



Healthy Lawn Care

The Santa Clara County IPM Program supports reducing reliance on pesticides. We encourage all including the homeowners to adopt environmentally sound lawn care practices, such as using pesticides only when necessary. Growing a healthy and safe lawn is as simple as using common sense. A well-maintained, healthy lawn is less likely to suffer from pest problems or need pesticides. If you build the soil and use a few basic cultural techniques, you'll have a lush stand of Turfgrass without harming kids, pets, wildlife, the water supply, and the rest of the environment. Take pride in your lawn, the care you provide it and the environmental ethic, which guides your actions and decisions. By implementing organic lawn care you are demonstrating to neighbors that alternatives to chemical lawn care and to the conventional lawn do exist. Growing a healthy lawn without use of pesticides is a question of following a few basic steps that don't require a lot of time or money. Keep your lawn healthy using good maintenance practices and manage pest problems by following integrated pest management principles.

The simple steps in the growing a healthy lawn are as follows:

- 📖 **Fertilizing:** the type of fertilizer you use and the timing of the application is important. Compost is a great fertilizer that will add organic matter to your lawn as well as supply both major and secondary nutrients needed for plant growth. Compost may be applied at any time of the season. Mix it into the soil before seeding or laying sod, or spread it in a thin layer raked over the existing lawn. Applying organic matter such as compost to the soil will supply simple and complex sugars, proteins, and amino acids. This will provide a nutrient source for both the turf and the microbial population, will improve nutrient uptake through greater cation exchange capacity, and will reduce leaching. Compost may be added to the soil prior to planting or may be top-dressed over existing lawns. If topdressing, it may be necessary to screen out some of the larger material before applying. Apply approximately ½ to 1 inch of material.



Nutrient content of compost will vary with the source of the substance. Further fertility, either from natural or synthetic sources, may be necessary for best health and vigor of your lawn. If buying commercial compost, look for the nutrient analysis label, which will tell you what nutrients are supplied. If you make and use your own compost, you may want to have it tested periodically

to determine what nutrients are being provided. Compost will always supply carbon and nitrogen, but an additional source of nitrogen may still be necessary. You may also need to supply other required plant nutrients.

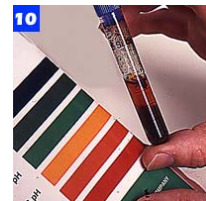
Another source of natural organic matter for soils is humic material. These products are similar to compost in that they are decomposed organic matter, but they generally have been decomposing for thousands of years and may come from deposits of peat, lignite, coal, or marine algae. These all contain humic acids in addition to carbon and nitrogen. They often also contain plant hormones or biostimulants, which are substances not required of fertilizers, but which the plant itself produces. Sometimes the addition of supplemental hormones may provide benefits; for example, the plant hormone cytokinin is often found lacking in turfgrass that has suffered a root dieback or decline. Application of cytokinin can offset the resulting stress from the root decline.

Application of humic substances provides benefits beyond those offered by compost. In addition to supplying nutrients, increasing soil nutrient availability, and improving soil structure, humates have been shown to enhance photosynthesis, protein synthesis, root functioning, and seed germination.

Clippings left on the lawn are rich in nitrogen and provide easy and free fertilization. However, under wet spring conditions, remove thick layers of clippings to avoid smothering the grass.

Opting for commercial fertilizer: Fertilizer with a slow-release form of nitrogen are more suitable because they provide more uniform feeding and there is less risk that excess fertilizer will leach away from the root zone. Fertilizing in early fall promotes vigorous lawn growth the next spring. As a general rule, a lower rate is used in spring and early summer than in early and late fall.

Have your soil analyzed every few years by a professional laboratory. This will tell you more specifically what type and rate of fertilizer to use and if the pH of your soil is adequate.



- 📖 **Liming:** lime is applied when soil is too acidic (low pH) for good lawn growth; you can have the pH of your soil tested if you think this might be a problem. Soil tests will aid the homeowner in determining the exact applications to be made. Generally, applications of lime should only be made every three to five years. It should be remembered that too much lime can be as damaging to lawn grasses as the lack of lime. Also, lime is not a cure-all to all lawn maladies but an ingredient, which can correct soil acidity, thus creating favorable conditions for other factors to occur which develop favorable conditions in soil for lawn grasses.

