

# Keeping Our Water Chemical Free

## Alternatives to Pesticides and Fertilizers

### Pesticides

According to the Environmental Protection Agency (EPA), the government body that regulates pesticides in the U.S., a pesticide is any substance or mixture of substances intended for preventing, destroying, repelling or mitigating pests. The term pesticides also applies to herbicides, insecticides, fungicides, rodenticides, and various other substances used to control pests. We use pesticides in our homes, schools, offices, yards, parks and farms to control insects, weeds, fungi, rodents, and other pests that can ruin property.

Pesticides become a potential threat when carried by rain water and urban runoff into our water systems, the soil and even the air. They damage the important ecosystems that live in creeks, rivers, lakes and the ocean and have been found

in the foods we eat. Humans also inadvertently ingest pesticides through drinking water and by swimming or playing in water bodies where pesticides have accumulated.

How wide spread is this problem? Research shows that when pesticides are applied only 1 percent reaches the intended target. The remaining 99 percent poisons our air, water and soil. Not surprisingly, the average person carries within their body at least 20 different pesticides that are considered unsafe by the US Environmental Protection Agency.

### Fertilizers

Fertilizers can also become a dangerous water pollutant. While used by many individuals to help grow gardens, lawns and crops, fertilizers, like pesticides, are often washed into ground and surface

water supplies where they collect. Once trapped there, fertilizers increase the amount of nutrients in the water, which in turn causes excessive plant and algae growth. Plants and algae are an important part of the aquatic ecosystem. However, when too much growth occurs as a result of fertilization run off, the dead and/or dying plant material in the water can use up the oxygen and suffocate all other life in the water.

### What Can I Do?

Since citizens of Jackson and the surrounding area receive an overwhelming majority of drinking water from surface water sources, namely the Pearl River and the Ross Barnett reservoir, the pesticides and fertilizers being carried untreated into our storm drains and ultimately into our water supplies should concern us all.

*Reducing the amount of herbicide needed to maintain weed-free lawns and public spaces is good for our environment. Of the various weed control strategies in use today, mulching with composted wood chips is the most effective. By adding wood chip mulch two inches deep, existing weeds are smothered and new seeds are prevented from germinating. The optimal size for the chip is two inches in length. While wood chips such as the type pictured here must be purchased at retail outlets, citizens are invited to visit the City of Jackson Rubbish Landfill for free mulch and compost. The Landfill is located at off I-55 south of the Byram Exit on the East Frontage Road.*



Photo: Darren Robertson - Dreamstime.com



*Beneficial insects, such as the praying mantis (*Tenodera sinensis*) pictured here, is one of the many insects available for "hire" in your garden. Beneficial insects can reduce the amount of pesticides you use by eating pests that harm your plants.*

## **Controlling Rodents**

Rodenticides are pesticides used to control rodents. While it is important that we control pests such as mice and rats, it is equally important to understand rodenticides can contaminate our water, harm other mammals and birds, and even make people sick. Improved mouse and rat traps are readily available today and include string traps and glue trays. Employment of a cat or two may suit the needs of those who prefer a more natural means of control.

The good news is water pollution caused by the chemicals in pesticides and fertilizers can be reduced and in some cases completely prevented. Nature provides beautiful checks and balances for weeds, troublesome insects and other pests if we allow them to function.

people, pets, or our environment. These so called "hired bugs" are not only safe for you and your plants, but are safe for the environment. Hired bugs are available for purchase from many outlets around the country and the World Wide Web. When

## **Control Pests Naturally**

Studies have found the best way to control troublesome insects is to allow them to control themselves. Homeowners are encouraged to consider using beneficial insects to control other pests. This natural approach is called Integrated Pest Management.

Beneficial bugs can be purchased and used to naturally control unwanted pests in your yard and garden without harming plants,

*Integrated pest management (IPM) techniques are planned methods of combining different ways of controlling pests. IPMs are essential to effective management of rodents in residential areas. For more information about IPMs, check with the U.S. Environmental Protection Agency.*



pest populations are eliminated, your hired bugs will either die off or move on to find more pests to eat somewhere else.

