

Cattle Tuberculosis in New Mexico...some history & facts

First of a Five Part Series

Since the mid 1980's tuberculosis (TB) in cattle in the state of New Mexico has fluctuated from a matter of low level concern to one of a very high level of concern. The disclosure of two affected dairy herds in 2003 led to the forfeiture of the State's TB Free status by USDA. This had far reaching implications for the breeding stock export for sale and contract growing segment of the almost two billion dollar beef and dairy industries in New Mexico.

The applicable regulation, as a result of the reduction in the State's TB status, required all breeding age cattle to pass a clear TB test prior to being exported to other States. Clinical signs usually do not occur until an animal becomes chronic in months or years after contracting TB. At that time extreme loss of weight and condition with recurrent coughing that produces an excess amount of mucous nasal discharge may be seen.

Administration of a TB test is a two step process [animals have to be handled and restrained twice; once to apply the test and again to read the outcome]. The test for TB is a skin test and is 70 -75 % effective in detecting animals that have the disease. In animals that do not have TB the test approaches 98 % effective with 98 of 100 such animals correctly shown as TB free and two of 100 shown as suspect or as a "false positive". The test requirement proved to be a significant hindrance and expense for moving breeding age cattle in interstate trade. The estimated cost to the New Mexico livestock industry to meet the testing requirement was \$2.0 to \$2.5 million annually.

New Mexico was awarded the Accredited TB Free status in 2000 and remained at that level until the disclosure of the two affected dairies in the Clovis-Portales area in 2003. Two TB infected cull cows, one from each of the herds, discovered at the time of slaughter, were traced back and the required herd testing led to the confirmation of TB in other animals within each herd. It is noteworthy that the DNA analysis of the TB organisms, from the two herds, was conclusive in that the cases were, without doubt, unrelated. The epidemiological investigations indicated the "most probable source" to be purchased replacement heifers in one case and exposure to Mexican roping steers in the other case. Subsequently the entire State was reclassified by the USDA down to the Modified Accredited Advanced level of status.

There are 5 levels of TB status for cattle and bison depicted in table form below. The status levels are described and defined in two official USDA publications that provide the authority and the working directions and guidelines for the national program for the control and eradication of bovine TB. These are in the Code of Federal Regulations (CFR) and the Uniform Methods and Rules (UM&R) and were made effective in 2000.

<u>Status Level</u>	<u>Required to Advance to next higher level</u>	<u>States/zones ☺; in this level</u>	<u>Comments/info.</u>
Accredited-free States or zones	* & justify continuation at this status by annual reports and onsite reviews & evaluations	All in the U.S. except Texas and the zones in Michigan and New Mexico.	In mid 2005 the Clovis-Portales area was successfully "zoned" → New Mexico TB Free status
Modified accredited advanced States or zones	* & zero herd prevalence & no cases for 2 or 3 years after depopulation of last TB herd	Texas, Michigan, Minnesota and the New Mexico zone in the Clovis-Portales area	The New Mexico zone is not expected to regain TB Free status for 7-9 years**
Modified accredited States or zones	* & herd prevalence of less than 0.01% of cattle & bison in the State or zone	One zone in Michigan	The zone in Michigan is where TB is in wild Whitetail deer; sometimes → cattle
Accreditation preparatory States or zones	* & herd prevalence of less than 0.1% of cattle & bison in the State or zone	None in U.S.	The majority of States in Mexico are at this level
Nonaccredited States or zones	* & herd prevalence of less than 0.5% of cattle & bison in the State or zone	None in U.S.	There remain a few States in Mexico at this non-status level

*Must demonstrate authority and infrastructure to comply with the Uniform Methods & Rules for TB

**To regain TB Free status the zone must have zero herd prevalence as shown in column 2 row 3. It is expected that the TB herd in the zone will not depopulate; 4-6 years will be required to qualify the herd for release from quarantine by the test & slaughter option and 3 years must elapse with no additional findings for the zone to be eligible for reinstatement to the Accredited-free zone status by the USDA.

☉ Zone is a defined geographic land area [usually a relatively small part of a State] identifiable by geological, political, manmade, or surveyed boundaries with mechanisms of disease spread, epidemiological characteristics, and the ability to control the movement of animals across the boundaries of the zone taken into account.

In mid 2005, with the exception of a small zone [☉ defined above] or region in the Clovis-Portales area of eastern New Mexico, the State was reinstated to the Accredited Free status level for TB. The zone remained at the lesser Modified Accredited advanced level of status. This action is termed “zoning or regionalization” **and provides for a part of a State**, with a particular livestock disease situation, to be sequestered, classified and treated differently, from the rest of the State. This procedure has been successfully used in the El Paso milkshed of Texas, the lower peninsula of Michigan and now in eastern New Mexico.

Prior to the USDA authorizing this procedure, in the late 1990’s and early 2000, primarily to expedite and “level the playing field” for international trade purposes, State boundaries were sacred and binding on animal disease status levels. For an example, the TB problem in the El Paso/Las Cruces area of New Mexico in the 1990’s dictated that the entire State remain at the same lesser status for TB regardless of the geography and differences in industry characteristics.

In early 2005 one of the affected dairies in the zone did opt to depopulate or liquidate the herd, clean and disinfect the premises and re-enter the dairy business at another site outside the State. In July of 2005 the New Mexico Livestock Board, working closely with their USDA-Veterinary Services counterpart was successful in gaining approval by USDA of their zoning or regionalization request. To do so it was necessary to effectively respond to the defining elements for a zone and 11 other factors considered crucial for sound livestock disease control and eradication principles, when applied to an area with limits other than a State boundary.

Regionalization or zoning is generally a “good thing”, as it has relieved most, if not all, of the inconvenient and costly requirements to trade across State lines. Though only dairy animals and herds were involved in the 2003 TB episode the beef industry of the State was subject to the same restrictions. However, the dairy and beef herds within the zone, of which there are a total of 40 or less, have to test their animals annually and must obtain brand inspections and permits for any movements leaving the zone. The personnel for testing and inspections are at no expense. The producers do have the added expense and inconvenience of having to handle the animals for testing and scheduling the inspections for movements, not to mention other concerns such as the reputation factor of their livestock being at some level of increased risk for TB.

Educating cattle and dairy producers on high-risk management practices, realistic preventive measures and animal health biosecurity in general are important elements in insuring that history does not repeat itself. The risks that legal importations of Mexican origin stocker, feeder and roping animals present are on the agenda for public information and education efforts. Also, there are concerns that smuggled dairy calves are implicated as they may contaminate, along with dairy heifers of unknown origin and status from across the U.S., the replacement dairy heifer pipeline. Likewise the matter of protecting replacement animals from unsuspected exposures, either on or away from the dairy will be a priority for information and education activities. A recurrence of the TB events of the last three decades seems much less likely if the New Mexico dairy and beef industries and their ancillary service agencies and associations take a proactive approach and work together to avert the threat.

This is the first of a 5 part series of articles on bovine tuberculosis and its recurring impact on the New Mexico livestock industry. Subsequent pieces will focus on management practices that are likely to put a herd at increased risk of exposure to disease with suggestions and recommendations to minimize such risk. The series is authored by Dr. Terry Beals who received his DVM from Oklahoma State University and a Masters Degree in Preventive Veterinary Medicine from the University of California, Davis. He has extensive experience with bovine tuberculosis as both a field and staff veterinary epidemiologist for the USDA and as The State Veterinarian of Texas for 10 years from 1990 to 2000.