E-348
06-05

AgriLIFE EXTENSION
Texas A&M System

Recognizing and Managing Common Health Problems of Beef Cattle

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Many health problems in beef cattle can be managed successfully if they are detected early. Cattle owners can prevent or minimize losses by taking steps to keep the problems from recurring or spreading to the rest of the herd.

Below are common problems found in beef cattle as well as the probable causes of those conditions and suggested measures to prevent recurrence.

"My cows' eyes are cloudy and runny."

When cattle have cloudy, runny eyes, the inflamed and painful eyeballs and eyelids are probably infected with a virus or bacterium or damaged from sunlight or cancer. These conditions include pink eye, IBR virus eye, cancer eye or photo eye.

Specific diagnosis and proper treatment may require close observation, available history, laboratory testing and professional assistance.

Pink eye (infectious keratoconjunctivitis)

Although sporadic cases of eye diseases occur in all seasons of the year, this highly contagious bacterial disease is most common during the summer.

Observations: The onset of pink eye is sudden, beginning with an excessive flow of tears. The animal holds the eye partially closed, rubs the eye and seeks shaded areas. Soon an ulcer develops in the central area of the cornea and an opaque ring develops around the ulcer. Within 48 hours of onset, the entire cornea becomes cloudy.

Next, the lining of the eyelids becomes red with mucus and pus. As the ulcer deepens and extends completely through the cornea, the eye ruptures and loses fluid, and the eyeball collapses. The infection may affect one or both eyes.

Management: The infected cattle must be isolated and treated immediately by a veterinarian to eliminate the infection and prevent spread to other cattle.

IBR virus eye (infectious bovine rhinotracheitis)

The IBR virus is transmitted through the air and can spread rapidly through the herd. It causes upper respiratory infections, and it is most prevalent in the fall and winter.

Observations: In the early acute stage, a few cattle may develop cloudy corneas, similar to pink eye. The opacity spreads inward from the outer edge of the cornea, and there is no ulceration.

Management: Isolate the affected animals until the viral infection runs its course, and vaccinate the whole herd and purchased replacements.

Cancer eye (squamous cell carcinoma)

Cancer often appears as smooth plaques on the eyeball and ulcers or horn lesions on the eyelids. It occurs more often in cattle with no eye pigment and those that are constantly exposed to bright sunlight.

Observations: As in cases of pink eye, cancer eye causes an excessive flow of tears. This cancer can be identified by the appearance of the lesions on and near the eye. The cancerous growths develop on the third, upper and lower eyelids and eyeball, and they spread to internal lymph nodes and organs.

Management: Early detection is necessary for heating or freezing therapies or for surgical removal of the tumor alone. In chronic cases with more extensive involvement, the entire eyeball and eyelids must be removed.

Photo eye (photosensitization)

This noninfectious condition is a hypersensitivity to sunlight after ingestion of various plants or administration of certain drugs.

Observations: In addition to cloudiness of the cornea, signs of photo eye include sunburn of nonpigmented eyelids, nose, teats, vulva and areas of the head, body and legs. If the affected cattle are exposed to sunlight for prolonged periods, blindness and severe skin damage will result.

Management: Protect the animal from sunlight until its eyes and skin have healed. Shelter it during the day and allow it to graze on pasture at night.

"My calves have areas of hair loss with skin lesions."

Calves commonly become infected with ringworm fungus and wart virus. These two infectious, contagious conditions are easily recognized and differentiated by the appearance of localized hair loss with skin lesions.

In cases where there is generalized hair loss with skin lesions, possible causes other than ringworm or warts include photosensitization, dietary deficiencies, infections of worms and infestations of horn flies and lice.

Ringworm fungus (dermatophytosis)

In the early stages, a fungus infection of the skin often goes unnoticed because the affected areas are small and slightly raised with roughened hair. Infected cows often serve as sources of the fungus, which is transferred by direct contact to calves.

Observations: After several weeks of the fungus infiltrating the hair follicles, the hair falls out, leaving distinct circumscribed, grayish lesions. The scaly lesions coalesce to form large patches of hair loss at least 3 inches in diameter. They are often located on the face and neck and are more common in young cattle.

