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FIRST STEPS TO HEALTHY GARDENING

The best way to encourage and ensure a healthy garden for the future is to start by making all efforts to prevent problems from developing. This is true whether you are concerned about lawns, shrubs, trees, perennials, annuals, or vegetables. Prevention is a fundamental component of maintaining healthy plants and one of the most effective ways to minimize the occurrence and impact of all types of diseases in the landscape and garden.

In order to accomplish this, it is helpful to follow some basic steps at the start and during every growing season.

FIVE STEPS TO HEALTHY GARDENING

STEP 1- SPRING CLEAN-UP

- **Remove winter mulch:**
  - Any plants or beds that have been mulched for the winter should have mulch removed before or as soon as new growth begins.
- **Rake:**
  - Lawns can benefit from a vigorous raking; this helps to remove twigs and dead, matted tissues; it also stimulates new growth.
- **Remove plant debris:**
  - Clean up any leaves or plant debris that may have collected in shrub or perennial beds during the winter; this removes potential sources of overwintering inoculum capable of infecting newly emerging plant tissues in the spring.
- **Remove or prune any dead or damaged branches:**
  - Carefully examine trees and shrubs for any dead, dying, or damaged branches;
  - These should be pruned, since they are potential avenues for secondary invaders and opportunistic pests.

STEP 2- OPTIMIZE PLANT VIGOR

- **Fertilize:**
  - Make appropriate applications of fertilizer to maximize plant growth and vigor; fertilizer should only be applied if necessary; the need for fertilizer should be determined by a soil test; this helps to avoid plant stress due to deficiencies or toxicities;
  - It is important to avoid excessive applications, which result in tender and succulent growth that is prone to disease; when plants are underfertilized, deficient plants are weak and spindly and are often prone to disease.
- **Mulch:**
  - Correctly applied organic summer mulches have several advantages: they help with weed control, soil temperature moderation, and soil moisture retention;
  - Mulches also help to minimize disease spread by splashing;
  - Mulches should not be applied too thick or too close to the stem;

➢ Incorrectly applied mulches can cause many problems: when applied too thick, the mulch impedes water penetration and smothers the roots; when applied too close to the stem, the mulch creates conditions favorable for the development of stem and crown rots(Figure 1);

➢ Guidelines for mulching:

- Mulches should be applied approximately one inch from the base of herbaceous plants and 6-12 inches from the base of woody plants;
- The thickness depends upon the coarseness of the mulch:
  1. Fine shredded bark ~ 1 inch
  2. Coarse shredded bark ~ 2 inches
  3. Pea gravel ~ 3 inches
  4. Bark nuggets ~ 4-6 inches

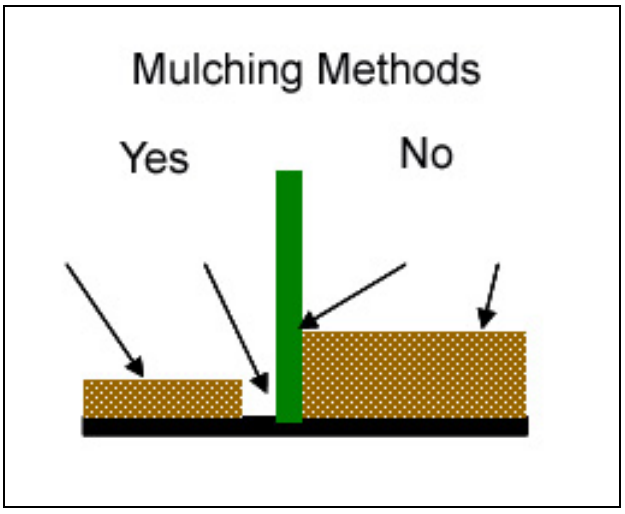

Figure 1. Guidelines for correct application of mulch for landscape plantings.

- **Water:**

➢ Maintain adequate soil moisture for each plant species;

➢ For most plants, including trees, shrubs, and turf, this usually translates to approximately one inch of water per week;

➢ In the absence of natural rainfall, supplemental irrigation is important;

➢ For *most* soil types, watering is best done as one deep soaking during which the soil profile is wet to a depth of 6-10 inches; in very sandy soils, two waterings of ½ inch of water may be necessary;

➢ In order to keep the foliage dry to minimize potential disease problems, it is important to avoid overhead irrigation; if overhead irrigation is necessary, water early in the day.

STEP 3- PLANT SELECTION

- **Hardiness:**

➢ When selecting new plants, it is important to consider plant hardiness; most of Connecticut is in Zone 6 but there are pockets in Zone 5.

- **Healthy plants:**

➢ Use healthy, pathogen-free seeds, cuttings, seedlings, transplants, bulbs, rhizomes, or corms;

➢ Carefully inspect plants at the time of purchase and when planting; special attention should be paid to the health of the root system at planting;

➢ Any bulbs that are overwintered should be inspected and those that have off-odors, obvious fungal growth, or are soft and mushy should be discarded.

