California’s Brucellosis Vaccination Law

enacted as a public health measure, now in force

W. E. Maderious and C. M. Haring

CALIFORNIA’s first law pertaining to the control of bovine brucellosis became effective on January 2, 1948. The vaccination of all female dairy calves with Brucella abortus Strain 19 now is compulsory under the provisions of the new law.

The vaccination, which will be free of charge to cattlemen, may be extended to male dairy calves and all beef calves at the owner’s option.

The age at which calves will be vaccinated under the state program has been fixed between limits of six and 12 months. This will permit the vaccination of all eligible calves on a given ranch by only two visits yearly, which will facilitate the execution of the program.

Plans

Present plans indicate that the actual vaccination and the identification of vaccinated calves will be carried out by accredited practicing veterinarians who will be furnished vaccine and reimbursed for their services by the State Department of Agriculture. No blood testing is provided for under the law as it exists at present.

Research in the use of Strain 19 vaccine has shown, during the past 12 years, that while vaccinated animals are usually not solidly immune to the challenge provided by exposure to virulent field strains of Brucella, they do show, under most conditions, a sufficient degree of resistance to protect a relatively high percentage from developing the infection.

In addition, there is evidence to indicate that even in those animals which become infected, the results of this infection are usually softened and not so severe as might be expected in the absence of vaccination.

Public Health Measure

In view of the growing importance of brucellosis or undulant fever as a human disease, the new law was intended primarily as a measure in the interests of public health.

This legislation was sponsored primarily by the dairy industry because of the knowledge that consumption of raw milk produced by Brucella infected cattle may serve to produce human infection. The control and gradual elimination of the disease in dairy cattle would be an important factor in lowering the incidence of human brucellosis, although it is known that brucellosis may be contracted by humans in several ways other than by the consumption of raw milk contaminated with virulent Brucella.

Strain 19

Calfehood vaccination with Strain 19 has, on the whole, been satisfactory, perhaps even more so than expected. In some herds, for instance, the resistance produced by Strain 19 vaccination has been sufficient to completely eradicate Brucella infections. The accompanying table illustrates the progress made in brucellosis control in Del Norte County dairy herds. This field experiment, carried on by the Department of Veterinary Science of the University has been duplicated elsewhere when vaccination was conducted on an area basis.

While it has been shown that calfehood vaccination will serve to control and even eliminate bovine brucellosis in certain herds, research by University veterinarians has also proved that the resistance produced by Strain 19 vaccine can be overwhelmed by massive field exposure to infection.

Not all vaccinated animals will resist exposure. In some cases measures other than calfhood vaccination alone must be adopted to produce herds free from brucellosis. These supplementary procedures may include efficient sanitation and segregation of infected animals, or in some cases, the vaccination or revaccination of older cattle.

Age at Vaccination

Experimental work at the University has shown that the resistance produced in animals vaccinated at older ages is greater than that produced in cattle vaccinated when very young.

The vaccination of grown cows has therefore been recommended in certain cases, especially as an aid in controlling the damages produced by brucellosis in very badly infected herds. While this adult vaccination seems relatively efficient because of the resistance produced in the vaccinated animal, it has the disadvantage of producing a positive blood test reaction which may last for a prolonged period or even for the life of the animal. Recently developed improved diagnostic methods may minimize this disadvantage.

Beef Calves

The vaccination of beef calves is optional under the new state law. While brucellosis usually is not a major problem in beef herds, the elimination of infection has resulted from the vaccine is a reduction in the prevalence of the disease, its complete eradication will eventually require the slaughter of diseased cattle.

Such a program of slaughter, based on the results of repeated blood tests on all breeding cattle in the state, is considered unsatisfactory under present economic conditions but may become practicable alter a low incidence of infection has resulted from several years of systematic vaccination of calves as now required by state law, beginning January 2, 1948.

Inquiries concerning this law and the dates when vaccination will be started in the respective counties should be addressed to the Division of Animal Industry, California Department of Agriculture, Sacramento, California.

W. E. Maderious is Junior Veterinarian in the Experiment Station, Berkeley.

C. M. Haring is Dean of the School of Veterinary Medicine, Professor of Veterinary Science, and Veterinarian in the Experiment Station, Berkeley.

Inquiries concerning this law and the dates when vaccination will be started in the respective counties should be addressed to the Division of Animal Industry, California Department of Agriculture, Sacramento, California.