

Managing Novel Tall Fescue For Persistence

Conservation Innovation Grant Project Fact Sheet



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Questions about Renovation

Producers' questions about converting toxic fescue pastures and hayfields to novel fescue generally center on two issues:

1. Economics
(*"That seed is expensive, will renovation pay?"*)
2. Agronomics
(*"Will it persist like KY31?"*)

When determining the potential payoff from pasture renovation, factors to consider include:

- If the land is owned or leased? If leased, for what time frame? Conversion under a short-term lease is an unattractive option.
- How much toxic fescue is in the forage stand and how is that likely affecting gain and reproductive performance? Most fescue stands in Virginia are heavily (greater than 60 percent and often 100 percent) infected and weaned animals routinely have gains limited to the one pound/day range.
- What is the value of cattle in the marketplace? This is the variable outside the producer's control.

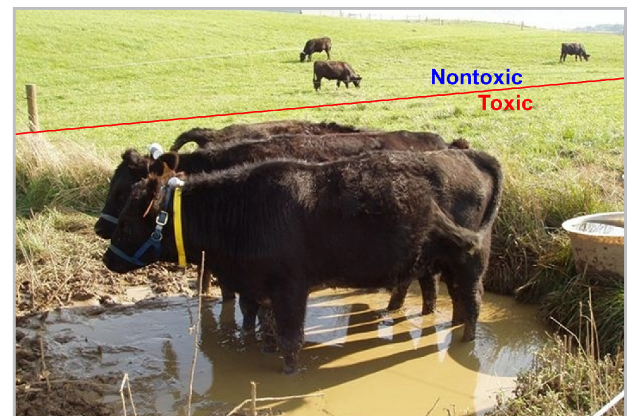


Figure 1. Cattle on nontoxic fescue continue grazing while cattle on toxic fescue stop. Photo by Holly Boland.

Regardless, the general conclusion is that cost of fescue renovations can be recovered over two to five years, depending on the conversion method, the degree to which pastures already needed renovation from weeds/poor stand, and if financial assistance from NRCS helped offset these costs.

The Question of Persistence

Research studies from around the U.S. have shown that novel fescue persists as well as KY31 and other toxic fescue varieties - with one caveat: Novel fescues must be managed differently.

Endophytes, fungi living within fescue, provide the plant many survival benefits, including tolerance to drought and poor soil fertility. This is true both for wildtype (toxic) endophytes and novel (nontoxic) endophytes. However, novel endophytes do not produce toxins and do not cause the distress and reduced intake associated with toxic fescue (Figure 1). That means it can be easier to overgraze novel fescue.

Managing New Stands

It may be tempting to graze newly-established novel fescue stands. Resist this temptation. Converting toxic fescue to novel fescue can cause a temporary disruption to forage supply, but the effort taken to get this non-toxic fescue can be lost if the stand is grazed before the new plants are big and strong enough to withstand grazing. Generally, the stand can be grazed if it passes the “pluck test”. That is, if you can pull on a plant and it is not uprooted, it can withstand grazing. A light defoliation encourages the plants to tiller, thickening the stand. Grazing or making hay on the new stand should be about encouraging the plants - not about feeding livestock or making many bales of hay (Figure 2). Don't overgraze it - defoliating too closely can open the field up for weeds



Figure 2. Young fescue stands (left) can be subject to weed invasion and weed control may be essential to have a clean stand. Haying new stands (right) can help the plants tiller out and increase density. But cutting too close also can open the stands up for weed growth. Photos by John Benner.

Stand Recontamination with Toxic Fescue

Novel fescue stands only can be contaminated when toxic seeds enter the pasture and are given opportunity to grow in the pasture. The way to maintain a novel stand, free of toxic fescue, is to keep the novel fescue healthy and vigorous and to keep toxic seed out. Follow these steps:

- Maintain soil fertility. All pastures benefit from routine soil testing and appropriate fertilization. Healthy stands are better able to resist invasion by weeds - or by stray seed from toxic fescue.
- Don't overgraze or mow too close. Cutting fescue too close to the ground, too often, or both, can weaken fescue stands. This increases the opportunity for erosion and nutrient loss, which further weakens the stand. As the stand declines, spaces are created for weeds and toxic fescue seed.
- Avoid traffic damage. Grazing on wet ground (especially with new stands) can damage plants and “pug” soils. Disturbed areas around hay feeders can provide an avenue for undesirable plants, especially if the hay being fed is filled with toxic fescue seed. Use of ring feeders is not bad, per se, but the feeder should be moved regularly to avoid soil damage.
- Make hay in the boot stage. Haying toxic fescue fields is a good strategy for mitigating toxicosis, but if made too late - once seeds are mature - this hay is a vector for spreading toxic seed.
- Keep “dirty”, seed-laden hay equipment out of novel fields. If haymaking or clipping has to occur in stands with mature seed, avoid traveling into novel fescue fields without first cleaning the tractor and equipment.
- Do not feed toxic hay on novel pastures.
- If cattle have been on “seedy” toxic fescue stands, keep them out of novel fescue pastures for at least two days. Cattle often eat seedheads and it takes about 48 hours to pass the seed out of the digestive tract.

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