



**PAPER No: SEAC 78/3**

## **FERTILISERS CONTROLS: PAPER FOR SEAC MEETING ON 24 JUNE 2003**

### **ISSUE**

1. In the UK, there is a ban on the use of mammalian meat and bone meal (MBM), or anything derived from it, on agricultural land. This control (introduced in April 1996) was seen as necessary to prevent exposure of ruminants to such material, and to avoid the potential risk of spreading BSE by this route.
2. The TSE (England) Regulations 2002 (as amended), provide that: *“No person shall use on agricultural land as a fertiliser any mammalian meat and bone meal or any material derived from or containing any mammalian meat and bone meal to any extent”*. This prohibition is intended to avoid the possible risk that may be related to direct grazing or use of grass as silage or hay by farm animals. However, it does not apply to meat and bone meal derived solely from blood or to compost or digestion residues derived from the treatment of Category 3 animal by-products in an approved composting or biogas plant.
3. In contrast however, the new EU Animal By-Products Regulation (which applies throughout the Community from 1 May 2003) permits the use of material derived from meat and bone meal from Category 2 and 3 material on non-pasture land<sup>1</sup> as a fertiliser. Definitions of Category 2 and 3 animals can be found in Annex A.
4. It is likely that such a disparity between these regulations could be confusing. For this reason, Defra would like to review existing fertiliser controls. It is suggested that it may be possible to return some positive value to the animal by-products disposal chain, if effective safeguards can be maintained and it is safe to do so. There would also be some environmental benefits, reducing landfill and promoting the use of organic rather than chemical fertiliser.

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<sup>1</sup> defined as land which is not grazed or cropped for at least 3 weeks after application of the fertiliser; this is to allow time for the fertiliser to be effectively incorporated into the soil

## BACKGROUND

5. This section provides detail on what SEAC has said on this issue, and related issues, in the past. It also sets out possible changes to the UK's BSE-related fertiliser controls, including the control measures needed to address potential risks.

### Possible changes to UK fertiliser controls in respect of BSE

6. The UK continues with a comprehensive ban on the use of mammalian MBM as fertiliser on agricultural land. However, it would be consistent with the EU Animal By-Products Regulation, as applied in other Member States, if the UK would allow:

- the use of *mammalian MBM* derived from Category 3 material to be transformed into compound fertiliser for use on non-pasture land<sup>1</sup>

It is also proposed that:

- *ash* from the *incineration of MBM* derived from Category 2 and 3 material could be used without restriction
7. Under the new Animal By-Products legislation, treatment of catering waste and other Category 3 material is allowed to take place in composting plants and biogas plants. Animal by-products other than catering waste must be reduced to a size of 12 mm and treated at 70°C for at least one hour in a closed vessel on approved premises. The compost or residues may be used as fertiliser on non-pasture land. It would seem illogical to allow composted material, but not rendered MBM to be spread on land.
  8. The EU Regulation would permit the use of Category 2 material as fertiliser on non-pasture land, providing it had been rendered to the pressure cooking standard. Although we would welcome the Committee's views on this practice, we consider that the fertiliser controls should be in line with the feed controls. As the Animal By-Products Regulation would not permit the feeding to livestock of any products derived from Category 2 material (even if the TSE Regulation permitted it), it is not proposed to allow MBM from Category 2 material to be used as fertiliser, in case any of it is ingested by livestock. Of course, the risk of ingestion also applies in relation to MBM from Category 3 material. However, such material is derived from by-products<sup>2</sup> of healthy animals slaughtered for human consumption, so that any TSE risk would be low. If it were ingested by

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<sup>2</sup> Definition of animal by products: Entire bodies or parts of animals or products of animal origin not intended for human consumption, including ova, embryos and semen

livestock, however, this would amount to intra-species recycling. Therefore, it is proposed that MBM derived from Category 3 material should only be brought onto livestock farms if it has first been transformed into another product (i.e. compound fertiliser) in approved premises. This would help to ensure that it is in a form which is not attractive to livestock. In addition, this material would only be permitted for use on non-pasture land<sup>1</sup>

9. It is also proposed that *ash* from Category 2 and 3 animal by-products<sup>2</sup> could be used as a fertiliser without restriction (provided other environmental controls permit it). There is little reliable data on the possible residual infectivity of the ash produced by incinerators. Once the provisions of the EU Regulation are fully in place, however, the incineration of Category 2 and 3 animal by-products will be required, in all cases, to take place in approved facilities operating at 850°C – in accordance with the strict controls in the EU Waste Incineration Directive (2000/76/EC). The aim of the Directive is to prevent and/or limit negative environmental effects due to emissions into air, soil, surface and ground water and the resulting risks to human health from the incineration and co-incineration of waste.
10. In order to minimise the risk that livestock might gain access to mammalian MBM, the introduction of stricter record-keeping requirements at rendering plants, incinerators, fertiliser manufacturers and farms is envisaged, so that a proper audit trail can be maintained. This would be supported by enhanced checking of records at these premises, and by on-farm inspections. If it becomes apparent that sufficient safeguards cannot be put in place, Defra would not progress this relaxation of the controls.

## **Previous SEAC advice**

### Use of rendered SRM in fertiliser

11. In 1991, SEAC was consulted on the disposal of protein produced from the rendering of Specified Risk Material (SRM). SEAC advised that it was not satisfactory that it should be spread on fields as fertiliser.

