K-STATE Research and Extension | Meadowlark District

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Pasture Fertility & Weed Pressure

Did you apply fertilizer to your cool season (fescue/brome) pasture or hay field for the 2025 growing season? Ever wondered if all that input dollars were worth it?

The value of fertilizer for cool season forages has long been a promoted best management practice with application rates typically based on tons of hay produced or animal units we can graze. We do so with good reason: these forages respond very well to fertilizer, so well in fact we've attempted to make it work similarly in other forage systems (with mixed results…).

Yield response may not be the only benefit of a balanced fertility program, however. According to a three year, 63 pasture (fescue) study from the University of Missouri, fertility can play a role on weed/brush pressure in cool season grass as well. In their work, pastures were sampled every 14 days to determine weed species and density in a sample area. Soil test levels, density of the fescue forage, forage groundcover, and stocking rate were also evaluated.

While results varied between broadleaf weeds, brush, and grassy weeds (and within each category as well), the take home message certainly supported good fertility management. Soil pH was the biggest influencer, reducing the density of both brush and broadleaf species in particular. Phosphorous (P) levels were also a factor, with each increase in soil test P reducing biennial and perennial weed pressure levels. Positive reductions of ragweed, ironweed and large crabgrass were noted from increasing soil test K (Potassium) levels as well.

Some of the reduction was directly attributed to plant density. The study found increasing forage cover correlated with consistent reductions in weed density with each one percent increase in ground cover having the potential to reduce weed pressure by 35 weeds per acre.

Good fertility programs aren't cheap, and if you haven't made plans for this growing season, your window is closing fast. On the flip side, constantly fighting weed pressure isn't an inexpensive endeavor, either. Making sure you have a balance fertility program may be your best bet at least attempting to get the best of both worlds.

If you are interested in these study results or want to dig further into a fertility program for 2026 and beyond, contact me via any of our District Offices or dhallaue@ksu.edu .