

# Vet Call

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## Cool down a hot summer problem

Tall fescue is one of the most predominant cool-season grasses in the United States. Because of its ability to resist pests, adapt to a wide range of conditions and provide a long grazing season, tall fescue is grown on more than 35 million acres in North America, primarily in the southeastern and somewhat in the northwestern United States. A drawback to grazing tall fescue is that a large percentage is infected with an endophyte fungus.

Fescue is a popular forage species because of the mutually beneficial relationship between the grass and the fungus. The relationship benefits the fungus by providing food, protection and a site for reproduction. The relationship also benefits the grass by providing protection from ruminant grazing and possibly insect attack. Because of this protection, endophyte-infected pastures have improved stand growth and vigor compared to endophyte-free fescue pastures.

The fungus that infects fescue produces a number of products known as alkaloids that appear to cause problems for beef cattle. Exposure of animals to high levels of the endophyte has been implicated as the cause of the syndrome "fescue toxicosis" (also known as "summer syndrome" or "summer slump").

Animals displaying signs of fescue toxicosis typically exhibit a number of symptoms, including roughened hair coat, high body temperature, rapid breathing and excessive salivation. Recent evidence shows that blood flow to peripheral and core body tissues is decreased. Affected animals also have reductions in feed intake, weight gain, milk

production and reproductive performance. Cattle grazing endophyte-infected fescue tend to spend less time grazing and more time in the shade or standing in water.

The severity of summer fescue toxicosis is directly affected by environmental temperature. Dry-matter intake, respiration rates and rectal temperatures remain normal for cattle fed highly toxic fescue if environmental temperatures are cool. However, extreme lesions, including sloughing the tail

**T**o date, the methods of coping with the effects of endophyte-infected tall fescue generally involve the following principles:

1. Avoiding the endophyte;
2. Diluting the effects of the endophyte;
3. Minimizing the effects of the endophyte; or
4. Using pharmaceuticals to relieve the symptoms.

switch and even the hooves, can occur in cattle grazing highly infected fescue during periods of cold environmental temperatures. These lesions are presumed to occur due to endophyte-induced reduction in blood flow to the periphery combined with constriction of peripheral blood vessels associated with cold temperatures. Lack of blood supply causes the death and sloughing of affected tissue.

Not all fescue is infected with endophyte, and the percentage of plants in a given pasture that are infected will vary from one pasture to another. Generally speaking, the greater the degree of infestation in a pasture, the greater the potential effects of fescue toxicosis. Whether or not a pasture is infected cannot be

determined by sight. The fungus does not affect either the growth or the appearance of fescue, and a laboratory analysis is needed to detect its presence.

The endophyte can be avoided by replanting infected stands of tall fescue with noninfected varieties of fescue or other grasses. The use of chemical-kill and no-till drilling of noninfected fescue seed has been described. In addition, some producers may be able to use a combination of chemical kill and tillage to remove the infected stand, and then rotate other crops such as summer annual grasses through the field prior to reseeding with a noninfected fescue variety. However, because noninfected fescue is not as hardy as endophyte-infected varieties, a commitment to improved grazing and forage management must be made.

Interseeding legumes into fescue stands increases the protein content and energy concentration of the pasture's forage, while diluting the amount of endophyte consumed daily. Ladino clover, red clover, birdsfoot trefoil and alfalfa have all been used successfully. Legumes can be seeded with a no-till drill or broadcast with or without harrowing. The best method of planting depends on the legume used and the time of year when planted.

Grain supplementation also acts to dilute the amount of endophyte consumed. Cows fed grain along with highly infected fescue hay had reduced winter weight loss and improved pregnancy rates compared to cows fed infected hay alone.

The effects of the endophyte can be minimized by only

grazing infected stands in the spring and fall when fescue quality is high and endophyte effects are the lowest. During the summer months, other grass or grass-legume pastures should be grazed. The fungus tends to concentrate in the stem and seedhead. If plants can be kept young and vegetative by grazing (or mowing) practices that keep stands from maturing, the effect of the endophyte on performance is decreased. Similarly, if fescue hay is cut in the boot stage (just before the seedhead emerges), performance in animals eating the hay is improved over those that consume late-cut hay.

Several pharmacological approaches to minimizing fescue toxicosis also have been investigated, including the use of B-vitamins (niacin, thiamine), thiabendazole, aspirin, zinc, selenium and others. None of these approaches consistently show benefits in well-controlled studies. Although not readily available to producers, use of the dopamine antagonists metaclopramide and phenothiazine have shown promise in research trials for controlling the effects of fescue toxicosis and may be available commercially in the future.

The best approach to managing fescue to minimize negative effects of the endophyte will depend on your local conditions. By working closely with area Extension and agronomy specialists, you can develop a plan for coping with this problem.

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