EUROPEAN PARLIAMENT
Secretariat
DIRECTORATE GENERAL
FOR RESEARCH

RESEARCH AND DOCUMENTATION PAPERS

Bovine Spongiform Encephalopathy (BSE)

Agriculture-Forestry-Fisheries
Series No.

20

PE: 23

December 1990

100355EN43 / 10-4-91

RESEARCH AND DOCUMENTATION PAPERS

Bovine Spongiform Encephalopathy (BSE)

Original: ENGLISH

This publication is available in the following languages:

FR, DE, ES, PT

Requests to be made to:

EUROPEAN PARLIAMENT
Directorate General for Research
Division for Agriculture, Fisheries and Rural Development
SCH. 6/56
L-2929 LUXEMBOURG

Tel. 4300-2739
Fax: 434071

Luxembourg: European Parliament

ISBN: 0
No de catalogue: 0

Printed in Luxembourg

FOREWORD

The following document has been drawn up in the framework of assistance provided to the rapporteur, Mr. V. GARCIA, on BSE (B3-0243/90) — TEC 239. It revises and updates the corresponding text published by STOA within the project "INTERNAL MARKET: CRITICAL ANALYSIS OF DIRECTIVES CONCERNING THE FOOD SECTOR" — Luxembourg, 6/8/1990, PE 140.380/rev.

Division for Agriculture,
Fisheries and Rural Development

in collaboration with

STOA
(Scientific and Technological Options Assessment)

Manuscript finished end of December 1990

Original: ENGLISH

CONTENTS

I. THE DISEASE

In the Spring of 1985, a cow on a Kent farm became the first victim of "bovine spongiform encephalopathy" (BSE). It was more than a year later that veterinarians identified the disease as a spongiform encephalopathy, something akin to scrapie in sheep. The Ministry of Agriculture of the United Kingdom made the disease notifiable in 1988. Farmers were then legally bound to report all cases. BSE has been reported throughout Great Britain but in greater concentration in the southern half of England.

A few cases have been identified in Northern Ireland, the Republic of Ireland and the Channel Islands and recently one case in Switzerland. In the rest of the world, two cases have been confirmed in animals exported in 1985 from the UK to Oman. The International Office of Epizootics (based in Paris) recorded a total number of 18,920 confirmed cases of cattle affected by BSE as at 12 October 1990. Some veterinarians suggest that cases exist in other countries, where some of the cattle - which are destroyed because they are thought to have rabies - might conceivably have had BSE instead. The early symptoms of rabies include weakness and general disability followed by paralysis in the hind quarters, causing very obvious staggering... [1]

The disease is characterised by a degeneration of the central nervous system caused by an "unconventional agent" (neither virus nor bacterium). Different views on the type of life-form of these agents have been proposed:

- tiny filamentous virus: (H. Diringer - Robert Koch Institute, Berlin);
- virino: tiny piece of nucleic acid that hijacks some of the hosts' protein (A. Dickinson - Institute of Animal Health Neuropathogenesis Unit, Edinburgh);
- prion: protein that could replicate without having a nucleic acid (S. Prusiner - University of California, San Francisco, USA), or is so small that it cannot be detected to date.

This agent
- is transmissible;
- is characterised by a long incubation period;
- appears not to induce an immune response (does not behave like an antigen);
- is very resistant to chemical or physical disinfection and high temperatures which remove bacteria and viruses; also withstands doses of irradiation and ultra-violet light that are normally used in sterilisation;
- is identified through its effect on brain tissue which degenerates to give a spongy appearance; exhibits a reactive astrocytosis of neurons and neuronal vacuolation.

Variants of this agent have been found to be responsible for disease to several animal species and to man:

- Creutzfeldt-Jakob Disease (CJD), Kuru and Gerstmann-Straüssler Syndrome to man,
- Scrapie to sheep and goats,
- Chronic Wasting Disease to deer and antelopes,
- Transmissible Mink Encephalopathy to minks, and
- Bovine Spongiform Encephalopathy to cattle.

Some of these diseases have been known for hundreds of years (scrapie has been endemic in the UK since 1732), while others have only recently been diagnosed.

