Middle Articles

CONTEMPORARY THEMES

Cause for Concern. Dealing in Brucella-infected Cattle

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Summary: The practice of selling *Brucella*-infected cattle in the open market appears to be widespread in Britain and is increasing. The introduction of an infected cow into a herd can cause serious economic loss to the farmer and often compels him to resell despite the risk of spreading the infection. It is suggested that markets should be more closely controlled by veterinary surgeons; certificates of freedom from brucellosis should accompany animals for sale; and some compensation should be paid to prevent infected animals from being sold.

Introduction

While infection with *Brucella abortus* in man is uncommon (Henderson, 1967) infection in cattle is not (Ministry of Agriculture, 1964), and is a serious economic matter for the dairy farmer. Infection of a clean herd through the purchase of an infected animal, which when bought may look quite healthy and reputedly may have given birth to a live calf, can be followed by an "abortion storm" within a short time. The economic loss to the farmer is then serious enough, but later, when his herd has been examined by a veterinary surgeon and he is confronted with the list of infected animals, he has often no alternative but to salvage some of his capital by selling them in the open market. This he often does, fully aware of the danger to other herds, simply because his economic plight drives him to it.

Purchasing Infected Animals

The following examples serve to illustrate the situation that can arise.

(1) The owner of a Guernsey herd maintained on the "flying" system supplied untreated milk and cream to a round of 250-300 regular customers. In September 1962 infection was introduced into the herd through the purchase of an infected cow, and showed itself in November 1962. Subsequent events were disastrous; six cows became infected by December 1962 and eight cases of undulant fever resulted among the customers (Henderson, 1964).

(2) A young man bought a farm with its cows early in 1966. Unknown to him some of the cows were infected with *B. abortus*, but nothing was said about their being infected. In February 1966, soon after he had begun to work the farm, one of the cows aborted. In March one of a number of new cows he bought aborted, then between July and October no fewer than 12 abortions took place. From then abortions were less frequent, but the farmer himself became infected, probably from handling an aborted fetus, and in February 1967 he was admitted to hospital.

(3) Another young farmer bought a farm in 1961 and began keeping cattle in 1963. He bought 10 cows from a known source.

He bought seven more in 1966 from an unknown source. The first abortion due to *B. abortus* occurred in January 1968, and from May to October he had 12 dead calves and 10 calves born prematurely. His farm manager, a man aged 38, became ill with undulant fever on 14 October.

In each case the farmer suffered heavy, indeed crippling, financial loss.

Disposal of Infected Animals

The following examples show not only the consequences of infection in a herd but also how infected animals are usually disposed of by dairy farmers—namely, by reselling.

(4) A farmer who maintained a "flying" herd had undulant fever in June 1968. On 9 December his herd was examined, and among the cows were 18 yielding milk which gave a positive milk-ring reaction. When asked what he was going to do with the infected animals he replied that he would try to get them in calf and sell them to the best advantage. He was adamant about this, though fully aware of the possible danger to other herds. He thought that his losses and expenses up to that time justified his action.

(5) A dairy farmer became ill with undulant fever on 6 January 1969. When his herd was examined because of his own illness at least nine cows gave a positive milk-ring test or guinea-pig test. Of these, three were sold in the open market; he was not absolutely certain, but thought they might have gone for slaughter. He was keeping three that had been "positive" and were due to calve later in the year; these would then be sold. He had also sold three other "positives," but could not say what had become of them. Meantime he had bought some pedigree animals, but was indifferent to the fact that these and others in the herd would be endangered when the three "positives" calved later in the year. He had the mistaken impression that an animal which had had the disease lost it by the time it next became pregnant and calved.

(6) A farmer's wife had an attack of undulant fever in March 1967. Examination of the herd showed that some were infected. Their disposal was straightforward: they were sold in the open market without any attempt to conceal the fact. The "flying" herd system was stoutly defended as a legitimate and long-established way of making a living; in fact, it was claimed that dairy farming could not continue if this type of dealing was abolished. The possibility of spreading infection was regretted, but it was maintained that matters would not improve until the Ministry ordered the slaughter of infected animals and paid compensation.

(7) A farmer bought a cow which aborted in August 1968 and which, when examined by a veterinary surgeon, was found to be heavily infected with brucellosis. He sold it in the open market, and was certain that it had gone to another herd. When asked if he realized the possible consequence, he said that he was not interested in consequences; the animal had been sold to him as sound and he was not going to be a loser.

