

SMALL FARM FAMILY PROGRAM

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Identifying and Treating  
Cattle Diseases

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Part I

REPRODUCTIVE DISEASES

**Brucellosis**

*Transmission.* Brucellosis or "Bangs" is produced by bacteria that cows swallow while eating or drinking or get from the bull at breeding time.

*Clinical Signs.* Signs of the disease are abortions, weak calves, failure to settle, faulty cleaning, and decreased milk production with no apparent signs of sickness.

*Treatment.* There is no cure. Test and slaughter of an infected herd is the only choice available.

Calfhood vaccination at 4 to 12 months of age is useful. The use of strain 19 vaccine offers 65 percent protection. There has been considerable controversy among the experts on when and where to use this vaccine. There is no simple answer at present. Through testing and slaughtering the incidence of this disease has been greatly reduced. However, precautions should be taken to keep a herd free of this costly and troublesome disease.

**Leptospirosis**

*Transmission.* The bacteria may live for some time in water. Infected animals shed the bacteria in urine. Wild animals, rats, skunks, raccoons, and others may be carriers.

*Clinical Signs.* The leptospirosis bacterial agent produces abortions, still births, weak calves, and deaths in nursing calves. Abortions may occur as early as the third month of pregnancy, but more frequently occur after mid-pregnancy.

A diagnosis may be made by a blood test or isolation of leptospire bacteria from the urine.

*Treatment.* Animal vaccination is probably sufficient preventive on most farms. The local veterinarian

should be consulted on how many strains of leptospirosis should be included in the vaccine.

**Trichomoniasis**

*Transmission.* Trichomoniasis is a venereal disease transmitted by sex contact. Trichomonads survive the processing methods used for artificial insemination and have been spread by this method as well as under natural conditions. Infected bulls show no signs of the disease.

*Clinical Signs.* During a period of days or weeks the organisms produce enough inflammation to cause the death of the developing embryo. The usual history of Trichomonad infections is an abnormal length of time between heat periods and an infertile cow for 3 to 5 months.

*Treatment.* Signs of Trichomoniasis and Vibriosis are quite similar. If these diseases are suspected, veterinary assistance should be sought. The use of a laboratory is necessary to make a definite diagnosis. These diseases are spread by the bull and are difficult to cure. Infected females recover with time and reproduce normally.

**Vibriosis**

*Transmission.* Vibriosis is a venereal disease that is spread from infected bulls to heifers and cows and from infected cows to bulls in the act of breeding.

*Clinical Signs.* Death of the embryo occurs without signs of disease. The heat cycle may be normal or a longer period of time may intervene between heat periods, depending on when the embryo is killed. Re-breeding several times is often necessary before the cow conceives. Abortion may occur if the embryo survives long enough for it to occur. The usual history is infertility rather than abortions.

**Treatment.** An effective vaccine is available. The bull as well as the cows and heifers should be vaccinated. Veterinary assistance should be sought if this disease is suspected.

## SCOURS - Virus Caused

### General

Viral agents which are known to produce scours in calves are reovirus, coronavirus, IBR, and BVD. The reovirus produces diarrhea during the first week of a calf's life. Coronavirus infection is more prevalent at 1-6 weeks of age. Diarrhea due to IBR or BVD viruses is not common in young calves, but can occur.

There is no effective treatment for viruses after their disease symptoms appear. Treatment is aimed at control of secondary bacterial invaders and assisting the calf in its own natural defenses (including vaccination in the case of IBR, BVD, and reovirus). Good nursing care is very important. The treatment recommended for bacterially caused diarrhea should be beneficial against these secondary invaders.

There is an effective vaccine against the reovirus, which needs to be given during the first 24 hours of life. Cows vaccinated against IBR or BVD will supply antibodies in the colostrum (first milk out of cow's bag) which should protect the young calf.

### BVD (Bovine Virus Diarrhea)

**Clinical Signs.** There are three forms of this disease. Mild, acute, and chronic. The signs may resemble those of IBR or shipping fever. This virus may cause abortions. Some calves are born with brain damage, due to exposure to the BVD virus before they are born. The acute form produces a high fever and severe diarrhea.

