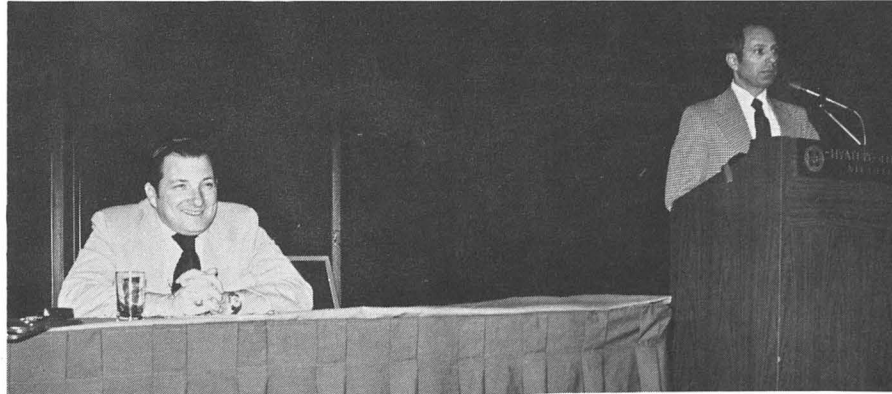


# General Session

Dr. Mort Silberman, Chairman



## An Outbreak of Bovine Tuberculosis in Georgia

**James F. Andrews, D.V.M.**  
*Georgia State Veterinarian  
Georgia Department of Agriculture  
Atlanta, Georgia 30534*

Bovine tuberculosis has been reduced to a very low level in United States cattle. However, scattered outbreaks continue to be reported. When suspect tuberculous lesions or other granulomas are found in cattle during routine slaughter inspection, the veterinary medical officer submits specimens for microscopic and mycobacterial examination. If a diagnosis of tuberculosis is confirmed, the tuberculin test is applied to all herds of origin of the tuberculous animal and to all herds that have received cattle from the tuberculous herd.

There are those among us who would probably say the tuberculin test is not a good test. I have found that when a reasonably accurate injection of .1 cc of tuberculin in the caudal fold is made intradermally and then observed 72 hours later by palpation and a visual observation of the injection site that it is a very accurate test. Granted, it would be much simpler if a test could be found that would require only one visit to the animal. But the intradermal caudal fold test is a very good test with two exceptions. It will oc-

asionally find an animal with advanced lesions to be anergic or non-reactive to the tuberculin. It will occasionally be positive on animals that have been sensitized by atypical acid-fast soil bacilli.

We do have a remedy for this small error in the caudal fold test in that, if anergic animals are suspected, a cervical test using .2 cc can be administered by a full-time regulatory veterinarian and this test, due to its sensitivity, will very often reveal animals that are grossly and severely lesioned. Because of its sensitivity the use of this test is limited to full-time regulatory personnel.

When false positives are revealed by the caudal fold test, a comparative cervical test may be used by injecting with .1 cc of balanced bovine protein purified derivative and by using a balanced avian protein purified derivative in the cervical region no less than five inches apart. This test is also limited to use by full-time regulatory personnel.

If a greater reaction is recorded from the avian site, the animal is considered sensitive to something other than *Mycobacterium bovis*.

Georgia's outbreak of tuberculosis began October 29, 1973, when a grossly lesioned animal was found at a slaughtering establishment and specimens submitted for diagnosis. Animal identification and traceback led to a purebred beef herd in Decatur County, Georgia. Epidemiology and tuberculin testing of 23,000 cattle in 350 herds revealed 11 *M. bovis*-infected beef herds and resulted in the complete depopulation of five herds. This outbreak occurred in purebred beef cattle and was confined to Georgia. It was eradicated by April, 1975.

An epidemiological traceback was initiated in the herd of origin of the one cow that was found to be tuberculous. All animals were negative by the caudal fold method. The herd was retested later using the .2 cc cervical method which revealed four reactors. There were no gross lesions found on the post-mortem in these four reactors. The animal originally condemned had been purchased through a purebred beef cattle sale and was traced back to a herd in Decatur County, Georgia, which was considered to be the primary infected herd. A tuberculin test of the primary herd revealed 28 reactors in 209 animals tested. Lesions typical of tuberculosis were found in all 28 reactor animals on post-mortem.