Many different strains of this agent exist. Scrapie, for instance, has over 20, each having a characteristic incubation period and lesion type/location. When scrapie is transferred to another species (e.g. in laboratory mice), the dominant strain may change. This ability to adapt suggests that the agent does contain some genetic information.

II. CLINICAL SIGNS

In the early stages of BSE - as in the case of scrapie - the symptoms are anxiety, fear, increased sensitivity, in some cases high aggressiveness and later, behavioural gait and postural abnormalities, reduced milk yield, slipping and falling followed by recumbency and death 1-6 months later.[2] Cattle between 3 and 11 years old are susceptible to the disease with most cases affected between 3 and 5 years old.

III. DIAGNOSIS

BSE can only be confirmed in **POST MORTEM** examination. At present, there is no laboratory test for the diagnosis of the disease in live animals.

There is no evidence of any abnormality in the meat of infected animals. The infectious agent is found in the central nervous system and lymphoid organs.

The brains of infected animals have a characteristic spongy look (brain vacuolation). Scrapie-associated fibrils show up by electron microscopy on nervous tissue extract.

Examination of infected brains fails to reveal any conventional micro-organisms such as bacteria or viruses.

Dissolving the nervous tissue with a protein-dissolving enzyme leaves twisted filaments ('fibrils'). The fibrils can be infectious, whereas pure natural protein is not. Research has yet to discover the infectious component of the fibrils. It is not clear whether the modified protein is capable of directing its own replication and modification, or whether small quantities of genetic material from the agent exist to take over and direct brain cell function.

IV. TRANSMISSION

All conclusions on transmission of the agent are based on circumstantial evidence using epidemiology or inferred from laboratory experiments.

Scrapie in sheep can be transmitted from ewe to lamb (epigenic transmission-without implicating transmission through germ cells) and between sheep through ingestion of highly infectious placenta after birth (horizontal transmission). It is therefore endemic and difficult to eradicate. In the other species (humans, mink, mice), the corresponding disease is not normally spread from one infected individual to another and the disease is said to occur in a

"dead-end" host. The only known cases of transmission of Creutzfeldt-Jakob Disease (CJD) from man to man have been by cornea grafting, application of deep brain electrodes or by surgical instruments, or by injection of pituitary extracted products (HGH, FSH). The spread of Kuru in the Fore tribe of New Guinea has been attributed to the ceremonial handling of ingestion of infected human brains.

There appears to be a genetic predisposition to these diseases. For instance, it has been established that susceptibility to scrapie is influenced by genetic factors, and a gene which controls the onset of the disease has been found in sheep. While this offers the possibility of introducing resistance into flocks, it would not prevent sheep becoming infected.

In cattle there is to date no evidence of vertical or horizontal transmission of the BSE agent. The following assumptions could thus be made: if cows are dead-end hosts, the disease should die out when all infected animals have been slaughtered; if BSE is transmitted to the calves of infected animals, the number of cases will continue to increase for several more years as these animals succumb and are destroyed; if the disease is transmitted from cow to cow, the epidemic will ease off slightly, as the first batch of infected animals is slaughtered and then will soar again, as the disease begins to affect their contacts.[1] The transmissibility of BSE to humans has not been proven and, so far, BSE is not considered as a zoonosis. Nevertheless, studies are taking place to further investigate this aspect.

Transmission studies are a vital aspect of research into BSE. The experiments on animals are designed to show which species can contract the disease and how. The important point of these experiments is to find out more about the species barrier. When one of these agents crosses from its natural host into another species, it usually meets some resistance, identifiable by a longer than normal incubation period. Once it has crossed species however, the agent meets less resistance in other individuals of those species and the incubation period becomes fixed for the new host. These experiments should show how "high" the barrier is in different species. This would be important in assessing the risk of a particular species succumbing to BSE. [1]

Epidemiological evidence points strongly to an infectious agent in protein concentrates containing suspect meat and bone meal as being a possible cause of the outbreak of BSE in the UK. It was assumed that the source of infection was scrapie from infected sheep tissues used in rendering processes[3]. According to the report of the Working Party on BSE - Oxford, February 1989 (the "Southwood Report"), a modification in the technique of making meat and bone meal could have been responsible for the transmission of the infecting agent. Among the waste products of slaughterhouses - used as source material for meat and bone meal - are remains of sheep suffering from scrapie. A new technique, using a lower temperature in order to improve the nutritive value of the end product, has probably allowed the pathogen of scrapie to infect cattle through animal feed. This assumption is further developed in the following chapter.