**Prevention** Response to treatment has been disappointing.

A vaccine is available, but should be used by or on the advice of a licensed veterinarian.

### IBR (Infectious Bovine Rhinotracheitis)

**Transmission.** This viral agent is rather prevalent and is often the initial cause of shipping fever. Cows exposed during pregnancy may abort. May be transmitted by nose to nose contact. This agent has been isolated from face flies. It is believed that they are capable of transmitting the disease from animal to animal.

**Clinical Signs.** There are three forms of this disease:

Respiratory IBR produces a heavy nasal discharge, open mouth breathing, high fever, and drooling saliva. The membranes lining the nose are red and inflamed, giving rise to the term "rednose."

Genital IBR is also called IPV or Infectious Pustular Vaginitis. The vagina develops blister-like nodules and a discharge of pus. The virus may produce inflammation of the sheath and penis of the bull.

Conjunctival IBR or the eye form resembles pinkeye.

**Prevention.** All forms of IBR may be prevented by vaccination. Calves should be vaccinated for IBR at weaning. Replacement heifers should receive another vaccination two to four weeks before breeding. Cows vaccinated while open will offer greater protection to the calf by way of the colostrum milk. However, these antibodies picked up by calves from their mothers will interfere with calf response to vaccination until after weaning.

## SCOURS - Bacteria Caused

### General

Colibacillosis, commonly known as white scours, is one of the most common ailments of newborn calves. Calves deprived of colostrum (the mother's first milk) are especially susceptible because colostrum has a high content of antibodies against *E. coli*, the bacteria which cause white scours or baby calf diarrhea.

There are a number of diseases which produce diarrhea. A confirmed diagnosis usually requires the services of a veterinarian and laboratory tests.

Calves with colibacillosis have rear quarters that are pasted with fluid or liquid feces. The stool has a foul odor and is white or gray in color. Affected calves become weak, dehydrated, and may or may not have a fever.

Calves born on pasture have less scour problems than those which are born in or spend time in buildings. The problem is more common among calves of first calf heifers because they are frequently confined so.

Prevention has been much more practical than treatment. Sanitation and cleanliness are very important if calves are kept in buildings. Colostrum soon after birth is also important. Vaccination of cows with commercial or autogenous vaccine with *E. coli* bacteria is thought to be helpful.

**Treatment.** The following formula was developed by Drs. R. W. Phillips and L. D. Lewis, veterinary physiologists at Colorado State University. The ingredients of the formula supply all of the immediate nutrient and electrolyte needs of the diarrheic calf. All ingredients are readily available in most supermarkets at a cost of around 75 cents per treatment. The formula is palatable, and most calves will voluntarily nurse it from a bottle.

1 3/4 oz. (pkg.) fruit pectin  
1 tsp. Lite Salt<sup>®</sup>  
2 tsp. baking soda  
10 1/2 oz. (1 can) beef consommé  
Warm water to make 2 quarts

It is recommended that two quarts (for a calf 80 lbs. or heavier) be fed 2 or 3 times daily depending on degree of scours. Continue diet for 24 hours after diarrhea ceases. If calf has been nursing a cow, milk cow out just before returning calf.

(1) Fruit pectin is 70-75% glucose, compared to corn syrup which is less than 23% glucose and table sugar which is less than 5% glucose.

(2) Fruit pectin is 3X as effective as corn syrup in raising blood glucose level when given orally to normal calves.

(3) Sodium chloride enhances adsorption of hypertonic glucose solutions in clinically normal calves.

(4) A 3% glucose solution (the concentration in the recommended formula) significantly increases glucose adsorption and consequently increases energy availability more than a 1% glucose solution (the concentration in a commercial electrolyte powder used for comparison).

(5) Lactose suckled from a nipple more effectively raises the blood glucose level than lactose given by stomach tube. Supplying lactose by tube apparently results in the solution pooling in the nonfunctional rumen, thereby delaying transit to the abomasum.

