Horticulture Diagnostic Laboratory

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Planting and After-Care of Container-Grown Plants

Most fatalities of a container-grown plant result from the plant drying out and this will often happen even when the soil adjacent to the new plant's root system is still quite moist. Plants which have been grown in containers require timely irrigation directed at the roots in the container growing medium (soil mix) as well as the surrounding soil after they are planted in the landscape. This is needed until their roots become well established in the surrounding soil. The care required is in addition to that normally given new transplants.

Why is this so important with container-grown plants? When plants are dug from the ground they have many of their roots cut. This stimulates root growth to occur from the cut ends and hastens the plant's eventual reestablishment. The container-grown plant's roots are not disturbed by its simple removal from the container before planting. It thus has no immediate incentive to send roots into the surrounding soil. In fact without proper loosening of these roots they will often remain in the soil mix or wrap themselves around in a girdling fashion.

The critical period of time until the plant becomes established will vary according to the soil conditions. Root establishment occurs slowly when a plant grown in a light soil mix, is planted into a soil that is heavy or clay-like. At the same time slow root establishment will occur when a plant grown in a heavy soil mix is planted into a light, sandy soil.

The amount of extra water needed varies with the current stage of growth of the new plant. More frequent watering is required when the plant must support new growth or flowers (i.e. mid-spring and summer). Another factor influencing watering frequency is soil type. A sandy soil is going to dry out more rapidly than loamy or clay-like soils. To be safe on Long Island, those plants recently transplanted growing in soils with good bottom drainage (drainage beneath the plant) may require approximately one inch of water twice a week during the summer. During the fall once a week will usually suffice. These are only rules-of-thumb and need to be adjusted depending on rainfall and prevailing temperatures. In any case frequent, shallow (short duration) irrigation is usually not beneficial. A layer of organic mulch (i.e. bark nuggets or chips) will help hold moisture in the soil.

What steps should be taken to shorten the critical establishment time? First, evaluate the soil condition (i.e. soil type, pH, drainage, etc.) where the plant is going to be planted. If your evaluation of the soil has determined problems exist then this is the time to correct them. If the soil is in good shape then no corrections or amendments are needed. First, dig a hole at least 3 times wider than the diameter of the existing root mass. The hole should not be dug too deep though. You prefer to have the plant sitting on firm, but well-drained soil. Loosen the soil you have dug thoroughly. In some cases it may be advisable to turn the soil under in a large "planting bed" by rototilling.

If poor drainage exists you will need to consider installing drainage devices (i.e. plastic drain, gravel filled holes, etc.) to move excess water from within the plants root system. Another possibility is to construct raised beds. If the soil is too sandy then replace up to a 1/3 of the back-fill with a suitable organic amendment (i.e. peat moss, compost, manure, etc.). If the soil is not porous enough consider adding sand to improve it, but be careful since too much sand added to clay-like soil can create more problems than it solves. Do not add water retaining amendments such as peat moss to soils that are poorly drained. Add soil pH adjusting amendments as recommended based upon soil test results. Remember if the soil is ok -- no amendments are necessary. Be sure any amendments are thoroughly mixed together with the back fill soil.

Do Not Plant Container-Grown Plants Before Loosening Or Cutting Their Existing Root System. This next step of loosening or cutting some of the roots before planting is very important. By extending some of the roots out into the planting hole, you begin to break the former root habits. For those plants with existing root systems, which are very fine in nature, a general loosening of the outside layer of roots with your hands should be sufficient. When roots are coarse, loosen them and/or cut them with sharp pruning shears. This is very important when these roots become severely coiled on the sides or bottom of the container. Bad kinks and coils should be eliminated. If a lot of roots need to be cut away in the process offset this root loss by pruning back or thinning out the top of the plant. While undertaking these steps, do not allow the roots to dry. Failure to loosen or cut roots before planting is a frequent reason why container-grown plants die after being planting in a landscape.

Do not plant too deep. It is very important that the root flare (the area where the major roots and trunk of the plant meet) be at or slightly above the soil line. Usually this is the top surface of the soil mix. Unfortunately some plants are set too deep in the containers and the root flare is not obvious. In this case you will need to remove the top surface of the soil mix until the root flare is exposed. After determining where the root flare on the plant is located set the plant into the hole. The soil at the bottom of the hole should be firm. Fill the hole around the plant with the back-fill soil. Construct a 4 or 5 inch tall saucer-like berm of back fill soil at the outside edge of the root ball. This will help water to be directed right to the existing root system. The berm can eventually be removed as the root system expands in the next year or two. It is important to keep the root system adequately moist.

Finally cover the top surface of the soil mix with a layer of organic mulch (i.e. bark nuggets or chips). Do not pile mulch up against the bark of the trunk and lower branches of the plant. Keep a few inch area around the trunk free of mulch. One or two inches (depending on particle size) should be sufficient. The mulch will help to retain soil moisture and lessen the incidence of the root ball drying out.

Where container-grown plants are planted in the late fall, assume that they will go into the winter without being thoroughly established. Provide winter protection in the form of a wind and sun barrier/break to protect the young twigs, buds and foliage (if evergreen). A burlap windbreak is a good choice.

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