



WHITE SCOUR IN CALVES

WHITE scour is the most important cause of mortality in calves, especially in large dairy herds and in beef herds whose offspring are born in stables. When the disease is present it takes a heavy toll, causing serious economic loss and interfering with the maintenance of breeding stock.

Causes of White Scour

Several different germs, all widely distributed in nature and usually harboured by the dam, have been named as the cause of this disease. The germ most often associated with it is known as *Bacillus coli*. This microbe is present in the intestinal tract of all animals, where it serves a useful purpose, causing no harm.

Although microbes are the actual cause of this disease, there are other factors which predispose to infection by weakening the resistance of animals, thereby assisting invading germs. These factors are as follows:

1. Disturbances of the normal function of the digestive tract of the young calf. This may be caused by withholding the first milk (known as colostrum) given by the cow following freshening. It acts as a laxative, clearing the intestine, and supplies valuable substances which have a protective action against the invasive properties of microbes. Overfeeding during the first days of life also deranges the sensitive stomach of the newly born.
2. Improper care and feeding of the dam during pregnancy.
3. Bad hygienic conditions such as cold stables, wet bedding, and draughts.

4. The presence of infectious abortion in the herd. (Contrary to the views of many live stock owners, this disease is only an indirect cause of white scour, as calves from infected dams are often weak or undeveloped, thus being more susceptible to the infective agent.)

Avenues of Infection

The udder of the dam, together with the bedding of the stall, becomes contaminated with the manure, which contains countless germs capable of producing disease in the young calf. In the majority of instances these are taken into the mouth during nursing or by browsing through the bedding; but any method, direct or indirect, which permits a small quantity of the mother's bowel content to reach the mouth of the calf permits infection.

Occasionally the open stump of the navel may serve as a point of entry for microbes at the time of birth or shortly after. The calf may also contract the infection before birth in the uterus of the dam, but such instances are infrequent.

Prevalence of the Disease

White scour occurs most frequently in large herds of dairy or beef cattle, especially when they are closely housed and continuously stabled.

The offspring of pure-bred animals appear to be more easily infected than those of grade cattle. In small herds and under range conditions little or no trouble is encountered. While an outbreak may occur at any time of the year, extremes of heat or cold appear to increase the frequency of the disease.

Symptoms

The first signs of white scour appear generally on the first or second day of life, with loss of appetite, dullness and fever. The animals are depressed, weak, and stand with back arched. Soon diarrhoea develops, and there is a foul smelling watery discharge, often streaked with blood. Weight is quickly lost. The eyes become sunken and the coat stary. Later, the temperature is often subnormal and the body cold and clammy. Occasionally pneumonia occurs. This can be diagnosed only with certainty by a veterinarian. The disease often runs a rapid course, the animals dying within twenty-four hours.

Prevention

Experience has shown that prevention of white scour is more successful than treatment. In dealing with the proper measures for prevention, the two factors to be chiefly considered are the infective agents and all the circumstances causing a lowered resistance. Success can only be expected if the offspring is

guarded against both these factors. Depending on the local farm conditions, the precautions practicable in combating the infection vary to some extent. There are, however, some general rules which should be observed.

1. Mate only sexually sound parents, because a large percentage of calves from a cow with abnormal or discharging genital organs acquire the disease shortly after birth or are born with the infection.

2. In herds where white scour is persistently present, the dam, before calving, should be placed, when possible, in an isolated stall, after precautionary measures have been observed.

The entire body should be well cleaned (where circumstances permit by washing) and the hind quarter and udder washed with warm water, soap, and a mild disinfectant solution. The stall should be cleaned and disinfected before each cow is placed in it to calve, and fresh bedding provided frequently. In order to avoid the spread of infection from the main stable, separate utensils should be provided, and the attendant should wash his hands and boots before entering the stall. A properly managed maternity stall will greatly help in protecting the new born against contamination during the most dangerous period of life.

3. Shortly after birth, tincture of iodine should be applied to the navel stump.

Conditions which are most likely to weaken the new born and thereby lower resistance are improper housing and feeding.

It is most important to keep calves in a warm, clean, dry, and well-ventilated stall during the first few weeks of life.

Allowing the calf to over-feed should be avoided. The best way to control this is by separating the calf from the dam and allowing them together for definite short intervals of time. Where this is impossible, some have found that muzzling of the calf answers the purpose.

It is a general rule that the new born should be fed frequently small amounts, decreasing the number of feedings gradually with growing age. If pail-feeding is used, the same rule applies.

The manner in which a strong, well-developed calf must be nourished is somewhat different from that used in a prematurely born, small or weak animal. If the new born is in good condition at birth, it may remain with the dam for twelve hours, after which feeding is withheld for the next twenty-four hours. At the end of this starvation period, pail feeding should be commenced, allowing three to four pounds of milk for a 60 to 80 pound calf and increasing the ration in the first three weeks of life by 8 ounces daily. Lime water in equal amounts may be added with advantage. The feed, of course, should be given at body temperature, and the amounts mentioned should be divided into at least three feedings.

The under-developed and weak animal requires special attention. If unable to rise, it should be given three to five feedings daily, omitting the 24 hour starvation period. As the animal grows older, the amounts should be increased gradually.

In pail feeding, the opportunities for contamination are numerous. For this reason the utensils must be kept scrupulously clean and scalded with water after each feeding. A most important factor in the prevention of white scour is ensuring that the dams receive a proper supply of vitamins, particularly Vitamins A and B. Green feed, turnips and carrots are rich in these substances.

Treatment

Whenever possible, a qualified veterinarian should be consulted, as success is dependent upon balanced judgment and attention to the varying factors found in the different infected animals. When his services cannot be obtained, the following rules should be observed:

At the first signs of diarrhoea, the infected animal should be isolated, all milk withheld from the diet, and a mild laxative, such as mineral oil, administered. Barley water should be substituted for milk, adding to it 25 per cent lime water. The animal should be warm, and stimulants are occasionally of value. Return to a milk diet when improvement takes place must be gradual. Great care should be exercised for several days.

*Division of Animal Pathology, Science Service,
Dominion Department of Agriculture.*