### Use of mMBM in fertiliser

12. At SEAC's meeting on 16 March 1996, the Committee recommended a prohibition on the use of mammalian MBM in feed for all farmed animals. The Committee also agreed that the use of MBM should not be permitted in fertilisers

that were likely to be used on agricultural land, where there was a possibility that cattle might be able to ingest it.

### Disposal of rendering condensate

13. SEAC has discussed the disposal of rendering condensate, a by product of the rendering process, on a number of occasions. It was noted that mammalian protein had been shown to be present in condensate. In November 2000, Members were asked to consider whether they were content with their previous advice of June 1999 which stated that condensate from the rendering of ruminant animals should not be spread on any land. Members were asked to consider the distinction between surface spreading and soil injection. The Committee noted that there had been limited work on the degradation of prions in soil, and were of the opinion that there was little distinction between spreading and soil injection in terms of the longevity of the infectious agent; as such their previous advice of June 1999 remained unchanged.

### Ash

14. In May 2000, the Committee discussed the paper by Brown *et al.*<sup>3</sup> which demonstrated that hamster adapted scrapie could survive ashing at 600°C. Members agreed that the paper was of some interest but that further work and information was required before the results could be interpreted. The Secretariat is not aware of this work having been repeated.

### Blood

15. SEAC has considered the risks associated with the practice of spreading bovine blood on agricultural land on a number of occasions. SEAC concluded in 1998 that there is no significant risk attached to this practice. This conclusion was based on the evidence that no BSE infectivity has been detected in blood, and there was no evidence of horizontal transmission of the disease.
16. In its meeting of 29 Sep 2000, SEAC reiterated the general principle that intraspecies recycling was undesirable. However, given that blood could only be included in animal rations if it was derived from cattle less than 30 months of age, no infectivity had been demonstrated in bovine blood, and epidemiological models predicted that less than one animal under 30 months of age will be slaughtered within 12 months of developing clinical disease, SEAC concluded the risk from using bovine blood products in animal feed was considered to be minimal.

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3 P Brown, E Rau, B Johnson, A Bacote, C Gibbs Jr and D Gajdusek (2000) New studies on the heat resistance of hamster adapted scrapie agent: Threshold survival after ashing at 600c suggests an inorganic template of replication Proceedings of the National Academy of Sciences of the USA, **97**, (7), 3418-3421

17. In August 2001, however, an EU ban on the feeding of processed animal protein to animals which are kept, fattened or bred for the production of food was implemented in the UK, and this included dried plasma and other blood products.
18. In June 2002, SEAC was updated on the new EU Animal By-Products Regulations, which have now come into force. SEAC noted that these regulations would place many additional restrictions on the manner in which blood can be disposed. For example, for inclusion in fertilisers, mammalian blood would first have to pass an anti-mortem inspection, then pressure-cooked. However fertilisers containing blood or blood products would not be allowed to be applied on pastureland on which animals graze. The Committee was content with this position, although some concern was expressed over the potential recycling link of sheep blood, as sheep graze non-pastureland such as sugar beet fields.

### **Advice sought from the Committee**

19. Does the Committee agree that this change to the existing UK fertilisers controls would not result in significant additional risk to animal health?

### **List of material attached**

- Description of the classification of animal by-products in EU legislation (Annex A).

***Department for Environment, Food & Rural Affairs  
May 2003***

## DEFINITIONS

Animal by-products are divided into three categories:-

(i) **Category 1** is high-risk material and must be completely destroyed. It includes the carcasses of animals suspected or confirmed as having a TSE, the carcasses of zoo and pet animals, Specified Risk Material and catering waste from means of international transport. It also includes material from the Over Thirty Month Scheme (OTMS).

The permitted disposal routes are:-

- incineration;
- rendering followed by incineration;
- rendering to the pressure cooking standard (133°C and 3 bar pressure) followed by landfill; and
- for catering waste from means of international transport, landfill.

N.B. There is likely to be a change in the OTMS from next January (probably permitting animals born after August 1996 to re-enter the food chain). However, there would still be a requirement for all OTM cattle slaughtered for human consumption to be tested for BSE and have SRM removed before it could enter the food or feed chain (and be regarded as Category 3 material).

(ii) **Category 2** is also high-risk material (e.g. diseased animals, animals which die on farm and which do not contain SRM at the point of disposal).

The disposal routes are:-

- incineration;
- rendering followed by incineration;
- rendering to the pressure cooking standard (133°C and 3 bar pressure) followed by disposal to landfill, use as a fertiliser or treatment in a biogas or composting plant;
- for fish, ensiling or composting in accordance with rules which have yet to be established; and

– for rendered fats, use in an oleochemical plant to produce tallow derivatives for technical use only.

(iii) **Category 3** is essentially material which is fit for human consumption.

The disposal routes are:-

- incineration;
- rendering followed by incineration or landfill;
- rendering followed by use in feedingstuffs or fertiliser (subject to the ban on feeding catering waste containing meat etc. to livestock and the restrictions in the TSE Regulations on the use of processed animal protein in feedingstuffs);
- use in a petfood plant;
- use in a technical plant;
- treatment in a biogas or composting plant;
- for fish, ensiling or composting in accordance with rules which have yet to be established; and
- for rendered fats, use in an oleochemical plant to produce tallow derivatives.