## **For Additional Information**

There is a vast amount of information concerning the proper use, disposal and alternatives to pesticides and fertilizers on the World Wide Web. There you will find specific information and step by step measures for controlling pests, such as fleas, weeds or flying insects, specific to your area. Meanwhile, here are a few quick tips to getting you started in reducing the amount of chemicals within our environment. By incorporating simple, daily changes in our routines and activities, we can keep our water resources clean.

Photo: Stanko Mravljak - Dreamstime.com



*The best way to deal with troublesome insects outside is to allow them to control themselves. Nature provides beautiful checks and balances if we allow them to function. Helpful insects, such as the Lady Bug (*Hippodamia convergens*), pictured at left, are considered beneficial since they eat harmful insects and can be purchased for use in home gardens.*

## Quick Tips for Reducing Pesticide Use

- Use pesticides and fertilizers sparingly and only when all else fails.
- Chemicals that have a short effective life span before decaying into harmless ingredients should be used whenever possible.
- Plant native plants; they can survive without extra fertilizers, pesticides and water.
- Carefully plan parks and urban green spaces. Allow input from maintenance personnel so that the need for pesticides and fertilizers are kept to a minimum.
- Try not to over water your lawn or garden. Excess water will simply run off into the street and wash away pesticides and fertilizers before they have had a chance to be effective.
- Sprays should not be applied to vegetation within 12 hours after a rainfall or within 24 hours before a predicted rainfall. Since wind can also carry chemicals into unwanted places, sprays should be applied only on calm days.
- Pull weeds by hand.
- Reduce weed growth by using mulch, sand or gravel.
- Plant hardy ground covers that naturally choke out weeds.

*Mulching tree wells is as much about maintaining healthy trees as suppressing weeds. A thick layer of mulch one to two inches deep around the base of a tree makes an attractive way to reduce weed problems.*

- Help fertilize your lawn naturally by mowing 1/3 of the total grass height only and leaving the clippings on the lawn.
- Consider natural fertilizers such as properly mulched clippings, leaves and other vegetation for use in your garden and lawn.
- If pesticides are necessary, spot treat instead of applying to the whole area.
- Follow the application instructions listed on the product packaging to be certain you are using the correct amount of chemicals.
- Try using natural alternatives to fertilizers and pesticides; this method of control is called Integrated Pest Management.



- Always follow label directions. To do otherwise is against the law.
- Rather than pour unwanted chemicals into the street or down the drain (which is illegal), take them to the City of Jackson's Environmental Service Center, which is open Tuesdays and Thursdays 8 a.m. - 3 p.m. and every fourth Saturday from 8 p.m. - 3 p.m. For further information, call (601) 960-2045.

*Leaves left where they fall can be an easy and natural way to reduce watering and the use of fertilizers.*



## Alternatives to Pesticides and Fertilizers

- Label and store pesticides and fertilizers in a covered area, protected from rain water exposure.
- Many commonly used pesticides continue to be harmful to beneficial insects long after they've been sprayed.
- Always test your soil for actual nutrient content in order to determine the amount of fertilizer needed.
- Apply half of the fertilizer in the spring and the other half in either late summer or early fall in order to increase the effectiveness of the fertilizer.

*Consider natural fertilizers such as properly mulched clippings, leaf mulch and other vegetative compost for use in your garden and lawn. In addition it can help amend or improve soil composition and retain moisture. One way to properly prepare a flower bed is install a layer of bamboo, palm fronds or other materials that do not decompose easily. Follow this with a layer of cardboard or newspaper, followed by wood chip mulch, with leaf mulch on top. This process is known as "lasagna" mulching.*



If you would like more information about stormwater laws or ways to help keep our water clean and clear log on to the City of Jackson's web site or contact the City of Jackson Department of Public Works.

### Did You Know?

- Pesticides directly and indirectly hurt people, pets, birds, wildlife, beneficial insects, streams, creeks, rivers, and our oceans.
- Pesticides are particularly toxic to children and expectant women.
- Gardeners use 10 times more poisons than farmers.
- Pesticides have been associated with certain types of cancer, Parkinson's disease, asthma, miscarriages, birth defects, infertility, and other health related problems.

### City of Jackson

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Website: [www.jacksonms.gov/government/publicworks/](http://www.jacksonms.gov/government/publicworks/)



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