Management: Although the infection tends to clear up spontaneously after several months, separate and treat the affected calves with a prescribed medication to prevent transmission to the others.

Warts (papillomatosis)

Warts are fibrous tumors of the skin and mucous membranes and are caused by many strains of the papilloma virus. The virus is usually transmitted to calves by direct contact from infected cows. It also can be

transmitted by contaminated instruments that puncture the skin and by biting flies such as horn flies and stable flies.

Observations: The cauliflower-type growths occur primarily on the head, neck and shoulders, in the mouth and vagina, and on the teats, vulva and penis.

Management: To prevent transmission to other calves, isolate those with warts. Over a period of 3 to 12 months, the affected calves build immunity against the virus in the warts and skin. Once the immunity kills the viruses, the warts dry and slough.

"Every winter, my cows rub their heads, necks and shoulders."

Even though lice are known in the winter to cause cattle to itch and rub on objects such as fences, posts, trees and barns, another common cause of itching and rubbing is the aftermath of the allergic dermatitis produced during the previous summer and fall by a horn fly infestation.

Horn fly allergy (allergic dermatitis)

During the horn fly season, cattle often develop a skin allergy to the saliva of the biting horn flies. After several weeks, an inflammatory reaction occurs in the skin, and many hair follicles are destroyed.

Observations: Before the damaged hair falls out during the winter, the retained hair causes an itch sensation, and the cattle rub their faces, necks and shoulders from December through March. As a result of rubbing these areas, the hair coat becomes sparse, and irritated skin lesions develop.

Once the dead hair is removed by rain and rubbing, a normal hair coat returns. If no crawling lice are on the skin or lice eggs are glued to the hairs, the diagnosis is based on a history that the cows had a horn fly infestation the previous year.

Management: To prevent recurrence of this cold-season problem, take steps to reduce the horn fly population during the warm seasons.

"I have occasionally a cow or a bull crippled on one foot."

A cow or bull with a lame foot should be examined closely. Pick up the foot with a rope, and wash and examine between the toes carefully, looking for a foot crack, a corn, swelling, heat or a discharge. You will need professional assistance to differentiate some of the other abnormal conditions of the foot.

Unobservable problems inside the foot include bruises, abscesses, fractures and foot founder, or laminitis. The lameness may also be related to long toes as well as joint inflammation of the leg, including the hip on the rear and shoulder on the front.

Foot crack (web tear)

This condition often occurs after cattle walk on rough terrain or when a bull places its weight on the foot when mounting for breeding. These actions commonly spread the toes wide apart and cause the skin to tear. Also, long toes predispose to the likelihood of excessive spreading of toes.

Observations: If the problem is not a corn or foot rot, check for signs of foot crack, along with swelling and heat of the foot. The web of skin between the toes is also likely to be cracked deeply into sensitive tissue.

Management: The damaged tissue must heal from the inside out. To prevent further tearing, the cow or bull must be confined for a few weeks to limit walking and the toes trimmed and taped together.

Foot rot (necrotic pododermatitis)

If the problem is not foot crack, the likely problem is foot rot, a bacterial disease of the foot. During warm, wet weather, the bacteria in manure mixed with mud

commonly gain entry through tiny cracks and abrasions of the skin between the toes and heel bulb, causing swelling and dead tissue.

Observations: The signs of foot rot include a hot, swollen and painful foot with pus discharge and a dead odor, fever and loss of appetite and body weight. The infection may spread to the skin of the pastern and fetlock and to bone joints inside the foot.

Management: Because the pus discharge contains bacteria and serves as a source of new infections, segregate the cow or bull from the rest of the herd for proper antibiotic treatment. To prevent occurrence of more cases, the unsanitary conditions leading to this condition must be corrected.

Corn (interdigital hyperplasia)

The development of scar tissue, or corns, in cattle is thought to be caused by stretched skin folds between the toes in heavy, splay-toed breeds.

Observations: A painful and hard, tumor-like, vertical mass develops in the web of skin between the toes.

Management: The mass must be removed surgically and the toes bandaged closely together.

"One of my cows coughs, protrudes her tongue and breathes with her mouth open."

