

## Supplementing Grazing Cattle Series

# Growing Cattle on Tall Fescue

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### Reasons for Supplementing

#### Offset Fescue Toxicosis

**Problems.** Cattle grazing toxic forms of endophyte-infected tall fescue are subject to reduced performance due to the negative effects of toxins and seldom gain more than 1 pound per day. Cattle on nontoxic or endophyte-free fescue may gain up to 2 pounds per day under the same management conditions and the same forage quality.

Animals consuming the toxic fescue experience reduced forage intake, especially during the hot summer months. Under this circumstance, providing supplemental feed can help support higher rates of gain for growing cattle. Because the additional feed is not being substituted for other nutrients, providing supplemental feed should result in a good supplemental feed conversion.

Increased stocking rates can also be beneficial by increasing forage usage. Pasture productivity (total weight gain per acre grazed) may be improved as a result of more cattle consuming forage that would not be used as a result of intake depression by the toxic endophyte.

#### Offset Reduced Forage

**Availability.** Fescue is a cool-season forage that achieves most of its growth (regrowth) in the spring and fall (once cool weather and sufficient moisture are acquired). Throughout the summer, forage allowance may become limited due to high temperatures and reduced soil moisture causing reduced fescue growth.

Providing additional feed during this period may become necessary when forage intake becomes limited, not only because of the presence of fescue toxins but also because of a reduction in forage availability due to hot and dry growing conditions.

#### Offset Reduced Forage Quality.

Because fescue is a cool-season forage, the nutrient composition of the forage will be at its best quality during spring and fall. Plant quality will diminish throughout summer. Providing additional feed will be necessary to maintain higher levels of performance regardless of the presence or absence of toxins.

### Responses to Supplementation

Steer calves grazing the spring growth of endophyte-infected tall fescue have been shown to gain nearly 0.25 pound per day more than non-supplemented calves when fed at 0.5 to 1 percent of body weight. Calves supplemented at 1 percent body weight may gain less with high starch feeds, such as corn, compared to feedstuffs, like corn gluten feed, that contain readily digestible fiber. Digestible fiber better complements forage digestion. Researchers comparing corn to corn gluten feed found that at 0.5 percent body weight, feed conversion was greater for corn than corn gluten feed (11 vs. 28 pounds of feed per pound of added gain). However, at 1 percent body weight, feed conversion was poorer for corn than corn gluten feed (40 vs. 14.5 pounds of feed per pound of added gain).

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Another study evaluated supplementing calves grazing endophyte-free fescue with corn or wheat bran at 0.34 percent body weight or wheat bran at 0.48 percent body weight. Supplementation improved weight gain by 20 percent. Calves supplemented with corn at 0.34 percent body weight or wheat bran at 0.48 percent body weight gained 0.2 pound per day more than nonsupplemented calves. Calves supplemented with corn required 5 pounds of feed for every pound of additional gain, whereas calves supplemented with the low or high wheat bran required 8 pounds of feed per pound of added gain.

A study in Arkansas found that providing supplemental bypass or rumen undegradable protein during the spring will not result in enhanced animal performance above corn supplementation at 0.31 percent body weight. Feed conversion for supplementation during this study averaged 7.5 pounds of feed per pound of added gain.

A comparison of supplementing cattle grazing either endophyte-infected or endophyte-free tall fescue in the fall was conducted at the University of Arkansas. Cattle grazing the endophyte-free pastures gained nearly 0.2 pound per day more than cattle grazing the infected pasture when no supplements were provided. Gains on the noninfected pasture were low (0.64 pound per day), which suggests forage quality or quantity might have been limiting in this study. Supplementing calves with corn at 0.75 percent body weight increased the weight gain of calves grazing the noninfected fescue by 48 percent, whereas weight gain of calves grazing infected fescue was improved by 110 percent. The amount of corn required to put on a pound of added gain when supplemented at 0.75 percent body weight was less on the endophyte-infected (6.5 pounds of feed per pound of added gain) compared to the endophyte-free (10.6 pounds of feed per pound of added gain) pasture.

Another Arkansas study looked at the cumulative benefits of supplementing calves at 1 percent body weight with a 50:50 soybean hull:corn gluten feed mix plus an ionophore (Rumensin) and implanted with Component TE-G. Weight gain was improved by 1 to 1.4 pounds per day and the amount of weight gained using the cumulative management strategy increased as plant toxicity increased. The cumulative management strategy increased return above direct cost by \$63 at the highest level of pasture toxicity.

## Suggestions

- **Non-toxic fescue.** Low level energy supplementation (<0.5 percent body weight) can improve weight gain. Higher levels should only be used with limited forage supply.
- **Toxic fescue.** Supplementation at 1 percent body weight with a digestible fiber-based feed supplement will provide improved weight gain at a good supplemental feed conversion ratio.
- **Growth implants.** Growth implants can be used in combination with supplementation to increase weight gain of feeder calves grazing toxic fescue pastures. Estrogenic implants may help alleviate the effects of fescue toxins.
- **Feed an ionophore to improve feed efficiency.** Gains can be increased by 10 percent, which may improve supplemental conversion by 50 percent.
- **Add minerals to the supplement to ensure an adequate, consistent intake.** Make sure trace minerals copper, selenium and zinc meet or exceed 100 percent of calf requirements. Copper content is known to be low and poorly available in fescue.

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Printed by University of Arkansas Cooperative Extension Service Printing Services.

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