The primary herd was tested ten weeks later using the cervical test which revealed 90 reactors, and 38 of the 90 had gross lesions. This herd was depopulated as being grossly infected.

The primary herd had sold 403 breeding animals to 157 buyers, mostly in Georgia, from January, 1969, to May, 1974. Numerous animals had been purchased and introduced into this herd from several other purebred herds scattered across the United States. It became obvious that several hundred herds and thousands of cattle would have to be tuberculin tested. A task force was assembled and VMO's from neighboring states were detailed to Georgia to assist with the tracing and testing. The testing protocol used during this outbreak required the locating, quarantining, and cervical tuberculin testing of all animals originating from the *M. bovis*-infected herds. If these animals were found negative to the cervical test, the remainder of the herd was later tested using the caudal fold test.

If the purchased animals were found infected, the remainder of the herd was cervically tested and the herd placed under quarantine. Some of the animals from the primary infected herd during tracing revealed up to six transfers of ownership. This required the testing of all existing herds of which such animals had been a member. Sales into and purchases from other states were reported to those states for follow-up testing. As stated previously, this required the testing of 23,000 cattle in 350 herds in Georgia. A total of 551 reactors were revealed of which about 100 were found to be grossly lesioned on slaughter inspection.

Two animals were sold from the primary infected herd into another purebred herd in March of 1972 and were found to be *M. bovis*-infected in August, 1974. Complete herd testing of 264 animals in this herd

revealed 79 reactors of which 19 contained gross lesions.

Epidemiology revealed that 412 cattle were sold from this herd to 167 buyers between January, 1970, and August, 1974. Tracing and testing of sales from this herd located two more *M. bovis*-infected herds.

Emphasis was then placed on tracing purchases and sales from these two herds which we considered to be primary infected herds. It was not possible for us to determine the source of infection into the first primary herd. Several purchased animals had died on the farm and any one of these could have been the source. Three other herds with evidence of *M. bovis* spread were completely depopulated and, because of the restrictive regulations for the disposing of tuberculous cattle, it was difficult to find slaughtering establishments that would accept these animals. This caused considerable delay in the depopulating of some of the reactors. Many of them were euthanized, had post-mortems, and were buried on the farm.

The cooperative state-federal bovine tuberculosis program was begun about 57 years ago, and at that time, one cow in every 20 was infected. Today, approximately one bovine in 20,000 is infected. A very important stage of our eradication effort is upon us. Proper injection of tuberculin and judicial interpretation of the test are of the utmost importance. Thorough epidemiology is essential to find all exposed herds that might be a source of infection. Bovine tuberculosis is an insidious chronic disease that may go undetected for several years in herds of cattle. A key to the eradication of this disease is the detection of infected herds before spread to other herds can occur. An infected cow may carry tuberculosis for a long time before organisms are shed in sufficient numbers to infect other animals. We encountered this in one herd during our testing procedures in connection with this outbreak. One herd owner had a high number of animals sensitive to the test that were depopulated as being severely infected. When these animals were sent to slaughter, we found very few animals to be lesioned.

The importance of constant vigilance by veterinarians doing routine inspections on the farm and in slaughtering establishments cannot be over-emphasized. The alertness of one of these veterinarians in Georgia started the chain of events that uncovered the outbreak discussed here in Georgia.

#### Questions

1. Give the amount of tuberculin used in the intradermal caudal fold test. \_\_\_\_
2. Give the amount of tuberculin used via the intradermal cervical test. \_\_\_\_
3. Palpation and visual observation of the injection site is made at 48 72 96 hours. (Circle one)
4. Traceback during the Georgia outbreak of tuberculosis led to the testing of approximately \_\_\_\_ cattle in approximately \_\_\_\_ herds.
5. What was the approximate number of reactors revealed and the approximate number that were grossly lesioned? Reactors \_\_\_\_ Grossly lesioned \_\_\_\_