within 12 months of harvest and also at least 6 months before drilling/planting
Livestock grazing	✗ NOT within 12 months of harvest and also at least 6 months before drilling/planting

Where livestock grazing is an essential part of the farming system (e.g. in some organic systems) there should be a minimum 6 months gap between livestock grazing and harvest. To minimise risks further, the guidance in the table above should be followed where practically possible.



Appendix EC.10 (continued)

Safe Applications to Land

Land application and soil incorporation

To make best use of manure nutrients and to reduce air and water pollution, you should follow advice in the relevant Codes of Good Agricultural Practice.

Design and locate manure storage areas to ensure that water pollution risks are reduced; this should include adequate containment measures.

Apply manures uniformly and with due regard to the environment. Observe any no spreading zones (e.g. next to watercourses or boreholes) identified in a Manure Management Plan. This will reduce the risks of run-off and indirect contamination of nearby crops. Keep a detailed record of manure application date, type and rate.

Although pathogens can be killed by exposure to sunlight, you should incorporate manures into the soil as soon as is practicable. This will reduce the potential for direct crop contamination as well as reduce odour and ammonia emissions.

Matrix of Cropping Categories

FRUIT	SALAD (ready to eat crops)	VEGETABLES	HORTICULTURE	COMBINABLE AND ANIMAL FEED CROPS	GRASSLAND & FORAGE	
					HARVESTED	GRAZING
Top fruit -apples, pears etc Stone fruit, plums cherries etc Vines Hops Nuts	Lettuce Radish Onions Beans incl. runner, broad & dwarf French Vining peas Mange tout Cabbage Cauliflower Calabrese Broccoli Courgettes Celery Red beet Carrots Herbs Asparagus Garlic Shallot Spinach Chicory Celeriac	Potatoes Leeks Sweetcorn Brussels sprouts Parsnips Swedes Turnips Marrows, pumpkins, squashes Rhubarb Artichokes	Soil based, glasshouse & polythene tunnel production (incl. tomatoes, cucumbers, peppers etc) Mushrooms Nursery stock and bulbs for export Basic nursery stock Seed potatoes for export Basic seed potatoes Basic seed production	Wheat Barley Oats Rye Triticale Field peas Field beans Linseed/flax Oilseed rape Sugar beet Sunflower Borage	Grass silage Maize silage Haylage Hay Herbage seeds	Grass Forage Swedes & turnips Fodder mangolds, beet, kale Forage rye & triticale Turf