The Science and Economics of Specified Risk Materials

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Canada's Enhanced Feed Ban

To limit the spread of BSE in the cattle herd, the Government of Canada banned most proteins, including Specified Risk Material (SRM), from cattle feed in 1997. To provide further protection SRMs were also banned from all animal feeds, pet foods and fertilizers in July 2007. This enhancement of the 1997 feed ban has been supported by the Canadian beef industry, recognizing its contribution to animal health. The on-schedule implementation of the Enhanced Feed Ban (EFB) is a significant achievement by the Canadian Food Inspection Agency (CFIA) and the supply chain.

The Economic Impact of the Enhanced Feed Ban

While cost is not the only consideration relative to measures designed to protect the health of animals any economic impact can have significant implications for the sustainability of the Canadian industry. Costs of the EFB have been incurred from gate-to-plate and associated requirements such as those for disposal of dead stock have posed significant challenges in some provinces due to shortage of approved landfills. The processing sector has been particularly impacted and according to a survey performed by the Canadian Meat Council in 2007 the average cost of the EFB per UTM animal was 5.49$/head and 12.41$/head for OTM. This cost is approximately 3.5 times higher than the original Government of Canada estimates for UTM and 1.7 times higher for OTM respectively. Costs for smaller provincially inspected processors are significantly higher and also more than anticipated. The result is additional pressure on a sector which is already struggling to remain cost competitive while experiencing reduced capacity utilization, higher exchange rates and shortages of labour.

Science and Specified Risk Materials

A significant reason for the initial costs being higher than forecasted is related to what has been called "incremental measures". These are interventions which address the potential of small amounts of SRM residues remaining following the removal of designated tissues. Compounding the issue has been the occurrence of "incidental animals" which are the approximately 1 in 100 animals identified as OTM using dentition during slaughter of fed cattle. In reality use of teeth to age animals is inexact and therefore criteria are applied which tend to overestimate age. As a result many incidental animals are actually younger than 30 months and most that are over 30 months are between 30-36 months of age. However, if even 1 in 100 cattle during the slaughter of youthful animals is classified as OTM then processors must treat all cattle as OTM as a precautionary measure until their teeth can be examined later in the slaughter process. The only potential exception would be cattle that are age verified and their UTM/OTM status is obtained from the national database before slaughter.

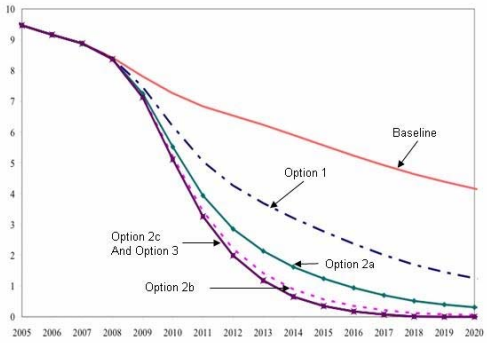
To illustrate, in the absence of incidental animals only floor waste around the area where distal ileum is removed would be a potential concern during the slaughter of young animals. However, because of incidentals, waste from nearly the entire kill floor is being disposed as SRM because of the potential for SRM's from incidental OTM animals to fall on the floor. A similar scenario occurs with measures to reduce the potential of contamination from brain tissue. Brain from UTM animals is not an issue but because of the possibility of an incidental OTM animal all cattle must treated as OTM. This requires that tampons, edible grease and other materials be applied to the skull of every animal to prevent potential leakage of small amounts of brain material through the hole left be a stunning device.

The Canadian Cattlemen's Association has worked with Dr. Joshua Cohen (the co-creator of the Harvard BSE Risk Model) to determine the benefit to animal health of these type of incremental measures. This research indicates that these interventions typically contribute very little and could be removed without significantly changing the time required to eradicate BSE. For example classifying all floor waste from incidental OTM animals as SRM's during the fed slaughter may prevent less than one additional BSE case in more than 200 years. This finding is consistent with CFIA's own analysis and efforts are being made to reduce the burden of these measures. A

significant issue is that the current regulation prescribes 100% removal of SRM residues and this leaves little room to consider alternate approaches which could achieve very similar outcomes for animal health at lower cost.

Beyond addressing incremental measures the Canadian Food Inspection Agency has indicated their willingness to reexamine the need to remove the so called "full list" of SRM's by July 2012. As the graph shown below indicates, the removal of the "short list" consisting of the brain and spinal cord of OTM animals would achieve eradication of BSE in a very similar time period as the current approach. (Note: Time to eradication for removal of the full SRM list and fallen stock is shown in the line labeled 2c and removal of the short list and fallen stock is option 2b.

Figure 1: Relative impact of control options for BSE (CFIA, BSE Regulatory Options: Enhanced Feed Ban Options – Risk Reduction Model and Analysis, Nov. 18, 2004)



Baseline: feed ban introduced in August 1998
Option 1: enhanced feed ban – dedication, increased inspection, etc.
Option 2a: exclude fallen stock (dead & downers) from the animal feed chain
Option 2b: exclude fallen stock, brains & spinal cords from the animal feed chain
Option 2c: exclude all SRI, including fallen stock from the animal feed chain
Option 3: exclude all ruminant MBM from the animal feed chain

However, where at present figures from the CMC survey indicate that 7.5kg and 55.9kg of materials are removed from UTM and OTM cattle respectively, the use of the short list could reduce this weight to approximately 700g for OTM. This would reduce the amount of material going to landfill by approximately 99% from the current estimate of 58,000 metric tonnes/year with the full SRM list. The cost of the EFB would be also dramatically reduced while achieving essentially the same level of protection against BSE.

Considerations for the Future

Beyond the need for measures to reduce the amount of material going to landfill there is also a significant need to consider how the industry can create revenues to offset costs of the EFB. One potential route is to increase exports of SRM removed MBM and indeed there are opportunities in the global market place for this type of protein. There is also growing optimism around the potential to add value to SRM materials by producing useful byproducts such as fuel and fertilizer. Ultimately both these routes will need to be pursued to the fullest extent possible if the Canadian industry is to remain competitive when other countries such as the USA do not face similar costs.