WEED CONTROL RESEARCH IN SUGARCANE

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For the 2000 growing season, research was conducted at the St. Gabriel Research Station and Ben Hur Research Farm and at off-station sites in East Baton Rouge, Ascension, St. James, and St. Martin parishes. Research primarily concentrated on evaluation of herbicides after planting, in the spring, at layby, after layby over the top of cane, and in fallowed fields. This report summarizes research conducted in 2000.

Milestone (DuPont). Research continues to show that this herbicide has a place in Louisiana sugarcane production. Milestone applied preemergence controls seedling johnsongrass, itchgrass (Raoulgrass), and morningglories (tie vines) and has good soil residual activity. HOCP 85-845 was more sensitive to Milestone when applied in March and April than was LCP 85-384 or LCP 82-89. Since foliar uptake of Milestone can be significant, this response was probably due to the presence of more plant foliage of 845 in the spring when compared with the other varieties. Our research continues to show excellent winter weed control and good crop tolerance when Milestone is applied after planting or in February in combination with Gramoxone Extra or 2,4-D. Even though cane injury can be significant, yield reductions have not been observed even when Milestone was applied after planting, in the spring, and at layby. The label for Milestone is pending at this time.

Command (FMC). Command received a section 18 (emergency use exemption) for use after planting in 2000 and full registration is pending. This herbicide, when in combination with Direx/Karmex (diuron), provides bermudagrass suppression and in some cases control. Whitening or bleaching of cane is evident if applied to foliage, but crop yield reduction has not been observed. The mixture is ineffective if bermudagrass is emerged when application is made. Using the rates that will be labeled in Louisiana, itchgrass control has been somewhat inconsistent and lower in some cases than control obtained with Prowl and Milestone.

Valor (Valent U.S.A.). Full registration of Valor is pending. This herbicide can be used both preemergence and postemergence and cane has good tolerance. As an after planting application, Valor has controlled a variety of winter annual weeds including ryegrass. Its strength as a spring or layby application is broadleaf weeds in particular morningglories, but does not control annual grasses. Valor also has excellent postemergence activity on morningglories.

CGA 362622 (Syngenta formerly Novartis Crop Protection). This herbicide has only postemergence activity and is very good on morningglories. Preliminary results show that control of johnsongrass and itchgrass may be as good or better than Asulox/Asulam. The herbicide is in the registration process. CGA 362622 may serve as an "as needed" postemergence treatment for control of broadleafs and grasses, particularly where johnsongrass and itchgrass are problems.

Spartan/Authority (FMC). This herbicide received a section 18 (emergency use exemption) for use at layby in 2000, but for all practical purposes, availability was too late for use by most producers. This herbicide provides excellent and consistent morningglory control, especially the red-flowered ones. Spartan applied later in the season after layby as a directed treatment has provided very good postemergence and residual activity. The weakness of this herbicide is on grasses and will need to be applied in combination with a grass herbicide in most cases. Full registration is pending.

Velpar (DuPont). This herbicide is currently labeled in cane, but is not widely used in part because of concerns of crop injury. A premix blend containing the active ingredients of Velpar and Karmex in a 4:1 ratio (referred to as Velpar K4) was evaluated. Velpar at 0.5 lb ai/A plus Karmex at 2.0 lb/A provided weed control as good or better than either herbicide applied alone. This rate of Velpar is around a third of the rate that reportedly has injured cane in Louisiana in past years. Results indicate that when applied in fallowed fields, weed control to include itchgrass and seedling johnsongrass along with broadleaf weeds is excellent and the herbicides are not as sensitive as Prowl in respect to need for rainfall shortly after application. No significant injury has been observed when cane was planted following a fallow application or when the mixture was applied immediately after planting and before cane emergence. Indications are that the mixture will also have a place in spring applications over emerged cane and possibly at layby, depending on label restrictions.

Sahara and Arsenal (BASF formerly American Cyanamid). There has not been a definite decision to proceed with registration of these herbicides in cane. If this is pursued, growers can expect to use Sahara (a premix of imazapyr, the active ingredient in Arsenal and diuron, the active ingredient in Karmex/Direx in a 1:8 ratio). As with Command and Velpar, the addition of diuron seems to enhance the activity of the mixture. The premix preemergence controls rhizome johnsongrass and itchgrass, most broadleaf weeds, and provides suppression of bermudagrass. It has looked especially impressive in fallowed fields where a single application has provided control throughout the summer period. Activity is reduced when applied postemergence. Cane has shown excellent tolerance to Sahara when applied as a fallow treatment or after planting, but postemergence application can severely injure cane.

Starane (Dow AgroSciences). This herbicide contains the active ingredient fluroxypyr and currently is labeled for use in fallowed cropland, but not in cane. Starane can be applied in the same manner as 2,4-D with the same weed spectrum i.e. broadleaf weeds, but Starane is not volatile. Starane has shown excellent activity on red morningglories. Its use potential in the industry will depend on acceptance by aerial applicators.

2,4-D Application to Seed Cane. This research involves application of 2,4-D (Weedar 64) at 1.5 qt/A to LCP 85-384 7, 5, 3, and 1 week before planting. Cane was harvested and used for planting both as whole stalks and billets. Plots planted to billets emerged very rapidly and uniformly. Whole stalk plantings emerged much slower and stands were more variable when compared with billets. No distinct differences among the 2,4-D timing treatments in shoot population for either the billet or whole stalk plantings were observed when compared with the respective nontreated controls. This experiment will be continued into the spring to monitor any adverse effects on cane emergence and development. Based on past research with older varieties, it appears that LCP 85-384 may be less sensitive to timing of 2,4-D application.

Evaluation of Drift Reducing Spray Nozzles. Various nozzles to include Greenleaf TurboDrop, AI, Teejet, DG Teejet, and Turbo Teejet were evaluated for weed control when used at the manufacturers recommended spray pressures and spray volumes. Weed control with Roundup Ultra using the various nozzles was comparable to standard flat fan nozzles. These specialized nozzles should be considered when applying herbicides to fallowed fields and for spring applications, especially when herbicides are banded under windy conditions. Control failures with herbicides in the spring under windy conditions are often related to reduced herbicide contact with the target area.

Herbicide Effects on Soil-Borne Pathogens. This is a cooperative research effort with Dr. Jeff Hoy to provide some understanding of why LCP85-384 plant cane treated after planting with Milestone has looked more vigorous in the spring than when treated with other herbicides. This response could be that Milestone as well as other herbicides with the same mode of action may have fungicidal activity. This research is ongoing, and no definitive conclusions have been made.