

## **Pesticides**

In an IPM program, pesticides may be used as a last resort or not at all. Sometimes only a specific category of pesticides can be used, such as organics only. If weeds continue to multiply, insects exceed their threshold level, or a disease continues to spread and cause damage, pesticide application may be the only option. In an IPM program, pesticides are selected based on application method and timing, toxicity and effectiveness, host specificity, cost and persistence.

### **Minimum-Risk Pesticides**

Minimum-risk pesticides do not carry EPA registration numbers and only contain natural ingredients approved by the EPA. More information regarding these pesticides can be found on the following website: [http://www.epa.gov/oppbppd1/biopesticides/regtools/25b\\_list.htm](http://www.epa.gov/oppbppd1/biopesticides/regtools/25b_list.htm)

### **Biopesticides**

Biopesticides are microbial or biochemical products derived from natural materials such as animals, plants, bacteria and certain minerals. There are three major classes including microbial pesticides, Plant-Incorporated-Protectants (PIPs), and biochemical pesticides.

Microbial pesticides contain microorganisms as the active ingredient. This organism attacks or competes with the pathogen or pest. These biopesticides can control many different kinds of pests, but each separate active ingredient is relatively specific to the target pest.

Plant-Incorporated-Protectants (PIPs) are pesticidal substances that plants produce from genetic material that has been added to the plant. In other words, the plant manufactures the added substance to destroy the pest.

Biochemical pesticides are naturally occurring substances that control pests by non-toxic mechanisms. Examples of this type of control involve the use of substances that interfere with mating or scented plant extracts that attract pests to traps.

More information on biopesticides can be found at the following website:

<http://www.epa.gov/pesticides/biopesticides/whatarebiopesticides.htm>

Rutgers has provided a Database for Biopesticides that allow users to search for biopesticides according to type of crop/site, the pest or problem, and state. Users can also limit their search to organic options.

<http://ir4.rutgers.edu/Biopesticides/LabelDatabase/index.cfm?CropType=&Crop=&PestType=&Pest=&Organic=&CFID=202590&CFTOKEN=13828581>

### **Reduced-Risk Pesticides**

Reduced-risk pesticides carry very low toxicity to humans and non-target organisms such as fish and birds, low risk of groundwater contamination or runoff, low potential for pesticide resistance, and demonstrated efficacy and compatibility with IPM programs. Reduced-risk designation applies only to certain uses of a particular pesticide according to the label. Some states, such as New York, do not approve the use of some of these products.

For more information regarding reduced-risk pesticides, please visit the following website:

<http://www.entomology.cornell.edu/Extension/Woodys/ReducedRiskPesticides.htm>

### **Synthetic Pesticides**

The use of synthetic pesticides is the most widespread method for pest control. They use synthetic materials to directly kill or inactivate a pest. Environmental and human health problems associated with the use of synthetic pesticides have created increasing pressure to restrict their use.

More information regarding synthetic pesticides can be found on the following website:

<http://p2pays.org/ref/02/01244/www.epa.gov/agriculture/ag101/croppesticideuse.html>