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Ryegrass Fertilization

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Annual ryegrass is an important cool-season grass grown in Florida to provide a high quality forage during the winter and early spring (January-April). Ryegrass can be seeded alone or grown with other forages. Ryegrass can generally be grazed within two months of seeding with grazing continuing for 120 days or more.

It is essential to follow proper fertilization and liming practices in order to obtain maximum production of high quality ryegrass. We have conducted field research studies at the Range Cattle Research and Education Center at Ona to reevaluate the fertilizer and lime recommendations for ryegrass.

Before a fertilizer or limestone recommendation can be made for ryegrass it is important that a soil sample be taken and analyzed by a reputable soil testing laboratory. A soil analysis will determine the nutrient status and pH from which a fertilizer and limestone recommendation can then be made. To sample take six to eight soil cores per pasture from the surface six inches and mix them together as a composite soil sample.

Nitrogen is by far the most important nutrient for ryegrass production, but many nutrients are essential for maximum forage production. Apply 30 pounds N/ acre at planting followed by another 50 pounds N/acre every four to six weeks. Recent studies conducted at the Range Cattle Research and Education Center have shown that higher yields and quality of ryegrass are obtained when sulfur is included in the fertilizer mix. Sulfur is obtained by either applying ammonium sulfate, sulfur, or potassium sulfate. It is important that the economics of fertilizers is considered and the least expensive source of nutrients be purchased. Unlike bahiagrass, research has shown that ryegrass responds to applications of phosphorus and potassium. One reason that ryegrass responds to

phosphorus and potassium fertilizer is its rooting system. Bahiagrass has extensive roots which go deep into the soil profile and get needed nutrients from a larger soil area, while ryegrass only has shallow root system.

Research has demonstrated that 25 pounds of phosphate per acre should be applied at planting for maximum ryegrass production when the soil tests very low in P. It is also important to apply approximately 50 pounds potash per acre if the soil tests low in K.

Data from ryegrass fertilization studies at Ona have shown that limestone should be applied to the soil when the pH is less than 5.5. It is important to point out that over liming is as bad as under liming. If coarse textured (sands) soils are over limed (pH over 7.0), poor plant growth may result due to the unavailability of micronutrients. Only a soil test can tell you for sure if you need lime. The laboratory should provide recommendations as to the quantity and type of limestone needed.

Dolomitic limestone is recommended over calcitic limestone (high cal) if the calcium to magnesium ratio is greater than eight to one. If the ratio is less than eight to one either high cal or dolomitic limestone may be used. The optimum soil pH for ryegrass production on sandy soils in Florida is 5.5-6.0. It is best to apply limestone three to four months prior to planting to give it time to raise the soil pH. When possible incorporate the limestone to a depth of six inches to allow the limestone to react with the soil faster.