

BATTLING BRUCELLOSIS

THE UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF ANIMAL INDUSTRY
PRESENTS

BATTLING BRUCELLOSIS

PRODUCED BY THE MOTION PICTURE SERVICE
OFFICE OF INFORMATION

SUBJECT MATTER ELMER NASH
SCRIPT R. N. NEWTON
CAMERA GEORGE ORTLIEB
SOUND REUBEN FORD

DIRECTION
WALTER K. SCOTT

This is the story of the Wilson family and their fight against a tiny microbe called brucella abortus, long an enemy of America's livestock farmers.

Somehow, driving the cows up in the morning doesn't seem quite the chore it used to be when a boy has been promised his first calf, a calf all his own to raise and feed and groom for shows. Likely as not there'd be powerful shortage of blue ribbons over the country if all the big plans a boy makes for his first calf came out just the way he thought they would. But Wilson there and Lem have made lots of plans and they're waiting with fair patience for Flossy to cooperate. Of course, big plans don't belong to youngsters only. Grown-ups make plans too. Their planning is usually just a little better seasoned by age. They know that lots of things can happen to plans.

Take Tom Wilson there. He's planning a bigger and better dairy farm, finer herd, plenty of space to grow his own feed, more buildings, good living, things he'll be proud to pass on to his son.

But lots can happen to plans. There is an enemy: tiny brucella abortus, magnified thousands of times for you to see it here. Brucella abortus, a pretty sounding name for a murderer. Working secretly and steadily in the dark confines of the animals' body, this evil little microbe plies a trade that has cost cattle growers millions of dollars. It is the cause of brucellosis or Bang's disease. This tiny vicious germ gives no warning. It attacks silently, invisibly, kills and destroys. Its favorite victim is an unborn calf.

National and state governments are cooperating in the battle against brucellosis by providing information and by paying farmers for part of the loss when they send infected animals to slaughter. Scientists of the United States Department of Agriculture know the treachery of this enemy of cattle growers. The battle against it has gone on for years and, especially of late, has brought good results.

In 1934, 1 cow out of every 10 in the United States was infected. Ten years later, the proportion had dropped to 1 cow in 20. In some states, the percentage is still alarmingly high. The enemy does not die easily.

In most infections, the cows take this germ in through feed that's been contaminated. Here is its favorite breeding ground, the reproductive organs, particularly of young heifers in first or second pregnancy. Literally millions of these microbes invade the region between the uterus and the sack that holds the unborn calf. Like thieves in the night they rob the unborn animal of its food and oxygen. Flourishing on their ill-gotten gain, they infect the entire region, prowling and plundering and finally, murdering.

The disease can spread rapidly from one animal to another. It takes an enormous toll of calves, often leaves breeding animals sterile and it attacks human beings in a form of disease called "undulant fever".

Brucellosis is no respecter of animals and no respecter of plans, not even the most exciting ones, like having a calf of your own to raise.

Brucellosis has struck, suddenly and without warning. This is the first sign: that aborted calf. After the act of abortion, the cow expels an uncountable number of germs and can infect any cow that licks her or eats feed that she has contaminated.

FIELD VETERINARIAN

"Dr Elmer speaking. Yes, Mr. Wilson. Sounds like brucellosis. Get that heifer away from the rest of your herd and get rid of her calf. Bury it where none of your other animals can get to it. Use plenty of lime in the pit so that the dogs won't dig it up. And be... That's right. And be sure to spread lime and disinfectant on the ground where you found the calf. That's right. And when you're through, disinfect all tools and your shoes. I'll be right out.

The dead calf is a dangerous source of infection. Bury it in quicklime and bury it immediately. Buckets, forks and shovels contaminated with brucella organisms may be as dangerous in spreading infection as the dead calf.

Next step: Tom Wilson finds out how far the disease has spread through his herd. How many animals are already infected? That means testing every cow, including the one which lost her calf. There's always a slim chance that some other reason caused the abortion, but it is very slim. Brucellosis causes 85 % of all cattle abortions. Scientists have devised the agglutination test, and animals which show a positive reaction to it are shipped off for slaughter. There is no cure for brucellosis, although many a farmer has paid out good sums of money for worthless so-called remedies. A veterinarian draws a small sample of blood from the jugular vein of the cow. It is the blood that will tell the tale.

In the laboratory, the blood serum, that clear liquid at the top of the tube, is drawn off. The dark red mass at the bottom of the tube is the clotted blood corpuscles. If the cow is infected, this clear liquid will contain a substance called agglutinin. Four amounts of serum are placed in the four squares of the glass plate. Each of these rows represents a different cow. Now the antigen, a blue liquid containing thousands of the germs that cause the disease. One drop of

antigen is added to the squares on the plate. Now watch what happens. The two rows to the left remain unchanged, but keep your eye on that third row. There, the enemy is unmasked. Watch him cluster in tight little knots. That blood serum is from a cow heavily infected with brucellosis. This test is run on every cow in the Wilson herd and here in the laboratory is the beginning of the counterattack against Brucella abortus, the battle of science against a killer.

There are many things to worry about when this invisible enemy strikes out of nowhere. Not half as big as the point of the finest needle ever made, yet it can wreck a family's plans. Bud is pretty much worried about that calf. Mrs. Wilson remembers a neighbor whose dairy herd was wiped out by the disease, the neighbor who had to sell out, leave his home and his farm. The buildings are now dilapidated and sagging. Can this happen to the Wilsons? Not if Tom Wilson can help it. He's determined to give this disease a good fight. It can be licked, can be wiped out. Yes, there is a lot of worrying going on at the Wilson place.

Here is the man with the verdict. Luckily for Tom Wilson, only 3 cows are infected: the heifer that lost her calf and two others. Which two? Tom Wilson's first job is to get rid of those three animals, ship them off for slaughter. The state and federal governments will pay him an indemnity to cover part of the loss. This is the second diseased cow in the Wilson herd. Which one is third? Number three is this heifer right here.

Step no 2: Tom Wilson has all his young calves between the ages of 4 and 8 months old vaccinated, another part of the battle in the war scientists (are) waging against brucellosis. Vaccination helps the animal build up a resistance against the disease and it gives cattle owners some assurance of clean healthy productive herds. This vaccine called "strain 19" is worth millions of dollars to cattlemen throughout the nation.

Here in the laboratory of the Bureau of Animal Industry at Beltsville, Maryland, thousands of doses of strain 19 vaccine are prepared every year and shipped to all parts of the country. Like all vaccines, this one is made from the germ itself, Brucella abortus, which is grown in cultures like these. It is much too weak to hurt the vaccinated animal, but it is strong enough to build up the animal's resistance. There's a liberal margin of safety.

When the last calf is vaccinated, and the last infected animal marked with a "B" on the left jaw is shipped away for slaughter, the Wilsons are ready for the third step: cleaning up the premises. It's a long hard job but it's the part that clinches the victory against brucellosis. Plenty of scrubbing, plenty of disinfectant, carting off manure piles which probably contain billions of germs. Yes, it takes the whole kit and caboodle, every man on the Wilson place, to wipe out every possible spot where this deadly germ could live, including its favorite breeding ground: the animals themselves. Tom Wilson will have his herd retested again and again until it is accredited as free of brucellosis.

This deadly invader can be and is being stamped out, farm by farm, county by county, state by state.

"You sure is a beautiful baby."

Healthy disease-free herds are worth the battle.

THE END

Transcript: Chloé Bourgogne