

PROBLEM SOLVERS

by Balakrishna Rao, Ph.D

Tender loving care

Problem: As part of recent street improvement projects, large trees (maple and locust) have been planted in a four foot by four foot sidewalk opening. Will these trees ever mature to their natural dimensions; will they be suppressed; will they die in the future? (Ohio)

Solution: It would be difficult to expect the plants to grow and mature to natural dimensions as they would in their natural environment (niche) because of the new and restricted four foot by four foot root area in the sidewalk.

The root system and the shoot system of plants are in equilibrium. Restricting root growth will proportionately restrict shoot growth. Studies have shown that it may take two to five years for most plants to establish after transplanting. During their recovery period they are very sensitive to environmental stresses which can then predispose the plants to insects and/or diseases.

Under these conditions, plants will be suppressed; however, to what extent depends upon the proper care given to the plants during and after planting. Some of the factors which affects plant health are soil, organic matter, soil acidity, aeration, water-holding capacity, drainage, and proper watering and fertilizing practices. Observation pipes installed in the ground within the dripline should help you monitor the drainage condition.

With proper cultural practices and other plant health management approaches, the plants should have a better survival potential, so consider giving all tender loving care to help improve the vitality of your plants.

Poast controls bermudagrass

Problem: A new product called Poast is being tested for use in controlling bermudagrass in woody plant beds. Have you heard about this? Would appreciate your comments in this regard. (Maryland)

Solution: Yes, Poast, a postemergence herbicide manufactured by BASF Chemicals Company, can be used to control bermudagrass in woody plant beds. Poast is a new, systemic, selective herbicide which can be safely applied at the recommended rates to control annual (1 pint per acre) and perennial (2 pints per acre) grasses such as bermudagrass, quackgrass, etc., in ornamental plants or ground cover growing areas. BASF representatives indicated that grasses growing up to six inches in height can be satisfactorily controlled with one pint per acre.

The material will be absorbed by the actively growing foliage and translocated to roots, eventually killing the plants.

Reportedly, there will not be any soil residual activity of the herbicide or any injury to broadleaf plants, including ornamental plants. Depending upon geography and climatic conditions, treated grass plants may discolor first and then die within two to three weeks. Since there is no soil residual activity, repeat application may be necessary if grass plants present a problem later in the season.

Inorganics and microorganisms

Problem: Does inorganic fertilizer kill or tend to destroy microorganism activity in the soil? Is organic fertilizer better for the long term life of soil? (Wisc.)

Solution: Application at the recommended rate of either inorganic or organic fertilizer to soil should not have any direct effect on microorganisms.

However, if over applied, fertilizer may affect the soil pH or release excessive salts which may injure the root system of plants. This may then affect the plant, soil, and microbial ecology. Natural organics such as sewage sludge or milorganite application may temporarily improve soil structure which, in turn, can be favorable for microbial activity.

Wood mulch still best

Problem: Will the replacement of bark mulch with 1 3/4 inch stone in shrub beds cause any long-term problems with shrub growth and development? Plantings are made up of mostly pines, yews, junipers, azaleas and rhododendrons. (Maine)

Solution: A review of information relevant to your question indicates that there isn't a simple "yes" or "no" answer. I've seen stones, pebbles, gravel and other inorganic materials used as mulch, but I'm more familiar with the organic mulches, ie. wood and bark chips.

My observations are that when rock mulch is used there usually is a sheet of plastic film beneath it. The plastic, usually black in color, is for weed control and it may cause problems for woody plants. I often find poor aeration and too little or too much moisture in the underlying soil.

Poorly aerated, wet soil plus the root and collar rot organisms commonly found under such conditions can cause root loss, reduced growth, and/or death of the entire plant.

When the rock mulch has been in place for several years it is, in my opinion, not very attractive because weeds and other things grow in or on the litter that accumulates among the stones.

With most organic mulches such debris simply blends in. The appearance of bark-mulched beds can be easily improved by a top dressing of fresh material.

Renovation of rock-mulched beds means removing the existing layer of rocks, putting down new plastic and spreading around new or clean stones. Where black plastic isn't used weeds are a problem.

Herbicides often become the only means by which beds are kept free of these unwanted plants. Repeated contact with herbicides through drift and/or root uptake can injure or kill the desirable plants.



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Questions should be mailed to Problem Solver, Weeds Trees & Turf, 7500 Old Oak Boulevard, Cleveland, Ohio 44130. Please allow 2-3 months for an answer to appear in the magazine.