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ACIDOPHILUS MILK AS A TREATMENT FOR SCOURS
IN CALVES

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Introduction

The use of acidophilus milk as a treatment for scours in calves originated at the Oregon Experiment Station in 1935. The results which followed experimental trial appeared better than those obtained by any other known treatment. Since that time this treatment has been quite generally used and in most instances reports on its use indicate the saving of the lives of a large number of calves.

According to reports of losses, scours in calves continues to be perhaps the most important disease affecting newborn animals. Most authorities would have us believe that this disease is more common in winter than in summer. In Oregon, however, losses have occurred in some herds all summer long. It is difficult to estimate just how much this disease costs the dairyman each year, but no doubt the losses in Oregon amount to thousands of dollars annually.

Causes

Much study has been given to the causes of scours in calves since Jensen in 1893 found that colon bacilli could and did cause dysentery, or so-called white scours. Bacteriologists have quite generally agreed that many different organisms might be responsible. Theobald Smith produced evidence that calves sometimes become infected before birth.

As the literature indicates that the bacteriology of this disease has been quite thoroughly worked out, little attempt has been made to study this phase of the disease at this station.

Most dairymen know that improper feeding and insanitary surroundings will usually produce dysentery in young calves. They also know that the disease will continue to exist under the best possible conditions of management. Such cases suggest intra-uterine infection such as that found by Smith.

Symptoms

The most constant symptom is a severe diarrhea. The discharge is slate- or dirty yellow-colored, very fluid and frequently frothy, having an extremely offensive odor. In most cases, the tails and hind parts soon become soiled. The animals show a loss of appetite, dehydration with rapid loss of flesh, weakness and inactivity. Calves appear thin and the coats lack the luster usually present in the newborn animal. In some cases in which the disease appears in a very severe form, calves die so quickly that dysentery does not have time to develop.

Method of Production of Acidophilus Milk

The production of acidophilus milk requires special equipment and training in bacteriology.

Fresh skimmed cow's milk is sterilized by heating in a steam sterilizer at 15 pounds for 30 minutes. It is then cooled and inoculated with cultures of Lactobacillus acidophilus. After inoculation it is incubated at 100°F. until a curd has formed and the lactic acid content has reached about 1 per cent. At this time, the milk will contain in the neighborhood of 400,000,000 organisms per cubic centimeter. The number of organisms starts diminishing a few days after preparation, but remains high for about two weeks if the milk is not subjected to extremes of heat or cold. It should be kept at room temperature (about 70°F.) and should never be kept in a refrigerator.

Method of Administration

The milk should be well shaken to break up the soft curd. The dose recommended is one-half pint given as a drench. Most animals take the milk readily. It is sometimes convenient to use a rubber nipple with an enlarged hole and let the calf nurse the bottle. If the calf has been sick for some time and shows the effects of dehydration, the dose may be diluted with three parts of salt water (1 teaspoon of common salt per pint of water), in order to supply additional water which would be beneficial. In most cases only one dose is necessary, but it is sometimes necessary to give additional ones.

When the disease has been severe in the herd it is advisable to treat calves as soon as possible after they have received colostrum, and before symptoms have appeared.

Results of treatment

Calves suffering from typical "white scours" usually recover promptly if treated before the disease has done them too much damage.

The disease can be prevented by the administration of acidophilus milk before symptoms appear.

Discussion

At birth, the digestive tract of most calves is sterile and contains no bacteria of any kind. With the first suck the calf takes in bacteria which are found on the cow's udder, on other parts of the cow, or on the bedding in the stall.

The digestive tract is a favorable medium for many bacteria. In some cases harmful bacteria soon predominate in the digestive tract and cause scours.

The bacterium Lactobacillus acidophilus is known to make up a large percentage of the bacteria in the digestive tract of normal calves. It is also known that Lactobacillus acidophilus is a desirable bacterium in the digestive tract of the calf. The giving of acidophilus milk, a milk culture of the bacteria, is an effort to replace the undesirable bacteria in the digestive tract of calves suffering from the disease.

Acidophilus milk can be obtained from the Dairy Department, Oregon State Agricultural College. It is supplied in gallon containers and is shipped C.O.D. plus express charges (\$1.50 per gallon plus express charge) upon receipt of the order. Directions for use are included with each order.

Although the Dairy Department tries to keep enough of the milk on hand to supply the demand, it is sometimes difficult to anticipate that demand. When need for the milk can be predetermined, notice should be sent to the Dairy Department in advance of the time the milk is needed, so that they will have opportunity to manufacture it.
