

Balled birch struggles

Q. I allowed a balled river birch to go dry for almost a week before I planted and watered it. It had already budded and less than five percent of the leaves survived. Will this tree find a way to put out new leaves or is it toast?

—WISCONSIN

A. Plants store energy reserves produced during photosynthesis the previous season in the root system. These stored carbohydrates help produce the new root and shoot growth that occurs following transplanting. Depending upon the maintenance practice of the nursery where the river birch was grown, the energy reserves may vary. However, many absorbing roots are cut off during the process of digging and balling/burlapping a tree. Only a few large roots remain with the plant.

In addition to loss of stored carbohydrates, root loss reduces the amount of water absorbed. The resultant water stress has a negative impact on all plant functions including photosynthesis, which further depletes carbohydrates. Water, either too much or too little, is the single most common cause of transplant failure.

However, trees have good recuperative potential, and will often reestablish from the transplant shock. Depending upon the reserve carbohydrates in the root system and available water, your tree may produce new leaves. In doing so it will further deplete the nutrients in the root

system so the tree must produce more carbohydrates to survive. During this recovery period maintain the health of the tree through proper mulching, watering and fertilizing. Water deeply and infrequently. Generally two inches of water per week is sufficient for clay soils while sandier soils may require more water. Be aware that stressed trees will be prone to other insect and disease problems. Monitor for pests and diseases and provide appropriate treatment.

Borer larvae eat pine terminals

Q. In our nursery we found some borer activity on Scotch pines and white pines. Most of the damage is on their terminals. From outside we don't see frass. In most cases there are some small holes right above the end of the discolored damaged terminals. When cut open the terminals had tunnels which are packed with sawdust-like frass. It is on both ends of the terminals. What is the problem? What is the remedy?

—PENNSYLVANIA

A. The pest problem sounds like Eastern pine shoot borer. This pest, since it feeds on the pith of terminals, can cause extensive damage to both Scotch pines and eastern white pines. They can also damage all two and five-needle pines, Douglas fir and white spruce. While feeding, the larvae first tunnel downward along the pith area, and then go upward. In the pith area the frass pellets will be

packed very tightly on either end of terminal tunnels. The frass is not pushed out by the insect. By late June larvae chew oblong or oval holes just above the base of the lower end of the feeding tunnels. Look for the packed frass with red brown bark tissue in the pith area on both tunnel ends. This is characteristic of Eastern pine shoot borer. By contrast, the pine shoot beetle also makes tunnels, but it produces circular holes which may have sap flow but not frass. The European pine shoot moth and Nantucket pine tip moth generally burrow into buds and stems and do not restrict their feeding to the pith. Normally, there will be only one larval feeding per terminal.

The Eastern pine shoot borer overwinter as pupa in duff, and adults emerge around late April or early May when pines break buds. They lay eggs on needles. The eggs hatch into tiny larvae which tunnel into the pith. After feeding, the larvae drop to the ground and overwinter as pupa in cocoons. Generally, by July the infested terminals will be empty. The damage from Eastern pine shoot borer is limited to main terminal leaders and lateral terminals. This deforms and stunts the tree.

Generally, insecticidal treatment is not needed unless more than 10 shoots per tree are damaged with three years of harvest. Shear or selectively remove infested branches to manage this insect. **LM**



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