

Master Gardener's Horticultural Best Management Practices

Practices that should always be recommended:

- Test the soil to learn the pH and nutrients already present
- Group plants with similar needs (water, fertilizer, sun...) for easier maintenance
- Fertilize based on a soil test and at the appropriate time of year for that plant/crop
- Identify plant problem and severity of damage before choosing a control
- Read and follow all directions on pesticide labels
- Right Plant, Right Place

Soil

- Test the soil to learn the pH and nutrients already present
- Before undertaking construction projects make a plan to preserve soil structure as well as root systems of mature trees
- Determine soil drainage capacity before planting
- Use compost to improve soil structure and fertility in lawns and gardens
- Prevent erosion by maintaining vegetative cover using mulch, and correcting drainage problems
- Select plants for the landscape that will grow in the existing soil

Trees/Shrubs

- When adding trees/shrubs to the landscape, select trees and shrubs that will grow in the conditions (soil pH, sun or shade, etc.) of the landscape
- Plant trees/shrubs in holes that are 3-5 times the width of the root ball, and slightly less the height
- Mulch only 2-3 inches high, and 4-6 inches away from the trunk of the tree/shrub
- Select trees/shrubs whose mature sizes will fit the scale and size of the landscape
- Maintain healthy plants by meeting their cultural requirements with the goal of using less pesticides
- Avoid planting invasive species; instead choose plants, especially native plants that minimize maintenance and increase habitat.
- Use no soil amendments in individual planting holes of new plantings
- In times of low precipitation irrigate landscape plants deeply and infrequently, at a rate of 1" per week

Turf

- Test the soil to learn the pH and nutrients already present
- Determine soil drainage capacity before planting
- Maintain desirable pH (6.2-6.5) for turf grass through regular soil testing

- Areas that receive less than 4 hours of sunlight per day are often better suited to shade-tolerant ground covers or the use of mulched beds.
- Use plants or mulch to conserve water, suppress weeds and prevent soil erosion
- Measure your turf's square footage – don't guess!
- Re-test your soil every 3-5 years
- Follow the 1/3 mowing rule --Never remove more than one-third of the leaf blade at any mowing event
- Sharpen mower blades about every 10 hours of use or every 10 to 20 mowings. Wet grass tends to dull blades. Mowing with a dull blade also contributes to lawn diseases.
- Avoid mowing under drought conditions or when the leaf blades are wet.
- Return grass clippings back to the lawn-- it counts for up to 30% of a lawn's nitrogen requirements for the year.
- When selecting plants, consider the site's conditions (sun/shade, moist/dry, pH, growing space available) and the landscape plan.
- Maintain healthy plants by meeting their cultural requirements with the goal of using less pesticides
- Core-aerate cool season lawns in late August-early September or mid March-mid April; warm season lawns from June through mid-August.
- Consider adding slow release fertilizers (those containing 30 to 50% Water Insoluble Nitrogen) to your fertility program to minimize nutrient leaching potential.
- Keep all fertilizers for the lawn off of hardscapes (sidewalks, driveways, streets, etc.).Fertilize based on soil test
- Fertilize based on soil test AND the grass!
 - Cool season grasses-Fertilize no more than 2 pounds of Nitrogen per 1,000 square feet TOTAL in the Fall; applying no more than 1 pound of water soluble Nitrogen every 30 days. Optimal time is September through November. Fertilize no more than 1 pound of Nitrogen per 1,000 square feet TOTAL in the spring. Optimal time is May 15-June 15.
 - Warm season grasses-Optimal time for fertilizing is June, July and August. Fertilize no more than 1 pound of water soluble Nitrogen per 1,000 square feet per application. With no more than 3 lbs of Nitrogen per 1,000 square feet TOTAL for the season
- In particular, apply phosphorus and lime based on a soil test.

Annuals, Perennials, Bulbs

- Test the soil to learn the pH and nutrients already present
- Determine soil drainage capacity before planting
- Avoid planting invasive species; instead choose plants, especially native plants that minimize maintenance and increase habitat.
- Achieve a low maintenance garden by planting natives
- Group plants with similar needs (water, fertilizer, sun...) for easier maintenance
- Use plants or mulch to conserve water, suppress weeds and prevent soil erosion

- Maintain healthy plants by meeting their cultural requirements with the goal of using less pesticides
- When adding plants to the landscape, select ones that will grow in the conditions (soil pH, sun or shade, etc.) of the landscape
- In times of low precipitation irrigate landscape plants deeply and infrequently, at a rate of 1" per week

Groundcovers

- Test the soil to learn the pH and nutrients already present
- Determine soil drainage capacity before planting
- Select a groundcover for the conditions (sun/shade, moist/dry etc.)
- Group plants with similar needs (water, fertilizer, sun...) for easier maintenance
- Use plants or mulch to conserve water, suppress weeds and prevent soil erosion
- In times of low precipitation irrigate landscape plants deeply and infrequently, at a rate of 1" per week