Despite the great resemblance of the pathogens responsible for BSE and scrapie, certain scientists, nonetheless, believe that BSE is not simply scrapie which has crossed into cows, but a natural encephalopathy of cows (not transmitted from sheep), which was so rare in the past that no one had recognised it. Should this be the case, it would then be highly probable that the disease exists in other countries too... [1].

V. FACTORS RELATING TO ANIMAL FEED

Irrespective of the exact origin of BSE, the key to its sudden outbreak in the UK has been attributed to factors relating to animal feed, namely a) an increase in infected material rendered and b) changes in processing techniques in the rendering industry[3], which may have reduced process severity, thus allowing more of any infectious agent to survive. The former relates to an increase in the number of sheep in the UK in the late 1970s and early 1980s, i.e. to an increase in the incidence of scrapie and quantity of infected sheep tissues used in rendering processes. The latter relates to the fact that, in the late 70s, rendering plants in the UK changed processing techniques. Instead of processing animal waste and tissues at high temperatures, they adopted a system of continuous processing at lower temperatures. Most firms also abandoned the use of solvents (such as benzene, hexane and trichloroethylene) - which are considered as having a sterilisation effect on these agents - to remove excess fat from the protein. It is worth noting that one firm of renderers that still uses the solvent treatment is in Scotland and Scotland has had a very small number of BSE cases[1]. Perhaps more significant was the loss of a final heating stage, involving very high temperatures, which is believed to be crucial in killing the scrapie agent.

Once the infection is present in feed concentrates, the large production capacity of modern rendering factories can spread it through the extensive distribution network of the feed compounders. The geographical distribution of BSE confirmed cases in Great Britain (more in the South than in the North) has been related by the UK central veterinary laboratory to the extent to which feed compounders use meat and bone meal and the severity of the process used by the rendering factory. In July 1988, a ban on feeding ruminant protein to ruminants was introduced in the United Kingdom. However, meat and bone meal produced in that country will still contain scrapie, since infected sheep are still rendered. Depending on the effectiveness of the July 1988 Government ban on feeding ruminant protein to ruminants and the February 1990 voluntary ban by the UK industry on the use of specific offals, BSE may still be present. Such meal was, at first, banned for feeding to ruminants in the UK, but allowed for pigs and poultry, as well as for export. This practice was viewed as unlikely to lead to further human exposure, since both pigs and poultry are killed for human consumption after a few months (in comparison with the long latency period of the disease). Nevertheless, based on experience with sheep, there may be initial signs of infection (primarily the lympho-reticular system) before the agent later spreads to the central nervous system. The possibility of small amounts of the BSE agent entering the human food chain cannot, therefore, be excluded, if pigs or poultry were to become infected. [4] Thus, it is not surprising that, in the summer of 1990, the UK Government - seemingly as a precautionary measure - extended its ban on the feeding of specified bovine offals, i.e. the spleen, thymus, brains, tonsils, spinal and intestines of cattle, to pigs and poultry. However other ruminant material continues to be a legally acceptable ingredient in pig and poultry rations in the UK.

The risks are obviously higher for other countries, who import meat and bone meal processed in the UK from ruminant tissues (probably) infected with scrapie. The aforementioned ban affecting the UK market aggravates the pressure on the stocks of (probably) scrapie-infected compound feedstuff and increases renderers' temptation to export.

Current UK regulations require renderers to use conditions which are effective for SALMONELLA bacteria, but which are ineffective against viruses. Hospital autoclaving procedures to inactivate scrapie have been defined in the UK: 134°C under pressure for 18 minutes[4]. The effectiveness of this condition seems to be confirmed by the findings of research carried out by Dr. O. RIEDINGER, University of Hohenheim, Germany (see annex), but the effectiveness of rendering processes for same objective has not yet been adequately studied. The industry believes that factories cannot reproduce the same environment as surgical autoclaving. Thus, it is not currently possible to define the process conditions necessary for complete sterilisation of meat and bone meal.

