

CERTIFIED BANG'S-FREE STATUS: How Your Herd Can Attain It

by Ray Adams
Tahoka, Texas

First, let me assure readers that I am not an expert on USDA Animal and Plant Health Inspection Service (APHIS) Uniform Method and Rules or the Code of Federal Regulations.

This article was conceived as the result of conversation among a group of Angus breeders around the breakfast table at the Wooden Nickle Restaurant during the Western National Angus Futurity in Reno. The question arose, "How can I attain the certified brucellosis-free status?"

Since I recently had received a certified brucellosis-free herd permit from APHIS, under supervision of the Texas Animal Health Commission, it seems I was drafted to write an article for *ANGUS JOURNAL* for breeders wishing to know more about the federal regulations and the interstate movement of cattle under the new federal requirements that will affect all movement of cattle by Jan. 1, 1982.

The purpose of this article is purely educational and hopefully will emphasize factual information on the disease and some alternatives or options that will help the purebred seed stock producer move cattle interstate in the future.

As a prerequisite to trying to attain a certified free herd, I think it necessary to understand the disease, the objectives of the eradication program, the vaccination program, the concerns about the inadequacy of some diagnostic procedures and some legal ramifications. When these subjects are understood, then you can decide



The author—Ray Adams of Tahoka, Texas, a member of the Board of Directors of the American Angus Assn.—recently received a certified brucellosis-free herd permit from USDA's Animal and Plant Health Inspection Service.

the route that best suits your individual needs.

A Brief History

Brucellosis—or Bang's disease, as it is commonly called—is a disease of cattle, swine and, to a lesser extent, sheep and goats. This disease can cause abortion, slow breeding and even sterility.

Cattle contact brucellosis by licking recently aborted fetuses or the genitals of infected cows or, occasionally, by eating or drinking contaminated food or water. The infected pregnant cow is the most common source of infection at the time of her abortion. The most obvious signs of brucellosis are abortion, birth of weak calves and retained placentas. However, an infected cow may give birth to a normal calf and still be a serious source of brucellosis bacteria. Brucellosis is a chronic infection. Most cows that become infected remain infected for life.

Brucellosis is generally spread from one herd to another by infected or exposed cat-

tle. This commonly happens through the purchase of infected replacement cattle, but the infection also can be spread from a neighboring farm by contact of cattle through fences or by use of a common pasture. Other brucellosis transmissions, including wildlife, are now being studied.

Brucellosis has been a problem in the dairy and beef cattle industries for many years and does indeed cause economic loss to the cattle industry. The government's program has not always been operated at a level that could achieve eradication. In fact, in its early stages, the program was used primarily to selectively reduce the cattle population because of drouth conditions that prevailed in this country. In the mid-1930s, the reactor rate in adult cattle tested was 11.5%.

Vaccination Program

USDA began supplying brucella antigen to state laboratories in 1939. Following extensive laboratory testing and field evaluation, Strain 19 vaccine was introduced in about 1941.

In 1954 an all-out effort to eradicate brucellosis was implemented by a down-the-road type testing program resulting in quarantine of herds found to be infected. Calhhood vaccination with Strain 19 not only was encouraged but pushed by USDA.

Then, by the 1960s, USDA decided to de-emphasize calhhood vaccination. The primary reason was that lingering titers were causing false positive readings by diagnostic procedure in the cleaner states.

Would you believe that by 1975 USDA and USAHA re-evaluated the role of Strain 19 and once again encouraged calhhood vaccination? After evaluation, it was concluded that available knowledge about use of Strain 19 vaccine had been adequate and, when appropriately applied, it would provide major assistance in the prevention and control of bovine brucellosis. However, biologic factors associated with development of transient and persisting post-vaccinal serologic titers have served as a barrier to full implementation of the vaccination program. Hopefully, a new dimension has been added to off-set this barrier of yester-year with approval of the reduced dosage of Strain 19 vaccine.

Not 100% Effective

People often perceive, including this writer, that vaccination provides 100% protection, with no side effects. These expectations are not in accord with reality. Poliomyelitis vaccine does not protect 100% of the people and appears to be responsible for a few cases of clinical poliomyelitis. Influenza vaccine may protect only 50-70% of recipients and it, too, is associated with low prevalence of some side effects.

Vaccines to prevent brucellosis share many of these same characteristics. None of them protect 100% under all conditions, but at the present time, they are the best vehicle we have in which to travel.

Beef heifer calves may be vaccinated between two and 10 months (60-299 days) of

QUARANTINE STATE OR AREA 12-24-75

High infection rate, lack of progress in brucellosis control, inadequate program.*

Steers and spayed heifers—no restrictions.

Cattle of unknown status—immediate slaughter or quarantine feedlot with "S" brand and permit.

Cattle from qualified herds—test within 30 days of movement. Quarantine and retest 30-150 days post-movement.

Qualified herd—two consecutive negative herd tests 90-150 days apart. Test cattle 12 months and older if vaccinates, 6 months and older for non-vaccinates. Continuous herd tests at not more than 120-day intervals. All cattle in herd to be tested.

