

Mad Cow Epidemic in the Making

By Michael Gregor, M.D.

The USDA decision to finally remove downer cattle from the human food supply is a welcome departure from its past Pollyanna public relations, but it can only be effective in conjunction with a dramatic increase in surveillance testing. In Europe, where they test 1 out of every 4 cows, and Japan, where they test 100% of all cattle bound for human consumption, they have found a number of cases of mad cow disease in animals who appeared perfectly healthy.

In fact even the recently discovered Mad Cow didn't appear sick. Luckily it seems she had a birthing injury which left her unable to stand, which in turn flagged her in particular to be one of the small percentage of downer cows tested. Had she been able to walk, she presumably may not have been tested at all. How many other cows invisibly infected with the disease are ending up on our dinner plates undetected? And in the United States, we may be at particularly high risk for just such occurrences.

The European Commission's risk assessment of the U.S. points out, for example, the "young age at slaughter makes it unlikely that fully developed clinical cases would occur (and could be detected" [1] Less than half of American dairy cows make it past their fourth birthday, before being retired into hamburger meat.[2] In fact the majority of U.S. cattle are slaughtered before they reach age two.[3] While this may mean that the prion load in an infected animal may be less at slaughter (since prions accumulate with age), it also means mad cow disease may be harder to detect in the United States.[4] Younger cattle could be infected and infectious, but be slaughtered for human consumption before they started showing symptoms.[5] In fact the latest case of Mad Cow disease in Japan was in an animal only 23 months old. Although the rapid tests used in Japan and Europe were able to detect the deadly prions in so young a case, it seems that the test used in the U.S. which takes days instead of hours, failed to pick it up.[6] The chief reason why our present Mad Cow surveillance program has not more confirmed cases in the U.S. could very well be because our surveillance program is inadequate.[7] In other words, the reason other Mad Cows haven't been found in the U.S. may be because we Americans have eaten all the evidence.

The USDA misleadingly boasts they are surpassing international testing standards, when in actuality we have fallen way behind. The United States and Europe have similar cattle populations,[8] for example, yet Europe tests almost a million cattle every month.[9] France, which has only a fraction of the U.S. cattle population, tests more cattle in a single week than the U.S. has tested in a decade.[10] According to Europe's latest annual report, Europe is testing cattle at a rate of almost two thousand times that of the United States.[11] Nobel Laureate Dr. Stanley Prusiner, the world's expert on prion disease, describes the number of tests done by USDA as "appalling." When asked what level of

testing in the U.S. he'd be comfortable with, Prusiner replied, "I'd like to see every cow tested, just as they do in Japan." [12]

Universal testing of every cow slaughtered for human consumption in the U.S. is the only way to ensure the safety of the American beef supply. The majority of Americans may have breathed a sigh of relief at the realization that they did not live in Guam or the 8 states mentioned in the Mad Cow meat recall. But the concern is not so much where meat from that one infected cow went; the concern is what about the meat from all of her herd-mates who presumably ate the same infected feed years ago? Since we're only now implementing a cattle tracking system, the only way to renew confidence in the safety of American beef overseas and here at home is to dramatically increase surveillance.

The second glaring omission in the December 30 announcement was the failure to address the feeding of slaughterhouse waste, blood and manure to livestock. Excluding cattle brains, eyes, spinal cord and guts from the human food supply is certainly a step in the right direction, but the World Health Organization recommends that these tissues not enter any food chain, human or animal. Unfortunately, the U.S. still feeds those potentially risky tissues to pigs, pets and poultry. The major concern in feeding rendered cattle remains to other animals is that the cattle remains may directly, or indirectly, find their way back into cattle feed, which could potentially spark a British style outbreak of mad cow disease.

In the United States, slaughterhouse waste from cattle is rendered, or melted down, into "meat and bone meal" which is used in animal feed, to help "animals grow bigger and faster." [13] Over 18 million pounds of meat and bone meal are produced every day in the United States. [14] Up until May 2003, the U.S. imported an extra 100,000 lbs. from Canada every day as well. [15] Almost all fattening beef cattle, all dairy calves and all adult dairy cows raised conventionally are fed meat and bone meal in the United States. [16] In fact, conventional dairy cows eat about a pound of meat and bone every day in North America. [17] Since the partial 1997 FDA feed ban, however, this meat and bone meal is not supposed to come from ruminants-other cattle, sheep or deer.

