

SECTION ONE

EXECUTIVE SUMMARY

The U.S. Food and Drug Administration (FDA) is considering regulatory options to reduce the risk of an outbreak of transmissible spongiform encephalopathies (TSE) in the United States. Many TSEs are believed to be transmissible through feed. Examples of TSEs in animals include bovine spongiform encephalopathy (BSE) in cattle, scrapie in sheep and goats, chronic wasting disease in mule deer and elk, and transmissible mink encephalopathy in mink. FDA is considering the following five regulatory options:

- # A prohibition on the use of mammalian protein in ruminant feed. (For convenience in the discussion this is referred to as the mammalian prohibition.)
- # A prohibition on the use of ruminant protein in ruminant feed (the ruminant prohibition).
- # A prohibition on the use of designated tissues in ruminant feed. Under this prohibition, ruminant feed would not be recognized as safe if it included designated bovine tissues, including the brain, eyes, spinal cord, and distal ileum; any material from ovine, caprine, cervine, and mink; or any dead, dying, disabled, or diseased bovine (the partial ruminant prohibition).
- # A prohibition on the use of protein from sheep, lamb, goat, deer, elk, or mink in ruminant feed. Thus, under this option, use of cattle protein is not restricted (the sheep/mink prohibition).
- # A prohibition on the use of protein from sheep, lamb, and goats in ruminant feed (the sheep and goat prohibition).

The following industry sectors may be affected by the FDA regulatory actions:

- # Ruminant producers: Over 1.4 million enterprises are estimated to be engaged in ruminant production. This includes businesses engaged in the production of beef and dairy cattle, sheep and lamb, goats, and other ruminants. The affected cattle operations include farmers and ranchers, stocker operators, and cattle feeders.
- # Other livestock producers: The mammalian prohibition will restrict marketing of nonruminant mammal protein, thereby affecting additional livestock producers, most notably hog producers.
- # Slaughtering and rendering industries: An estimated 4,011 establishments are engaged in slaughtering activities. This total includes large integrated packer/renderers, nonintegrated packers, and numerous small slaughterers (commonly referred to as "locker" plants). There are also 282 independent renderers.

- # Feedmills: An estimated 30,000 facilities are engaged in feed production for farm or ranch animals. Of these, an estimated 5,000 are major commercial feedmills and the remainder are small retail feed dealers or other local feedmills.

Restrictions on marketing animal protein in the form of meat and bonemeal (MBM) will reduce the price of this product. The amount of the decline depends greatly on public reaction to the FDA rulemaking, a reaction that is largely unpredictable. To capture the possible range of public reaction and the related market shifts, low and high market impact scenarios were estimated in which the price of the restricted MBM falls by \$25 per ton or \$100 per ton. (This price decline is considered only for the first three regulatory options. Under the sheep/mink and sheep and goat prohibitions, the quantity of prohibited MBM is so small that impacts on the price of MBM will be negligible.) At the \$25 per ton price decline, the loss in commercial value of the restricted MBM product is an estimated \$76.4 million per year under the mammalian prohibition, \$63.2 million per year under the ruminant prohibition, and \$28.8 million per year under the partial ruminant prohibition. At the \$100 per ton price decline, the loss in commercial value is an estimated \$305.6 million per year under the mammalian prohibition, \$252.8 million per year under the ruminant prohibition, and \$115.4 million per year under the partial ruminant prohibition. Under the sheep/mink and sheep and goat prohibitions, the revenues losses are much smaller, and are estimated at \$4.2 million per year and \$0.1 million per year.

The regulatory options and the resulting market impacts will require slaughterers and renderers to decide whether to separate either mammalian or ruminant tissues for separate processing. Under the mammalian and ruminant prohibitions, it was forecast that no slaughtering or rendering establishments will choose to separate offal or otherwise change their processing operations. Under the partial ruminant prohibition, however, cattle packer/renderers and large cattle packers will separate ruminant tissues in order to preserve the market value of their nonrestricted animal protein. This change in processing will require capital investments and increase operating and transportation expenses. Depending on market circumstances and the regulatory option selected, an estimated 5 to 20 percent of major commercial feedmills will also make capital investments in expanded facilities to allow storage and use of additional feed ingredients to replace the mixed species MBM now used in ruminant feed.

Under the sheep/mink and sheep and goat prohibitions, the restricted materials will be excluded from rendering processes that manufacture mixed species MBM. Most of this restricted material, however, is already excluded from MBM used in ruminant feed and, therefore, the incremental economic impacts from these regulatory options are quite small.

The total annualized compliance costs under the various regulatory options and market scenarios are as follows:

- # Under the mammalian prohibition, total compliance costs are estimated at \$31.6 million per year under either the low or high market impact scenarios.
- # Under the ruminant prohibition, total compliance costs vary from \$10.2 million per year in the low market impact scenario to \$27.6 million per year in the high market impact scenario. The difference is due to the forecast that only in the high market impact scenario will feedmills expand capacity.
- # Under the partial ruminant prohibition, total compliance costs are \$23.5 million per year in the low market impact scenario and \$27.9 million per year in the high market impact scenario.
- # Under the sheep/mink prohibition, total compliance costs, which consist almost entirely of disposal charges, are estimated at \$5.1 million per year under either market scenario. Nearly all sheep, lamb, and goat offal is already excluded from MBM used in ruminant feed.
- # Under the sheep and goat prohibition, total compliance costs are estimated at \$0.2 million per year under either scenario.

Renderers will pass much of the economic burden of new regulations and reduced revenues upstream to slaughterers, who will in turn pass them on to animal producers. Regulatory impacts also will be reflected in a decline in the demand price for slaughter-weight cattle and, under the mammalian prohibition, hogs. In the long run, a modest reduction in the size of the affected animal herds is forecast.

The small renderers that rely most heavily on ranchers and farmers dead stock for raw materials will attempt to increase charges to these groups. To avoid these charges, ranchers and farmers will dispose of more dead animals on their own land, thereby reducing the amount of dead stock going to rendering. Because of the reduction in their raw material supply, some small renderers will be vulnerable to failure.