* **Quarantine State or Area**—Refer to Code of Federal Regulations (CFR) dated 1-1-79: Section 78.1(o), "Test Herd in a Quarantined Area," and Section 78.22a, "Quarantined Areas."

** **Class C State or Area**—Does not meet requirements for Class A or Class B state; must make progress in reducing prevalence in brucellosis as determined by epidemiologic evaluation. (NBTC—see Pages 6-12.)

*** **Class B State or Area**—Must not exceed an average 12 months prevalence rate of 1% for herds infected with field Strain B abortus; no county may have annual prevalence rate exceeding 2% of the herds except in counties under current area test; must maintain annual prevalence rates not to exceed five reactors per 1,000 cattle tested (no previously known reactors to be used in

CLASS C STATE OR AREA (Higher Risk of Brucellosis) 1-1-82

High infection rate but progress in reducing brucellosis by adequate program.**

Steers and spayed heifers—no restrictions.

Cattle of unknown status—two negative tests not less than 60 days apart. Quarantine and retest 30-150 days post-movement.

Cattle from certified free herds—no test required. Quarantine and test 30-150 days post-movement.

Certified free herd—two consecutive negative herd tests 10-14 months apart. Annual negative herd test for continuous certification.

CLASS B STATE OR AREA (Intermediate Risk of Brucellosis) 1-1-82

Low infection rate, continuing progress in reducing brucellosis.***

Steers and spayed heifers—no restrictions.

Cattle of unknown status—one negative test within 30 days of movement. Quarantine and retest 30-150 days post-movement.

Cattle from certified free herds—no test required. Quarantine and test 30-150 days post-movement.

Certified free herd—two consecutive negative herd tests 10-14 months apart. Annual negative herd test for continuous certification.

CLASS A STATE OR AREA (Brucellosis Free) 1-1-82

Zero brucellosis infection for more than 12 months. Exception see below.****

Steers and spayed heifers—no restrictions.

All cattle known status—no test requirements.

All herds considered certified free—no test required. Recommend test 30-150 days post-movement.

No test requirements.

calculations); must maintain effective surveillance, the same as defined for Class A state; maintain effective implementation of UM&R requirements as judged by administrative review and epidemiologic evaluation; and must make continued progress in reducing prevalence of brucellosis as determined by epidemiologic evaluation. (NBTC—see Pages 6-11.)

**** **Class A State or Area**—Must maintain zero infection due to field Strain B abortus for more than 12 months except for reintroduction of infection from outside the state or from other species, with no secondary spread to other cattle within state; must demonstrate effective surveillance and prevention of transmission to other herds. Effectiveness can be defined as: (a) A function of an average national reactor rate on initial herd tests compared to initial herd test of the herd being evaluated; (b) as judged by prevention of secondary transmission and by epidemiologic evaluation. (NBTC—see Pages 6-11.)

age with approved Strain 19 vaccine. Official vaccination must be conducted under the supervision of a veterinarian. Vaccinated calves must be permanently identified with an official metal eartag or registration tattoo. The U.S. registered shielded "V" must be applied to the right ear.

One interesting fact that we should all be aware of with regard to calfhood vaccination is that some states have severe restrictions on entry of non-vaccinated heifers.

Testing for Brucellosis

Whenever cattle change ownership, both parties are better protected legally and financially if cattle are tested. To move cattle across state lines, many states require one or more tests. In the future, more testing will be required by states to move cattle interstate.

Any one of a battery of tests may be used to classify cattle either negative or positive for brucellosis. The card test is most often used to screen cattle. It is fast, easy and can be done on the farm or ranch. However, experience has shown the card test may overcondemn in some instances, such as a lingering titer. Therefore, results of the card may be confirmed or disputed by other tests when classifying cattle as reactors.

Other recognized official tests include the standard tube test (STT), standard plate test (SPT), complement fixation (CF) test, Rivanol test, semen plasma test and buffered acidified plate antigen presumptive test.

Many of us feel much like we do when we are audited by the Internal Revenue Service. We feel as if we are sitting on a time bomb whenever our cattle have to be tested whether at home, at market or at slaughter. However, with the multiple battery of supplemental tests available, selected use of cultures evaluated by experienced epidemiologists and with individual herd history, the chances of being quarantined because of a false positive are remote. This compares very favorably with results in human disease such as tuberculosis, hepatitis, syphilis and others.

Legal Ramifications

I will not go into detail on expressed or implied warranty. Several court cases already have been decided in favor of the buyer, and several pending legal actions are beginning to set legal precedents because of recent extension of the implied warranty provisions of the U.S. Uniform Commercial Code to include livestock transactions. The industry fears a dangerous precedent is being set. It would seem that a certified brucellosis-free herd certification from the U.S. Animal and Plant Health Inspection Service would indeed serve as sound defense for any expressed or implied warranty.

The accompanying chart effective Jan. 1, 1982, is the "Federal Classification of States and Interstate Requirements to Move Cattle." A study of this chart will help you evaluate your present situation and help establish the direction you wish to take.

How can you attain a certified brucellosis-free herd?