- 📖 **Aeration:** Compacted soil makes it difficult for water and oxygen to get to the roots.



A hard & compact ground, thatch build up and when water does not penetrate well are the signs of compacted soil that needs aeration. Aerating your lawn allows a better flow of water, air and vital nutrients to the plant root, allowing them to grow more easily through the soil.

Aeration of the lawn is best done before top dressing and fertilizing. Do not roll the lawn in spring, as this will increase compaction problems.

- 📖 **Dethatching:** Thatch is a tough mixture of dead grass and roots that accumulates at the soil surface. Thatch that is more than ½ inch thick can prevent water, air and nutrients from getting to the roots and can harbor harmful insects. In healthy lawn, insects, earthworms, beneficial fungi and other microorganisms break down thatch and aerate the soil. Excessive watering, over fertilizing with nitrogen and heavy use of insecticides and fungicides may decrease the populations of soil organisms required to keep thatch levels down. Remove excess thatch with heavy rake or de-thatching equipment.



- 📖 **Top dressing and over-seeding:** late summer or early fall, top dress your lawn with a thin layer of compost or good garden soil, and add grass seed appropriate to your site conditions. This will regenerate your lawn and take care of any thinned-out areas. If bare patches do not fill in quickly, weeds may invade these open spaces. Over seeding the lawn regularly will ensure that the grass stand remains dense. Early fall is the best time. Top dressing with compost or topsoil can be done at the same time. Over seeding is very important for lawns in shady areas. Keep the new seed or sod well watered until the new grass is established.



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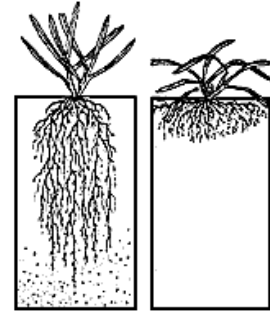


- 📖 **Mowing:** rather than giving your lawn a close shave, mow it to a height of 3 inches, this will promote better root growth and competition with weeds. Why? Tall blades of grass have more surface area exposed to the sun, enabling them to photosynthesize more sugars and starches for greater root growth. Greater root mass means better access to water and nutrients, so plants



are more tolerant of drought and can recover more rapidly from dormancy. Cut your grass when it's dry. Keep your mower blade sharp and mow often enough that you don't take off more than one third of the growth. Why? A dull lawn-mower blade will tear grass, and the jagged wounds make the plants susceptible to infection and allow for more rapid evaporation.

- 📖 **Irrigation:** give your lawn a deep watering, less often. Apply at least 1 inches of water. This can be measured by placing a container on the lawn while it is being watered. Early morning is the ideal time to water, to minimize evaporation. Water according to need rather than on a set schedule. Avoid watering in the late evening. It will also help prevent disease if the grass doesn't stay wet overnight. Deep and infrequent irrigation tends to cause grassroots to grow deeper into the soil, making the plants more droughts tolerant. Shallow and frequent watering lead to shallow-rooted plants with less drought tolerance.



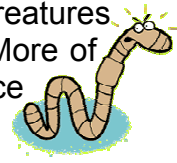
Grass growing near large trees may need more frequent watering, since the tree roots may use much of the soil water.

A healthy lawn can survive several weeks in a dormant state. In extended hot dry periods, a lawn may wilt, turn brown and become dormant but will green again when regular moisture conditions return. Check the lawn regularly to detect any pest or other problems early. It may be more difficult to detect or differentiate insect damage in a dormant lawn.

- 📖 **Variety:** plant a variety of grasses that can tolerate a range of growing conditions, such as sun and shade. Your lawn will then be less susceptible to pest damage
- 📖 **Substitutes:** where conditions are not suitable for a traditional lawn, try growing plants more adapted to the area. For example, periwinkle and lily of the valley are good ground covers for shaded sites, while creeping juniper and wild thyme are better for sunny dry sites. A variety of plants and grasses promote biodiversity in your yard. Or replace grass with paving stones or mulch in heavy traffic areas.



