PROBLEM MANAGEMENT

by **Balakrishna Rao,** Ph.D.

Straightening tipped trees

Problem: *How can wind-blown trees be straightened up? Gradual tipping of parking lot trees has occurred in our lot. Do you have any solution other than digging the trees? (Wisconsin)*

Solution: The gradual tipping that you describe is probably a result of a constant wind from one direction. The tipping caused by this wind could be due to either actual shifting of the root ball or bending of the tree trunk.

The root ball of a newly transplanted tree acts like a ball and socket joint. A force against the tree canopy, such as wind, causes the root ball to shift or rotate in its planting hole if there has been insufficient root establishment outside the root ball. Under extreme wind conditions, even mature trees with shallow root systems can be blown over.

Attempting to straighten a tree by pushing or pulling the trunk without digging around the root ball could cause the root ball to break apart. Extensive root damage will limit a tree's chances of survival.

Digging around the root ball and then straightening the tree is the only practical solution. The tree should also be properly staked or guyed for a year or two to brace the tree while establishing its root system. Thinning the crown will also reduce its wind resistance.

The tipping may actually be the result of a bending trunk instead of a shifting root ball. A trunk which does not taper, that is, increase in trunk diameter as height decreases, cannot support the canopy above it.

A tapered trunk will flex uniformly along its length when the tree is subjected to the force of wind. An untapered trunk will permanently bend or break because the stress against the trunk is not evenly distributed, but is concentrated at one location. A young tree with low branches will develop trunk taper better than will another tree of the same age and species that has had its lower branches removed. As a tree matures and develops adequate trunk taper, the lower branches can be shortened and eventually removed.

Improper staking or guying can also cause a tree trunk to bend or break. The point of attachment of the stake ties or the guy wires should be about 6 inches above the lowest position on the trunk that will support the crown. The trunk should be secured so that a slight amount of movement is possible. Attachment to the trunk that is too high or too rigid will transfer all the stress of wind resistance to that portion of the tree above the point of attachment. This may exceed the structural strength of the trunk at this location and either deform or break the trunk at or above the tie.

No way to remove heavy metals

Problem: *How can heavy metal (lead, cadmium, etc.) concentrations be dealt with in the landscape so as not to pose a hazard to plants and people? (California)*

Solution: Ideally, soil testing should be performed to determine the heavy metal concentrations in soils. Assuming that through proper soil testing, high levels of heavy metals have been established, I feel that there is nothing that can be done to reduce the already present high levels.

For the future, if you know the source of these, avoid further accumulations. Dr. Elton Smith, Professor of Ornamental Horticulture, Ohio State University, also agrees with the above comments and added that based on a study conducted in Ohio using composted municipal sludge containing heavy metals, he feels that the composted sludge should be safe to use around ornamental plants but not safe on edible crops such as vegetables, particularly root crops. We are not familiar with any published data or standards for heavy metal toxicity established for ornamental plant injury. However, we feel that standards for heavy metal toxicity to humans should be available from the EPA in California. Therefore, contact your local EPA office for further information.

Ridding fairways of *poa annua*

Problem: *Even though Prograss is safe to use on perennial ryegrass, would it be an advantage to kill off poa annua before overseeding bluegrass fairways with ryegrass? (Ohio)*

Solution: Your best approach would be to use a nonselective herbicide like Roundup to kill existing annual bluegrass and then to provide no-till renovation. With this approach you should be able to get rid of existing annual bluegrass plants prior to establishment of ryegrass.

Roundup will not have any soil residual, so if new plants emerge from seeds, consider using a selective herbicide like Prograss to manage future annual bluegrass, or use pre-emergent materials such as Dacthal, Betasan, or Pre-M to help prevent new annual bluegrass plants from emerging from seeds.

Remember that pre-emergent materials will not have any effect on plants already established. Unlike the use of pre-emergent herbicides for crabgrass control, applications to manage annual bluegrass should be made in late summer and spring.

If fairways contain desireable turfgrass, then it is better to use materials like Prograss instead of Roundup.

Reports indicate that many superintendents have given up trying to get rid of annual bluegrass in fairways and now use management practices to maintain annual bluegrass. Frequent watering and short mowing will favor annual bluegrass.

Read and follow label specifications for best results. Do not expect to eliminate annual bluegrass with herbicides alone. Provide good cultural practices such as watering, mowing and fertilizing, along with herbicides to manage annual bluegrass. **LM**

Balakrishna Rao is Manager of Technical Resources for the Davey Tree Co., Kent, Ohio.

Questions should be mailed to Problem Management, LANDSCAPE MANAGEMENT, 7500 Old Oak Boulevard, Cleveland, OH 44130. Please allow 2-3 months for an answer to appear in the magazine.