

PROBLEM SOLVERS

By Balakrishna Rao, Ph.D

Bark mulch better than stones

Problem: Will the replacement of bark mulch with 1-3/4" 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 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, i.e., 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. I would think it tedious, if not impossible, to remove leaves and decomposing plant material from large beds of rock mulch. With most of the organic mulches such debris simply blends in.

The appearance of bark-mulched beds can be easily improved by a top dressing of fresh material.

Where black plastic isn't used, weeds are a problem. Herbicides often become the only means by which the 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. When the bed gets a lot of sunlight the rocks store heat; enough heat that they are too hot to handle. Renovation of rock-mulched beds means removing the existing layer of rocks, putting down new plastic, and spreading around new or clean stones.

High temperatures can kill or injure roots and emerging or thin-barked plants. If the rock, stones, pebbles or whatever are of calcareous origin, e.g., limestone, the mulch may reduce soil pH to the point where the pines, junipers, azaleas, rhododendrons, and even the yews suffer from micronutrient deficiencies.

Fungi culprit in fairy ring

Problem: What causes "fairy ring" problems in lawns and how do we get rid of them? (Toronto, Canada)

Solution: Fairy ring problems in lawns can be caused by a number of different fungi belonging to one group - the mushroom family. These fungi grow on buried organic matter such as logs, roots, and

construction materials in the soil.

The fungus growth can become so dense that the soil cannot be wetted and the grass dies from lack of moisture or from a toxic substance released that prevents the growth of the grass. Fungal decomposition of organic matter releases the nitrogen which stimulates adjacent grass to grow greener. This may be quite annoying as some are foul-smelling, a few are poisonous, and all are unsightly on a well-maintained lawn.

The following cultural practices should help to manage or suppress the problem: 1) Regular mowing will remove the mushrooms. Mushrooms may grow back again until the food reserve is used up. Therefore, if desired to prevent this, remove buried organic matter or re-establish turf in clean soil. 2) Or wait until organic matter is used up with the hope that eventually the rings will disappear. 3) Apply water into the soil to a depth of one to two feet at one foot intervals just inside the ring of dead grass with a tree feeding lance or root feeder attachment on a garden hose. Aerating and drenching the soil with a wetting agent will help prevent the development of the zone of brown or dead grass in the area of dense mycelial (thread-like fungal body) growth. Treat when rings appear or whenever grass shows signs of wilting. This is inexpensive, easy, and satisfactory to mask the symptoms. 4) Maintain a good fertility level throughout the year to help mask the stimulated, dark green rings.

5) Avoid applications of organic matter such as manure or mulches as they may stimulate development of the fairy rings. 6) Remove infected soil in the ring to a depth of 18 inches and replace it with fresh, clean soil. This, however, is laborious and expensive.

Although not impossible, the chemical control approach is difficult, laborious and expensive. Some success has been achieved by aerating the soil and drenching the infected area with a fungicide. However, results have been sporadic and generally unsuccessful. Stripping off the sod and fumigating the soil with methyl bromide, or some other fumigant, would provide complete control of fairy ring problems. **WT&T**



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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.