The cow obviously has a lung disease in which inflammation elicits an irritated cough, and reduced air space encourages open-mouthed breathing. Because several infectious and noninfectious causes are possible, professional assistance will be needed to make a specific diagnosis by physical and laboratory examinations.

A common infectious lung disease is pneumonia; a common noninfectious condition is fog fever.

Infectious lung disease (pneumonia)

Pneumonia is a highly complex, contagious disease and may be caused by one of several viruses in concert with various bacteria. Pneumonia caused by bacteria is generally serious.

Observations: Fever, coughing and labored breathing are caused by inflammation and swelling of the lungs and the accumulation of mucus, blood and pus that interfere with airflow in the air passages. The animal tries to get more air by stretching out its head and neck and protruding its tongue.

Management: When you see signs of pneumonia, isolate the sick cow for antibiotic treatment. Laboratory tests are needed to identify the specific viruses or bacteria involved to develop an effective vaccination plan for the herd. The plan should include vaccinating the cows, nursing calves, bulls and replacements with the proper vaccines.

Because stress can contribute to the occurrence of this disease by lowering an animal's resistance, cattle owners need to minimize adverse conditions of cold or hot weather to prevent pneumonia in the herd.

Fog fever (pulmonary emphysema and edema)

Fog fever is caused by a toxic reaction in the lungs after the cow ingests a large quantity of an amino acid in lush, green grass in spring or fall. Diagnosis is based on a history of the cows being moved within the previous 10 days from a dry, brown pasture to a lush, green pasture.

Observations: Fever is not present; coughing is minimal; and the onset of symptoms is sudden. Breathing is obviously difficult, with the animal breathing through its mouth, extending its tongue and drooling saliva.

Management: The affected cow should be treated by a veterinarian and handled carefully to prevent death by suffocation brought about by exercise. Move the herd from the lush pasture and gradually return it over 3 weeks by feeding hay and limiting grazing time.

"My calves have runny, snotty noses."

Runny, snotty nose can be associated with pneumonia if the calves have fever, are coughing and have labored breathing. Otherwise, the calves may simply have an inflammation of the sinuses of the head, which is called sinusitis.

Runny, snotty nose (sinusitis)

Nasal drainage in calves may be the normal discharge of mucus from the sinuses of the head. On extremely hot, cold or windy days, inflamed sinuses can discharge excess drainage, even if there is no infection. Also, irritants and allergens in the environment such as dust, pollen and mold cause inflammation of the sinuses.

Observations: When viruses and bacteria infect the sinuses, they produce a head cold and cause a nasal discharge that is a clear, mucus or pus type. Often the infection is limited to the head and does not involve the lungs.

Management: Do not use antibiotics if there is no or only a low-grade fever; allow the condition to run its course. Respiratory vaccines may lack the specific antigens to prevent recurrence.

"Some of my cows got the staggers, went down and are unable to rise."

Cows that cannot rise must be checked by a professional, who will conduct physical examinations and evaluate their diet and environment. Although the cause may be one of many poisonous plants, it is more often the result of grazing on Dallisgrass. In chemical poisoning cases, the cause is often the consumption of toxic amounts of lead or arsenic from batteries or lubricating grease of vehicles or machinery. If the cause is dietary, it is likely that the cattle have a common metabolic disorder such as polio, ketosis or grass tetany.

Polio (polioencephalomalacia)

Cows with polio are thin and usually have been on a diet high in sulfate and low in protein and roughage. They probably have been confined and fed a grain diet without roughage.

Observations: As an affected downer cow attempts to stand, the ankles remain flexed or knuckled over.

Management: Immediate treatment by a veterinarian to relieve swelling of the brain is necessary to prevent permanent brain damage. Adequate roughage must be fed with grain concentrates.

Range ketosis (acetonemia, hypoglycemia)

Cows with range ketosis are usually thin, on a low-carbohydrate, low-energy diet and likely are stressed from cold weather or calving and nursing.

Observations: In addition to the incoordination before going down, the cows are observed pressing against walls, posts and trees, bellowing and tongue wallowing and licking.

Management: Immediate treatment by a veterinarian is directed to raise the blood sugar and improve glucose metabolism.