After 24 hours and at least one hour after the last offering of the salt-bicarbonate solution, start to feed milk replacer, milk, or acidophilus milk at a volume of not more than 2.5% of body weight per offering, morning, noon, evening or night for 3 or 4 days. At the resumption of milk feeding, begin therapy with an oral anti-diarrheal medication. Antibiotics, such as neomycin, given orally, or injectable antibiotics, such as a penicillin-streptomycin mixture, and sulfa drugs, such as sulfamethazine, are usually beneficial.

Feeding small quantities of milk frequently during the day seems to allow the digestive system to handle the resumption of milk feeding without recurrence of diarrhea.

Special electrolyte preparations have advantages, but aren't usually available on the farm when you need them for quick use like the salt and soda.

## BLACKLEG AND MALIGNANT EDEMA

**Transmission.** These two diseases are similar and are produced by bacteria which live in the soil for years.

The bacteria are not spread by direct contact from animal to animal, but from the soil.

**Clinical Signs.** Rather large numbers of cattle are lost each year because of blackleg. Usually only one or a few animals are lost in a herd. Affected animals are frequently found dead. The most prominent signs are stiffness and lameness. Pockets of gas frequently form under the skin of the shoulders and a crackling sound can be heard when the skin is rubbed.

Malignant edema is very similar except the affected tissues are swollen and filled with fluid.

**Treatment and Prevention.** Early treatment is worth trying. However, response has occurred in only in a small percentage of cases. Penicillin injected into the muscle is the treatment of choice.

Preventive vaccine is cheap and effective. All calves should be vaccinated against blackleg and malignant

edema at four to six months of age. Calves receiving vaccine before four months of age should be re-vaccinated at six to eight months of age. Purchased cattle under two years of age should be vaccinated unless there is proof that they were vaccinated as calves.

## OTHER HEALTH PROBLEMS

### Anaplasmosis

**Cause.** Anaplasmosis is produced by a microscopic parasite which destroys red blood cells of cattle. Most cases appear in late summer and early fall. Practically all cases occur in older cattle. The disease is usually mild in calves.

Anaplasmosis is spread by blood sucking insects, and by dehorning, tattooing, and other surgical procedures. Recovered animals remain carriers of the rest of their lives. The carrier state may be eliminated with large or prolonged dosage of antibiotics.

**Clinical Signs.** Signs of the disease are: rapid breathing and paleness of lips, nostrils, mouth lining, and other mucous membranes. Affected animals lose weight rapidly, become constipated, and may become belligerent.

**Treatment and Prevention.** Early treatment by a veterinarian is often beneficial. Blood transfusion and antibiotics are beneficial during the early stages of the disease.

A vaccine is available for controlling anaplasmosis. The vaccination program should be discussed with a veterinarian. The vaccine protects cattle from an acute attack of anaplasmosis. However, the vaccine does not stop infection or prevent the carrier state. The veterinarian may recommend a blood sampling, culling, and treatment program, or feeding a preventive during the insect carrier season.

### Bloat

**Cause.** Eating too much lush legume forage is the usual cause of bloat. Use of legumes in grass pasture has greatly increased because of high prices of nitrogen fertilizer and research showing that grass legume mixtures give more economical gains than grass alone. Problems with bloat from cattle grazing legumes are dependent on how you manage the pasture and the kind of growing season. Clover in a grass mixture usually presents no bloat problem if the clover content is kept below 50 percent of the mixture.

**Prevention.** Feeding cattle hay before turning them on clover pasture is a good practice for preventing bloat. Feeding a small amount of grass hay daily helps to prevent bloat. The same results can be achieved by having hay available for cattle to feed on free choice.

Poloxalene, sold as "Bloat Guard," is effective in preventing bloat due to legumes. Directions should be followed closely because results are much better if animals consume the required amount daily.

**Treatment.** Severely bloated animals should be treated as soon as possible. The gas may be allowed to escape by passing a stomach tube into the rumen or it may be necessary to puncture the rumen on the left side behind the last rib with a large needle or cannula. The use of the stomach tube or cannula will not adequately relieve the pressure in cases of foamy bloat. Dosing with four to eight ounces of vegetable oil, such as corn oil or peanut oil, is quite effective in an emergency. Administration by stomach tube is preferred. Oils can be given by drenching or a drenching syringe; however, there is some danger of the animal aspirating the drench into the lungs.

