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Food and Drug Administration
5630 Fishers Lane, rm. 1061
Rockville, Maryland, 20852

RE: Docket No. 2004N-0264, RIN 0910-AF46
Federal Measures to Mitigate BSE Risks: Considerations for Further Action

This submission is in response to a request for public comment on the Advance notice of proposed rulemaking *Federal Measures to Mitigate BSE Risks: Considerations for Further Action*, (*Federal Register Vol. 69, No. 134, Wednesday, July 14, pp.42288-42300*) on behalf of the North American Natural Casing Association, a trade association that represents the majority of natural casing producers and brokers in North America. Our members produce, buy, sell, and distribute casings worldwide. The US industry processes the casings saved by slaughterhouses in the United States in addition to importing and exporting significant amounts of casings to meet domestic and global demand.

Natural casings, which are derived primarily from the intestines of hogs, sheep, and beef cattle, are used in a wide variety of high quality sausage products that constitute a significant industry in North America and throughout the world. Of the three primary types of natural casing, only beef casings are affected by this advanced notice of proposed rulemaking.

Beef Casings: The three most commonly used types of natural beef casing are beef rounds, beef middles, and beef bung caps. Beef rounds are derived from the small intestine of cattle, beef middles from the large intestine, and beef bung caps from the caecum, which connects the large and small intestines.

Beef rounds are used in a wide assortment of quality sausage products, including numerous varieties of ring bologna, knockwurst, blood sausage, and ring liver sausage, as well as specialty sausages such as mettwurst, kishka, and holsteiner. In addition, the majority of halal sausages are made using beef casings (smaller diameter halal sausages generally are made using lamb casings). Processors can substitute collagen casings for some types of sausage made from natural beef rounds, but this generally results in a lower quality product with a decreased market value.

Beef middles and beef bung caps also are used in a wide range of quality sausage products. Sausages made from beef middles include bologna, dry and semi-dry cervelats, dry and cooked salami, and veal sausage. Sausages made from beef bung caps include veal sausage, large bologna, and cooked salami.

The United States imports most beef intestines for use as natural casings from South American countries such as Brazil, Argentina, Paraguay and Uruguay, which currently are not included on the US BSE risk list. Brazil, Argentina, Paraguay, Uruguay, and other South American countries also are classified as BSE free by the European Commission, which has elaborate risk analysis programs in effect to determine BSE risk. Prior to the diagnosis of a BSE-infected animal in Canada, the United States also had imported beef casings from Canada. Currently, only limited amounts of beef intestines (none from the small intestine of animals slaughtered January 12, 2004 or later) from animals slaughtered in the United States are saved for use as natural casings. However, there has been a demand for the US product in several countries, primarily in Europe, where the US product currently is not allowed to be imported, and the growth potential for this product would be significant if trade restrictions not based on science were removed. Greater amounts of beef small intestines were saved for an edible product exported primarily to Asia (Japan and Korea) and Mexico (as *tripas*). This is an important value-added product for cattlemen and meat packers, and these exports consequently are important to our industry overall.

The manufacture of sausages from natural beef casings generates over \$200 million dollars in sales every year for the North American sausage and casing industries and employs significant number of people. The industry is committed to preserving this valuable market, while at the same time providing the public with the safest product possible.

In the notice published on July 14 2004, in specific question 2, on pg 42296, FDA requested information as follows: “*What data or scientific information is available to evaluate the IRT recommendation described above, including that aspect of the recommendation concerning what portion of the intestine should be removed to prevent potentially infective material from entering the human food and animal feed chains?*”

This submission responds specifically only to that question. Further responses will be submitted later to requests for comments from FSIS and FDA on related issues, due on later dates.:

A. All current science has demonstrated infectivity potential only in the distal ileum of beef cattle.

Bearing in mind the US is believed to be an Office International des Epizooties (OIE) Minimal BSE Risk Country (but this is awaiting confirmation based on results of active surveillance for BSE in targeted populations conducted to standards advised by the International Committee and the OIE), in minimal disease countries the OIE require no part of the intestine to be removed from animals passed fit for human consumption before being available for use in human food. In recognition of the available science on this issue, both FSIS and FDA have properly named the distal ileum as Specified Risk Material (SRM), and thus require that US product be removed and destroyed at the slaughterhouse as SRM. Only the distal ileum portion of the small intestine has demonstrated BSE infectivity, and the remaining portions of the small intestine pose no known risk to human health. Figure 1¹ summarizes the results of the UK pathogenesis experiment and shows that there is intermittent infectivity present in the distal ileum from 6-18 months and 36-40 months post exposure. Thus, in order to stop amplification of

¹ References providing supporting data for Figure 1 (Wells *et al*) and Tables 1 and 2 below (Fraser and Foster, Hadlow, *et al*, MAFF, Terry *et al*, Wells *et al*, and WHO) are listed at the end of this submission

BSE and limit exposure, we support a proposal that the distal ileum of cattle should be classified as SRM if from countries or zones which have moderate or high BSE risk.