- **Genetic resistance:**

➢ Select and plant resistant or tolerant cultivars or species of plants; these are plants with genetic resistance to a specific disease(s);

➢ This is a very effective tool for prevention of disease when available; for example, cultivars of crabapple are available with resistance to cedar-apple rust, phlox with resistance to powdery mildew, and tomato with resistance to Fusarium and Verticillium wilts.

- **Plant requirements *vs.* site characteristics:**

➢ It is important to match plants to the characteristics of the site as closely as possible; this is much more successful than trying to modify the site to match the requirements of the plant;

➢ Among the factors to consider are: light, soil pH, soil drainage, soil compaction, and exposure (e.g., wind, frost pockets);

➢ Although this is important for both herbaceous and woody plants, it is particularly important for woody and perennial species.

STEP 4- PROPER PLANTING

- **Spacing:**
  - ➢ Use the spacing recommended for each type of plant;
  - ➢ Avoid planting too close since crowded plants do not grow well; crowding also creates environmental conditions that are favorable for many plant diseases.
- **Rootball preparation:**
  - ➢ Correct preparation of the rootball is critical to plant growth and vigor and it is often overlooked;
  - ➢ With balled and burlapped (B&B) material, the burlap should be completely removed or at least shredded and folded down; if a wire basket is present, it should be completely removed or the top third should be cut off;
  - ➢ With both woody and herbaceous plants grown in containers, the rootball should be moistened, scored, cut, and teased apart before planting; this is especially important if the root mass is very tight and dense (Figure 2); this can impact overall plant vigor as well as susceptibility to disease.

Figure 2. Creeping phlox three weeks after planting. The plant with roots teased apart prior to planting (left) has much more vigorous top and root growth than the plant with roots not teased apart prior to planting (right).

- **Planting practices:**
  - ➢ Correctly prepare the planting hole;
  - ➢ The current method for planting specifies that the hole should be dug two to four times wider but no deeper than the rootball to be planted; no amendments to the soil are suggested; this method encourages faster root growth from the rootball into the planting hole and into the planting site and helps to minimize problems with settling, especially for heavy trees and shrubs (Figure 3);

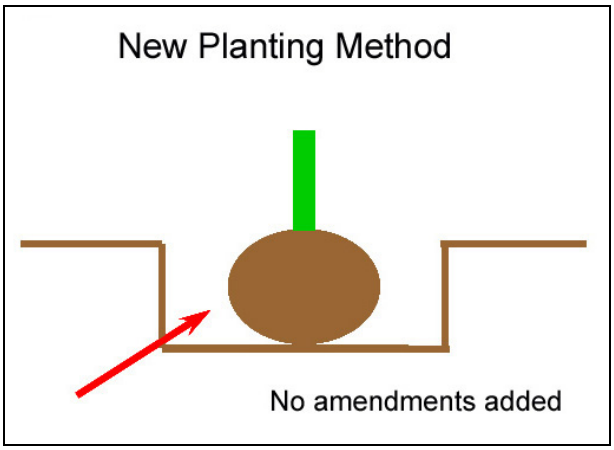

Figure 3. New method for planting.

  - ➢ The "old" method for planting included digging the hole two to three times deeper and no wider than the rootmass to be planted; amendments were routinely added to all soils (Figure 4).

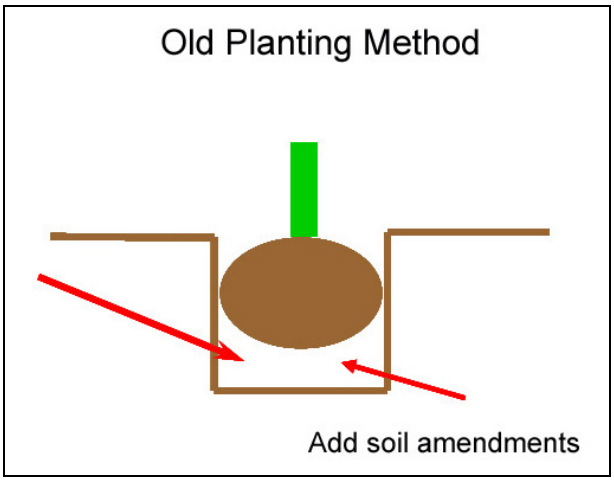

Figure 4. Old method for planting.

- **Timing**
  - ➢ Be patient.
  - ➢ Plant at the appropriate time for the particular species to be planted; for example,

rhododendrons, junipers, or most perennials can be planted in early spring without any problems; in contrast, semi-tropicals or tropicals such as dahlias and canna should not be planted until the air and soil temperatures warm by late spring, after the danger of hard frost has passed.

STEP 5- SCOUT FOR PROBLEMS

- Take scheduled walks through your yard and garden to check for problems and to monitor for how quickly they are spreading or building up;
- Record the dates, locations, and types of diseases that are identified;
- If you need assistance with disease identification, you can contact the *Plant Disease Information Office* of the Experiment Station.
- Information on how to collect and send or bring a sample, as well as a checklist for submitting a sample can be found on the Experiment Station website.
- It is helpful to remember that it is ***ALWAYS*** easier to control a problem ***BEFORE*** it gets out of hand.

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