

# Fescue Toxicosis – What It is and How It Costs You

## Conservation Innovation Grant Project Fact Sheet



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Produced by Dr. Gabe Pent and  
 Dr. John Fike (Project Director)

### The Fungal Endophyte

Producers, conservationists and industry specialists have made tall fescue the primary forage in Virginia, largely because it is highly productive over much of the growing season and it is relatively easy to manage. Tall fescue is resilient and a strong competitor in pastures largely because of a fungal endophyte – that is, a fungus that lives within the plant.



- About two-thirds of Virginia's fescue pastures (greater than 65 percent) are highly infected with endophyte.
- The fungal endophyte makes the plant resilient to stress, helping fescue survive drought, limited soil nutrients and overgrazing.
- The endophyte gives the plant a competitive advantage, so it generally outcompetes other forages in such limiting situations.



Most fescue in Virginia contains an endophyte. The image of a stained leaf (inset), shows the endophyte as dark blue, squiggly lines (Photo by Nick Hill.)

### Alkaloids

Fescue's agronomic benefits come with a cost to producers, because the fungus produces toxins that harm livestock. Ergovaline, the primary toxin produced by the fungus, causes many negative symptoms in cattle, including:

- Reduced forage intake
- Reduced milk production
- Reduced reproductive success
- Increased core body temperature
- Rough hair coats
- Potential damage to or loss of feet, ear tips and tail switches during cold weather

The stress associated with increased body temperatures in turn leads to the use (and degradation) of streams and surface waters for cooling.



## Animal and Environmental Impacts

When cattle consume alkaloids, blood vessels constrict. This reduces blood flow to extremities and increases core body temperatures. Alkaloid consumption also reduces ability to shed hair, and the rough hair coats worsen the effects of heat. In summer, the added heat stress for livestock grazing infected pastures results in their wanting to go to surface waters to cool down. In winter, reduced blood flow to the extremities can result in frostbite of tail switches and ear tips, and feet can be damaged – a condition called fescue foot. (Photos from John Fike (top left), Matt Poore (top right), Morgan Paulette (bottom right) and Dr. Terry Swecker (bottom left)).



## The Bottom Line

The estimated cost of fescue toxicosis across the U.S. is over \$1 billion annually. Reduced weight gain and poor reproductive performance are primary drivers of the losses in this estimate. However, this calculation does not count the cost of damage to the environment in terms of lowered stream health, degraded water quality or the cost of remedial stream exclusion fencing.

Opportunities exist to improve animal and environmental health with better management and by renovating infected fescue pastures. Assistance is available to remove toxic fescue and convert to fescue with non-toxic endophytes or native grasses. This can be part of a whole farm strategy for mitigating fescue toxicosis. Contact your local extension office to learn more about toxicosis management strategies.

Contact your local NRCS office to learn more about assistance available for fescue conversion.

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