Grass tetany (hypomagnesemia)

The affected cows are thin, grazing lush pasture high in nitrogen and potassium and likely are stressed from cold, cloudy weather or calving and nursing.

Observations: In addition to staggers, signs in cattle include tossing the head, bellowing and galloping before going down with convulsions.

Management: Immediate treatment by a veterinarian is directed to raise the blood magnesium.

"I have occasionally a thin, downer cow."

Dietary deficiencies are the most common cause of weakness and weight loss in cattle. Enteric bacteria and parasites may be contributing factors.

Observations: Tipoffs to problems in the diet include weakness and loss of weight.

Management: Evaluate the nutritional intake, comparing it to the protein and energy requirements of the herd. Make adjustments if necessary.

If the problem is limited to an individual cow instead of affected the entire herd, seek professional assistance to identify the cause, such as infections of body cavity linings (pleurisy, peritonitis) and abscesses and cancers of internal lymph glands and organs.

"I continue every year to have cows prolapse and retain afterbirth."

It is common for a cow that has difficulty in calving to bruise her uterus. A thin, weak cow may have a prolonged calving process that commonly causes a bruised uterus.

Observations: The inflamed, swollen uterus quite often causes straining with prolapse of the vagina, cervix or uterus. If prolapse does not occur, the placenta may be retained because of bruising inflammation.

Management: Treatment by a veterinarian is directed to replace the prolapse and expel the retained placenta.

"I have low conception rates, repeat breeders and abortions in my cowherd."

Dietary deficiencies and stresses of hot weather and malnutrition in cows continue to be major causes of reproductive failures. Abnormal ovaries and uterus and starvation of the embryo or fetus are commonly associated with inadequate intake of protein, energy, minerals or vitamins. These reproductive problems occur in stressed cows on poor quality or short grazing without provisions of hay and nutrient supplements.

Observations: The herd has an unusually high number of abortions, repeat breeders and low conception rates that cause a large percentage of open cows.

Management: If the problem is caused by poor nutrition, evaluate the nutritional intake and take corrective measures. Professional assistance is essential to diagnose infectious diseases, including testing of fetuses, placenta and blood samples.

"I had several calves suddenly die that before dying were rapidly breathing, weak and feverish."

Many infectious causes of rapid breathing, weakness and fever, followed by sudden death of calves are possible. Ask a veterinarian to perform a necropsy on one of the dead calves and make a specific diagnosis by physical and laboratory examinations. Two common diseases that cause sudden death in calves are lepto and blackleg.

Lepto (leptospirosis)

Lepto is caused by one of five strains of bacteria. The bacteria are shed with urine from infected animals, such as cattle, raccoons, skunks, opossums, rodents, deer, swine and dogs. The bacteria may be shed for many months.

For calves, the likely exposures are from the urine from carrier cows that were stressed at calving and from diseased and convalescent calves. Cows may have the disease but show no signs of it. Calves are infected with the bacteria when they ingest contaminated urine on teats, hair, grass and hay and in water. Newborn calves are the most susceptible to the acute disease.

Observations: The acute form of the disease causes high fever, rapid and difficult breathing, depression, bloody urine, incoordination and death. Lepto calves are often mistakenly diagnosed and treated for pneumonia. Because the bacteria can kill unborn calves as well as nursing calves, it is suggested that cattle owners evaluate the cow herd's pregnancy rate and look for aborted fetuses.

Management: For a closed herd, the most effective approach for control is annual vaccination of all cattle; for an open herd, vaccinate twice yearly. If you time the vaccination in the cow herd during the last trimester of pregnancy, it will provide immunity to the newborn calves through the colostrum.

Use polyvalent killed vaccines containing three or five common serovars. Different vaccines vary in effectiveness, and vaccine failures may occur.

Blackleg (clostridial disease)

When the cause of sudden death of a calf is blackleg bacterial toxins (poisons), the first point to make is that the calf swallowed blackleg spores from the soil. This means the ground is contaminated with the spores that never die. During rains, these spores are normally concentrated by surface water in various spots in the ground, and drought or rains will cause them to surface from the soil.