VI. ACTION RECOMMENDED BY THE INTERNATIONAL OFFICE OF EPIZOOTICS FOR COUNTRIES WISHING TO IMPORT CATTLE AND CATTLE PRODUCTS

Underneath is an extract from a document adopted by the International Committee of the 'Office International des Epizooties' on 23 July 1990 relative to this matter:

"Determine answers to the following questions in the country of origin :

- Is BSE notifiable ?
- Does BSE or/and scrapie exist or has it existed in the past and if so at what prevalence and incidence?
- Is there a significant sheep population?
- Are ruminant carcasses processed for inclusion in ruminant rations?
- Is ruminant derived meat and bone meal fed to cattle and what is the inclusion rate?

From the answers provided, an assessment of the actual or potential occurrence of BSE and associated risks can be made and appropriate import conditions considered, if necessary.

Imports from countries with BSE:

- Live cattle: Based on the available epidemiological evidence concerning the origin of the disease and on the known low attack rate - provided that in an affected country measures are taken to ban the feeding of ruminant protein to ruminants, the disease is notifiable and that affected cattle are slaughtered and destroyed - it is highly unlikely that animals exported from that country will develop the disease. However, should a case occur in this way in an importing country there is no evidence to suggest that this would necessarily lead to the establishment of the disease.

- Cattle products: Scientific studies in naturally occurring scrapie of sheep indicate there is no detectable infectivity in muscle, udder, colostrum or milk (and thus products derived from these) in either pre-clinical or even clinically affected animals. By extrapolation:

  . Meat and milk derived from cattle in countries in which BSE is present are not a danger to public health.

  . With regard to other parts of the carcass, as a precautionary measure, every attempt should be made to prevent large quantities of lymphatic and nervous tissue entering products intended for human consumption."

VII. FRENCH SURVEILLANCE SYSTEM

The Ministry of Agriculture's Directorate-General for Food, in collaboration with the National Centre for Veterinary and Food Research, the Departmental Directorates for Veterinary Services and the Pathological Anatomy Laboratory of the National Veterinary School at Alfort, have set up a surveillance network to deal with the BSE epidemic.

The network comprises two components:

1. A clinical early warning network, relying on the vigilance of practising veterinarians and the Departmental Directorates for Veterinary Services: all suspected cases of BSE are reported, and the animals taken to the National Centre for Veterinary and Food Research's Bovine Pathology Laboratory in Lyon for detailed examination.

2. A post-mortem detection network, based on the systematic examination of the encephala of rabies suspects, which are removed and forwarded, following a strict procedure, to specific laboratories for rabies diagnosis.[5]

After the rabies examinations, negative samples are forwarded to the Pathological Anatomy Laboratory of the National Veterinary School at Alfort (Prof. A.L. PARODI) or the Alfort Histopathology Laboratory of the National Centre for Veterinary and Food Research, for histopathological examination. Samples from the Rhone-Alpes region, which pass through the Pasteur Institute in Lyon, are sent directly to the Bovine Pathology Laboratory there.

VIII. SWISS POLICY

The first occurrence of BSE in Switzerland has caused considerable disquiet. The Federal Swiss Veterinary Office started proceedings, on 14 November 1990, to draw up measures for its control, after the first BSE case in Switzerland was detected at the beginning of November (this was also the first case to be officially recorded on the European continent).

The measures for control include:

a) forbidding the use of meat and bone meal in animal feedstuffs, which is considered as the most likely cause of the disease;

b) ante-mortem examination of all bovines more than 6 months old;

c) regular control of the animals; quarantine measures and slaughter of suspected animals; incineration of the carcasses of the animals infected with the disease.

d) the exclusion, as unsuitable for human consumption, of the brain, the spinal cord, the thymus, the spleen and the intestines of more than 6-month old bovines.

In addition to the control measures, and in view of the high-risk category of drugs based on raw material from infected animals, the "Intercantonal Pharmaceutical Board of Control" (INTERKANTONALE KONTROLLSTELLE FÜR HEILMITTEL - IKS) in Berne, asked pharmaceutical companies and pharmacies to prove that their preparations, based on extracts of bovine organs, are totally harmless to man. According to Swiss law, authorities and companies must, in order to protect public health, take all appropriate steps to ensure that no raw material from infected animals is employed in the manufacture of drugs for use on humans. The IKS now intends to reinforce restrictions to this end and has asked all companies that have registered preparations derived from animal matter with them to fill out a questionnaire by the end of December.

