Agronomic Research to Enhance the Sustainability of Sugarcane in the Everglades. (A08-glaz105731-Oral)

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Abstract:

It is widely agreed that hydrologic restoration is the necessary starting point for ecological restoration in the Florida Everglades. Sugarcane (interspecific hybrids of Saccharum spp.) is the major crop in the Everglades Agricultural Area (EAA). In addition to its positive ecological consequences, restoring the natural hydrology in the EAA would also help control oxidation of the organic soils in that region. However, the long-duration floods associated with the natural hydrology of the EAA would substantially reduce sugarcane yields. A challenge for researchers in the region is to further develop the appreciable flood tolerance of sugarcane and to learn to move water among fields such that an EAA basin that is only partially flooded at any given time could store and deliver water to linked regions as it did before drainage. The objective of this presentation is to report on results of promising developmental research that seeks to profitably raise water tables or apply short-duration floods to sugarcane. Three of nine cultivars yielded well at summer water tables of 15 and 38 cm below the soil surface. One cultivar had a 25% yield loss at the 15-cm water table. Flooding at planting for up to 12 d improved emergence if stalks were not covered with soil in the furrow, and compared to an insecticide, flooding at planting for up to 21 d in containers controlled wireworms (Melanotus communis Gyll.). In the plant-cane crop, flooding for 21 d and then draining for 20 d before harvest did not affect yields. Some of these floods have only been tested in containers. Field practices will need to be developed to apply biologically successful practices.

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