The science of BSE in addition to the pathogenesis study comes from the study of infectivity and PrP-res (PrP^{Sc}) in bovine intestine from experimental BSE and natural BSE (Tables 1 and 2). The only place positive PrP^{Sc} staining was found in cattle intestine from experimental and natural cases of BSE was in the Peyer's patches and rarely in the myenteric plexus of the distal ileum, (Terry et al, 2003).

On the basis of this study the only likely place in the intestine where PrP and infectivity can be demonstrated is the distal ileum. The ileum, which is readily identifiable, can be clearly separated from the rest of the intestine with consistent accuracy and without cross contaminating the rest of the intestine. Thus any remaining risk will be very low and even that would be reduced by the cleaning process, which is undertaken to remove the mucosa from the product for use as a casing.

Despite this scientific evidence however, the FSIS interim final and the FDA notice of advanced rulemaking implements a standard operating procedure that requires the removal and disposal of the entire small intestine from cattle of all ages. The issue of the removal of the entire ileum will be addressed in a response to FDA docket No. 2004N-0081, RIN-0910-AF47.

B. Studies on other ruminant susceptibility to TSE, and non ruminant studies should not affect proper science-based decision-making concerning bovine susceptibility to BSE infectivity.

The available science is clear that there are distinct differences even among ruminant species as to infectivity of the BSE agent. For example, the attached Tables 1 and 2 shows the distinct differences between scrapie in sheep (ovine) and BSE in cattle (bovine). There is no evidence that BSE is present in sheep. However, this study (cite) demonstrates, for example, that should BSE be found to exist in sheep, then for risk animals the entire animal should be considered SRM.

Any studies involving non ruminants are even further removed from the science required for a determination on SRMs. A study cited to us by FDA officials for example, which looked at primates, deals solely with a primate-passaged agent in a primate, which is far removed from the situation in a bovine, which is a ruminant animal, and this study thus has no relevance to the question of SRM removal in bovines. (*Herzog C., Sales N., Etchegaray, N., Charbonnier A., Freire S., Dormont D., Deslys JP., Lasmezas Cl., Tissue distribution of bovine spongiform encephalopathy agent in primates after intravenous or oral infection, Lancet 2004; 363: pg 422-28*)

C. The IRT recommendations for removal of the entire intestine were a part of overall recommendations on the need for short term aggressive action, not long term determinations on removal of SRM.

The IRT recommendations were based upon the assumption that the US is a higher than minimal risk area, thus requiring aggressive surveillance and actions until such time as the US can be considered a minimal risk country or region. The US is a member of the OIE. The OIE recommends the removal of the intestine from moderate or high risk countries or regions, but does not require removal of any part of the intestine from provisionally free or minimal risk

countries or zones. We believe that given the necessary information on the removal process for the distal ileum that this rule may be changed in the future to require only the removal of the distal ileum from moderate risk countries, instead of the entire intestine. However that is resolved -- in this instance, once the US can demonstrate that it is a provisionally free or minimal risk country, then no part of the intestine should be considered SRM. The US is now undertaking the testing and surveillance necessary to demonstrate its minimal risk classification, and the early results have shown no further evidence of any BSE in cattle in the US, while the only case detected thus far was in an imported animal. Even should a few positive cases be found, the US will likely be within the parameters of the minimal risk or provisionally free category under OIE criteria.

D. We recommend that any rule affecting the use and importation of beef casings clearly not apply to beef casings from regions which have reported no cases of BSE and/or which have clearly met the OIE criteria for the classification of BSE free, provisionally free or minimal risk countries or zones under OIE guidelines.

The FDA notice of advanced rulemaking and the FSIS interim final rule classifies the distal ileum portion of the small intestine of all cattle as SRM and requires the removal of the entire small intestine from cattle of all ages without regard to the BSE risk classification of the region of origin. To be in compliance with international standards adopted by the OIE, the interim final rule should be amended to remove restrictions on beef casings imported from regions which have had no reported cases of BSE and/or meet the OIE guidelines for countries or zones properly classified as free, provisionally free or minimal risk for BSE.