IX. UNITED KINGDOM POLICY

In November 1989, the UK Government introduced a ban on the use of specified offals for human consumption. In February 1990, the UK rendering industry agreed to a voluntary ban on the use of specified offals in rendering processes.

The UK BSE Order of 1988 prohibits the sale, supply and feeding of rations containing ruminant protein to ruminants (cattle, sheep, goats and deer) in the UK. This ban does not affect exports. The UK rendering industry thus makes available to feed compounders meat and bone meal with and without ruminant tissue. Two different markets have therefore been developed in the United Kingdom, one for internal use, the other for export. However, following aforementioned ban on the sale, supply and feeding of rations containing ruminant protein to ruminants, extended in summer 1990 to the feeding of specified bovine offals to pigs and poultry, the only outlet left for such meal is as fertiliser or for export.

Meat and bone meal is of low nitrogen content and therefore, only has a minimal fertiliser value unless used as a long-term slow release product on organic-type systems. Consequently, the potential for expansion in this area is minimal relative to the amount of processed specified offal material available. It is worth noting, as regards exports, that the UK Government actually banned the export of specified bovine offal material in the same piece of legislation that bans its use in pigs and poultry rations.

In consequence of these preventive measures, UK agriculture is now faced with a major animal waste disposal problem. Over 400,000 tonnes of specified bovine offals (unprocessed) plus all casualty or fallen stock can no longer be rendered "safe" for inclusion in animal feedingstuffs. The main concern of the UK authorities is how best to dispose of this material without creating a hazard to public health.

At present, UK legislation provides for the compulsory slaughter and destruction of carcasses and the compensation of farmers, for each cow which is found to be suffering from BSE. As a result, all cases are recorded and the authorities are, therefore, in a position to closely follow the evolution of the disease.

The latter can be considered as an important preventive measure, although the very great need for measures to assist scientific teams working to find a test that can detect the disease in animals in its early stages, should not be underestimated.[1] Diagnosis before slaughter would help to ensure that infected cattle do not enter the human food chain.

An important national research programme on BSE is already valued at £2 million and a further £12 million will be used during the next 3 years. The main aspects which will be examined and clarified are : epidemiology, anatomopathology, transmissibility, aspects of molecular biology and genetics.

X. EEC DECISIONS

A. In order to re-establish the Common Market in the beefmeat sector (disrupted by unilateral actions taken by some Member States against imports of beefmeat of UK origin), and to prevent the spread of BSE from the UK to other Member States, the Council - acting on a Commission proposal which was based on the advice of the Standing Veterinary Committee - adopted, on 6/7 June 1990, the following decision[6]:

"1. The UK will not export to other countries:

(a) live cattle other than those aged under 6 months and bearing a proper identification (tattoo or freeze brand) to guarantee compliance with this point.
(b) live cattle which are the offspring of cows in which BSE is suspected or confirmed.

The UK shall make full use of computer records to guarantee identification of animals.

2. The UK may not export from its territory to other Member States fresh bovine meat unless it is:

(a) fresh bone-in bovine meat derived from bovines not originating from holdings where BSE has been confirmed during the previous 2 years.

(b) fresh boneless meat from which, during the cutting process, obvious nervous and lymphatic tissue has been removed."

These are supplementary measures to those already introduced by the Commission Decision of 9 April 1990[7], namely those foreseen under Article 2 of same decision i.e.

"1. The United Kingdom shall not send from its territory to that of other Member States:

a) the following tissues and organs derived from bovine animals aged more than six months at slaughter:

- brains, spinal cord, thymus, tonsils, spleen, intestines.

b) the following tissues and organs derived from bovine animals for uses other than human consumption:

- tissues and organs referred to in point a,
- placental tissue,
- cell cultures of bovine origin,
- serum and foetal calf serum,
- pancreas, surrenal glands, testicles, ovaries and hypophisis,
- other lymphoid tissues."

B. On 25/26 June 1990, the Council decided on the implementation of an EEC veterinary fund. This fund would, inter alia, participate in the financing of programmes aiming to prevent and reduce, by appropriate control measures, the appearance of serious infectious animal diseases which pose a threat to human health (Council Decision No. 90/424/EEC of 26.06.1990 on expenditure in the veterinary field, OJEC L 224, p. 19)[8]. Obviously BSE also falls within the scope of this decision.