### Cancer Eye

Squamous cell carcinoma or cancer eye may originate on the eyeball or the eyelids. This condition usually occurs in cattle six years of age or older. Cattle lacking pigment in the eyelids are most susceptible. Exposure to sunlight, dust, and other irritants appears to increase the incidence. Close observation, early detection, and early treatment by surgical procedures are helpful. Selecting animals for breeding with greater amounts of pigmentation in and around the eyes is a good practice.

### Fescue Foot

**Cause.** Lameness and sloughing of feet and tips of tails has been associated with grazing tall fescue. The cause of fescue foot has not been proven. Researchers believe that a poison or toxin is produced by the plant or a mold or fungus growing in or on the plant. The toxic substance may be produced under certain temperature and climatic conditions.

**Clinical Signs.** One of the earliest signs of fescue foot is stiffness when animals first get up. Affected animals show severe pain and swelling of one or more feet. A hind foot is usually affected first. As the condition progresses, an indented line appears somewhere between the hock and dew claws. The line appears as though a wire had been tied around the leg. The affected foot or tip of tail is deprived of blood and will drop off if the condition is allowed to progress.

A veterinarian should be consulted for a definite diagnosis.

**Prevention.** There is no treatment. Early detection and removal of infected animals from the fescue will often allow them to make a complete recovery. Affected animals should be placed inside a building with straw bedding to protect the feet from cold. Forage other than fescue should be fed. Some grain and vitamin A is thought to help animals to recover from fescue foot.

When cattle are grazing fescue, watch them closely, especially during winter months. More detailed information may be found in UMC Guide 2100.

### Foot Rot

**Transmission.** An injury to the skin between the claws or to the bulb of the heel gives bacteria a chance to enter the tissue of the foot.

**Clinical Signs.** Foot rot usually appears suddenly. The cow is extremely lame in one foot and stands on the other three. Appetite and production drop. In some herds, after one animal develops foot rot it continues to develop in other animals in the herd.

Not all lameness is due to foot rot. In case of lameness the foot should be picked up and examined. The soreness may be due to a pebble lodged between the toes or a nail in the hoof. Foot rot produces redness between the claws and a characteristic foul odor.

**Treatment and Prevention.** Response to treatment is usually good, especially if treated early. Sulfa drugs are good. Most cases respond to treatment with penicillin-dihydrostreptomycin combination given intramuscularly. In addition to systemic treatment with sulfas or antibiotics, the foot should be cleaned and treated with 5 percent copper sulfate.

If possible, keep cattle out of mudholes as this may be a source of infection. Standing in water softens the cattle's skin and it can be more easily broken by stubble, rocks, and other objects.

### Grass Tetany

**Cause.** Grass tetany is due to a deficiency of magnesium in the blood serum. It is similar to milk fever. Grass tetany has increased with greater use of cool season grasses. Cows which have calved during the past six weeks and are at the peak of milk production have the greatest incidence. Cows become more susceptible with age. Most cases occur in cows beyond the fifth lactation period.

Cool, cloudy, windy, and rainy weather appear to affect the grass and the cattle. At temperatures between 20 to 40 degrees F., grass is less capable of taking magnesium from the soil. Lush, rapidly growing grass may be deficient in magnesium.

**Clinical Signs.** An excitable expression, erect ears, blindness, and muscular twitches. The animal usually goes down. A series of convulsions may occur or the animal may die shortly after developing signs.

**Treatment and Prevention.** Early treatment with little excitement and stress of the animal is essential. Follow-up treatment and care are important since recovered animals are subject to relapses.

Prevention may be achieved by supplying magnesium in a salt mix. Equal parts of magnesium oxide, salt, bonemeal, and dried molasses will supply sufficient magnesium under most conditions. Feeding alfalfa, clover, or other legumes as a part of the pasture or ration is a good preventive.

More detailed information may be found in UMC Guide 2101 or USDA leaflet Number 561.

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