



## Being Greener When Controlling Bugs

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As the spring arrives expect to see activity from several species of caterpillars feeding on trees, shrubs and lawns and boring into trees. If you are looking for the safest, lowest toxicity materials for controlling insects you have several good options from which to choose – some of them are newer materials and some are not so new but are still very safe products. This is not an exhaustive list of all of the products available but highlights four of the low risk pesticides available to managers. Let's start with the newest products available.

### **Acelepyrn**

Acelepyrn from Dupont Company is very safe, new systemic material for controlling foliar feeding caterpillars, some boring caterpillars, lacebugs and some leafminers in the landscape. Acelepyrn uses an entirely unique class of chemistry with a novel mode of action and active ingredient that has been classified as EPA Reduced Risk for turf applications. Acelepyrn also has a low impact on non-target organisms such as beneficial arthropods as well as bees, birds, fish and mammals, and has a very low water solubility.

It is the first insecticide in the new anthranilic diamide class of chemistry. Acelepyrn has been developed to provide control of caterpillars feeding on trees and shrubs. It has been reported to kill fairly late instar caterpillar stages.

This material can be used for caterpillars that feed in turfgrass such as sod webworm and armyworm. It also does an excellent job of controlling white grubs, bluegrass weevil, and billbugs. For white grubs, the labels states it is applied in April through September. One application provides season long control. For billbug control, apply the material in April or May when billbugs are first observed.

For tree and shrub applications it can be used as a foliar, soil or bark treatment for ornamental insect control. Since it is a systemic it will be taken up from a soil application, but it should be applied within 1 - 3 ft of the base of the plant. For foliar applications for controlling caterpillars such as bagworms the label range is 1 - 2 oz mixed in 100 gallons of water. For maximum residual control the labels states to use it at a rate of 16 oz/100 gallons of water. This would be one expensive treatment at this high rate.

### **Lepidoptera (caterpillars) boring into trees:**

Acelepryn can be applied to the trunk of trees for control of clearwing moth borer larvae such as banded ash clearwing and peachtree borer. The label states that the product should be used at 4 oz/100 gallons of water and sprayed on the trunk down to the flare of the plant. Apply the material after adult emergence.

Acelepryn contains the new active ingredient chlorantraniliprole. It is used at very low application rates (0.1 lb/acre A.I.). Here is the best part: **DuPont Acelepryn has been classified as a reduced risk insecticide by the EPA. It has also received the presidential green seal award.**

### **Provaunt**

Provaunt, containing the active ingredients Indoxacarb, is a **low risk pesticide** for use in landscape and turf areas. This is also another product from Dupont Company. It controls caterpillars such as gypsy moth, bagworms, webworms, and yellowneck caterpillars. This material is not systemic. If applied for caterpillar control it is suggested that it be applied to early life stages of caterpillars.

It also is labeled for control of potato leafhopper. For foliar applications the label rate is 1.25 – 2 oz/100 gallons of water.

In turf areas it controls several species of cutworms, armyworms, sodwebworms and grasshoppers. For turfgrass it is used at very low rates of 2- 4 ounces of product per acre.

### **Conserve**

Conserve SC, spinosad, is a very safe insecticide from Dow Agro Science that has been in the marketplace for several years. It is a **low risk pesticide** that is made through fermentation of naturally occurring fungi. It is very effective in controlling lepidopterous caterpillars, several sawfly species larvae, thrips and some leafminers. In turfgrass it can be used to control cutworms, armyworms and sodwebworms. It is labeled for use in the landscape, nursery and turfgrass areas. In nurseries it has a 4 hour REI.

This material is very gentle to beneficial organisms such as ladybird beetles, lacewings and other predators. This product has no detectable ill impact on birds or fish.

For caterpillar control such as bagworms, tent caterpillars and other leaf feeder it works well on young larvae and later instar larvae.

### ***Bacillus thuringiensis (Bt)***

Of the four products discussed in this article, Bt is one of the oldest and very safe materials used for control of caterpillars. The insecticide produced from this rod-shaped bacterium does not harm animals, birds, beneficial insects or humans. This material is not systemic and must be ingested by a caterpillar to cause death. When eaten by a caterpillar a crystal dissolves in the insect's stomach and breaks down the stomach wall. The crystal can only dissolve in those

insects species whose stomach contain the correct combination of pH, salts, and enzymes. It cannot dissolve the highly acidic stomach of humans. Because of the selectivity, the US EPA permits food crops sprayed with Bt to be eaten right after spraying.

Bt is effective in controlling early stages of caterpillars but is rather ineffective against late instar stages of caterpillars. It can provide good control of early instars of bagworms, eastern tent caterpillars, fall webworms, yellowneck caterpillars, orange stripped oak caterpillar and several other lepidopterous species of caterpillars. **Note:** Bt will not control sawfly caterpillars which are in the order Hymenoptera.