

## **BROODMARES and FESCUE PASTURE**

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Now that spring is here, foals are arriving. Spring and early summer is nature's time for most foals to be born.

In the Southeast and other areas of the United States, many pregnant mares graze tall fescue pastures. Unfortunately, many of these fescue pastures are infected with an endophyte fungus (*Neotyphodium coenophialum*).

In Tennessee, about 80 percent of all fescue pastures tested have been infected with the endophyte fungus at a level of 50 percent or more.

Endophyte infected fescue can result in a number of serious problems in broodmares. Among the most common problems are mares' failures to show the typical signs of impending foaling. Dystocias or difficult foalings are common. The placenta is thickened and often does not rupture normally. Rather than the typical transparent amnion that appears around the fetus at birth, an intact red structure ("red bag") that resembles a basketball as the mare attempts to foal, appears protruding from the vulva. The intact placenta and fetus are together at the attempted foaling. This abnormal birth process can result in the death of either or both the foal and mare.

Mares often have prolonged pregnancies that have exceeded 365 days. Foals that are born alive are leggy and thin. Their hooves and teeth are not fully developed. A number of stillbirths also occur in mares that graze endophyte infected fescue pastures. Upon foaling, many mares are agalactic, have no milk, or are hypogalactic, have little milk.

**Data does not support that abortions are a common problem with mares grazing endophyte infected fescue pastures.**

**With such problems, broodmare owners need a management system to allow them to properly handle broodmares grazing endophyte infected fescue pastures effectively. It has been shown that removing mares at 300 days of pregnancy and placing them on a non-fescue pasture, in stalls or dry lots with proper nutrition results in normal foalings without the problems noted previously.**

**When mares have gone over their foaling date and have been removed from endophyte infected fescue, they show normal signs of foaling such as udder development within 48 hours and often foal normally within 72 hours after removal from endophyte infected fescue. Mares appear to quickly recover from some of the effects of endophyte infected fescue when moved to a non-endophyte infected forage.**

**Owners can give mares domperidone as an oral paste beginning 25 days before their foaling date and continue until foaling. Domperidone has been shown to allow mares to foal normally while grazing endophyte infected fescue. However, there is the cost of the product and the labor associated with daily administration.**

**In some management situations the use of domperidone may be the only option that an owner has.**

**Another problem that has been noted when mares graze endophyte infected fescue is re-breeding. Mares grazing endophyte infected fescue often become pregnant, but do not stay pregnant. Recent data from the University of Mississippi has confirmed earlier research from Auburn University that mares grazing endophyte infected fescue have more early embryonic deaths (EED).**

**EED usually occur within the first 40 days of pregnancy. Mares can be pregnancy tested at 14-18 days by ultrasound or rectal palpation. When pregnant mares are re-examined at 40-days post-breeding, a number of mares grazing endophyte infected fescue have been observed to not be pregnant.**

**In the Mississippi State University research, 100 percent of mares grazing non-endophyte infected fescue became pregnant.**

**A new fescue forage<sup>1</sup>, known as a novel endophyte has been developed. This novel endophyte fescue has the positive factors of drought, insect and disease resistance noted in endophyte infected fescue. However, it does not appear to have the negative compounds that cause major problems noted when broodmares grazing endophyte infected fescue.**

**Mares grazing this novel endophyte fescue pasture at Mississippi State University had a pregnancy rate of 87.5 percent with 7 of 8 mares becoming pregnant.**

**When mares grazed endophyte infected fescue the pregnancy rate was 62.5 percent or only 5 out of 8 mares became pregnant.**

**EED was observed in the mares grazing endophyte infected fescue. Six of 8 mares became pregnant. However, three of these mares had EEDs between 16-35 days after breeding. Two of them which had EEDs re-cycled, were bred and became pregnant again. But, one of these 3 mares did not return to estrus by the end of this study. Two other mares in this group never did cycle during the study.**

**These data again indicated that broodmares grazing endophyte infected fescue have problems in early pregnancy as well as late pregnancy.**

**It should be noted that EED is a serious problem even when mares that lose their**

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<sup>1</sup>)Jessup Max Q.

**pregnancies early are re-bred and become pregnant. EED represents a major economic lost which involves time and management considerations. When using shipped semen, it can be expensive having to reorder additional semen. Over use of stallions can be a serious problem as the breeding season progresses.**

**Mare care also can be a financial factor. Another consideration is some of these foals will be born later in the year. Most breeders prefer early foals, especially those that will be sold, shown or place in training as long-yearlings or two-year-olds.**

**Some mares which have EED will not recycle, or they recycle so late they cannot be bred efficiently in the current year.**

**Owners can manage mares to reduce the risk of EED by keeping them off endophyte infected fescue pastures until they are diagnosed pregnant at 40 days. Note that the EEDs in this study occurred at 16-35 days in the three mares. Owners may want to develop alternate forage-based pastures containing orchardgrass, Bermudagrass or a novel endophyte fescue for such purposes.**

**Mares which are pregnant at 40 days post-breeding are highly likely to have a foal next spring. This is one reason that owners are urged to have mares pregnancy tested at 40 days post-breeding even when they were pronounced in-foal at a 14-18 pregnancy check.**

**Owners may want to consider giving mares that graze endophyte infected fescue pastures a higher level of vitamin E the last 30 days of pregnancy and in early lactation. Research from the University of Connecticut has shown that vitamin E supplementation above the normal recommended level resulted in higher levels of immunoglobulins in foals nursing such mares.**

**Immunoglobulins are large proteins that contain antibodies which can protect**

**newborn foals from diseases, so they are key to early survival of foals. Foals are born without any natural immunity or protection from disease. They acquire natural immunity from colostrum, the first milk, which contains a high content of immunoglobulins. The foal's intestinal tract can only absorb these large protein molecules in the first 12 hours after birth. So, it is critical that foals get high-quality colostrum early.**

**Extra vitamin E in the pregnant mare's ration the last month of pregnancy and the first month of lactation can be a benefit to newborn foals. A level of about 75 International Units (IU) of vitamin E per pound of feed was given to mares compared to the typical 36 IU of vitamin E.**

**Wheat germ oil, corn and soybean oils, high vitamin E sources, can be fed if mares are not on green pasture which is a good source of vitamin E. A vitamin supplement can be fed to provide extra vitamin E daily. When selecting a vitamin supplement, use one that has a 10:1 ratio of vitamin A to vitamin D.**

**Mares that graze endophyte infected fescue are often agalactic or hypogalactic. When mares are removed from endophyte infected fescue, they usually will milk normally. Supplemental vitamin E should be helpful to improve the immunoglobulin level in these mares' colostrum.**

**Broodmares that graze endophyte infected fescue pasture have potential foaling, lactation and re-breeding problems unless owners address these serious issues with a management strategy designed to reduce the effects of endophyte infected fescue.**

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