

# *Guidelines for the Application of Sewage Sludge to Industrial Crops*



**BRC**  
BRITISH RETAIL CONSORTIUM  
The Voice of British Retailing

  
**WATER UK**

  
**ADAS**  
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## Introduction

This leaflet provides guidance on the use of both treated and untreated sewage sludge on industrial crops grown on agricultural land. Sludge can provide a significant proportion of the fertiliser requirements of industrial crops and is particularly valuable on poor soils and restored land. The end date for the use of all untreated sewage sludge on agricultural land used to grow non-food crops is 31 December 2005.

### *The Safe Sludge Matrix*

The provisions of the "Safe Sludge Matrix", commonly referred to as the ADAS Matrix will be included in the Sludge (Use in Agriculture) Regulations which regulate the use of sewage sludge (often referred to as biosolids) on agricultural land. Under the "Safe Sludge Matrix" agreement, the use of untreated sewage sludge was phased out from use on land used to grow food crops from 31 December 1999 and will be phased out from land used to grow industrial crops that also have a food use from 31 December 2001.

**The end date for the use of all untreated sewage sludge on agricultural land used to grow non-food crops is 31 December 2005.**

Following discussions between Water UK, the British Retail Consortium (BRC), Department of Environment Transport and Regions (DETR), Food Standards Agency (FSA), Environment Agency (EA) and Food and Drink Federation (FDF), it has been agreed that untreated sewage sludge can continue to be recycled to agricultural land used to grow specified industrial crops until 31 December 2005. Demonstrable audit procedures must be followed to provide evidence that no part of the industrial crop enters the food chain. If land to which untreated sludge has been applied, is returned to food use, increased harvest intervals will be applied between application of the sludge and harvest of a subsequent food crop.

### *What Types of Sewage Sludge Are Available?*

Full details of the various standards of sludge treatment can be obtained from your local Sewerage Operator and will be detailed in the revised Code of Practice for Agricultural Use of Sewage Sludge available from DETR later in 2001, but a brief summary of the different treatments is shown below.

- *Untreated sludge* - will have been screened to remove litter and foreign objects but will not normally have been stabilised. Any sludge failing to reach the product standards for treated sludge is regarded as untreated. Untreated sludge must be deep injected or incorporated within 24 hours of application
- *Conventionally treated sludge* - will have been subjected to defined treatment processes and standards that ensure 99% of pathogens have been destroyed
- *Enhanced treated sludge* - will have been treated by a process which is 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 (at least a 6 log reduction)

Sewage sludge may be supplied as a liquid (about 4% dry solids), dewatered cake (about 25% dry solids) or as a granule or pellet (about 95% dry solids).

### *Which Industrial Crops are suitable?*

Sewage sludge is a valuable source of major plant nutrients and organic matter, which can be used by growers to help meet crop nutrient requirements and to maintain soil fertility. Conventionally treated and Enhanced treated sludges are suitable for all industrial crops, but in order to minimise any food safety risks, the application of untreated sewage sludge is limited to industrial crops which do not normally have a food use. Under the agreement with the BRC all recycling of untreated sludge on agricultural land used to grow non-food crops will be banned from 31 December 2005.

Other industrial crops may also be suitable, provided they have no food use. Parties wishing to have a particular crop included in the agreement should submit details to the chairman of the Research Steering Group.

The following table summarises the main industrial crops grown in the UK and highlights which crops may continue to receive untreated sewage sludge after 31 December 2001.

<i>Industrial Crop</i>	<i>Conventionally and Enhanced Treated Sludges</i>	<i>Untreated Sludge</i>
Willow & Poplar grown for coppicing	✓ *	✓ To end 31/12/2005 Subject to the agreed harvest intervals outlined in this leaflet
Miscanthus for biomass	✓ *	✓
Hemp for fibre	✓ *	✓ To end 31/12/2005 Crops to be grown under contract and auditable protocols in place to guarantee none of the crop enters the human or animal feed chain and subject to the agreed harvest intervals outlined in this leaflet
High Erucic Acid Rape (HEAR) for production of High Erucic Acid Rape Oil (HERO)	✓ *	✓
Industrial Oilseed Rape	✓ *	✗
Linseed	✓ *	✗ Not permitted even if grown under contract or grown for non-food use on setaside
Flax	✓ *	✗
Others- including:- spurge, pyrethrum, kenaf, cotton, nettle, pot marigold, calendula, woad, reeds, cordgrass etc.	✓ *	✗ Not permitted at present. However new commercial crops that have no food use may be acceptable in the future, subject to agreement.

✓ All applications must comply with all the requirements of the Sludge (Use in Agriculture) Regulations and DETR Code of Practice (both to be revised in 2001)

\* Subject to the harvest intervals outlined in the "Safe Sludge Matrix"

✗ Applications not allowed

## Harvest Intervals

In the event of land being returned to food production, the following time intervals between the application of untreated sludge to land used to grow an industrial crop and the harvest of a subsequent food crop, must be observed:-

- 18 months for combinable & animal feed crops
- 30 months for vegetable, grass and forage crops
- 48 months for salad, horticultural and fruit crops

The harvest intervals for conventionally treated and enhanced treated sludges are shorter and are detailed in the leaflet, 'The "Safe Sludge Matrix" - Guidelines for the Application of Sewage Sludge to Agricultural Land', available from ADAS or your local Sewage Operator.

## Further Information

Applications of all sewage sludge to farmland are strictly controlled and the regulations require that where sludge is used on agricultural land, usage will be recorded and the soil tested by the sludge producers. Your local Sewage Operator will be able to provide you with further information on the products available in your area. The following publications also contain detailed information and guidance on the use of sewage sludge on agricultural land.

Code of Practice for Agricultural Use of Sewage Sludge (to be revised 2001) – Available from DETR Publication Sales Unit, Tel: 01709 891318.

Codes of Good Agricultural Practice for the Protection of Air, Water and Soil – All three Codes are available free of charge from MAFF Publications, Tel: 0645 556000.

Prevention of Environmental Pollution from Agricultural Activity – Scottish Office Agriculture, Environment and Fisheries Department (SOAEFD) (1997). Available from Scottish Executive Rural Affairs Department (SERAD), Tel: 0131 2440312.

The "Safe Sludge Matrix" – Guidelines for the Application of Sewage Sludge to Agricultural Land – Available from ADAS, Tel: 01623 844331.

For technical queries relating to the interpretation or application of the "Safe Sludge Matrix" or the use of Sewage Sludge on Industrial Crops, please contact:

Dr Brian Chambers, ADAS Gleadthorpe Research Centre, Tel: 01623 844331

Gordon Hickman, ADAS Environment, Tel: 01428 683014 or

Mark Aitken, SAC Auchincruive, Tel: 01292 525330

For queries relating to additional suitable Industrial Crops, please contact:

Patrick Pierrepont, ADAS, Chairman, Research Steering Group, Tel: 01908 261 893

The latest version of the Safe Sludge Matrix can be found using the search facilities on the Water UK and ADAS websites:

[www.water.org.uk](http://www.water.org.uk) and [www.adas.co.uk/matrix](http://www.adas.co.uk/matrix)

