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## **Some Tips on Using Lime in Florida's Acid Soils**

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Proper liming practices are an essential part of forage management in Florida. The majority of soils in Florida are acidic and will produce low forage yields in the absence of limestone.

Soil acidity can result from acid rain, decomposing vegetation and acid-forming fertilizers such as ammonium sulfate and ammonium nitrate. In addition to neutralizing soil acidity which is toxic to forage growth, addition of calcitic limestone (high cal) provides calcium, and dolomitic limestone provides both calcium and magnesium which are required for plant growth. In order to determine the quantity and form of limestone needed it is necessary to take soil samples from the surface six inches of the pasture in question. The soil samples should then be analyzed for calcium, magnesium, soil pH and a lime requirement test by a reputable soil testing laboratory. The soil testing laboratory will then make a lime recommendation based upon the results of the soil test.

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. Currently, the recommended soil pH for forage production in Florida is 5.5 for perennial grasses and 6.0-7.0 for legumes. 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.

As a rule of thumb, approximately one ton per acre of limestone will raise the soil pH one unit on sandy, coarse textured soils in Florida. In other words if the initial soil pH is 4.5, one ton of limestone per acre will raise the soil pH to approximately 5.5. Limestone should be applied approximately every two to three years in Florida depending upon the fertilization practices. For this reason it is highly recommended that a soil sample be collected annually and analyzed by a reputable soil testing laboratory before applying

limestone or fertilizer. If possible, limestone should be applied to coarse textured soils approximately two to three months before planting forages in order to allow the limestone to neutralize the soil acidity. Perennial grass pastures should normally be limed sometime during the winter months to allow time for the lime to neutralize soil acidity before the growing season begins.

Over liming can be as harmful to forage growth as is under liming. If soils in Florida are over limed, the soil pH will increase above the recommended level. If forages are grown on coarse textured soils with high pH levels (greater than 7.0), poor plant growth may result due to the unavailability of micronutrients and/ or an increase in root pathogens.