

Scientists counter brucellosis threat to livestock and wildlife

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Armed with dart guns and medical pellets, Agricultural Research Service (ARS) scientists are vaccinating bison in and around Yellowstone National Park against brucellosis.

Researchers from the ARS National [Animal Disease](#) Center (NADC) in Ames, Iowa, are using a vaccine known as RB51. By vaccinating the wild bison, scientists hope to prevent the disease from spreading to nearby livestock. Currently, no cattle herds in the U.S. are known to be infected, although some near Yellowstone have been sickened in the last decade.

Brucellosis, an incurable disease, can cause abortions in cattle, bison, elk, and feral swine. It can be transmitted to humans through contact with infected animals or consumption of unpasteurized dairy products. In humans, it's called undulant fever, and causes severe flu-like symptoms.

Wildlife reservoirs of brucellosis in the United States include bison and elk (which carry *Brucella abortus*) and feral swine (which carry *B. suis*). The animals often come in contact with cattle, especially in winter when bison, elk, domestic livestock and swine are all foraging for the same food. *B. suis* can be transferred to farm animals or people.

Steven Olsen, a veterinary medical officer at NADC, has led the team on the bison vaccination study. During the project, researchers monitored animals to determine the natural course of *B. abortus* in female bison and

their offspring. They found that in [bison](#), the disease mimics the characteristics seen in cattle.

Brucellosis has been nearly eradicated in the United States, mostly through cooperative federal and state programs dating back to the 1950s. But its continuing spread through wildlife in the Yellowstone area has rekindled concern among cattle producers. Currently, there is no eradication program for *B. suis*, according to Olsen.

Among the concerns of Olsen and his colleagues--microbiologists Fred Tatum and Betsy Bricker--is the difficulty in differentiating between *B. abortus* and *B. suis*. This presents difficulties for federal officials because a national brucellosis eradication program only targets *B. abortus*.

In addition to the vaccination program carried out by ARS and other agencies, the National Park Service is conducting an environmental impact study on a proposal to spend \$9 million for a new brucellosis eradication program in Yellowstone over the next 30 years.

More information: The results of this study have been published in the journal *Vaccine*.

Provided by United States Department of Agriculture

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