Chapter 2.3.13 of the Terrestrial Animal Health Code of 2003 published by the OIE recommends distinguishing between beef SRM (including intestines) required to be removed for trading purposes on the basis of the BSE risk classification of the region of origin. The OIE defines five risk categories (listed in decreasing order of risk): high risk, moderate risk, minimal risk, BSE provisionally free and BSE free. In Article 2.3.13.19, the OIE recommends banning the use of the entire intestine from cattle originating from high risk regions, banning the use of the distal ileum portion of the small intestine from cattle originating from moderate risk regions, and not restricting the use of any portion of the intestine from cattle originating from minimal risk, BSE provisionally free and BSE free regions. However, for trading purposes we understand that the BSE *Code* chapter for 2004 on BSE now recommends the removal of the entire intestine from cattle from countries with a high and moderate risk from BSE. The US has to date had zero cases of BSE in native born animals, has adopted the OIE *Code* recommendations and by no stretch of the imagination can it be claimed definitely to be in a higher risk category than minimal risk. Notwithstanding the actual categorization of the US and Canada in respect of BSE, the US and Canadian natural casings industry remove the whole of the ileum from cattle before processing the rest of the intestine into casings (see below).

If the proposed rule is applied it will have the negative effect of increasing the quantity of SRM to destroy (as recommended by the International Committee) while not contributing to the improved protection of public health. Furthermore if within a year or so the active surveillance results show that the US is truly a minimal BSE risk country, then the gap in collection and processing of US beef intestines to make natural casings will predictably cause irreparable damage to the North American natural casings industry from which it may not recover. Major exporting countries that have met appropriate OIE criteria should not be required to remove SRM. To require the same treatment for these countries as is required for countries that have a

recorded case or cases of BSE is not appropriate under international trade rules. An exemption for these countries or zones would coincide with the import regulations adopted by other trading countries, including the Government of Canada, with which the US rules are intended to conform.

The casing industry does not consider the distal ileum to be usable as a casing, and to our knowledge, no portion of the distal ileum, or in fact the entire ileum is saved for use as a casing.. The industry already has adopted the practice of removing and disposing of the distal ileum from all cattle at the time of slaughter. A decision to impose a uniform rule requiring the removal of the distal ileum from all cattle, regardless of the BSE risk classification of the region of origin, could easily be complied with by countries which have sent this product to the US. In particular, major exporters of beef casings to the United States, such as Brazil, Argentina, Paraguay and Uruguay, already have been able to certify the removal of the distal ileum upon request, and Australia has a regulation that requires the removal of the distal ileum from countries with a low incidence of BSE.

We respectfully request that FDA consider this science based information when making its final rules. Please contact us if we can provide further information or assistance in connection with issues involving the safety of natural casings.

Sincerely,

Shirley A. Coffield
Executive Secretary and Legal Counsel,
North American Natural Casing Association

FIGURE 1

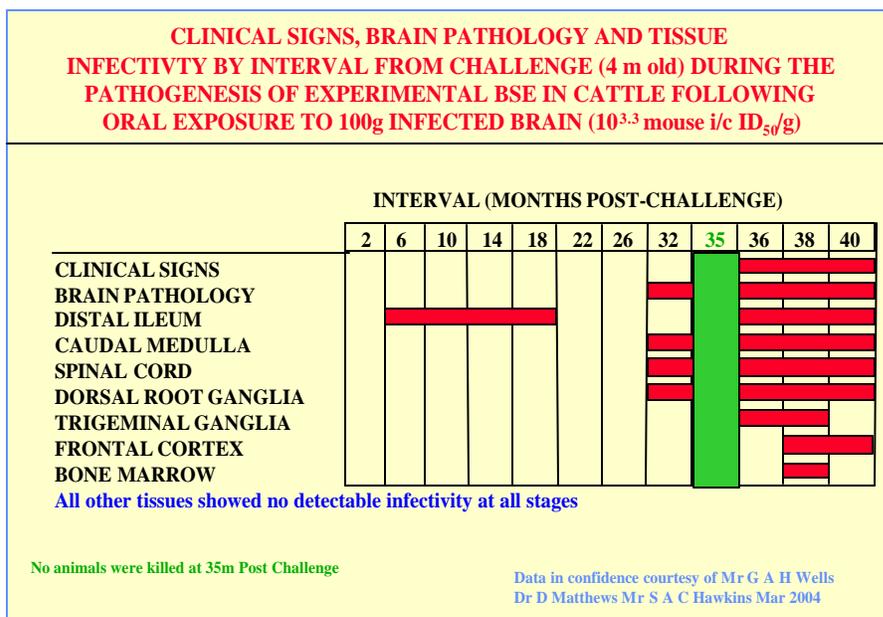


TABLE 1
Differences in the tissue distribution of infectivity/PrPSc in sheep with scrapie and cattle with BSE during incubation and the clinical phase of disease.

