June 2005 BSE Test Step by Step

Background:

Since the U.S. Department of Agriculture's (USDA) enhanced surveillance program for bovine spongiform encephalopathy (BSE) began in June 2004, more than 375,000 animals from the targeted cattle population have been tested for BSE using a rapid test. Three of these animals tested inconclusive and were subsequently subjected to immunohistochemistry, or IHC, testing, in accordance with USDA protocol, which was developed to be consistent with international guidelines. The IHC is an internationally recognized confirmatory test for BSE. All three inconclusive samples tested negative using IHC.

June 5-10:

During the week of June 5-11, 2005, USDA's Office of the Inspector General (OIG), which has been partnering with the Animal and Plant Health Inspection Service (APHIS), the Food Safety and Inspection Service, and the Agricultural Research Service (ARS) by impartially reviewing BSE-related activities, recommended that all three of these samples be subjected to a second internationally recognized confirmatory test, the OIE-recognized SAF immunoblot test, often referred to as the Western blot test. OIG recommended the additional testing because, originally, one of the samples had had a positive reaction to the rapid test, but it had a negative reaction to the IHC test. Although the IHC test is internationally recognized as a confirmatory test for BSE, OIG officials believed further testing was warranted on the three inconclusive samples.

June 10:

On June 10, USDA received final results from the Western blot tests. Of the three samples, two were negative, but the third—the one that had previously had a strong reaction to the rapid test—came back positive on Western blot. Because of the conflicting results on the IHC and Western blot tests, a sample from the reactive animal will be sent to the OIE-recognized reference laboratory for BSE in Weybridge, England. USDA will also be conducting further testing. Results are expected within 2 weeks.

This animal was a non-ambulatory (downer) animal and as such was banned from the food supply. It was processed at a facility that handles only animals unsuitable for human consumption, and the carcass was incinerated. APHIS retained part of its brainstem at the National Veterinary Services Laboratory in Ames, Iowa, in case further testing or research was ever required.

Next Steps:

Since only a limited amount of testable material remains, APHIS and ARS officials in Ames are currently developing a protocol for continued testing and analysis of the sample, They will consult with officials at the international reference laboratory in Weybridge, England, to determine which additional tests to perform in the United States, as well as the order in which to do them. They will also ensure that as much of the sample is preserved as necessary for confirmatory testing to be run at the international reference laboratory in Weybridge, England. By performing additional testing, USDA hopes to learn the true nature of this unusual case and determine if it is an atypical case of BSE, some noninfectious abnormal condition, or classical BSE.

Summary:

The animal in question never entered the food or feed supply chain. Therefore, this additional testing, regardless of the eventual results, has no public or animal health implications. The results could, however, assist USDA in assessing current protocols and understanding the nature of the disease.