In countries where scrapie exists - for example France, where it is estimated that 5-10% of sheep are infected[9] - research should be intensified to prevent the spread of the disease in bovines. So far, no Member State has presented a proposal to the Community in the framework of the aforementioned decision.

The Commission has undertaken to elaborate a Community-wide research programme for BSE. In this programme, the aspect of the diagnosis of the disease in live animals in its early stage and prior to the appearance of clinical signs, is of a particular (scientific and economic) interest. Other topics to be undertaken in the programme are: Epidemiology, Molecular biology, Rendering of offals, etc.

XI. CONCLUSIONS

There are a number of unconventional infective agents in man and animals which attack the central nervous system and cause the brain's grey matter to degenerate. Since 1985, cattle have been suffering from the bovine form of this disease in increasing numbers in the UK, leading to a series of control measures by this Member State and the EEC. Debate continues, however, on the public health implications of BSE.

Despite the extensive research, many questions still remain unanswered with respect to BSE. They can be grouped into three main areas:

a) Nature and MODUS OPERANDI of the infectious agent: There are a lot of views about what BSE is or isn't. The agent may be a form of scrapie that has mutated, either in sheep or cows, after they have eaten contaminated food. If BSE is a scrapie that has crossed into cows, then it has already made one jump over the species barrier. If BSE has always existed as a natural cattle disease, then it is likely to remain a disease of cattle.

b) Conditions for inactivation of the agent and sterilisation of meat and bone meal: These have been defined for hospital autoclaving procedures, but not for factory rendering processes.

c) Infectivity and transmissibility: Experiments to investigate the infectivity and transmissibility from cow to calf, from cow to cow and from cow to other species are underway.

Some experts see the absence of an epidemiological link between scrapie and Creutzfeldt-Jacob Disease (CJD) as indicating that BSE is unlikely to pose a significant health threat to humans. However, the uncertainty reigning in the scientific field, and the great number of questions that still remain unanswered, calls for precaution. It should be recalled in this context that CJD is a devastating disease to mankind, as are the other types of spongiform encephalopathy. It takes a long time (even decades) to incubate; when symptoms finally appear, the course of the disease is catastrophic. It begins with loss of memory and other uncharacteristic behaviour, progressing to rapid mental deterioration, dementia, incoordination and involuntary movement of the limbs. CJD is fatal and most people die within a few months[1]. CJD has been contracted by meat-eaters and non-meat-eaters all over the world, in countries where scrapie is endemic (e.g. Japan) and in countries where it has never been recorded (e.g. Australia). The issues of the horizontal and/or vertical transmission of this unconventional agent to animals and humans are uncertain and are the subjects of current research, therefore necessary precaution should be taken until such issues are fully investigated.

The PRECAUTIONARY PRINCIPLE places an emphasis on anticipating possible consequences before scientific evidence is made available. Although policy makers at national and EEC level are convinced they adopted appropriate policy measures on an assessment of risk made from the best available scientific evidence to date, there have been calls for the precautionary principle to be further applied in view of the uncertainties which will continue to exist for some years as research takes time to produce its results. Such an approach would attempt to eliminate the unquantifiable risk of BSE spreading to humans or animals, through the exclusion of the use of drugs derived from suspect animal matter or of suspect meat and bone meal in animal feed.

In this connection, the proposal for a Council Regulation (EEC) laying down the veterinary rules for the disposal and processing of animal waste, for its placing on the market and for the prevention of pathogens in feedstuffs (COM(89)509 final) presented by the Commission on 17 October 1990 and which received the Parliament's opinion on 13.09.1990, should be noted.[10] Article 3 of Chapter II of this proposal includes in the so-called "HIGH-RISK