Attention concerning the enforcement of the feed ban regulations have focused on the industry, but as pointed out by Dr. Michael Hansen from the Consumers Union, "All they said is that you've got to label it, Do not feed to cattle and other ruminants.?" [18] Farmers can walk in a feed store and still buy it. Nobody asks, Are you feeding it to cattle or pigs??" [19]

Even in Britain, the country most affected by mad cow disease, inspections showed that it was impossible to enforce the feed ban. If ruminant bone meal was available, and it was cheap, British farmers continued to illegally feed it to their cattle. The U.K. even had to ban the use of mammalian meat and bone meal as agricultural fertilizer to keep it out of the stores. [20] If it's on the shelves and cheaper, the fear is that cattle farmers may use it to cut corners.

Even with 100% compliance with the feed regulations, however, cattle remains are still

legally fed to pigs, for example. Despite an assertion to the contrary in the USDA's press briefing, in the laboratory, pigs have been found to be susceptible to Mad Cow disease infection.[21] The pig remains can then be fed back to cattle.[22] Or cattle remains can be fed to chickens, and then the poultry litter can be fed back to cows.[23] In these ways, prions may be indirectly cycled back into cattle feed.

Poultry litter is the mixture of excrement, spilled feed, dirt, feathers, etc. that gets scooped from the floors of poultry sheds every year.[24] Because poultry litter can be as much as eight times cheaper than alfalfa,[25] the cattle industry feeds an estimated one million tons of poultry litter to cattle every year.[26] Although excrement from other animals is fed to livestock in the U.S., chicken droppings are considered more nutritious for cows, compared to hog feces or cattle dung.[27] Under the 1997 feed regulations, the FDA specifically allowed the feeding of chicken litter to cattle to continue, even if the chickens had just been fed meat and bone meal made from cattle remains.[28] Not only would the passage of infected feed through the chicken's intestinal tract be unlikely to reduce prion infectivity, some of the feed inevitably spills on the floor and mixes into the poultry litter that's fed to cattle.[29] So in this way, the cannibalistic practice of feeding cows to cows continues legally in the U.S.

A more direct cannibalism circuit continues to exist in the U.S. because of the exemption of blood from the 1997 feed regulations. Like all mammals, cows can only produce milk after they've had a baby. And, most newborn calves in the United States are separated from their mothers within 12 hours - many immediately after birth - so that the mother's milk can be marketed for human consumption.[30] Though many dairy farmers still wean their calves on whole milk, the majority of dairy producers use milk replacement as a cheaper alternative to milk.[31] The protein source in milk replacement is most often milk protein (whey), but dairy farmers also suckle their calves with milk replacement made from cattle blood protein[32] which is often cheaper.[33]

The medical director for the US Public Health Service has reviewed the blood infectivity literature and found 15 published studies showing prion transmission through blood.[34] A sixteenth study, published in 2002, showed that blood taken even from an asymptomatic animal that was silently incubating BSE could still transmit the infection via a blood transfusion.[35] Reviewing the published science, the European Commission concluded, "There is little doubt that humans or animals could be exposed to the BSE agent by consuming blood products." [36] This is the reason the American Red Cross bars blood donations from people who have spent substantial time in Western Europe.

The European Commission specifically condemned the practice of "intraspecies recycling of ruminant blood and blood products"- the practice of feeding cow blood to calves.[37] Even excluding the fact that brain emboli may pass into the trough that collects the blood once an animal's throat is slit,[38] the report concludes, "As far as ruminant blood is concerned, it is considered that the best approach to protect public health at present is to assume that it could contain low levels of infectivity." [39] Yet calves in the U.S. to this day are still drinking up to 3 cups of "red blood cell protein" concentrate every day.[40]

To prevent the spread of Mad Cow disease in our herds, we need to put an end to our remaining cannibalistic feeding practices. To prevent the spread of Mad Cow disease to the meat-eating public, we need universal Mad Cow testing. On the cusp of a new year, American consumers deserves no less.

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