

Using Pesticides and Controlling Garden Pests

A guide to improving water quality in Redford



Why be concerned?

Chemical pesticides are poisonous substances containing toxic materials that can enter storm water runoff or be discharged into the air. Many are harmful to plants, animals and people, and can pollute groundwater and surface waters. Integrated Pest Management (IPM) is an alternative approach to purely chemical pest control. It provides a safer, less expensive and more consistent eradication of any pest over the long term.

What is Integrated Pest Management (IPM)?

IPM recognizes that pests are an integral part of the natural system. This approach works to keep pests at tolerable levels by using cultural, mechanical and biological controls instead of chemical ones, whenever possible. IPM involves paying atten-

tion to the landscape and managing it in a way that provides optimum growing conditions for those plants desired, since healthy plants are less susceptible to pests. This includes working to eliminate conditions favorable to pests and promoting natural controls such as beneficial insects. When pest controls are needed, the pest and its stage of development are identified, and the least toxic control possible is used. Pesticides are used only as a last resort, and only in a way that maximizes their effectiveness and minimizes damage to the environment.

Choose resistant plants

Choose plants that naturally tend to be free of major pests and diseases. This includes grass, trees, shrubs, flowers, and food crops that are derived from disease-free stocks. In addition, select plants that are well-adapted to our temperate climate, and to the specific soil, light and moisture conditions on-site. Plants that require shade, for example, are more susceptible to pests when grown in full sun. The pH level of soil can also affect a plant's ability to withstand pests.



For help identifying the plant(s) best suited for your purposes and site, contact the MSU Extension (see "Getting Help"), a local nursery, or a landscape architect.

Keep plants healthy

Weeds, pests and diseases are usually the result of poor growing conditions and unhealthy plants, not the cause of them. To keep plants healthy, use good horticultural techniques. Maintaining healthy soil conditions is the foundation of any IPM program:

- Space, thin and prune shrubs and trees to promote air circulation.
- Plant seedlings after the threat of frost and before hot weather.
- Maintain a variety of plants instead of only one or two species, to minimize the spread of diseases.
- Aerate and add organic matter to the soil.
- Water and fertilize plants only as needed.
- Mow grass as high as possible and leave clippings on the lawn.

There are no cures for plant diseases, they can only be prevented.

Watch your landscape

Walk through your yard at regular intervals. Learn to identify pests and diseases, as well as beneficial insects. For each of these, become familiar with their development stages and what they need to survive. This way, you can take actions during the most vulnerable stage of weed, insect or disease development.



Sources and Funding

- *The Community Partners for Clean Streams program (Janis A. Bobrin, Washtenaw County Drain Commissioner). Original text by Florence Davis and graphics by David Zinn. Revisions by Canton Township Engineering Services and JJR Incorporated (Fall 1997).*
- *Guide preparation and distribution funded, in part, through a grant from the Rouge River National Wet Weather Demonstration Project (# X995743-02).*

Define “damage”

Establish threshold levels. Decide what level of weed, insect, disease presence or damage is tolerable. Setting a tolerance level too low may require excessive or unnecessary treatment which can result in environmental damage. Changing our beliefs about what looks good is one of the most important things we can do to protect water quality.

Identify the problem

Always identify the insect, weed, or disease causing the problem before initiating treatment. In the case of insects, remember that only a very small number are actually pests. When a pest is identified above the threshold, select a control which is targeted to the specific pest, if possible. Beneficial organisms may be impacted by the control, so proceed with caution. Start with the least toxic method. Advance to a more toxic method only if the first does not work. Be aware that many biological and chemical controls are effective only during a certain stage of a pest’s life cycle.

Protect sensitive areas

Consider whether the site is near a water body, detention basin, drainage ditch, vegetable garden, children’s play area, or public place. Select a pest management technique that minimizes harm to these sensitive areas.

Natural enemies

Common garden pests include grubs, aphids, scale insects, mealybugs and whiteflies. Populations of these insects are kept in control by natural enemies such as predatory bugs and other animals. Lady beetles (or “Ladybugs”) and lacewings, for example, feed on aphids. Robber fly larvae can substantially reduce grub populations in the soil. Garden spiders capture insects

in their webs and kill their prey by injecting them with venom. Birds, frogs, toads and small mammals such as mice, shrews and moles also help control insect populations.

You can help encourage these natural enemies of garden pests by minimizing or avoiding use of chemicals that are poisonous to all insects and insect feeding animals.

The secrets of chemical-free pest control

Use methods of pest control that are the least disruptive to human health and the environment.

Low cost/simple control methods

Simple methods to control pests include:

- remove weeds by pulling or hoeing
- cover planting areas with 2"-3" of mulch to prevent weed germination
- remove pest-infested plant residue in the fall
- remove insect eggs, larvae, cocoons, and adults from plants by hand.

Retain and promote natural pest controls

Many organisms feed on or infect pests. These natural enemies frequently prevent the pest population from reaching damaging levels. Natural enemies include insect and non-insect predators, parasites, and bacterial, fungal and viral pathogens.



Getting Help

MSU Extension Office for Wayne County

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