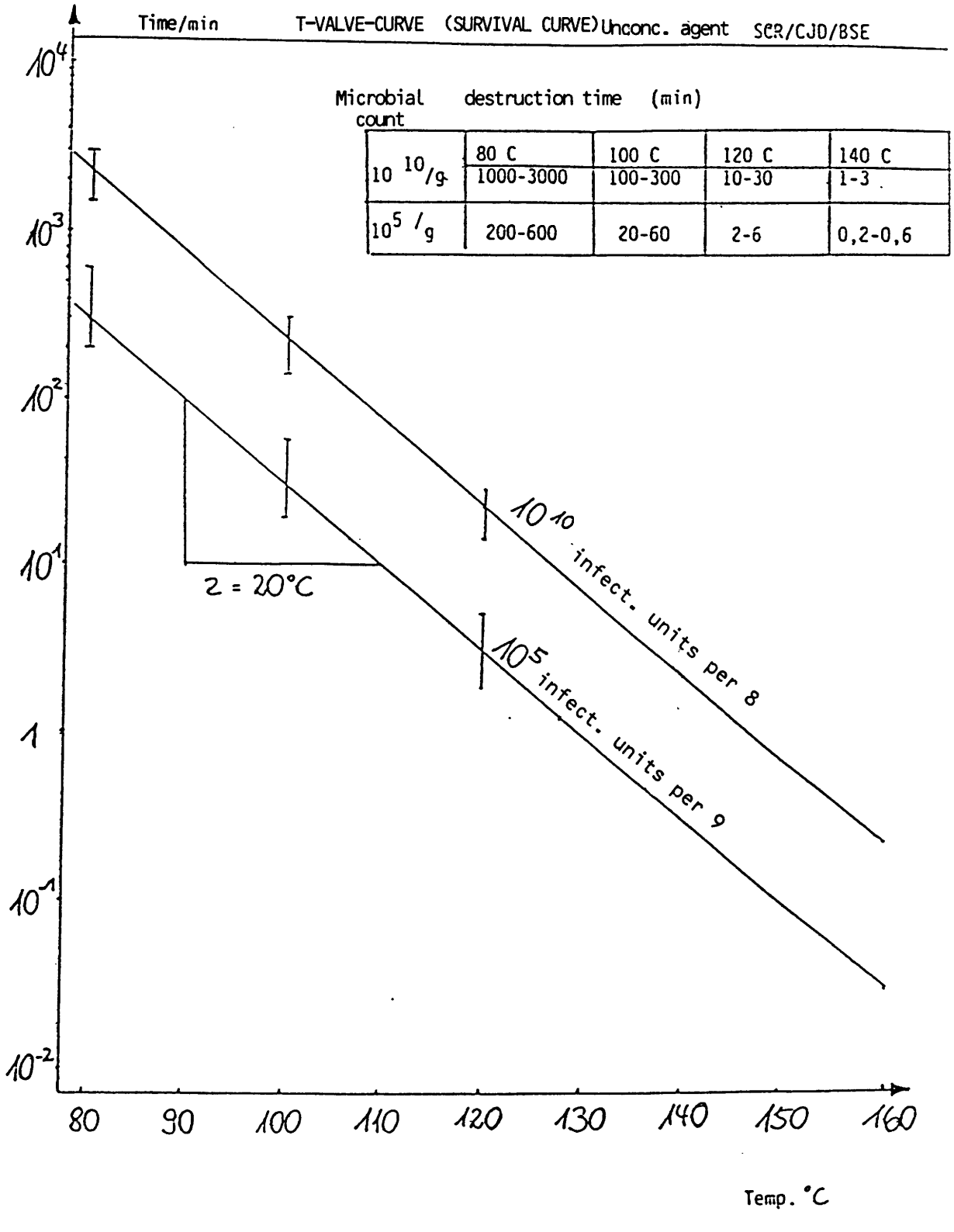
MATERIALS" allowed to be processed by the rendering industry in the Member States .....

"c) animals which are killed either on the farm, or after arrival at the processing plant, in order to eradicate epizootic diseases;
d) animal waste originating from animals which show, during veterinary inspection at slaughter, clinical signs or evidence of diseases communicable to humans and which are for that reason, or due to the presence of residues, excluded from human consumption;
e) those parts of slaughtered animals not presented for post-mortem inspection, with the exception of hides, skins, hooves, feathers, wool, horns and similar products;....."

