

A new method for converting toxic tall fescue pastures to MaxQ.

John Andrae
Clemson University
and Nick Hill
The University of Georgia

The beneficial effects of replacing toxic tall fescue with MaxQ® have become well accepted by university forage specialists as well as producers over the past several years. Improved stocker cattle gains, increased weaning weights, and excellent agronomic performance make it economically feasible to replace toxic tall fescue pastures. In a recent survey of forage specialists, the top reason listed for **NOT** converting toxic tall fescue pastures to MaxQ was the extensive spray-smother-spray replacement method. Therefore, we began a research study examining alternative methods of replacing toxic tall fescue. After three years of collecting research data and two years of on-farm testing, we feel that controlling seedheads in the spring followed by two fall Roundup WeatherMax® applications at a six week interval is an acceptable method for establishing MaxQ tall fescue.

Toxic tall fescue plots were assigned to one of six experimental treatments. Treatments are listed in Table 1. These treatments were applied to six plots in Athens and Blairsville Georgia during each of two years. Plots were evaluated and harvested at various times following MaxQ planting for toxic tall fescue escapes, MaxQ stand density, and toxin content.

Table 1. Description of experimental treatments used to replace toxic tall fescue with MaxQ tall fescue. All plots were planted with 25 pounds of MaxQ per acre in October 2003-2005.

Treatment	Description
Control	Toxic tall fescue (>90% infected with toxic fungus) that was not sprayed. MaxQ notilled in fall.
S-S-S	Sprayed in spring with 1.5 qt/A Roundup WeatherMax, notill pearl millet, sprayed again in fall with 1.5 qt/A Roundup and notill MaxQ tall fescue
Planting	Toxic fescue mowed twice in spring. Sprayed in fall with 1.5 qt/A Roundup WeatherMax immediately prior to notill drilling MaxQ tall fescue.
2 week	Toxic fescue mowed twice in spring. Sprayed with 1.5 qt/A Roundup WeatherMax two weeks before planting and 1.5 qt/A immediately prior to notill drilling MaxQ tall fescue in fall.
4 week	Toxic fescue mowed twice in spring. Sprayed with 1.5 qt/A Roundup WeatherMax four weeks before planting and 1.5 qt/A immediately prior to notill drilling MaxQ tall fescue in fall.
6 week	Toxic fescue mowed twice in spring. Sprayed with 1.5 qt/A Roundup WeatherMax six weeks before planting and 1.5 qt/A immediately prior to notill drilling MaxQ tall fescue in fall.

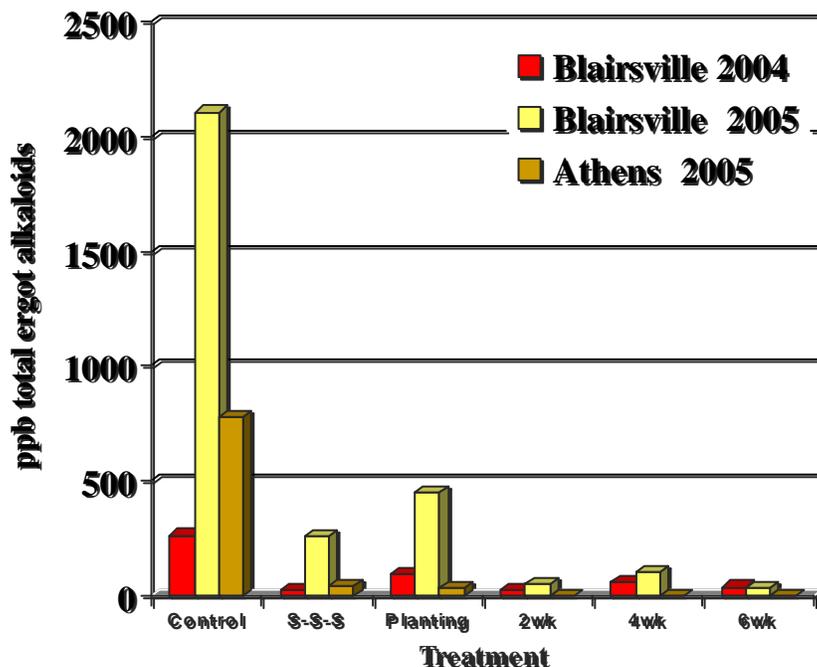
Research Results

The spray-smother-spray technique and plots with four and six week herbicide application intervals had the fewest toxic tall fescue escapes. The six and four week application interval plots also contained the highest stand density of MaxQ tall fescue. Plots sprayed with a single application immediately prior to planting had the lowest stand counts while spray-smother-spray and two-week interval treatments were intermediate.

Weed populations were also affected by the spray treatments. Plots sprayed at six week intervals had fewer winter annual weed scores than all other treatments during the spring following MaxQ establishment. This decrease in weeds was due to weed seed germination and control of subsequent seedling weeds with the subsequent second application of Roundup. This response was consistent across years and locations, and was not present in any other herbicide treatment interval.

Toxic alkaloids were measured in plots to determine if toxic fescue was effectively eliminated. Results are shown for three of four plot years (Athens spring 2006 data is pending). Note that all treatments where MaxQ replaced toxic tall fescue contain lower alkaloid levels than the toxic control plots. Also note that plots sprayed at the four and six week intervals had consistently low toxin levels, and were lower in toxins than the currently recommended spray-smother-spray method of tall fescue replacement.

Figure 1. Concentration of toxic ergot alkaloids in tall fescue forage near Athens and Blairsville Georgia. Control tall fescue is greater than 90% toxic. Other categories represent various replacement techniques. Preventing viable seed formation in Spring, followed by two fall Roundup applications at a six week interval was most effective in removing toxic tall fescue from field and replacing with MaxQ tall fescue.



Some Precautions to Follow

- 1) Toxic tall fescue seed formed during the spring prior to MaxQ establishment can contaminate a new stand. Two timely mowings prior to viable seed production are normally necessary to prevent seed formation.

- 2) Two herbicide applications are required. Do not be tempted to eliminate the second application even if there appears to be a 100% kill from the first application. Our initial observations led us to believe second application was not needed. Ergot alkaloids in the plots receiving only one Roundup application indicates to us that a second application of Roundup prior to planting is essential.

- 3) Plots have been monitored only for a short term. We will continue to monitor infection rates over the next several years to determine if toxic fescue encroaches upon MaxQ. Minimizing toxic seed import and maintaining vigorous MaxQ stands after establishment remains important. However, an excellent study conducted in Ohio indicates that MaxQ tall fescue is as competitive as toxic tall fescue.

Summary

Controlling spring seedhead formation of toxic tall fescue and using two fall Roundup WeatherMax applications at a six week interval appears to be the best method of establishing MaxQ tall fescue. Stand density was excellent using this method and pasture toxin concentration was lower than the spray-smother-spray method. Implementation of this technique on four farms in Georgia and South Carolina has resulted in MaxQ tall fescue stands with a 0%-2% toxic tall fescue infection rate. This rate should be acceptable for all classes of livestock.