

Evaluating plant health upon receipt of material

A delivery of plants has been brought to your restoration site and it's your job to inspect them before acceptance. Of course you'll have to get down and dirty to properly inspect plants. What do you look for to judge their health? If you find problems, are they severe or numerous enough to reject the plants? If you aren't sure, contact your local Cooperative Extension office for help with diagnosis.

Looking over a block of plants is only the first step. As a whole, do the plants look healthy to you? Plants should fill the pot and have no sign of damage or disease. Do they look wilted or fat and happy, despite their autumn dieback? Next, get in close and start poking and prying, peering and prodding.

Examine the leaves, stems, and trunks

Starting at the top of the plant, examine the leaves or needles for signs of disease. The new leaves of plants received in the spring should be free of leaf spots, powdery mildew or other infections. If the leaves of deciduous species look bad in the fall, don't worry; it's normal for opportunistic infections such as leaf spots to appear on aging or withering foliage. The same infections **are** a concern in the spring or early summer, or if they occur on evergreen species. With a magnifying glass or hand lens turn the leaves over and examine them for insects and associated damage. A few aphids are no big deal and easy to control but an infestation may be a concern.

Now examine the stems and the main trunk. Broken branches can be cut off cleanly but broken trunks on a single stem tree may be cause for rejection, especially on conifers. Look for wounds, soft spots or depressions that could indicate canker or mechanical damage. Plants do have the ability to wall off injuries, but until they do, damaged bark can invite infection and should be avoided. Cankers that completely girdle the stem often cause mortality.

Examine the roots

For bareroot material, open a bundle of plants and look at the roots. Are they firm and moist, with pale growing tips? This is important because dried-up, mushy, or totally brown roots are dead, and those plants probably won't survive. Extra-long roots should be pruned so the roots fit easily into the planting hole. For container plants, take a random selection of plants, invert them, pull off their pots, and look at the roots. Are they fully rooted, with roots reaching to the sides and from top to bottom, without circling or coming out the bottom? Plants that pull out of the pot leaving a pile of soil behind have been sold before they are ready. A fully rooted container plant has white healthy roots that are consistent throughout the pot. Are they root-bound, with roots that circle thickly around the bottom of the pot? Circling roots **must** be straightened and pruned before planting, otherwise the plants may never grow out of the "pot" shape, and within a few growing seasons they could die. However, it's normal and acceptable for species that spread by aggressive root suckering to have shoots coming out the holes in the pot. Examine the roots color and texture. Roots that are brown, dried, slimy, or soft are not healthy. Some brown roots are normal for a container plant, but there must also be live, growing roots. This step in inspection is critical: healthy roots are vital to a plant's growth.

Take advantage of these simple steps to ensure that the plants you receive for your project are ready for planting, and have the best potential to become established and thrive on the site. Inadequate plant inspection can result in accepting unsatisfactory plant material, thereby jeopardizing the success of your project.