- 📖 **Helpers:** birds, beneficial insects, earthworms and many other creatures feed on lawn pests, help break down thatch and aerate the soil. More of these useful organisms are likely to thrive in your lawn if you reduce your use of insecticides and fungicides.



- 📖 **Integrated Pest Management (IPM):** Integrated Pest Management stresses pest prevention as its first principle. Manage pest problems by following IPM principles:

- Prevention is the best approach for managing pests.
- Check the lawn regularly. Good soil, with ample depth and organic matter, and improved drainage in wet areas will help prevent problems
- Regular inspections will give you early warning of potential problems. Make sure pest problems are correctly identified.
- Once you've identified a pest in your lawn, check for damage and decide whether action is necessary. Identifying the pest will help you decide if and when you need to apply a treatment. Be sure you correctly identify a pest or problem since beneficial insects may be mistaken for pests.
- Accept that a few weeds or insect pests won't noticeably harm a healthy lawn. Don't be alarmed at the first sign of a pest. It is not necessarily a threat to your lawn
- Attacking pest problems from several fronts is often more effective. For example, if chinch bugs are a problem, you can de-thatch the lawn, keep it well watered, increase the mowing height, keep nitrogen fertilization to a minimum, and over-seed with grass varieties that are resistant to chinch bugs. Such a combination of tactics will make it difficult for this pest to thrive.
- Organic pest control may fall into various categories: use of natural, organic products such as corn gluten meal, use of natural predators and biocontrols, and use of proper cultural practices to relieve pest pressure (integrated pest management). Often a combination of these methods will provide the most effective pest control. In addition, the use of new cultivars developed for resistance to insects or diseases can greatly reduce the overall need for pest control.
- The best way to combat weeds is to maintain a healthy, vigorous turf. This is best accomplished through combinations of proper fertility, mowing, and irrigation practices. One new natural weed control product has been shown through university research to suppress growth of certain weeds. This product is corn gluten meal, a substance commonly found in dog food and cooking oil. It is now commercially available through different companies and has been labeled for use on many warm-season grasses.

- The primary factors needed for a disease to develop are a susceptible host, a pathogen, and a conducive environment. Use of species less prone to disease and proper cultural practices are the most effective ways to reduce disease on your lawn. As mentioned above, proper fertility, irrigation, and mowing are all essential to disease control. Use of compost or other organic fertilizers may offer disease suppression as well.
- Recurring pest problems are often a sign that lawn care practices need to change.
- If you need to use a pesticide, only apply it when and where the pest is present.

📖 **Pesticides:** Before resorting to herbicides, try managing weeds by improving the general condition of the lawn and doing some occasional hand weeding. If you decide that a pesticide is necessary, follow these steps:

Before buying, make sure that the pesticide label has directions for use on lawns and lists the pest you want to control. Apply the product only where the pest is found; spot treat instead of applying broadly

Always read the label; its instructions must be followed. The label will give you the directions for use, including how much to apply and when. It will also indicate whether protective clothing, gloves or equipment are needed

Store pesticides out of the reach of children and pets and buy only the amount you expect to use in one season.

📖 **Lawn Care Services:** If you choose this option, ask what type of services the companies offer and discuss the results you can expect. Avoid lawn care programs that regularly apply pesticides whether or not pests are present. If pesticides are used, make sure that they are part of an IPM program, where pesticides are applied only if pests are at levels that require control.

📖 **Need more info?** The Santa Clara County IPM website provides important web links to comprehensive information for homeowners and green space professionals who wish to establish and maintain a healthy lawn while minimizing reliance on pesticides. For more information on IPM contact the Santa Clara County's IPM Manager at 408-299-5105 or E Mail: Naresh.Duggal@ceo.sccgov.org.

**PRACTICE IPM AT YOUR
WORKPLACE AND HOME**

**A healthy & pesticide free lawn is an ideal place to relax, It's
good for the environment and It's good for you!**

A Message from Santa Clara IPM Program