This Community Directive which allows for rendering of these high-risk materials, which may indeed include BSE-infested matter, obviously does not satisfy the aforementioned precautionary principle and an adequate solution should be sought to avoid such a risk. It should be noted in this respect that neither the amendments presented by the European Parliament[10] nor the revised Commission proposal following the EP's opinion[11] take into consideration the difficulty of destroying the BSE agent in animal feedstuffs. One of the EP's amendments proposed a heat treatment of 121°C for 100 minutes as a general treatment irrespective of the pathogen involved. This amendment has not, however, been retained by the Commission. The Council decided on the Commission's amended proposal on 27.11.1990.[12]

In addition to the above regulation, the Council Directive 90/44/EEC of 22 January 1990 modifying Council Directive 79/373/EEC, concerning marketing of compound animal feedstuffs (OJEC L 27 of 31.01.1990, p. 35), should also be re-examined. For instance, it is obvious that if compound feedstuffs produced from scrapie-infected animal waste and tissues are allowed to be marketed as animal feedstuff in Member States (other than the UK where a local ban exists), an appropriate label should, at least, be foreseen to inform possible users of their origin (and subsequent usage risk).

Until current research programmes produce conclusive results, it would be prudent to extend to the rest of the Community the precautionary measures which are now applied in the UK for the control of BSE. The recently established common veterinary fund should be fully used to this end. However, measures taken to control BSE within the Community would be ineffective in the absence of adequate control with regard to imports. Therefore, the same degree of efficiency should be sought to ensure imports of BSE-free meat and other animal tissues and organs, as well as imports of quality meat and bone meal for animal feed. The biggest problem remains, nonetheless, the identification and elimination of drugs derived from suspect animal matter.



Heat resistance of unconventional agents

FOOTNOTES

1. Stephanie PAIN: 'BSE - What madness is this?'/New Scientist, 9 June 1990

2. U.K Meat and livestock Commission, BSE, 16 May 1990.

3. Rendering is an industrial (cooking and separation) process, whereby animal wastes (fats, bones, offals, carcasses etc.) are treated in order to extract fats and proteins (primarily tallows, and meat and bone meal).

4. The House of Commons, Parliamentary and Scientific Committee, Parliamentary Office of Science and Technology, Information for Members, No. 14, June 1990

5. Approved laboratories for rabies diagnosis are:
   For suspect animals which have not infected humans:
   - Laboratoire d'Etude sur la Rage et la Pathologie des Animaux Sauvages (LERPAS), CNEVA - 55 220 Malzeville.

   For suspect animals which have infected humans:
   - Institut Pasteur de Paris - 75 724 Paris
   - Institut Pasteur de Lyon - 69 007 Lyon
   - Centre antirabique de la Faculté de Médicine - 67 085 Strasbourg

6. Commission Decision 90/261/EEC of 8 June 1990 amending Decision 89/469/EEC concerning certain protection measures relating to bovine spongiform encephalopathy (BSE) in the United Kingdom and Decision 90/200/EEC concerning additional requirements for some tissues and organs with respect to bovine spongiform encephalopathy (OJEC L 146 of 09.06.90, p. 29)

7. Commission Decision 90/200/EC of 9 April 1990 concerning additional requirements for some tissues and organs with respect to Bovine Spongiform Encephalopathy (BSE) (OJEC L 105 of 25.04.1990, p. 24)

8. In the 1991 budget, Article item B2-5100 "Disease eradication programmes" has been allocated 70 MECUs in commitments and payments (non-differentiated appropriations)
   (OJEC L 30 of 4 February 1991, p. 576)

9. Didier DUBRANA, 'Les vaches font trembler l'Angleterre' / Science et Vie No. 189, September 1989.

10. Document A3-167/90 of 27 June 1990 (Report drawn up on behalf of the Committee for the Environment, Public Health and Consumer Protection-Draftsman: Sir James SCOTT-HOPKINS)

11. 90/C290/07 (OJEC C 290 of 20 November 1990, p. 10)

12. OJEC L 363 du 27.12.1990, p. 51

European Communities – European Parliament – Directorate General for Research

Catalogue: 0

Luxembourg: European Parliament · L-2929 Luxembourg

1990 – 16 pp. – 21 x 29 cm

DE, EN, ES, FR, PT

ISBN 0

Catalogue number: 0

Price (excluding VAT) in Luxembourg:
ECU 0

EN

Directorate General for Research

EUROPEAN PARLIAMENT

L-2929 Luxembourg