On the Blog

Answering the call to the fescue toxicity dilemma

By Sam Strahan | April 22, 2020

It is well-documented that the reduced productivity of cattle and other livestock in the more-than 35 million acres of tall fescue known as the “Fescue Belt” is challenging when temperatures start to rise every year. With plenty of time lately to look out the window of my office at the rapidly growing spring grass, I have spent a fair amount of time talking with customers about efforts to reduce some of the typical problems related to fescue toxicity. The quickly growing grass and impending warm weather mean that the levels of ergot alkaloids we associate with fescue toxicity in cattle and other livestock will be rising in our pastures. Some of the problems associated with these alkaloids include the slow shedding of winter hair coats, the slower growth of our calf crop, lower reproduction rates in cows, lowered immune responses when challenged and increased levels of heat stress. Greater heat stress can induce more rapid breathing and more energy burned trying to stay cool, often leading to more time spent in the shade or water rather than grazing. Despite fescue having tremendous agronomic attributes, a study conducted several years ago found that the industry-wide economic losses resulting from reduced growth and reproduction as a result of fescue toxicity were estimated to be over $3.2 billion (Kallenbach, 2015).

Is there a way to prevent the toxic effects of fescue instead of trying to treat already-affected animals? With this focus in mind, a number of years ago, Alltech researchers discovered that a yeast cell wall component referred to as modified glucomannan had a strong affinity to bind the suspected chemicals involved in fescue toxicity, known collectively as ergot alkaloids. A study by Akay et al., in 2003 demonstrated how this modified glucomannan increased the excretion of alkaloids in the feces of cattle fed toxic fescue seed.

Focusing on this affinity, follow-up animal experiments showed that feeding that same product to cows grazing toxic fescue pastures resulted in improved body condition scores and improved conception rates (Aaron et al., 2006; Ely et al., 2006) and that feeding it to stocker cattle resulted in increased body weight gain (Akay et al., 2003a).

Trial data has consistently indicated lower feed intakes, especially in hot weather, when cattle graze toxic fescue pastures. More recent research continues to explore the exact causes of these problems in livestock, as well as ways to alleviate the symptoms. Learning more about why intake is depressed, which can drive some of the issues related to reduced growth and contribute to lower milk production, would give producers better means of improving the production efficiency of their herds. Research undertaken at the University of Kentucky over the past few years has studied reduced rumen motility and the subsequent impact on intake as it affects growth (Koontz, “Effects of endophyte-infected fescue, alkaloid ingestion on energy metabolism, nitrogen balance, in situ feed degradation and ruminal passage rates,” Ph.D. dissertation, 2013; Riccioni, “Influence of ergot...
alkaloids on rumen motility...,” master’s thesis, 2017). These studies theorized that “rumen fill” may be a major contributor to reduced intake and, therefore, to a negative impact on productivity. We also know that heat stress plays a large part in reduced feed intake, and elevated body temperature is another symptom of fescue toxicity. The focus, then, must be on products that counteract these effects on intake reduction and heat stress and their resultant challenges to cattle production.

So, what nutritional products for cattle are available to improve productivity in the “Fescue Belt,” and how do they help? Years of research, plus farm and ranch testimonials, have proven the ability of CRYSTALYX® to improve forage digestion. When digestion is improved, rumen fill is reduced and intake improves for better productivity — it’s pretty simple! Subsequently, producers can enhance the overall nutrition of their animals with essential trace minerals that are critical for reproduction and immune response, such as copper, zinc and selenium. Multiple studies have indicated that copper status is often compromised when cattle graze toxic fescue, leading to long, rough hair coats and increased morbidity due to compromised immune function (Koontz, Ph.D. dissertation, 2013). All CRYSTALYX fescue products include additional copper and zinc to help overcome these deficiencies, plus the maximum level of selenium allowed.

CRYSTALYX offers several options containing FEB-200™ that can meet these nutritional needs on a variety of operations. Fescue-lyx® and Hi Mag Fescue-lyx® are the foundation products, allowing a moderate protein level with a higher-magnesium option. Fescue-Phos® is a mineral-based block for use when additional protein is not required. Our newest addition to the fescue lineup is Blueprint® Fescue Mag with FEB-200™, containing 100% organic copper, zinc, manganese, cobalt and selenium. We continue to see and hear from customers about the benefits of using the Blueprint® line of products for higher weaning weights and improved breeding performance (see Jon Albro’s recent blog, “CRYSTALYX Blueprint nutrition for breeding and beyond”).

Let CRYSTALYX products help you meet your needs for high productivity despite the challenges of grazing toxic fescue. For further information, contact your local CRYSTALYX dealer or read CRYSTALYX blogs and podcasts on a variety of topics.

www.crystalyx.com