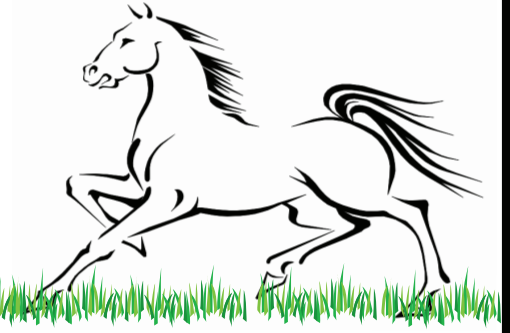
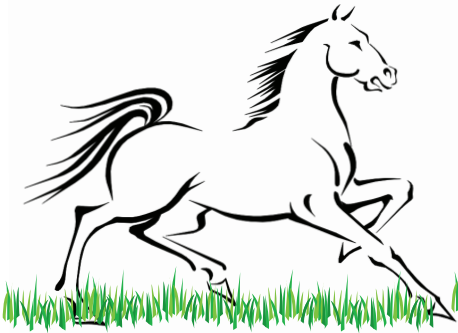


March

Pasture Acre Management



Endophyte-free Seed

Some farmers and ranchers have asked about maintaining endophyte-free hay and pasture ground. A friend of a friend has offered the opinion that when endophyte-free seed was planted into a field where the existing grass already had the endophyte infection; the new plants would pick up the endophyte infection. The friend's opinion is all too common.

The problems with endophyte in pastures are real and potentially very costly for horse, sheep, and cattle operations. Endophyte causes health problems that include abortions, hoof and leg problems, low conception rates, rough hair coat, and generally poor health in all grazing animals and poor rates of gain in cattle and sheep.

Many pastures across the south have had K-31 Tall Fescue planted in them at one time or another. Most of those pastures were not well managed. The fescue was allowed to head out and produce seed that fell to the ground. Some of those seeds germinated and grew the next year, but many of the seeds laid dormant in the ground for several years, waiting for the ground to be disturbed so they could grow. When the ground is tilled for a new pasture, some of those K-31 seeds will germinate and grow. How many seedlings germinate and grow is different in each field. Most may have very few that survive, and some may be thick with K-31 plants. So now the question of why to plant endophyte-free pastures has to be answered.

By planting endophyte-free pastures you can virtually eliminate endophyte problems. If the new pasture is seeded properly and at an adequate rate, even if K-31 germinates and grows, you will have a very low endophyte infection in the pasture. If the pasture is properly managed (clipped, rotated, fertilized, over seeded) then the K-31 should be so diluted that there should not be a problem with endophyte poisoning.

The endophyte fungus does not spread from plant to plant. By planting endophyte-free varieties you can greatly reduce the percentage of endophyte infected plants in the pasture.

By planting K-31 or allowing it to over take the pasture can you "save money"? Let's see, you will promote endophyte poisoning and profit loss from those fields for generations; does that save money???

Pasture Perfect – Brand of Choice

If the newly seeded pastures are left to go seed-head and not fertilized, or clipped or grazed properly, or cut for hay at the right time then the K-31 may eventually be the species that will take over the field as it is so well adapted to this climate and area. However, if managed properly, Renovator Special Mix and Show Horse will perform very well for years of profitable, endophyte-free forage production. A management program that includes overseeding or frost seeding on an annual basis with Renovator Special will be very helpful in keeping the pasture thick enough that the K-31 will not be able to get a foot-hold in bare spots.

An endophyte-free or low endophyte pasture will be a profitable pasture and will provide a more palatable and more appealing pasture for your horses. It will save time, effort and money over the long haul and the resulting pay-off will last for years to come.

Kentucky 31 (K-31) History

Tall fescue (*Festuca arundinacea*) is a widely used forage crop. It is insect and nematode resistant, tolerates poor soil and our weather conditions well and has a long growing season. It also has a downside. Most tall fescue is infected with a fungal endophyte (*Neotyphodium coenophialum*) that is toxic to forage animals.

Tall fescue was brought to the USA from Europe in the late 1800s. It was officially discovered in Kentucky in 1931, tested at the University of Kentucky and released as "Kentucky 31" in 1943. It became popular with farmers in the mid-to late 1940s and 1950s, spreading quickly in the Midwestern and Southern states.

Early producers were excited by the ease with which they could establish and maintain a stand. However, conflicting reports began circulating. For some reason animals were not performing well when allowed to graze tall fescue. Research into the causes of poor animal performance resulted in the discovery of a small fungus that grows between the cells. This fungus came to be known as the "endophyte" because it was "in" (endo) the "plant" (phyte). Follow-up research revealed that this endophyte could produce ergot-like alkaloids under certain conditions.

Endophyte and Grazing Animals

Toxins that result from the endophyte create a number of problems. Cattle, horses and sheep do not gain and can actually lose body weight despite constant grazing. Reproductive problems show up; low conception rates and poor offspring survival. Cattle grazing infected tall fescue have elevated body temperatures and loss of blood flow to the extremities, causing "fescue foot" and other symptoms. It is estimated that the losses to the beef cattle industry alone or well over \$600 million a year.

Studies show that cattle grazing endophyte-infected tall fescue decrease the feed intake and lower their weight gains. They also produce less milk, have higher internal body temperatures and respiration rates, retain rough hair coat, demonstrate unthrifty appearance, salivate excessively, have poor reproductive performance and maintain reduced serum prolactin levels.

Research shows that the endophyte can reduce weight gain by more than 50% in steers fed on pasture. It also shows that the seed head is the most toxic portion of the plant.

Horses, particularly mares, grazing endophyte-infected tall fescue are prone to reproductive problems such as late-term abortions and stillborn foals, prolonged gestation periods and dystocia, thickened or retained placentas, laminitis (founder), poor conception rates, decreased prolactin and progesterone levels and agalactia.

Foals that survive in the uterus will generally be larger than normal, have overgrown hooves, poor suckling reflexes, uncoordinated and lowered body temperatures. They may also have poor immunity due to the lack of colostrums produced by the mare. Because horses are sensitive to the toxins in endophyte-infected fescue, even the lowest of endophyte can produce equine fescue Toxicosis.

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