When ingested by a calf, the spores go to the muscles and remain dormant. A trigger breaks them out of dormancy, sometimes months or years later. Then the bacteria multiply rapidly and produce toxins in the muscles, killing the muscles (black dead muscles), causing blood poisoning and sudden death.

The most common trigger is fast growth. Another trigger is muscle exertion, such as that caused during working, weaning and hauling. Affected calves may be infected at an early age and die of blackleg at a later age. When blackleg occurs, the transmission was not necessarily recent, but possibly months ago.

Observations: Sudden death and rapid, gaseous decomposition are the most common signs of blackleg.

Management: The death is so rapid that treatment is normally ineffective. All dead calves should be burned with untreated wood products to keep from contaminating the ground.

Because other calves can have the bacteria in dormancy, guard against triggers such as stress and rapid growth. Vaccinate the remaining calves. If these calves die, they were already infected with the dormancy of blackleg bacteria before vaccination. Vaccination after exposure will not prevent the dormancy from breaking out.

The seven-way blackleg vaccine should be used because other strains in addition to blackleg that also cause sudden death can be present. The seven strains can be diagnosed only in a dead calf by necropsy and laboratory tests. In addition to blackleg, the other six clostridial diseases that cause sudden death are black neck, black liver, malignant edema, and B, C, D enterotoxemia.

A proper vaccination program includes annual vaccination of the entire herd (calves, cows, heifers, bulls), not just calves. Grown cattle die from four of the seven different blackleg-type bacteria. Cows should be vaccinated during last 3 months of pregnancy or twice a year.

"Some of my calves are rapidly breathing, weak, feverish, scouring and dying."

Because several infectious causes are possible, professional assistance is required to make a specific diagnosis. Fresh feces from live calves must be submitted for laboratory testing, and one of the dead calves must be submitted for necropsy and physical and laboratory examinations. Results of these examinations commonly reveal the presence of tissue damage in the small intestine (enteritis) and large intestine (colitis) and bacteria in the blood (septicemia).

Scours (enteritis-colitis septicemia)

Nursing calves are at high risk to fatal diseases such as scours from the day they are born and continuing during the time of the year when one is calving cows and heifers, moving and mixing these cows and heifers, and bringing in bulls to them. At this time, the baby calves can have low immunity and be highly susceptible to diseases. They can die from scours by dehydration and from septicemia by systemic infections.

Scours are caused by bacteria (*E. coli* and *C. perfringens* B, C, D), viruses (rotovirus and coronovirus), and protozoa in the intestines (cryptosporidia and coccidia). Scours and dehydration worsen when affected calves nurse natural or artificial milk and receive oral antibiotics.

The sources of these deadly germs in the pasture include contaminated ground and fecal shedding from the cows, heifers and bulls. When a pasture trap is used year after year for close observation of calving cows and heifers, the ground becomes heavily contaminated with germs from manure. This contamination is long standing during cool, wet weather by a build up of manure from the calving cows and heifers and scouring calves.

Observations: Calves infected with these germs breathe rapidly and are weak, feverish and scouring. Death also may result.

Management: To correct the dehydration, the affected calves must be removed from nursing and given oral electrolytes until the scours have stopped.

Preventive measures include increasing the level of immunity in colostrums and having all calves nurse the first day of birth. Calf scours can be controlled by vaccines containing *E. coli*, rotavirus, coronavirus and *C. perfringens* B, C, D. Establish an annual vaccination program to provide immunity for the newborn calf though the cow's colostrum. The pregnant cows and heifers need to be vaccinated late in pregnancy to be in colostrums and provide the protective immunity against the fatal baby calf diseases.

Other preventive measures include reducing the level of exposures to infectious organisms during calving and breeding seasons. To reduce the calf mortality related to scours and septicemia in a cow herd calving over a period of several months, use more than one pasture trap to provide clean maternity areas.

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Issued in furtherance of Cooperative Extension Work in Agriculture and Home Economics, Acts of Congress of May 8, 1914, as amended, and June 30, 1914, in cooperation with the United States Department of Agriculture. Edward G. Smith, Director, Texas AgriLife Extension Service, Texas A&M System.