



MASTER GARDENER

COLORADO STATE UNIVERSITY
EXTENSION

Year-Round Gardening

Pine Needle Myths

Joan Nusbaum, Colorado Master Gardener

Are you finding it difficult to grow grass under your pine tree? You may think that pine needles create acidic soil in which grass doesn't grow. That would suggest that the pine needles are decomposing rapidly enough to lower the soil pH. However, people who make their own compost find that pine needles decompose very slowly. What's the truth?

There are a number of things to consider that will help you understand this problem. While pine needles have a low pH of 3.2 to 3.8 (neutral is 7.0), they do not decompose very fast on their own. A slight drop in pH might occur if pine needles were incorporated into the soil, but would not be damaging to plants because the microbes that work to decompose pine needles would eventually neutralize the properties of the pine needles.

Research was done by Spokane County Extension in Washington to find out if ponderosa pine needles might be able to be turned into usable compost. They compared three treatments of needles:

1. current year needles that were intact
2. current year needles shredded
3. needles shredded and saved from the previous year.



To each needle pile they added coffee grounds, fresh grass clippings, and dried leaves then placed each mix in GeoBins designed for composting. The mix in each bin was turned and watered which speeds up the composting. Reporting their findings, each treatment resulted in usable compost with a nearly neutral pH level.

The third treatment, using the shredded and aged pine needle “melted almost like butter” and was usable within six weeks. The second treatment with the shredded needles attained higher temperatures and decomposed faster than the treatment with non-shredded needles. Both current-year needles took longer but were usable within three months.

By adding water and shredding the needles, the waxy cuticle was broken down and needle surface area increased which allowed greater microbial action on the needles.

So what does this tell us about the myths we hear? While pine needles are acidic on the tree and on the ground, the decomposition of the needle which clearly takes time and energy, will be nearly neutral once it's finished. That time can be reduced dramatically by shredding the needles before composting.

Perhaps the biggest factor in growing grass under a large tree is that rain and snow is blocked by the tree canopy. The next time it snows or rains, look and see if the ground is wet under the tree. If it is a large tree, it most likely will be dry. In addition, there will be competition between grass roots and tree roots for the water that is there. Lack of direct sun may be a factor too? It's more difficult to grow grass in the shade of a tree.

Be aware of the information you read. Check your assumptions.

When you have questions, Colorado State University Extension has research-based answers. The Help Desk is open at 17 N. Spruce St. Hours are 9 a.m. to noon and 1 to 4 p.m. Mondays and Wednesdays. Call 520-7684 or email CSUmq2@elpasoco.com.