

# 8 STEPS TO A TOXIC-FREE LAWN

## A BEYOND PESTICIDES FACT SHEET

### MAINTENANCE: GOOD CULTURAL PRACTICES RESULT IN HEALTHY SOILS.

- ✗ **Develop healthy soil.** Sample the soil with a “soil probe” – cut or dig a small hole about 10” deep and with one side that is straight and smooth. The lawn should have between 5”-6” of topsoil, which is the darkest soil layer. If needed, add topdressings of organic matter, such as composted manures (they do not have an odor), to the topsoil.
- ✗ **Plant well-adapted, pest-resistant grass varieties.** You can find out which grass is most suitable to your climate from your local cooperative extension or nursery. A mix of two or more grass varieties is preferable. Overseeding, or planting additional seeds in already established lawns, has been shown to reduce weed problems in some cases.
- ✗ **Aerate the lawn twice a year.** Soil compaction is one of the largest causes of weed problems. Aerating, or removing small cores or “plugs” of soil, allows air, water, and nutrients to reach the roots of the grass. Most lawns should be aerated. You can rent an aerator and share costs with neighbors.
- ✗ **De-thatch.** Thatch is a dense layer of grass stems and roots on the surface of the soil. When thatch layers become ½” or more, the roots will grow up within the thatch instead of establishing themselves down into the soil, making grass susceptible to insects, disease, and weather stress. Thatch is reduced by aeration, topdressing with organic matter, power raking or by vertical mowing, which requires special equipment and will result in temporary aesthetic damage to the lawn.
- ✗ **Maintain proper pH.** Test your soil and adjust the pH if necessary. Low pH means high acid content – add lime to raise the pH and lower the acidity. High pH means high alkaline – add sulphur to lower the pH, taking care not to add too much and burn the lawn. Watch for hints of pH imbalance such as a dandelion infestation. Dandelions love soil with a 7.5 pH, while most grass varieties prefer a pH of 6.7 - 7.0. Nothing will successfully conquer a dandelion problem without a correction of the lawn’s pH.
- ✗ **Fertilize.** Use a slow release fertilizer formulation once a year, usually in the fall, to increase the efficiency of nutrient uptake and reduce nutrient runoff and leaching. Fast-release fertilizers can induce pest outbreaks. Avoid synthetic chemical nitrogen-rich fertilizers that can kill valuable microorganisms in the soil and feed only the grass not the soil. The best way to determine your lawn's nutrient needs is by a soil test. As a general

rule however, use a natural/organic fertilizer with a balanced ratio of numbers close in proximity, such as 5-3-4. Watch for signals from your lawn. Learn to read signals. For example, if clover is taking over the lawn, chances are the soil is lacking nitrogen since clover gets nitrogen from the air and grass gets nitrogen from the soil.

- ✗ **Water properly.** Too much or too little water can induce pest outbreaks. Enough water should be applied each time to wet the soil to the depth of the grass root zone. The soil should be allowed to become nearly dry between waterings. Avoid frequent, shallow waterings, which promote the development of a shallow root system and reduce the ability of the lawn to resist stress. Natural/organic fertilizers can increase the water-holding capacity of the soil.
- ✗ **Mow correctly.** Mow with sharp blades set to 3" to minimize adverse effects and retain the lawn's competitive ability. Never cut more than 1/3 of the grass blades in a single mowing and leave a light layer of grass clippings on the grass, as they can provide up to half the lawn's nitrogen requirement. Rotate the mowing pattern to reduce lawn compaction.

<b>CONTROL: TREAT THE ROOT CAUSES, NOT JUST THE SYMPTOMS.</b>
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- ✗ **Weeds.** Be sure you are keeping up with your lawn maintenance to maximize the health of your lawn. Mow frequently enough to ensure that weeds are unable to build up energy reserves and become well established. Weeds can also be pulled by hand. If you feel an herbicide is necessary, corn gluten is an excellent pre-emergent, and a fatty-acid soap product called Sharpshooter™ is an effective broad-spectrum herbicide.

**Insects.** Your control strategy will depend on your particular pest problem. Grubs can often be controlled by applying the bacterium *Bacillus popillae* (milky spore disease), which, once established, will provide control for decades. Kill chinch bugs by drenching the thatch layer with an insecticidal soap. Sod webworms can be controlled by dethatching, applying *Bacillus thuringiensis* (Bt) when larvae are present, applying nematode parasites, or with insecticidal soap. In general, insecticidal soap is toxic to most insects when they are drenched with it, and Bt is toxic to most caterpillars. Not all controls work for all geographic regions.

- ✗ **Disease.** Disease problems are often the result of improper nutrient or moisture conditions. For example, dollar spot, a common lawn fungus, thrives on lawns with insufficient levels of nitrogen. The key to preventing lawn disease is to use locally adapted, resistant varieties of grass and to follow good cultural practices.