this underconsumption can be remedied by better marketing and distribution.

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MASTITIS of Cattle May be Controlled by Tests and Sanitary Procedures

The best present evidence indicates that the cattle disease, mastitis, also known as garget and mammitis, exists to some extent in a large number of dairy herds in this country, probably in the majority. In some of these herds, nearly one-half of the milking cows are affected.

One species of bacteria appears to be responsible for about 90 percent of the cases of mastitis. The disease produced by these bacteria is as a rule of chronic form. In many cases no indication of infection is observed other than the occasional appearance of flakes in the milk and a decrease in milk production. Other cows, however, may suffer recurrent attacks of acute mastitis in which the udder becomes hot, swollen, and painful, and the milk secretion drops abruptly or may stop entirely. Under proper management the acute condition subsides rather quickly and the udder returns to its former state, but the infection remains. Relatively few cows seem to recover completely from the disease, which persists in the udder from one lactation period to the other without any disturbance in the general health of the animal.

Methods of Detecting the Disease

Although attempts have been made to cure the disease by various measures, none has yet proved to be generally effective. Since the mastitis bacteria appear to spread from the diseased to healthy animals through milking, either by machine or hand, a promising means of controlling the disease is the detection of the infected animals and milking them after the healthy ones. Many tests have been devised to find these diseased animals and some of them have been investigated by the Bureau of Animal Industry.

All but one of the tests studied depend upon detection of changes produced in the milk by the bacteria which cause mastitis. The test which does not relate to the composition of the milk is made by palpating the udder for the presence of changes in its physical character. When the udder becomes infected, the normal glandular tissue is gradually replaced by fibrous tissue. As a result hard nodules or diffuse areas of hardened tissue are felt when the udder is manipulated with the fingers. Such changes are always diagnostic of mastitis.

The most practical test for dairymen is to use the strip cup daily. This is simply a tin cup covered with a fine wire screen or a piece of black cloth. Two or three streams of milk are drawn onto the strainer from each quarter immediately before the animal is milked. Any quarter in which clots are found is infected with mastitis. Inasmuch as clots are not always found in all the infected quarters, the test is not entirely effective. Another measure which can be applied in the stable determines the degree of acidity of the milk as soon as it is drawn from the cow. The test consists in adding a given quantity of a color indicator, bromothymol blue, to a definite quantity of milk.

If the change in color shows an appreciable increase in alkalinity or acidity, mastitis is present. The proper interpretation of this test requires considerable skill, and even experienced persons may overlook some infected quarters because milk from such quarters is not always changed in reaction.

Services of Veterinarian Desirable

The other tests which have been tried are best conducted in the laboratory, although a modification of one of them—the chlorine test—has been used in the field. When a quarter is affected with mastitis, there is an increase in the quantity of chlorides present, a condition which in severe cases is sufficient to give a salty taste to the milk. Another test is the determination of the number of body cells present in a known quantity of milk. When infection is present in the quarter, the number of cells increases sharply. All these tests, however, indicate only that the quarter is diseased without showing what the cause may be. The only means of determining definitely whether mastitis bacteria are present in the affected quarter is by bacteriological examination of a sample of milk drawn as carefully as possible to exclude outside contamination. By this procedure the number and kind of bacteria may be determined, but because of the labor and equipment required it cannot be used on a large scale.

In spite of the limitations of these tests, a very large percentage of animals infected with mastitis may be detected through the use of a combination of two or more of them. It appears, therefore, that when a herd has been examined with the tests, the infected cows are kept apart from the healthy ones, and other necessary sanitary precautions are regularly taken, the spread of mastitis may be reasonably well controlled. The services of a veterinarian should preferably be obtained so that the tests and other procedures selected for use may be based on his scientific knowledge of the disease.

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Mexican Fruit Fly Spread is Prevented by Strict Quarantine Enforcement

The Mexican fruit fly is one of the serious pests of fruit that has not yet become widely disseminated in this country. In Mexico this fly is probably the worst enemy of fruit with which the growers have to contend. In that country it inflicts heavy damage to the mango, citrus, and stone-fruit crops, the infestation in mangoes at times reaching 100 percent. Should this pest become established in the fruit-growing sections of the United States, untold losses would undoubtedly result. Although Mexico is carrying on a vigorous campaign against the fly, the duty of preventing its entry and dissemination in the United States rests upon the Bureau of Entomology and Plant Quarantine.

The lower Rio Grande Valley in Texas has developed in recent years into one of the major citrus-producing areas of the country. There has been no corresponding development on the Mexican side of the river, and not enough fruit is grown there to supply the local markets. As a result large quantities of fruit are brought to the