



*Ergovaline causes serious complications to gestating mares.*

**B**efore we know it, foals will hit the ground and breeding season will be in full swing! Periodically, we discuss problematic plants that would be considered weeds that can easily take over our pastures when management is not optimized. But what do we do if a problematic plant is a valuable cool-season grass? What if only some cultivars are considered problematic, while others are completely safe? We will visit in this article about tall fescue which is an often misunderstood but valuable forage for horses.

Tall fescue (*Schedonorus arundinaceus*, formerly known as *Lolium arundinaceum* and *Festuca arundinacea*) is the most widely grown cultivated pasture grass in the United States and was found growing on a hillside in eastern Kentucky in 1931. This proved to be a productive grass when it was released as a variety, called KY31 Tall Fescue, in 1943, and in subsequent decades was planted in the lower Midwest and upper South. This cool-season, perennial bunchgrass is surprisingly heat and drought tolerant, disease resistant, and persists with minimal care. But how does this grass persist so well in the upper two thirds of Alabama, despite being a cool-season grass? The plant has a symbiotic relationship with the fungal endophyte *Epichloë coenophiala* (formerly called *Neotyphodium coenophialum*) which is vital to stand longevity. The plant provides nutrients during the endophyte's lifecycle, which is housed entirely within the plant, and in exchange the endophyte secretes ergot alkaloids, such as ergovaline. While the entire plant contains ergovaline, the seedhead contains the greatest concentration of this substance. Ergovaline gives KY31 Tall Fescue, sometimes denoted as E+, its hardy nature but is problematic when grazing livestock and in particular, breeding horses.

Ergovaline works by acting on dopamine D2 receptors which manifests in numerous abnormalities. The most well-documented side effects of ergovaline are in the gestating and lactating mare. During gestation, mares may experience prolonged gestation, dystocia or difficult births, oversized fetuses, and premature placental separation or "red bag" deliv-

## Problematic Plants – Tall Fescue

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Tall fescue grows in bunches. Reseeding may be required in sparse areas.

eries. Mares may also develop thickened placentas, retained placentas, limb artery vasoconstriction, and laminitis. Mares may have poor or no udder development and after parturition may experience agalactia, also known as a lack of milk production. This can have devastating implications on foal health, as foals rely on the antibodies found in colostrum for immunity. If a producer chooses to rebreed a mare impacted by ergovaline, they will find the mare may have lower conception rates. When it comes to stallions, our understanding of the impacts of ergovaline is more limited; however, of the studies that exist, stallions may have a decrease in ejaculate and gel-free volume, but no differences have been noted in sperm motility, morphology, or sperm cell number.

It is recommended that mares are removed from E+ pasture or hay 60-90 days before parturition. It is always better to remove mares earlier rather than later to account for variations in when they may foal! If it is difficult for a manager to remove mares from infected pasture, the diet should be supplemented with an alternate forage source through pasture, hay, cubes, or pellets to dilute the amount of ergovaline consumed. Additionally, not all tall fescue varieties contain the toxic endophyte. Although you cannot see the endophyte residing in fescue with the naked eye, if a stand has persisted with minimal management for numerous years and you did not plant it yourself, it is most likely E+ fescue. Endophyte-free, or E-, fescue varieties do not contain endophytes and therefore are not as drought or grazing tolerant. Subsequently, they do not persist as well in the South. A commercially available variety is KY32. Due to reduced stand vigor with E-, researchers developed novel endophyte (NE+) or “friendly endophyte” varieties of tall fescue. These endophytes help with plant hardiness without producing harmful ergot alkaloids that are concerning to breeding stock. Some examples of commercially available NE+ fescue include Jesup, Texoma, and Lacefield. BarOptima +E34 has been shown to contain ergovaline but in lower concentrations than KY31, but should still be avoided in breeding stock. If you have a gestating mare and are concerned about E+ fescue exposure, be sure to contact your veterinarian for intervention. These mares should also be monitored closely around their expected foaling date to the increased risk of complications. For grazing during warm-season dormancy, you can consider establishing NE+ pasture, but keep in mind an increase in associated costs. Remember that although E+ fescue has a bad reputation, it can be a safe and viable forage for a wide class of horses.

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