Vegetables

- Rotate crops to avoid the build up of pathogens and pests in the garden
- Test the soil to learn the pH and nutrients already present
- Determine soil drainage capacity before planting
- Utilize companion planting/intercropping to attract beneficial insects and to take advantage of symbiotic biochemical and cultural benefits
- Use cover crops/green manures to improve soil nutrients and structure
- Practice right plant, right place, in order to take advantage of garden microclimates- hot areas, light angles and moisture sinks, when planning your garden layout.
- Identify insects (beneficial or pest), diseases or weeds and susceptible life cycles and evaluate the extent of the problem before taking remedial action (using the least toxic alternative).
- Improve compacted soil by aerating, double digging
- Select cultivars of plants and seeds that are bred for resistance and tolerate local conditions.

Irrigation

- In times of low precipitation irrigate landscape plants deeply and infrequently, usually no more than 1" of water per week, while being sure that the water applied enters the soil and is not running off.
- Irrigate early in the morning, rather than late at night, to minimize evaporation losses, effects of wind, and to reduce the length of leaf wetness so that disease pressure is reduced.
- Periodically inspect and audit your irrigation system to maximize system performance and improve water use efficiency.

- If irrigation is not available to sustain active growth during periods of summer drought, refrain from irrigating and let the grasses go dormant.

Compost

- Top-dress existing lawn with ¼" of compost one to two times per year to improve the soil structure of clay soils. The benefits are enhanced when done in conjunction with soil aeration. A simple formula to calculate how much compost is needed is :
Area to cover (square feet) X depth of compost (inches) X 0.0031= compost needed (cubic yards)
- In late spring, add about 1 inch of compost around the trees and shrubs. Cover with a mulch of shredded pine needles, straw, bark chips, or leaves 2 to 3 inches deep.
- In the fall, spread about 2 inches of compost over your entire garden and work it 6 to 8 inches into the soil

Insects

- Identify the pest and susceptible life stages before you treat with a pesticide. Contact the Extension office for identification and control recommendations.
- Maintain healthy plants by meeting their cultural requirements with the goal of using fewer pesticides
- Monitor plants in the landscape regularly to recognize when pests are present
- Learn which insects are common to the plants growing in your landscape/garden.
- Reduce pest populations by hand removal and regular clean up
- Establish thresholds for acceptable levels of pest infestation; consider how beneficial, non-target insects might be affected by a chemical treatment.
- Keep all insecticides off of hardscapes.

Diseases

- Learn the diseases common to the plants growing in your landscape/garden and consult with your Extension office regarding management strategies that can reduce disease incidence.
- Maintain healthy plants by meeting their cultural requirements with the goal of using less pesticides
- Monitor plants in the landscape regularly to recognize when pests are present
- Keep all fungicides off of hardscapes.

Weeds

- The best weed control in a lawn is achieved by a dense turf canopy. Choosing an appropriate grass and providing responsible fertility and cultural management programs is the best way to reduce weed pressure.
- Identify weeds before using a chemical control and consider WHY the weed is present (compaction? Persistent wet soils? Shade? etc.). Decide which species you can live with and which species you want to control. Contact the Extension office for

identification and control recommendations and for help in improving growing conditions such that weeds are discouraged.

- Hand-pull weeds or use spot herbicide treatments where possible.
- Appropriate timing is critical for pre-emergent herbicide control of summer and winter annual weeds. Consider how pre-emergent herbicides can affect the chances for success with future seeding establishments. When fertilization is not appropriate, choose pre-emergent herbicides that do not contain fertilizer. Read the label; many products require a second application or need to be watered in to activate.
- When using post-emergent herbicides, treat young, actively growing weeds and consider how the environment (temperature, wind, humidity, chance for rain, etc.) might affect herbicide activity on the target weed AND surrounding, desirable vegetation.

Wildlife Control

- Identify species before you choose a control
- Remove food, water, and shelter sources that attract and harbor pests
- Combine tactics for the best control strategy
- Encourage success of natural predators
- Seek professional assistance if problem persists

Stormwater Management

- Remove debris from storm drains regularly, and clear snow from drains
- Clean parking lots and paved areas of leaves, trash and sediment
- Reduce the amount of road salt used in parking lots and walkways, or use ice melt, sand, kitty litter, cinders, ashes or other alternatives, but not fertilizer
- Clear snow to the lower end of the paved areas
- Educate employees/residents on proper storage, handling and disposal of potentially hazardous wastes
- Collect and recycle hazardous waste, waste oils, solvents, etc.
- Store potential pollutants inside or cover
- Minimize the amount of material stored by implementing "just enough" and "just in time" purchasing
- Practice preventive maintenance to reduce leaks, spills
- Return clippings to the lawn (or compost them if collected) and keep all chemicals applied to the lawn and landscape off of hardscapes.