

Agrocote CRF Technology in Sugarcane: Program Options for Sand Cane Growers

Everris began studies with Sugarcane in Florida in 2006. The goal was to provide cane growers a cost effective nutritional program using Agrocote controlled release fertilizers (CRF) to improve nutrient use efficiency and provide a positive return on investment for the grower. After 6 years investment in both university trials and commercial trials, Everris has developed three programs that cane growers can use to improve their fertilizer performance. These options are: the Fastrac Program, the Seasonal Program, and the Comprehensive 3:2:2 Program. All programs use a portion of Agrocote CRF to provide long-term feeding blended with conventional uncoated nutrients to provide the immediate nutrition the cane needs. The percent of Agrocote differs from program to program. Each program has shown to grow as much cane or more than conventional programs.

Flexibility

Cane growers not only have the option to choose a program based on their goals, but the local blending of Agrocote by Everris's qualified blending partners allows formula analysis to be customized by grower and by field. Growers who are new to Agrocote may choose the Fastrac Program. Growers who want to eliminate the summer fly-on applications or to have insurance that their crop is being fed during the rainy season may choose the Seasonal Program. And growers who want to gain the most benefit from Agrocote will want to choose the Comprehensive 3:2:2 Program.

Fastrac Program

For growers who are new to Agrocote CRF, the Fastrac Program is the best option to experience the benefits of Agrocote without major changes to their current practice. Growers are encouraged to simply replace 20- 25% of their nitrogen with Agrocote nitrogen. This simple step will deliver a steady source of nitrogen to minimize the feast and famine of conventional feeding practice.

Picture 1 (below): Part of a Seasonal Program 5 months after application. The Agrocote formula fed through the entire rainy season eliminating the need for aerial applications.



Trt	Fertilizer Type	Lbs N/ acre	Avg TCA	Avg TSA
1	Conventional @ 450 lbs/acre	58.5	25.39	2.97
2	Agrocote Formula @ 350 lbs/ acre	66.5	31.06	3.63
3	Agrocote Formula @ 205lbs/ acre	39	27.88	3.21

Table 1 (above): A small plot study on a Seasonal Program applied in May for feeding through September demonstrated equal to greater sugar yields at an N rate 66% of growers conventional practice. Demo trials confirmed rate reductions of this magnitude could be accomplished with equal or greater sugar yield results.

Seasonal Program

Growers and researchers agree that the most impactful time to apply Agrocote formulas on sand cane in Florida is just prior to the rainy summer season. The Agrocote serves as an “insurance”, continuing to pump away and feed the cane even during heaviest rains. The coating on the Agrocote protects the nutrient core from all dissolving immediately and leaching through the soil profile. For the Seasonal Program, Agrocote formulas are designed for application prior to canopy close and will feed through the end of the crop cycle (usually 5-6 months) while conventional fertilizer is used during the rest of the year. Growers also benefit by eliminating the need for aerial fertilizer applications that cost more than ground applications. Everris has demonstrated that Seasonal Programs using Agrocote allow the grower to reduce rate as much as 25%, feed the crop through the summer into the fall, save 1-2 fly-on applications, and still have equal or better yield than conventional practice. Depending on the costs at the time of application, it is possible that the cost per acre for the Seasonal Program will be equal to cost per acre on the conventional program while sugar yields are equal or greater than the conventional program.

Comprehensive 3:2:2 Program

Everris continues to push the bar of innovation by developing comprehensive programs that maximize the efficiency of Agrocote throughout the entire 3-year sugarcane crop cycle. While studies are ongoing, preliminary results indicate growers can apply custom-built formulas powered by Agrocote at equal cost per acre and deliver greater yields than conventional programs.*

On plant cane 3 different customized formulas are applied: at plant, in the mid-winter, and finally in the early spring. Each formula has a different percent of Agrocote, with the last application designed to feed the longest.

Subsequent stubble crops receive 2 customized formulas: one applied in the spring and the second before the canopy closes.

Site	N trmt	N (lb/ac)	Cane (tons/ac)	Sucrose (tons/ac)
1	100% Soluble	293	51.3	15.3
	75% Agrocote	210	53.4	14.9
2	100% Soluble	227	58.9	tbd
	75% Agrocote	174	60.6	tbd
3	100% Soluble	312	64.6	14.3
	70% Agrocote	214	62.3	15.5
	50% CRF	186	64	15.8

Table 2 (above): Comprehensive 3-2-2 Program demo trial results on plant cane. Demo trial block size and site variability does not allow for statistical comparison of treatments and results.

Picture 2 (below): Trial photo from one of several Comprehensive 3:2:2 Program demo sites. Typical trial blocks were 20-40 acres in size and trial rates for Agrocote formulas were ~75% of grower practice.



* Due to the confidentiality of growers involved and customization aspect, specific formula design is not mentioned in this article. For a formula and program recommendation contact Ward Gunter at 772-473-3987.