Contact your veterinarian and tell him you wish to sign up for an individual certified herd plan. He will provide you with an agreement form between your state animal health commission, APHIS and yourself. You will agree to place your herd of cattle (which includes all cattle on your premises) under supervision of the cooperative agencies for the purpose of establishing the herd as certified brucellosis-free under rules and regulations prescribed by the cooperative agencies. The agreement is self explanatory and in essence reads as follows:

IT IS AGREED:

That the cooperative agencies shall not be responsible for any damages that may be incurred, directly or indirectly, as a result of a herd following the provisions as outlined in the agreement.

That it is understood that a herd under this plan must be kept separate from other cattle.

That a "herd test" shall be defined as including all cattle over six months of age except steers, spayed heifers and officially vaccinated animals of dairy breeds under 20 months of age and beef breeds under 24 months of age.

To allow all animals to be properly identified by eartag, firebrand, tattoo number or other approved method of identification and to furnish information regarding all animals in the herd.

That work is to be done at my expense.

**SECTION I
GENERAL PROVISIONS**

1. *The vaccination of calves is optional but, if vaccinated, compliance must be made with the following requirements:*
 - a. *They shall be vaccinated with an approved vaccine by an accredited veterinarian or a representative of the cooperative agencies and reported to the state animal health commission within 10 days.*
 - b. *All calves of dairy breeds shall be vaccinated between the ages of three to six months, beef breeds between the ages of three to 10 months.*
 - c. *Each officially vaccinated calf shall be identified with a tattoo in the right ear, showing number of month, the "V" shield, and the last number of the year (except October, November and December). The letters "O," "N" and "D" will be used, respectively, for these months. Or, when "V" hot-iron brand is used to identify animals of beef breeds, it must be applied in the correct position on the right jaw.*
 - d. *Each animal must be identified with an eartag, tattoo number, fire brand or such other means of identification as may be approved by the state animal health commission and the U.S. Animal and Plant Health Inspection Service.*
2. *All animals designated as reactors must be fire branded with the letter "B" on the left jaw as required by law and disposed of within 15 days by consigning them for immediate slaughter to establishments maintaining federal, state or municipal veterinary post-mortem inspection.*
3. *Premises shall be cleaned and disinfected under supervision following removal of reactors.*

**SECTION II
REGULATIONS GOVERNING THE
ESTABLISHMENT AND
MAINTENANCE OF A CERTIFIED
BRUCELLOSIS-FREE HERD**

- a. *A herd may be certified as brucellosis free by conforming to the following procedures:*
 - (1) *A minimum of three consecutive negative milk tests conducted at not less than 90-day intervals, followed by a negative herd blood test conducted within 90 days after the last negative milk ring test, or*
 - (2) *At least two consecutive negative blood tests not less than 10 months nor more than 14 months apart. Additional herd tests may be conducted if the owner so desires or if certifying agencies deem it necessary.*
- b. *A herd under this plan must be maintained separate and apart from other cattle.*
- c. *Additions to certified brucellosis-free herds or herds in the process of certification must originate from one of the following:*
 - (1) *Natural herd increases.*

- (2) Other certified brucellosis-free herds.
 - (3) Herd of origin must have passed a negative herd blood test within the previous 12 months. Official vaccinates of dairy breeds less than 20 months and beef breeds less than 24 months of age from such herds which are not parturient (springers) or post-parturient may move on a certificate verifying the vaccination status. All other cattle from such herds must have an additional retest not less than 60 days from the date of the negative herd test and within 30 days of the date of the movement. Animals added under this section shall not receive new herd status for sale purposes until they have been members of the herd at least 30 days and are included in a complete herd retest.
- d. A herd may maintain certified brucellosis-free status by conforming to the following procedures:
- (1) Continuing negative milk ring test results.
 - (2) A negative herd test conducted within 60 days of each anniversary date. The certification period will be 12 months from the anniversary date and not 12 months from the date of recertifying test. If a retest of a certified herd or of animals from such a herd reveals only one reactor, the certification status will be suspended until a negative herd retest conducted not earlier than 60 days following removal of such a reactor is obtained. If more than one reactor is disclosed, then herd certification is terminated and that herd must requalify for certified brucellosis-free status.

Conclusion

Remember that cattle exposed to brucellosis may blood test negative at the time of sale because they are in the incubation state of infection and still developing into blood test reactors.

To reduce risks of spreading disease from cattle that are in the incubatory stages of brucellosis at the time of sale, follow these recommendations:

- (1) Ask the seller to give you information on the brucellosis status of the herds of origin of any cattle you purchase.
- (2) Take appropriate precautions to protect these cattle from exposure to brucellosis while in your ownership.
- (3) Have post-purchase blood test for brucellosis conducted between 60 and 120 days following purchase to check for previously incubating infection.
- (4) If the blood tests indicate brucellosis, ask your DVM and a DVM from the state animal health agency to evaluate the situation and provide assistance.

Whatever route you decide to take, it seems mandatory in the future to purchase animals from known clean herds. Any time there is a question about what you should do, *don't do it* until you have sound advice from your local or state veterinarian. ☺