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## **FERTILIZING STARGRASS FOR GOOD FORAGE PRODUCTION**

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Stargrass is an excellent source of forage for cattle production in southern Florida both for grazing and for hay production. In general stargrasses have very high fertilizer requirements, thus it is essential that a proper fertilizer program be maintained.

Before a fertilizer and limestone recommendation can be made for stargrass it is essential that a soil test be taken and analyzed by a reputable soil testing laboratory. A soil test will determine the nutrient status and pH of the soil from which a fertilizer recommendation can be made.

Nitrogen is by far the major plant nutrient to which stargrass will respond. Nitrogen application has a direct effect on yield and quality of stargrass. Recent studies at Ona have shown yields of both Florico and Florona stargrass to increase as the amount of applied nitrogen increases up to 600 pounds per acre per year applied in three split applications (March, June and September). The greatest yield response to applied N was with rates up to 225 pounds per acre per year, with the smaller yield increases being observed for N fertilization rates greater than 225 pounds per acre per year.

Phosphorus, potassium, and micro nutrients are also essential in obtaining maximum yields and quality of stargrass. Phosphorus and potassium need to be applied annually while micronutrients normally only need to be applied very three to four years. This of course should be determined by annual soil testing.

Proper liming practices are an essential part of good forage management. However only apply limestone after having had soil samples analyzed by a soil testing laboratory. The lab will make the recommendation as to the source and quantity of limestone to be applied. Generally, dolomitic limestone is recommended over high cal if the calcium-magnesium ratio of calcium to magnesium is greater than 8:1. If the ratio is less than 8:1, either high cal or dolomitic limestone may be used. If the soil pH is too high or too low,

certain nutrients required for plant growth are chemically changed into forms unavailable to the plants. This results in plant nutrient deficiencies. Limestone should be applied to coarse-textured soil approximately three to six months before planting forages in order to allow the limestone to neutralize the soil acidity.

Recent studies conducted at the Ona AREC have demonstrated stargrass yields to increase as the addition of limestone increased up to two tons limestone per acre (pH 5.5) and decreased at the three tons limestone per acre (pH 6.3) application rate. This decrease in yield at the three-ton limestone per acre rate is a result of over liming. Over liming can be as harmful to forage growth as is under liming. When soils are over limed, the soil pH will increase above the recommended level. If forages are grown on coarse textured soils (flatwood soils) with high pH levels (greater than 6.0), poor plant growth may result due to the unavailability of micro nutrients and/or an increase in root pathogens. Overall stargrasses generally perform well at a soil pH between 5.5 and 6.0.

As a general fertilizer recommendation, 350 pounds per acre of a 16-8-16 should be applied semi-annually with 60 pounds N per acre between the complete fertilizer applications if stargrass is going to be intensively grazed. If the stargrass is going to be harvested for a hay crop, about 400-450 pounds per acre of a 15-15-15 fertilizer or equivalent should be applied four to five weeks before each cutting. Limestone should be applied approximately every three to four years, or when the pH drops below 5.0 on sandy coarse textured soils. It should be remembered that this recommendation can be modified depending on the soil test results.