



EUROPEAN COMMISSION
HEALTH & CONSUMER PROTECTION DIRECTORATE-GENERAL
Directorate C - Scientific Opinions
C1 - Follow-up and dissemination of scientific opinions

OPINION ON
OPEN BURNING OF POTENTIALLY TSE-INFECTED ANIMAL
MATERIALS

ADOPTED BY THE
SCIENTIFIC STEERING COMMITTEE
AT ITS MEETING OF 16-17 JANUARY 2003

OPINION

On 17 May 2002, the Scientific Steering Committee (SSC) was invited by Commission Services to advise on the examples of conditions under which safe burning of potentially TSE-infected (animal) materials can be achieved.

The details of the SSC's evaluation are provided in the attached report. The SSC concludes as follows:

- (1) "Burning" covers a wide variety of combustion conditions. This opinion is concerned with the process of open burning e.g. bonfires.
- (2) There are serious concerns regarding the use of open burning for the destruction of pathogen contaminated animal waste, particularly for waste which may be contaminated with relatively heat stable pathogens. Issues include: the potentially very high variability of the pathogen inactivation, the nature of the gaseous and particulate emissions, and the risks from the residual ash.
- (3) The SSC recommends that open burning is only considered for pathogen destruction under exceptional circumstances following a specific risk assessment. In the case of animal waste possibly contaminated with BSE/TSE in view of the uncertainty of the risk open burning should be considered a risk. Suitable monitoring methods for TSE contamination of both air and ash are needed. Protocols for safe burning in emergency situations need to be established.

The SSC reiterates the consideration made in its opinion of 24-25 June 1999 on "Fallen Stock"¹. The limited capacity for destruction of animal wastes in certain countries or regions in the first place justifies the installation of the required facilities; it should not be used as a justification for unsafe disposal practices such as burial. However, the SSC recognises that for certain situations or places or for certain diseases (including animals killed and recycled or disposed of as a measure to control notifiable diseases), the available rendering or incinerator or disposal capacity within a region or country could be a limiting factor in the control of a disease. Thus if hundreds or even millions of animals need to be rendered after killing or if the transport of a material to a rendering or disposal plant proved to be impractical, an appropriate case by case risk assessment² should be carried out before deciding upon the most appropriate way of disposal. In principle, the risk is expected to be the lower for small incinerators³ as compared to open burning. As such decisions in practice may have to be taken at very short notice, risk management scenarios according to various possible risks should be prepared in advance to allow for a rapid decision when the need arises.

¹ Scientific Opinion on The risks of non conventional transmissible agents, conventional infectious agents or other hazards such as toxic substances entering the human food or animal feed chains via raw material from fallen stock and dead animals (including also: ruminants, pigs, poultry, fish, wild/exotic/zoo animals, fur animals, cats, laboratory animals and fish) or via condemned materials. Adopted By the Scientific Steering Committee at its meeting of 24-25 June 1999. (and re-edited at its meeting of 22-23 July 1999).

² See also the relevant sections and footnotes on risk assessment in the report accompanying the SSC opinion of 24-25 June 1999.

³ See SSC opinion of 16-17 January 2003 on the use of small incinerators for BSE risk reduction.

OPEN BURNING OF POTENTIALLY TSE-INFECTED ANIMAL MATERIALS

REPORT

1. MANDATE

On 17 May 2002, the Scientific Steering Committee (SSC) was invited by Commission Services to advise on the examples of conditions under which safe burning of potentially TSE-infected animal materials can be achieved.

The SSC appointed Prof.J.Bridges as rapporteur. His report was discussed and amended by the TSE/BSE ad hoc Group at its meeting of 9 January 2003 and by the SSC at its meeting of 16-17 January 2003.

2. GENERAL CONSIDERATIONS

Burning is a combustion process to which a range of control measures may be applied to contain emissions and to ensure the completeness of the degradation process for organic matter. Depending on the source (waste) material the burning process may or may not require addition of other energy sources. Incineration/pyrolysis are contained combustion processes are contained combustion processes and therefore have the potential for a high level of control. (However see opinion on small incinerators). At the other end of the control spectrum is open burning; such as bonfires.

Typically combustion of animal waste requires the addition of a high calorific fuel in order to initiate (and for some materials to sustain) the process. It is recognised that open burning of animal waste is a very cheap and convenient method of disposal. However uncontained burning has a number of problems in terms of the potential risks involved:

- (1) In the open burning situation a range of temperatures will be encountered. It is difficult therefore to ensure complete combustion of the animal waste. If the waste is contaminated with pathogens there will remain considerable uncertainty as to the degree of their inactivation.
- (2) Gaseous and particulate emissions to the atmosphere will occur and consequently worker and public exposure is likely. There is very little data to indicate whether or not some pathogens could be dispersed to air as a consequence of open burning.
- (3) The supporting/secondary fuel may be a source of contamination itself. For example in the recent foot and mouth disease outbreak in the UK timbers were used at some sites that were heavily contaminated with pentachlorophenol.
- (4) The residual ash must be considered to be a risk source. Its safe disposal needs to be assured (see opinion on small incinerators) to prevent human and animal contact and protect from groundwater contamination. While careful selection of burning sites can reduce the risks open burning should only be considered in emergency situations. For each such emergency situation a specific risk assessment should be conducted which must include the risk

from the pathogen of immediate concern but also other pathogens that might be present.

3. RISK ASSESSMENT OF OPEN BURNING FOR BSE

The SSC, at its meeting of 28th-29th June 2001, recommended “a framework for the assessment of the risk from different options for the safe disposal or use of meat and bone meal (MBM) and other products which might be contaminated with TSEs and other materials. Applying the framework to the practice of open burning, the following conclusions can be drawn:

3.1. Nature of the materials handled

Potentially a wide variety of materials can be used provided suitable secondary fuel is available. The burning process is very simple in principle and difficult in practice to regulate effectively.

3.2. Risk reduction due to open burning

There is no reliable data to indicate the extent of risk reduction that could be achieved by open burning. It is reasonable however to assume that overall it will be rather less effective in reducing the infectivity of BSE/TSE than well-conducted incineration. Moreover the reproducibility of the risk reduction is likely to be very variable even at a single location.

3.3. Airborne emissions and residue ash

The composition of airborne emissions and residue ash is rarely monitored. From a risk assessment viewpoint particular attention needs to be given to the potential for the airborne dispersal of relatively heat stable pathogens as a consequence of open burning. In the absence of reliable data both airborne emissions and residual ash must be considered to constitute a significant risk if animal waste that might be contaminated with TSEs is being burnt.

4. FURTHER INVESTIGATION

Research is needed particularly on:

- The potential for airborne dispersal of relatively heat stable pathogens.
- Methodologies to improve the efficacy of the combustion process to ensure the inactivation of pathogen contaminated animal waste.

5. CONCLUSION

Open burning potentially represents a significant risk where the animal waste has the possibility of being contaminated with BSEs/TSEs. Suitable monitoring methods for TSE contamination of both air and ash are needed. Protocols for safe burning in emergency situations need to be established.