(8) The herd of a producer-retailer who sold untreated milk and cream over a wide area was found to be infected when one of his customers developed undulant fever. On examination of the herd the infected animals were identified and within a very short time they were disposed of in the open market. The herd remained

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¹ A number of farmers maintain their herds on the "flying" system—that is, they buy cows in calf or cows that have recently calved, keep them as long as they can give milk or can give birth to calves, and then sell them when they are no longer a source of profit.

free from infection for some time, but it was reintroduced by the purchase of three cows from a supposedly uninfected source. On examination two of the three were clean, but one was heavily infected. On this occasion the infected animal was slaughtered. This was the first time I had heard of a cow in full milk being disposed of in this way.

Discussion

In these examples the dairy farmer concerned had bought a farm where infection was present, though the seller had concealed the fact, or had bought infected cattle in the open market believing them to be sound, or from a dealer who at least suspected that the animals were infected. The dairy farmers, when disposing of their infected stock, were determined to get the best price they could, and though they might have been aware of the consequences they did not allow this to influence them. Though these examples are spread over a number of years, my impression, confirmed by numerous conversations with veterinary surgeons, dealers, and dairy farmers, is that trading in infected animals is widespread. Moreover, it will continue so long as dealers and "flying" herds exist. Unfortunately the practice seems to be on the increase, since under the eradication scheme more and more herds are being examined by veterinary surgeons and infected animals are being singled out. These are usually sold in the market. Thus, as the number of clean herds increases, so the number of infected animals put up for sale multiplies and the number of infected herds grows. My impression is that the amount of infection per herd is also increasing. This is certainly so in producer-retailer herds in Worcestershire.

Not all dairy farmers, however, sell infected animals regardless of the consequences. A producer-retailer was twice found in 1962 to have infected animals in his herd. These he "dried off" and sold for slaughter. Similarly, two other producer-retailers, when questioned about disposal, replied that they would have liked to sell, but conscience had not allowed them to do so. Their infected cows had been "dried off" and sold for meat, though a loss of up to £60 an animal had been sustained by doing so.

Examples of such "good" practice are few, and the matter therefore of trading in brucella-infected cattle is indeed a serious one. Nationally the question is whether the country can afford the 40 or 50 million pounds that would be required to compensate owners if all the infected animals were to be

slaughtered and whether such slaughter would result in a shortage of milk; opinions differ among dairy farmers and veterinary surgeons.

To the individual dairy farmer brucella-infected animals are indeed a problem. When buying there is no quick way of his telling whether an animal is infected or not; a blood test or a milk-ring test takes time. Perhaps a closer control of markets by veterinary surgeons should be attempted, or a certificate of freedom from brucellosis required to accompany animals for sale. There would be administrative difficulties. When brucellosis has struck the herd the feeling of despair that overtakes a young man can well be imagined, for after sinking a good deal of money in a farm he is unexpectedly brought face to face with a situation where any prospect of profit suddenly vanishes under the load of dead calves, milk losses, veterinary surgeon's fees, and pasteurization orders. On top of this the problem of disposing of the infected animals confronts him. A well-established, rather better-off dairy farmer could possibly carry the loss, and there would be little excuse for his selling infected animals openly; but for the struggling dairy farmer, making a precarious living as most of them do, the matter is somewhat different. One cannot but sympathize with the man who, himself a victim of this sort of dealing, feels obliged to sell an infected animal to the best advantage simply because he does not know how his next bills will be met. There would seem to be a case for Ministry help in the form of compensation of some kind to prevent infected animals from being sold.

As an addendum there arises the question of whether the increase in infection among cattle will result in increased infection in human beings. One cannot say. Those likely to be at most risk are dairy farmers and others who handle aborted material. *B. abortus*, however, though highly infectious, may not be unduly pathogenic for man (Wilson and Miles, 1955; Henderson, 1967). One thing is certain, the economic loss lying in wait for a dairy farmer who buys infected cattle is likely to be considerable.

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ASPECTS OF EMERGENCY CARE

Mass Disaster Schemes

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In no sphere of health care are prevention and preparedness more needed and more rewarding than in the arrangements for an accident and emergency organization. Accidents range from the trivial affecting only one person, slightly injured, to the disastrous—mine explosions, train smashes, earthquakes, and floods—in which many are maimed or killed. Emergencies do not occur conveniently for the duty hours of casualty officers or coincide with the surgery times of family doctors. They do not fit neatly into one clinical category such as orthopaedics;

several bodily systems may be involved, requiring the concerted efforts of teams of specially trained surgeons, physicians, nurses, and ancillary staff.

Nevertheless, whatever their nature the effect of injuries is not only a personal tragedy but also an increasing drain on a nation's economic and human resources. For males between the ages of 1 and 35 accidents are the biggest killers, and we are apt to forget the vast loss of endeavour, achievement, and happiness and life expectancy. The total number of all kinds of accidents in Great Britain this year may well be about five million.

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