INFECTIVITY IN INTESTINES IN CATTLE, SHEEP AND GOATS WITH TSE

	Cattle	Sheep	Goats
TRIPE (Natural)	NEG	ND	ND
TRIPE & INTESTINE (PrP)	ND	POS	ND
INTESTINE prox (Natural)	NEG	ND	ND
ILEUM dist (Natural)	NEG	POS 8m+	POS
COLON prox (Natural)	NEG	POS 8m+	POS
COLON dist (Natural)	NEG	NEG	NEG
RECTUM (Natural)	NEG	ND	ND
TRIPE (Exptl)	NEG	ND	ND
DUODENUM (Exptl)	NEG	ND	ND
DISTAL ILEUM (Exptl)	POS + 6m	ND	ND
SPIRAL COLON (Exptl)	NEG	ND	ND

TABLE 2

Differences in the distribution of infectivity in intestines of sheep and goats with scrapie and cattle with BSE

Infectivity /PrP^{sc} Differences BETWEEN SCRAPIE AND BSE

	Sheep*	Cattle**
Pre-clinical		
Brain/CNS (3-6 m)	Negative	Negative
Spleen	Positive	Negative
Lymph nodes/nerve	Positive	Negative
Tonsil	Positive	Positive
Distal ileum	Positive	Positive
Other intestine	Positive	Negative
Clinical as above +		
Brain/CNS/NM	Positive	Positive

*** With natural scrapie or experimental BSE ** With BSE**

REFERENCES

WELLS. G.A.H., 2001. Pathogenesis of BSE in bovines. Abstract of a paper given at the Joint WHO/FAO/OIE Technical Consultation on BSE: public health, animal health and trade. 11-14 June 2001, Paris. OIE, Paris. P. 3-6.

WELLS. G.A.H., 2003. Pathogenesis of BSE. *Veterinary Research Communications*, 27 Suppl. 1, 25-28.

WELLS. G.A.H., DAWSON, M., HAWKINS, A.C., AUSTIN, R., GREEN, R.B., DEXTER, I., HORIGAN, M.W. & SIMMONS, M.M., 1996. Preliminary observations on the pathogenesis of experimental bovine spongiform encephalopathy. In: *Bovine*

spongiform encephalopathy. The BSE dilemma. C.J. Gibbs, Jr. Ed. Springer Verlag, New York. Pp 28-44.

WELLS, G.A.H., DAWSON, M., HAWKINS, S.A.C., GREEN, R.B., DEXTER, I., FRANCIS, M.E., SIMMONS, M.M., AUSTIN, A.R. & HORIGAN, M.W., 1994. Infectivity in the ileum of cattle challenged orally with bovine spongiform encephalopathy. *Veterinary Record*, 135, 40-41.

WELLS, G.A.H., HAWKINS, S.A.C., GREEN, R.B., AUSTIN, A.R., DEXTER, I., SPENCER, Y.I., CHAPLIN, M.J., STACK, M.J. & DAWSON, M., 1998. Preliminary observations on the pathogenesis of experimental bovine spongiform encephalopathy (BSE): an update. *Veterinary Record*, 142, 103-106.

FRASER, H., FOSTER, JD: Transmission to mice, sheep and goats and bioassay of bovine tissues: in **BRADLEY R., MARCHANT B.** (eds): *Transmissible Spongiform Encephalopathies. Proceedings of a Consultation with the Scientific Veterinary Committee of the EC*, Sept. 14-15, 1993. (VI/4131/94-EN Brussels, EC, 1994, pp. 145-159).

HADLOW W.J., KENNEDY R.C., & RACE R.E., 1982. Natural infection of Suffolk sheep with scrapie virus, *Journal of Infectious Diseases*, 146, 657-664.

HADLOW W.J., KENNEDY R.C., RACE R.E. & EKLUND C.M., 1980, Virological and neurohistological findings in dairy goats affected with natural scrapie, *Veterinary Pathology*, 17, 187-199.

HADLOW W.J., RACE R.E., KENNEDY R.C. & EKLUND CM., 1979. Natural infection of the sheep with scrapie virus. In: **PRUSINER S.B. & HADLOW, W.J.,** (eds), *Slow Transmissible disease of the nervous system*. Vol. 2 Academic Press, New York. Pp. 3-12.

MAFF 2000. BSE in Great Britain: A Progress Report, June 2000, MAFF, London.

TERRY, L.A., MARCH, S., RYDER, S.J., HAWKINS, S.A.C., WELLS, G.A.H., SPENCER, Y.I., 2003. Detection of disease-specific PrP in the distal ileum of cattle exposed orally to the agent of BSE. *Veterinary Record*, 152, 387-392

WHO 2003. Consultation on TSE in relation to Biological and Pharmaceutical Products 3-5 February 2003. <http://www.who.int/biologicals/Meeting-Reports/Doc.whotse2003.pdf>