

PolicyPennings by Dr. Daryll E. Ray

Producers argue for sound science, some consumers prefer precautionary principle

US agricultural and trade negotiators have been pressuring the Japanese to reopen their market which has been closed to US beef since BSE (Bovine Spongiform Encephalopathy or mad cow disease) was first detected in the US herd at the end of 2003. The US is also in a trade dispute with the EU (European Union) over the EU's restrictions on the importation of GMO (genetically modified organism) crops. In both cases the US has argued that, on the basis of "sound science," both of these trade restrictions ought to be lifted.

On the face of it, it would seem that the US argument is very strong. After all how could and why would one argue against sound science?

For their part the Europeans and the Japanese defend their actions on the basis of the "precautionary principle." The precautionary principle is what our mothers were talking about when they told us that it is better to be safe than sorry.

As long-term readers of this column know, we have written about these issues before. Our analysis of these two trade disagreements has been based on two ideas. The first is couched in economic terms arguing that the "customer is always right." If the Japanese are willing to pay for the BSE testing of every head of beef, the idea that the customer is always right would suggest that we would agree to the testing. Likewise, if the Europeans want non-GMO grain, then US farmers ought to be working to provide them with non-GMO grain.

Our second idea has been to identify why customers might assess the risk of GMO grains differently than the producers. After all, growing GMO crops makes it easier for producers to control weeds and insects. While producers receive the benefits, customers take the risks if at a later time it were to be shown that GMO crops posed some health risk. It makes no difference how low the probability of that event is—the probability is nonzero and therefore important in minds of some customers.

This past summer we read a paper presented by Priya Om Verma and William R. Freudenberg at the 2005 Rural Sociological Society Annual Meeting that took a different look at the conflict between those advocating for the use of sound science and those advocating for the use of the precautionary principle in decision making. Verma and Freudenberg of the University of California, Santa Barbara argue that "the precautionary principle may be the more scientific of the two approaches."

The core of their analysis reduces the two arguments to their essentials. Those using the sound science as the justification for their policies - pressuring Europeans to buy GMOs or Japanese to purchase US beef - are arguing that something is safe unless it is proven to be hazardous. Thus, declaring something is safe runs the statistical risk that it is not.

Those supporting the precautionary principle are arguing that when there is a potential risk to life and safety, the prudent course of action is to err on the side

of caution, risking the chance that one may reject an action or product as unsafe when in fact it may be safe.

Hurricane Katrina and the flooding of New Orleans provide us with a chance to apply these concepts to a situation most of us are familiar with. Those officials who supported cutting back on levee repairs were arguing that the likelihood of a Category 3 hurricane that would cause a breach in the levees was very small and that the money would be better spent elsewhere. This is the sound science argument which takes the risk assuming the levees will hold when in fact they won't. Those who were arguing for the levee expenditures and protecting the wetlands surrounding New Orleans were basing their argument on the precautionary principle. As we have seen the sound science argument favors short-term economic gain over against the potential of catastrophic long-term costs. In this case we can see that an ounce of prevention would have been worth more than a pound of cure.

Applying this back to the case of GMO sales to the Europeans, the US is arguing in favor of immediate economic gains from increased trade over and against long-term health and/or safety problems that may arise if it were to turn out that GMOs pose a risk that does not show up for ten, twenty, or thirty years. Similarly, in the case of the sale of beef to the Japanese, the US is arguing that the extra cost of testing each head of beef sold to the Japanese is unnecessary, given the low chance that any one animal would have BSE. The Japanese are arguing that given the long-term risks - if one imports enough untested beef, sooner or later a BSE positive animal will slip through - the cost of testing is a small price to pay for increased long-term safety.

As Verma and Freudenberg note, statistics teaches us that these two risks are closely related. As one reduces the chance of making a short-term error - rejecting a product as unsafe when it is in fact safe - one increases the chance of making a long-term error. There is a tradeoff between these two types of errors. We cannot have our cake and eat it too.

Their argument that the "precautionary principle may be the more scientific of the two approaches is based on their contention that "the precautionary principle recognizes the reality of scientific unknowns and acknowledges . . . scientific uncertainty." They go on to say, "Under conditions of scientific uncertainty, judging what is an acceptable level of risk for society is an inherently political responsibility . . . These are value-laden processes that reflect differing perspectives regarding what ought to be 'society's' preferences for short-term economic risks versus longer-term risks to health and the environment."

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