Proposed Changes to Sugarcane Fertilizer Recommendations for Transitional Soils and Sands

Executive Summary – Mabry McCray

With the recently updated phosphorus, potassium, and calcium silicate recommendations for sugarcane on mineral soils, most sugarcane fertilizer recommendations in Florida have been updated over the last eleven years. However, there are some gaps that would be helpful to growers to fill to cover the range of soils and situations that Florida sugarcane growers encounter. These are addressed in the EDIS manuscript "Nutritional Requirements and Fertilizer Recommendations for Florida Sugarcane". This new EDIS publication will serve as a comprehensive nutrient management guide for Florida sugarcane growers. It includes proposed options for determination of nitrogen, phosphorus, and calcium silicate rates based on actual soil organic matter content. Also included are proposed updates for elemental sulfur recommendations for sands and mucky sands.

Nitrogen fertilizer requirements range from 220 lb N/acre for plant cane on sands to zero for sugarcane on muck soil. In addition to specific nitrogen fertilizer recommendations for sands, mucky sands, and sandy mucks, the updated recommendations propose the option of using actual soil organic matter content for a field or management zone to interpolate between the nitrogen recommendations for sands and mucks. Similarly, the soil test ranges in which phosphorus and Ca silicate are recommended for sands and mucks vary with organic matter content. So, the new recommendations give the option of using interpolation to determine an appropriate rate based on actual organic matter content. This will provide growers with more precise estimates of nitrogen, phosphorus, and silica requirements for transitional soils.

Elemental sulfur is recommended as a furrow application at planting to increase micronutrient availability in high pH soils for Florida sugarcane. Elemental sulfur recommendations for mucks and sandy mucks were updated in 2018. While more situations of micronutrient deficiencies exist in mucks and sandy mucks because of higher calcium carbonate concentrations in these soils, there can be sands and mucky sands where sugarcane yield could benefit from elemental sulfur application. IFAS Bulletin 809 from 1979 suggested application of elemental sulfur with soil pH $\geq$ 6.5, but sugarcane yield responses were not determined at soil pH < 7.0 even on muck soils. The pH break points for sands and mucky sands in the proposed recommendations are the same as those for muck soils and the maximum elemental sulfur rate is the same as the previous recommendation (300 lb/acre).