

# Beef up the science

By Andrew Nikiforuk

"Where's the science?" When U.S. inspectors check out the health of Canada's cattle herds this week, they'll likely hear the line that our BSE program is "science-based." It's the new federal mantra on mad cows.

But a growing number of people are asking if Canada's mad-cow policies are truly science based. They are beginning to realize, as Albert Einstein clearly did, that "the whole of science is nothing more than a refinement of everyday thinking." In other words, science is common sense writ large. Yet, any close examination of Canada's bovine spongiform encephalopathy programs reveals a worrying lack of refinement, thought or common sense.

Let's start with the institution responsible for our food supply: the Canadian Food Inspection Agency (CFIA). Incorporated in 1997, this agency reports to the Minister of Agriculture and is run by Richard Fadden, a former security and intelligence co-ordinator for the Privy Council, a body not known for its science.

Like the United States Department of Agriculture (USDA), CFIA has two incompatible mandates: promoting trade and contributing to food safety. Trade clearly dominates. Since 1997, the agency has downgraded its science capabilities by closing labs; it has hired lots of folks with MBAs and communication degrees; and it has adopted a paper audit system for food inspection.

England had the same conflicted system until its BSE crisis revealed a fatal weakness: When trade triumphs over public health, industry eventually loses billions of dollars. Europe and Japan also discovered the same drawbacks, thanks to BSE.

So CFIA may be called a trade-based, industry-based, efficiency-based, or even a public-relations-based agency. But no citizen who has reviewed its BSE performance would call it science based.

In fact, CFIA has regularly rejected good science. In July of 2000, a team of European BSE scientists examined 23 countries, including Canada, to assess mad-cow risk. After studying data on feed standards and cattle imports, these scientists concluded, "BSE-infectivity could have entered the Canadian system."

The scientists also reported that, "Overall the Canadian rendering industry is apparently not able to ensure a significant reduction of incoming BSE-infectivity." The Europeans gave the U.S. systems the same poor grade.

Both countries, however, ignored the science and replied with trade-based rhetoric: "BSE is a European-disease." Now what about this science-based "firewall" that has prevented cattle cannibalism since 1997, the one that is supposed to keep BSE out of the animals we eat? Even CFIA's records show that this was as porous as a volleyball net.

Between 1999 and 2001, federal audits of 65 feed mills found that 31 per cent didn't follow the rules. The following year, 35 per cent of 70 firms didn't obey the ban. Full compliance, in paper at least, wasn't achieved until the end of 2000, or three years after the ban. That's the same year the Auditor-General identified general "problems with compliance actions" at CFIA.

The half-hearted implementation of the ban can be explained by a 2000 Health Canada report on BSE risk that described the ruminant feed ban as "a voluntary ban that is monitored by CFIA." (The U.S. General Accounting Office found that its feed ban was just as "flawed.") The same risk report also noted that European feed bans were notoriously leaky. England, for example, has had more than 44,000 cases of BSE after its serious feed ban, for reasons that still confound scientists.

Nor have the feed leaks here been plugged. In December, a Vancouver Sun investigation based on internal CFIA documents, revealed that half of 70 vegetable feed samples tested by CFIA in 2004 contained "undeclared animal materials." DNA assay testing would have identified how much of the material was actually cattle protein, but CFIA didn't do that. And without assay testing, say veterinary toxicologists, Canada essentially has an unenforceable feed ban.

We eat what our animals eat. For the record, one milligram of infected material, the size of a grain of sand, can infect a cow with BSE.

Approximately 600 feed mills in Canada produce 13 million tonnes of feed every year.

But, hasn't our testing of cattle been scientific? Canada has what is known as a passive surveillance system. In other words, it picks out cows with central-nervous-system symptoms for the odd test -- less than 1,000 cows a year until 2003.

France had a similar system that underreported BSE by 80 per cent and allowed 50,000 severely infected animals to enter the food chain.

"Because of this underreporting, the French BSE epidemic in the late 1980s was completely undetected and only the second wave, after 1990, was observed" reported a study in the journal *Veterinary Science* last year. In other words, official statistics were not a true reflection of the epidemic.

Given France's data, Canada could be seriously underreporting BSE. But CFIA won't know this until it begins a responsible, active surveillance program.

The Canadian government's approach to BSE has been so trade-biased that last year it even fired three scientists from Health Canada for talking about the emerging science concerning BSE. Margaret Haydon, an Alberta-born veterinarian with more than 30 years of experience, was one of them. She describes the present system as "corrupt" and doesn't believe Canada's current level of testing (24,000 cows a year) is close to adequate. "The government says we have a low incidence of BSE. Yet where is the evidence that we have a low incidence?"

Ms. Haydon also offers a good explanation as to why Canada's low-level surveillance system is only finding cows in Alberta. For starters, Alberta is the only province where veterinarians have had experience looking at Chronic Wasting Disease in elk, another notorious BSE-like disease that punches the brain full of holes.

"They have seen the slides of brain tissue and that's why it's not concealed," says Ms. Haydon.

Is the U.S. system any more science-based? No. An internal audit of the USDA's mad-cow surveillance program by the agency's inspector last fall found a failure to test the riskiest animals, confusion among inspectors and slaughterhouses and a failure to follow regulations.

