K·STATE Research and Extension | Meadowlark District

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Broomsedge Bluestem – Fertility Management Considerations

There's a statement in a USDA Plant Fact Sheet on broomsedge bluestem stating: *On infertile soils, broomsedge is a long-lived competitor.* If your end of year forage management includes pricing or applying fertilizer to a cool season grass stand, keep broomsedge bluestem management in the back of your mind.

Why? Broomsedge continues to be an increasing species of interest in cool season grass stands, and fertility management plays a big role in whether it gets a foothold or not. Other factors contribute as well (harvest management comes to mind…), but because the competitive nature of cool season grasses depends heavily on fertilizer, fertility management, particularly lime and phosphorous, can be a great way to help manage broomsedge to a degree. One example comes from the results of a 2008 study at the University of Missouri evaluating the response of cool season grass (fescue) stands with broomsedge in them to fertilizer applications. Their research showed the addition of fifty pounds of phosphorous per acre plus lime increased fescue stand composition from less than 15 percent to over 35 percent, while *slightly* reducing the broomsedge composition of the stand. Bottom line: it's a slow process, but fertilizer can help.

This research does not suggest potassium and nitrogen fertilizers aren't important. In fact, potassium levels in many forage stand soil tests continue to decline, warranting a second look at K applications. As in this study, we know pH and phosphorous levels have long been a concern and are contributors to the broomsedge issues we currently have.

If 50 pounds per acre of phosphorous fertilizer makes you cringe a little, a second look at actual soil fertility levels versus a 'blanket' approach to application might be in order, and that's best done with a soil test. Conditions can make it tricky this time of year, but if you can get a probe in the ground (to a six-inch depth) and don't mind variable weather during sampling, a good soil sample can provide a lot of information to guide fertilizer applications. We have good numbers for N/P/K removal in cool season grasses, but soil testing becomes particularly important when determining the need for lime applications.

If soil testing isn't in the cards, keep this P number in mind: 12. That's the phosphorous removal number we use for every ton of cool season grass. For example: if a hay field yields two tons per acre, the amount of phosphorous needed to 'replenish' that removed P would be 24 pounds per acre. In the absence of a soil test, consideration should at least be given to application of a crop removal rate to keep soil test levels from falling further.

The acres taken over by broomsedge bluestem continue to increase. Plan now for a fertility management program to keep it from getting worse. If you want to discuss fertility (or other management) programs further, feel free to drop me a line.