

**PUTNAM VALLEY  
CENTRAL SCHOOL  
DISTRICT  
PUTNAM VALLEY, NY**

**MS4PY1 STORMWATER  
PROGRAM**

**FACT SHEET # 4  
MAY 2011**

**THE PATH TO CLEAN  
WATER: ORGANIC LAWNS  
AND GARDENS**

**FOR MORE INFORMATION  
VISIT  
YOUR STORMWATER  
WEBSITE AND/OR  
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**1. SYNTHETIC FERTILIZERS AND PESTICIDES  
IMPACTING OUR HEALTH & ENVIRONMENT**

Stormwater discharges to our water bodies continue to be impacted by the improperly applied fertilizers and pesticides to our lawns and gardens. These chemicals not only contaminate our streams, lakes, drinking water supplies, wetlands and coastal waters, but also impact our health and environment.

- Young children, because of their undeveloped physiology, can be greatly impacted by direct exposure to lawn chemicals. Scientific studies (reported by the USEPA), link the exposure to certain lawn care products with the increased risk of asthma, several types of cancer, nervous and immune system damage, birth defects and the endocrine system disruption
- Fertilizers and pesticides not only impact the quality of our drinking water supplies, but also require costly and sophisticated treatment processes to remove these chemicals
- Pesticides and insecticides applied to lawns and gardens, besides killing pests, often kill or harm other organisms that are beneficial to plants and grasses
- Fertilizers, which usually contain phosphorus, potassium and nitrogen, if applied in excessive quantities, can run off the lawn into our nearby waterways. This results in an algae bloom, which decreases the oxygen level, and which in turn, kills our fish population
- The life cycles and breeding mechanisms of fish and aquatic insect species, which are highly sensitive to both inorganic and organic chemicals, are directly impacted by these chemicals
- Synthetic fertilizers can also adversely affect local wildlife and birds, including our pets, which often mistake fertilizer granules as food

**2. THE INTEGRATED PEST MANAGEMENT  
PROGRAM**

Local counties and school districts have adopted the Integrated Pest Management (IPM) program.

IPM embraces the following principles:

- IPM relies on a combination of common-sense practices to control pests
- IPM utilizes the life cycles of pests based on their interaction with the environment
- IPM monitors for pests and identifies them accurately so control decisions can be made as to what level of chemical is needed
- IPM uses pest control methods that produce the least hazard to people, property and the environment

### **3. EXAMPLES OF DOCUMENTED BANNED CHEMICALS, INCLUDING PHOSPHORUS**

As a result of ongoing research and raised public concerns, several states and towns are considering or have banned the use of certain pesticides and insecticides for use on lawns and gardens. Examples of chemicals, documented by government agencies and other experts and banned from use in lawns and gardens, include:

- Grub-control pesticide Dylox is banned in many states and school grounds in Maine and Massachusetts disallow the use of Dylox on school grounds
- Glyphosate (Roundup) is generally safe, but several studies have raised concern about long-term effects
- A ten-year study conducted by Cornell University, Cooperative Extension, confirmed that most lawns are already phosphorus-rich. It has been reported that, effective January 2012, the State of New York will ban the use of phosphorus on all lawn fertilizers

Carefully read the labels before using any chemicals on your lawn and strictly follow all manufacturer instructions on the application of these chemicals.

### **4. ORGANIC LAWNS AND GARDENS**

The organic lawn care/gardening program promotes the use of organic composted materials for supplementing the soil with nutrients, in lieu of utilizing synthetic chemicals. Organic matter (decayed plant material) is an essential ingredient in fertile soil. Organic matter improves soil while preventing soil compaction and crusting. Organic gardening techniques involve the following steps:

**Step 1 – Soil Analysis:** Begin your organic gardening program by conducting a soil analysis to determine:

- The current soil acidity and alkalinity, which will indicate what amendments should be added
- Soil mixture type, whether sandy or clayey
- Soil water retention capacity and its depth to ground water table

**Step 2 – Aerate the Soil:** Aerate the soil in the early spring by raking off dead lawn grass and/or by utilizing a tiller to till the garden.

**Step 3 – Feed the Soil:** Rake   of compost made from lawn clippings, leaves and other plant material into your lawn and garden each spring and fall. Adding compost to your soil:

- Improves the soil structure
- Increases the population of beneficial microbes
- Increases soil moisture retention
- Reduces nutrient loss
- Boosts pH
- Suppresses certain diseases

To speed up the process add microbial inoculants (bacteria and fungi), as well as granulated lime, if the soil is acidic or clayey

**Step 4 – Grass Clippings:** Leave grass clippings on the lawn, which will produce nitrogen and reduce the amount of fertilizer needed by about one half.

**Step 5 – Mow High:** Cut grass at 3 to 3 1/2 inches, allowing the grass to shade the roots, conserve moisture and keep out weeds. High mowing is better for controlling crab grass than herbicides.

**Step 6 – Water Less but Longer:** Once a week watering in the early morning for several hours is the best method.

**Step 7 – Control Weeds:** Weeds such as dandelions can be controlled by applying organic corn-gluten product that prevents weed seeds from germinating. It must be applied in the early spring for several years to problem areas, to be effective.

**Step 8 – Control Pests without Chemicals:**

Common pests such as grubs, webworms, chinch bugs, can be controlled with the application of beneficial nematodes. Milky spore powder is another effective control for Japanese Beetle grubs. Fungal diseases, it has been reported, can be treated with several light applications of compost or liquid compost tea.

**5. NATIVE LANDSCAPING**

The current stormwater permit requires permittees to promote the cultivation of native plants in lieu of growing lawns, so as to reduce the use of fertilizers and grass clippings. Native plants are those that evolved and originated in your area, not exotic and imported plants from other parts of the world. Choosing native plants adapted to the climate and soil in your area means that the plants will require less care and maintenance. Native landscaping:

- Reduces runoff because the plants absorb and infiltrate runoff to match the natural precipitation frequencies, water levels, as well as soil type in your area
- Landscaping with plants suited to your area reduces the need to use fertilizers and pesticides, as compared to plants that are non-native
- Naturalized plantings provide food and habitat to local wildlife and birds

- Well-designed native gardens require less maintenance and tending than non-native gardens due to better pest and drought resistance

**6. LAWN CONVERSIONS**

Many homeowners today are choosing to convert their lawns or a section of their lawns to a more natural state. This includes planting of hardy native plant species, grasses, shrubs, wild flowers and/or trees that require less maintenance than the conventional expansive bright green lawn. Lawn conversion:

- Provides an aesthetically pleasing landscaping choice
- Preserves native plant species and biodiversity
- Creates a habitat for wildlife and birds
- Requires less lawn cutting and maintenance
- Reduces the application of lawn fertilizers and pesticides
- Promotes a reduction of pollutants to our streams and rivers
- Improves local groundwater infiltration
- Provides flood control

In the long run, lawn conversion can save time, money and energy, not to mention the added benefit of providing a greener and sustainable environment.