Yet, as Ms. Haydon notes, "The Americans are telling us what to do and we are at their mercy." And they will do anything to protect their \$70-billion industry.

The refinement of everyday thinking now strongly suggests that Canada has a significant BSE problem. Common sense indicates that any effective solution must involve active testing of animals aged 24 months or older; a real feed ban and an independent organization dedicated to food safety.

Until then, our trade-based approach to BSE will remain hopelessly unscientific, grossly ineffective and anything but "science-based." Andrew Nikiforuk is a Calgary journalist and author of *The Fourth Horseman: A Short History of Plagues, Scourges and Emerging Viruses*.

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# Ignoring mad cow at our peril

By Andrew Nikiforuk

Any beef eater wondering why the Canadian Food and Inspection Agency (CFIA) is struggling with its fourth mad cow and a \$5-billion economic disaster need look no farther than a lengthy risk assessment prepared for Health Canada five years ago.

The 2,000-page report carefully examined the science on mad cows and concluded that "BSE is silently incubating" in our beef herds for a host of reasons. The report, which never saw the light of day, also explains why our food agency has spent the last two years denying, minimizing and fudging the facts about mad cow disease and why mad cows and other mad health risks could remain with us for decades.

For starters, the report noted that the BSE risk was never "negligible," as the government then pretended. One of the primary risks came from imported cattle from the United Kingdom, where mad cow disease originated, between 1982 and 1990. The report concluded that many of these animals were probably infected with BSE and that as many as 45 possibly "entered the human and animal feed chain."

Canada also opened other doors to BSE by importing cattle blood, cattle tallow (fat) and veterinary products. And we bought 100,000 kilograms of animal feed from France in 1999, a country that went on to sprout one of Europe's worst BSE epidemics.

The report examined the so-called "fire wall" feed ban and found lots of fires but no walls. It noted that BSE can be transmitted by cattle eating cattle bits in animal feed, but described the ban as purely a voluntary one or as it put it, "largely an honour system monitored by CFIA." The monitoring consisted of looking at company documents.

The ban was also highly selective and permissive. It still allowed cattle blood (a high-risk source banned in the United States last year), to be fed to calves. It still allowed chicken and pork bits to be fed to cows and allowed cattle parts, in turn, to be cooked up and fed back to chickens and pigs.

The report noted that the country had about 10,000 on farm feed manufacturers -- farmers or feedlot owners who mixed and prepared their own feed. None were registered and none were inspected.

It also found other troubling practices. Renderers, for example, were allowed to use diseased animals with TB, road kill, supermarket waste and even household pets or "companion animals" for cattle feed.

Many pages in the study are devoted to the "leaky" nature of feed bans because cross-contamination is a fact of life in factory feed mills. Studies of Swedish, British and Italian feeds all found traces of cattle meat and bone meal in feeds long after feed bans took effect, as have Canadian studies.

In sum, the courageous risk assessment concluded that BSE was here and that its companion human disease, variant CJD, was incubating in the human population. The possibility of a BSE risk "exists in Canada must be acknowledged," pleaded the report's two authors, Joan Orr and Mary Ellen Starodub.

The agency, however, buried the assessment and promoted the fiction that BSE did not exist in Canada. But "one stinking cow" after another has rudely exposed the agency's irresponsible economic gamble.

William Leiss, one of the nation's pre-eminent risk analysts and a professor at the University of Ottawa, now argues that CFIA has put the industry into indefinite jeopardy by refusing to plug all the holes identified by the 2000 report. Leiss calls the permissive feed ban "a pile of crap" and wonders why cattle blood hasn't been banned. (Even one CFIA bureaucrat admitted last month that current rules "provide opportunities for prohibited proteins to be accidentally included in or cross-contaminate feeds.")

Leiss also can't understand why chicken and pig protein is still being recycled through cattle, a risky practice outlawed in Europe. He suspects that the food agency's BSE minimizers are now in big trouble because "they don't have a clue about where the latest infection came from. They are just spinning tales."

But the latest Alberta case also raises something of a mystery. The 2000 report clearly identified the nation's dairy herds as the most at risk for BSE. That's because Canadian dairy cows have always been fed more animal protein and bone meal than beef cows ( up to 400 grams per day). For this reason, nearly two-thirds of all mad cows in the U.K. have come from dairy herds. Most of Canada's dairy herd is located in Ontario and Quebec. Yet, to date, BSE hasn't showed up in the most exposed and under-tested population of at-risk cows. Why?

Leiss thinks that we have had lots of BSE cases but "CFIA hasn't found them" due to a low-level permissive surveillance system that only tested 8,000 animals last year.

But the predominance of Alberta cases might also indicate another problem, other than contaminated feed. Cattle protein in animal feed as well as insecticides were originally identified as the two biggest risk factors for the BSE outbreak in England. Could there be other environmental factors at work in Alberta, such as airborne pollutants that can fold good proteins in the brain into bad hole-making prions?

One thing remains certain. Until beef eaters and politicians demand a proper accounting of CFIA's risky behaviours in the last four years, there will be more mad cows and more mad economics.

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