Sugarcane

Louisiana Recommendations for Control of Sugarcane Insects

The sugarcane borer (SCB) and the Mexican rice borer (MRB) are the most destructive insects attacking the Louisiana sugarcane crop. Soil insects, including wireworms, sugarcane beetle, and Hemipteran pests, including sugarcane aphid, yellow sugarcane aphid, and West Indian cane fly, are sporadic pests for which no controls are consistently recommended. Other insects, such as sugarcane mealybugs, root stock weevils, and mole crickets, are not considered economic pests of sugarcane in Louisiana.

Stem Borers: Sugarcane Borer and Mexican Rice Borer

Cultural practices

The following farming practices can reduce stem borer infestations and damage:

1. Plant noninfested seed cane to improve crop stands. Stem borer larvae in seed cane can contribute substantially to overwintering populations.
2. Plant corn as far as possible from sugarcane to reduce midsummer moth movement from senescing corn into sugarcane.
3. Plow out old stubble soon after the final harvest to reduce the number of overwintering larvae.
4. Leave crop residues such as cane tops and stalk pieces exposed on the soil surface throughout winter to obtain maximum kill of larvae by winter temperatures.
5. Avoid early August plantings, which are more susceptible to stem borer deadhearts and often harbor increased densities of overwintering larvae. Plant cane fields often have earlier treatable infestations.

Sugarcane borer infestations are greatest in vigorously growing cane, while Mexican rice borer infestations are exacerbated by drought conditions.

Varietal resistance

Some varieties of sugarcane withstand or avoid stem borer attack better than others. The following commercial varieties are ranked in order of their susceptibility to stem borers based on results from replicated field trials.

- Resistant–HoCP 85-845, L 01-299, HoCP 04-838 (SCB), HoCP 18-803
- Moderate–L 01-283, HoCP 09-804, Ho 12-615, Ho 13-739, L 14-267, Ho 15-508
- Susceptible–HoCP 96-540, HoCP 00-950, HoCP 04-838 (MRB), L 11-183, L 12-201, HoCP 14-885, L 15-306

Plant resistant varieties wherever appropriate. This can reduce the need for insecticide applications. It is also important to plant resistant varieties adjacent to schools, waterways, and other areas where aerial applications are not recommended. No variety exhibits complete resistance, and periodic scouting of resistant varieties is recommended. Plant each variety in as large an acreage block as possible. This method helps the scouting program and cuts down on the treatment of resistant varieties when mixed with susceptible varieties.

Table 1. Stem borer: Insecticides labeled for control of stem borers. In addition to the reduced-risk insecticides listed below, several pyrethroids are labeled for stem borers but are not recommended.

Insecticide	IRAC Mode of Action	Active Ingredient	Rate Fluid Ounce/Acre	PHI
Diamond 0.83 EC	Benzoylurea [IGR] (15)	Novaluron	9.0-12.0	14 days
Vantacor	Diamide (28)	Chlorantraniliprole	1.2-2.5*	14 days
Besiege	Diamide (28) + Pyrethroid (3A)	Chlorantraniliprole + lambda-cyhalothrin	8.0-10.0	21 days

*Rates >2.0 fl oz/acre are not recommended

Application timing
Insecticide applications should be made only after internodes have begun to form and when economic infestations are detected. It is important that fields be scouted at weekly intervals from June through September, and that insecticides be applied only when economically injurious borer infestations exist at an action threshold of 5% stalks infested with live larvae in leaf sheaths. Applications may be made after Sept. 15 as long as the PHI is considered, however, late season borer infestations are less likely to reduce yields than mid-summer infestations.

Application methods
Because of the limited exposure of stem borer larvae and the high biomass of sugarcane, insufficient water volume can reduce insecticide efficacy. A minimum of 5 gal/acre is recommended for aerial applications and 10 gal/acre for applications made with a ground sprayer. The use of adjuvants including spreaders and/or binders can improve coverage in late season applications when a dense canopy is present. The use of a large droplet size will reduce the risk of pesticide drift. If more than one application per season is needed, rotation of chemistries is recommended to delay the development of insecticide resistance.

West Indian Canefly
The West Indian canefly (WIC) is a sporadic pest of sugarcane that has become problematic in recent years. Only pyrethroids are labeled for WIC control. Caution should be used when applying pyrethroids for WIC control, as these products may flare aphid infestations. Apply with a minimum water volume of 5 gal/acre (aerial) and 10 gal/acre (ground).

Table 2. West Indian Canefly

Insecticide	Active ingredient	Rate (Fluid Oz/Acre)	PHI
Warrior, generics	lambda-cyhalothrin	1.6-2.6	21 days
Besiege	chlorantraniliprole + lambda-cyhalothrin	8.0-10.0	21 days

Sampling
Scouting should be done by examining the underside of canopy leaves (Third or fourth down from the dewlap) and counting the number of nymphs present. Growers should make an insecticide application when populations are increasing for two consecutive weeks and average > 30 nymphs/leaf with honeydew and sooty mold in the upper canopy. The relationship between WIC infestations and yield reductions is still being investigated. WIC infestations generally decline as cane matures later in the season, and treatment after August is not recommended.

Wireworms
Soil treatment is recommended to control wireworms where sod/pastureland is planted to cane or where wireworms are known to be a problem. Wireworm damage results in reduce stands and generally occurs in patches. Wireworms are more problematic in sandy or sandy-loam soils. Apply granular insecticide over seed pieces in the open furrow in a band 12-16 inches wide so that all the seed pieces have contact. The application should be made just before the seed pieces are covered with soil.

Table 3. Wireworms

Insecticide	Active Ingredient	Rate	Application
Thimet 20G EZ Load	Phorate	19.5 lbs./acre*	Apply in furrow around planted cane in a 12-16-inch band and cover with soil.
Mocap 20G	Ethoprop	10-20 lbs./acre	

*Lower rates may still be effective and are less detrimental to beneficial insects.

Sampling
Wireworms can be sampled by setting up one to two bait stations per 10 acres one to four weeks before planting. For each bait station, bury a handful of fermented corn seeds 2–4 inches deep (corn seeds must not be coated with a seed treatment). Cover with a small mound of soil and mark the location with a flag. Remove the soil and count the number of wireworms attracted to each bait station one week after set up.

Soil-applied insecticides may reduce populations of fire ants and lead to increased stem borer infestations.

Note
No liquid formulations are labeled for wireworms. Use of the smart-box “lock’N load” applications systems for granular insecticides is required.

Aphids: Sugarcane Aphid and Yellow Sugarcane Aphid

Aphids are sporadic sugarcane pests that have the potential to reduce yields through direct feeding and transmission of the sugarcane yellow leaf virus. **No insecticides are recommended for the control of aphids**, and insecticides are not effective at reducing virus transmission. Only pyrethroids are registered for aphid control and these products can potentially flare aphid infestations by reducing populations of beneficial insects.