

Sugarcane Ripeners in Florida ¹

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Chemical ripeners for sugarcane have been studied since the 1920s. Ripeners hasten plant maturity and prolong the period of maximum stalk sucrose concentration. Ripeners typically inhibit apical meristem growth. Presumably, this allows energy ordinarily used for vegetative growth to be diverted to the manufacturing and storing of sucrose.

Since ripeners simply accelerate the natural ripening process, ripeners should not be expected to increase the sucrose content of sugarcane beyond the optimum obtainable through natural ripening (Figure 1). Ripener action is highly variable. The most important factors to consider are the sugarcane variety, climate (temperature and moisture conditions), and timing of ripener application in relation to expected harvest.

Ripeners can be incorporated as an important component of sugarcane production management strategy. Natural ripening is induced by low temperatures, water stress, nutrient stress and a

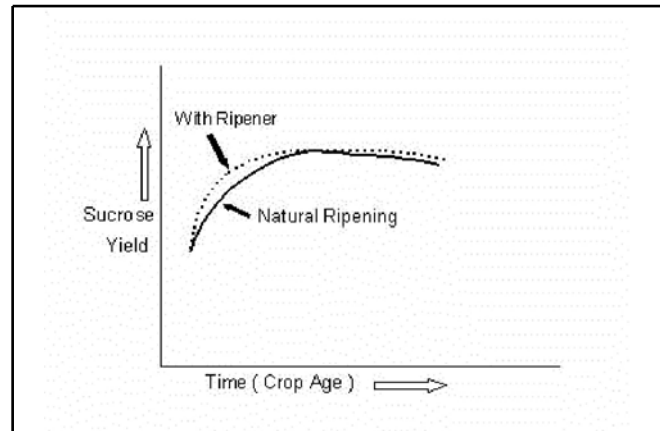


Figure 1. Theoretical ripener effect on sucrose yield.

shortening of day length. Natural ripening is usually limited during the early portion of the Florida sugarcane harvest season because of plentiful soil moisture, high levels of plant available nitrogen and warm temperatures. Thus, chemical ripening is most effective in sugarcane scheduled for harvest in October and November.

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Labeled Ripeners

Currently, Polado L, Roundup WeatherMax, and Touchdown HiTech are the only products registered for use as a sugarcane ripener in Florida. They can only be applied to "last ratoon cane." Use on earlier crops may result in decreased stands in the successive ratoon crops. Roundup WeatherMax at 5 to 12 oz per acre and Polado L at 5 to 14 oz per acre may be applied 3 to 6 weeks prior to harvest. Touchdown Hitech should be applied 3 to 5 weeks prior to harvest at 3 to 11 oz per acre. Total canopy coverage is important. Avoid drift of either product to non-targeted cane or crops. It is critical to avoid newly-planted or freshly-cut cane since inadvertent treatment may result in poor stands.

Expected Results

When applied as directed, the product will enhance ripening and extend the period of high sucrose in responsive varieties. Weather conditions, however, may have a dramatic effect on expressed results. For example, rainfall within 6 hours of application has been shown to reduce effectiveness.

Within 2 to 3 weeks after application, the product may produce slight yellowing to pronounced browning ("burning") of the leaves. Shortening of the upper internodes and spindle death may also occur. As a result of leaf desiccation, an improved trash burn at harvest may be expected.

Most of the enhanced sucrose content will be concentrated in the top of the treated cane stalk. In order to recover maximum sugar at harvest, the stalk should be topped no lower than the base of the fourth leaf.

It is important to follow a harvest schedule adjusted to the variety and amount of ripener applied. Higher ripener application rates require an earlier harvest (e.g., 3 weeks after application) than sugarcane treated with lighter applications.