Hardee Rancher Beef and Forage Newsletter

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Spring 2002

Calendar Of Events

March

14	Beef Cattle Herd Health Management Seminar - Hardee County Agri-Civic Center, Wauchula - 3:00 - 7:00 PM
26	Peace River Valley Citrus Growers Association Annual Meeting - Pioneer Park, Zolfo Springs - 6:30 PM

April

16-18	Annual Reproductive Management School - Hardee County Agri-Civic Center, Wauchula
18	Farm Credit of Southwest Florida Annual Meeting - Hardee County Agri-Civic Center, Wauchula - 6:00 PM

20	Packer/Feeder School - Highlands County Agri-Civic Center
May	
1-3	51st Annual Beef Cattle Short Course - Sheraton Hotel, Gainesville

- Bermudagrass Establishment - Time of Planting -

The improved hybrid bermudagrasses do not produce sufficient seed and must be established from vegetative plant parts. Dug sprigs, consisting of underground rhizomes, plant crowns and stolons, can be planted from mid to late February through July. Sprigging bermudagrass in mid to late winter before it starts growing (before breaking dormancy) is encouraged. Sprigs dug in early spring after the plants have broken dormancy have lower levels of energy reserves. Energy reserves are needed to initiate and develop new shoots (sprouts). Also, soil moisture is usually more favorable in late winter as compared to spring (April-May). In the spring, when top growth reaches 4 to 6", digging and planting of sprigs should be delayed until after the first hay harvest or harvest of tops for planting. Tops (green stems) can be planted in June and July. The grass should be overly mature with six weeks or more of growth when the tops are harvested for planting. (Source: Florida Forage Handbook) Dr. Carrol Chambliss

- Fecal Exams -

A Review

Microscopic examination of fecal samples for parasite ova is common in veterinary practice due to the wide range of problems caused by internal parasites. In young cattle, signs of clinical parasitism may include diarrhea, anemia, weight loss, bottle jaw, rough haircoat, lack of appetite and death. In adult cows, internal parasites have been shown to cause weight loss, diarrhea, reduced reproductive performance, and reduced calf weaning weights. Past attempts to identify a minimum number of parasite eggs per gram of feces (EPG) that would justify anthelmintic treatment have been unsatisfactory. Finding parasites or their eggs in a fecal sample confirms parasitism. However, a negative fecal exam may not indicate the absence of worms.

Common Fecal Exam Techniques

Direct Smear
A small amount of feces is diluted with water. This mixture is placed on a microscope slide, a coverslip is applied and the smear is examined microscopically for parasites or their eggs. This method is seldom used as it does not concentrate parasite eggs nor allow for removal of confusing debris from the sample.

Fecal Flotation
Two grams of feces are mixed in a beaker with about 15 mL of water. The mixtures is poured through a gauze screen to remove debris and collected in a test tube. The test tube is filled with water and may be allowed to stand for 20 minutes or centrifuged in a swinging head centrifuge at 1500 RPM for 10 minutes. The tube is decanted and half filled with a flotation solution of saturated salt, magnesium sulfate, sodium nitrate or sugar.

The sediment in the tube and flotation solution are mixed and then the tube is filled with flotation solution, so that a coverslip placed on the top of the tube contacts the solution. Next, the tube with coverslip is centrifuged for 10 minutes at 1500 RPM or allowed to stand for 30 minutes. Nematode eggs will float to the surface and stick to the coverslip, which is then removed and placed on a microscope slide for microscopic viewing. This technique will not detect liver fluke eggs or lungworm larvae, but does a good job with the eggs of most bovine gastrointestinal parasites. Most parasitologists agree that more eggs will be concentrated with a double centrifugation method than with single centrifugation technique or flotation without centrifugation.

Fecal Sedimentation Technique for Liver Fluke Eggs
Five grams of feces are mixed in a beaker with 200 mL of water. The mixture is poured through a tea strainer and the debris in the strainer is discarded. After standing 10 minutes, 70% of the retained mixture is poured off and the beaker is refilled with water. Standing for 10 minutes and pouring off are repeated 3-5 times, until the liquid is clear. Most of the clear liquid is discarded and the sediment in the beaker is poured into a Petri dish. A dissecting microscope is used to examine the Petri dish for fluke eggs.

Parasite Egg Identification

The era of broad spectrum parasiticides, like ivermectin, has largely reduced the need to positively identify the genus and species of all eggs observed. The differentiation of common cattle nematode eggs such as Ostertagia spp. and Trichostrongylus spp. is difficult and may require fecal cultures to identify larvae.

Variables

Type of Fecal Exam
Fecal exam techniques using centrifugation detect up to six times the number of eggs that are identified with noncentrifugal methods. **Sample Handling**
Fresh samples, preferably collected from the rectum, yield the best results. If a sample will not be evaluated within 24 hours of collection or is to be shipped to a diagnostic lab, the sample should be chilled (not frozen) or fixed in 5% formaldehyde. Delay in examining the feces can result in the eggs hatching to larvae, or distortion and collapse of the eggs. Consequently, low or negative results could be falsely recorded from older fecal samples.

Season
The time of year can affect fecal egg counts, as parasite egg production increases in the spring and fall and directly following parturition.

Feed
It is widely recognized that high energy diets in feedlots suppress parasite egg production, while roughage diets are claimed to increase egg output.

Parasite Type
Lungworms and liver flukes do not produce eggs that are detectable with routine fecal flotations.

Stage of Parasite
Immature and inhibited parasites do not produce eggs. A cow could have few if any O. ostertagi eggs in her feces, yet be infected with hundreds of thousands of inhibited larvae.

Egg Production Capacity
Each type of worm does not produce an equal number of eggs. Trichostrongylus, Ostertagia, and Nematodirus produce significantly fewer eggs than Haemonchus.

Host Immune Status
Parasite egg production may be suppressed by the cow's immune reaction. It follows that use of immune suppressing drugs in cattle, such as cortisone, may allow increased parasite egg production.

Anthelmintic History
Use of narrow spectrum dewormer could remove adult parasites and clear fecal samples of eggs, yet leave the cow infected with immature or inhibited parasites that do not produce eggs.

Misleading results may also be obtained when cattle are sampled within 14 days or less following deworming. It may take 14 days for nematode eggs to clear from the digestive tract and fluke eggs may wash out of the gall bladder for 30 days post treatment.

Summary

Many factors can confuse the evaluation of bovine fecal exam results. Variables that affect the data include exam technique, how the sample is handled, season, type of cattle feed, type of parasite, stage of parasite, egg producing capacity of the parasite, host immune status, and history of anthelmintic use. Many of these factors may provide a false sense of security via false negative fecal exams. If clinical signs or consideration of these variables creates doubt as to the parasite status in a group of cattle, the best response is a broad spectrum parasiticide. Adapted from Veterinary Bulletin/Bovine Fecal Exam Limitations, Donald W. Briskey, DVM

For questions or comments regarding this publication contact Lockie Gary

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