



## Horticulture

# 2003 Perennial Plant of the Year

The Perennial Plant Association (PPA) has announced that the Perennial Plant of the Year 2003 is *Leucanthemum* 'Becky'. PPA members selected Becky Shasta daisy on the basis of its bright white flowers, sturdy stems and long season of bloom. *Leucanthemum* 'Becky' has proven to be a lovely and dependable perennial for herbaceous borders across the county.

'Becky' has sturdy, upright stems that grow 40 inches tall, with a similar spread. Three inch wide, single white flowers with contrasting yellow centers appear at the end of June or early July when other Shasta daisies are finishing. Flowering continues throughout August and often into September. Becky Shasta daisy grows well in hardiness zones 4 to 9.

*Leucanthemum* 'Becky' is a wonderful choice to be grown as a specimen or mass planting in the perennial border, naturalized landscapes, attract butterflies, garden bouquets and even large containers. It can be one of the main attractions of the summer border.

An excellent cultivar of an old fashioned favorite, Becky



*Leucanthemum* 'Becky'

Shasta daisy grows best in full sun and well drained soil. Plants are not tolerant of excessive moisture or wet soils in the winter. Deadheading encourages rebloom and extends the flowering season into autumn. The flower stems are strong enough to keep this daisy upright after a heavy rain and to make it an excellent cut flower. 'Becky' is superior to other Shasta daisies due to its robust habit and performs well in northern climates. (MJF)

# Recognizing Hazardous Trees

Most people realize dead trees should be removed as soon as they are detected, however, living trees also can be a threat to life and property. A living hazardous tree may have one or more defects which decrease its structural integrity and give it an increased potential for failure. Unfortunately, this potentially deadly combination of defective trees with areas where people or their property stop and congregate are all too common in today's urban and residential landscape. Tree managers or home owners must have the ability to identify and then correct hazardous situations caused by defective trees.

## Tree Structure

Trees are complex and highly adaptable organisms. Knowing how trees are constructed, function, and respond to wounding can help home owners understand the eventual aging process and ultimately insure the safety of people who work and play near them.

Trees have massive stems that support and elevate the leaves. The stem is also the transport system for moving materials from the root to the leaves and back again. Tree stems must grow every year. Each spring and summer a new sheath of living wood covers last year's tree. If a tree cannot grow every year, it will decline and die.

A cross section of a tree trunk has many layers. The outside of the tree is dead bark which protects the tree. The inner bark or phloem tissue is alive and carries food manufactured in the leaves to lower, aboveground portions of the tree and to the roots.

The layer between the bark and wood is called the cambium. The cambium produces wood cells to the inside and bark cells to the outside. Actively growing cambium results in an increase in stem diameter. In addition, the cambium is a major reaction site that responds to injury.

Inside the cambium are annual rings of wood. The large pores in each annual ring (xylem) are dead, but are still capable of transporting water to the leaves. Nearly all of the volume of a tree is wood or xylem. If these woody tissues become unsound for any reason, such as internal decay, then most of the structural support for the tree will be compromised. The tree will remain alive, however, because the living cells near the cambium will continue to grow, laying down new phloem and xylem tissues. The result is a relatively healthy-looking tree with a functional outer sheath, but one that lacks sufficient structural strength from wood to support itself, particularly during extreme weather events.

A tree's structural support is most important during high winds or when snow and ice have accumulated on branches. For example, accumulation of ice can increase the branch weight of trees by 30 times or more. This additional weight may not pose a problem for relatively young trees, however,

as trees grow old, they are less able to compartmentalize or seal-off injured portions of the tree and decay is more common. In addition, older trees have a greater tendency to shed branches due to unavoidable decline in wood quality.

Besides age, growth rate and ability to respond to injury will influence a tree's functional life span. Fast growing trees like silver maple, poplar and willow allocate a relatively small portion of internal resources to building compartments that keep pests and decay from spreading. Instead, they rely upon a rapid rate of growth to outdistance decay-causing pathogens. But as they age, their rate of growth slows, and significant decay and structural failure become likely. On the other hand, trees like oak grow slowly and allocate a significant proportion of resources to defense. These trees compartmentalize wounds and in general are long-lived and less likely to fail.

There are four ways that living trees become structurally unsound:

- Internal decay in the trunk and large branches
- Cankers and canker-rot
- cut roots and root decay
- poor branch attachment

## Internal Decay

Decay in living trees is the end result of many complex interactions between the tree and several groups of fungi and bacteria. Many of these microorganisms are opportunistic and enter through wounds. Healthy and vigorous trees have adequate defense systems that limit the spread of decay caused by these pathogens, however, older trees or those in poor health are at a disadvantage, and extensive columns of decay often result.

Once decayed tissue takes over a large volume of the trunk, the tree will be unable to support its own weight and may fail at any time (even though failure is most likely to occur during periods of high wind.)

Here are the warning signs of internal decay:

- Large, wide wounds or cavities
- Presence of fungal fruiting bodies or conks
- Bleeding (oozing sap) through the bark
- Presence of carpenter ants, termites, nesting holes and bee hives
- Loose, cracking bark
- Overall poor appearance, slow growth, or twig and branch die-back

## Cankers/Canker-Rots

Cankers, localized dead areas on the bark caused by bark-inhabiting microorganisms, also can lead to structural instability in a tree. Cankers on the trunk and branches are inherently weak spots and trunk and branch failure may occur at old cankers.

Canker-rot occurs when microorganisms attack and decompose the wood beneath the canker and adjacent bark tissues. Most canker-rot is likely to cause tree failure because of the combined effect of dead bark around the circumference of the tree (from the

canker) and loss of internal support (from wood decay.) Trees with canker-rot are very hazardous and should be removed as soon as possible.

## Root Problems

Anything that alters or compromises the structural support provided by any part of the root system decreases the stability of the tree.

Two major culprits that jeopardize the integrity of roots are (1) root-rotting pathogens that attack weakened trees or enter through wounds and cause root decay, and (2) the severing or cutting of any portion of the root system.

In addition, soil erosion, drought, gas leaks, changing the grade around trees, flooding, soil compaction or paving around trees can kill roots. Building, road, and sidewalk construction or utility installation are especially damaging to the roots of nearby trees. Large, heavy equipment used around trees often severs or injures a large portion of the roots.

Without the support of the entire root system the tree is structurally weakened and the probability of failure increases as the amount of injured roots increases. Trees that have lost 50 percent or more of their root systems during construction should be removed.

## Branch Attachment

To have a strong attachment, a branch must be smaller (40 to 50 percent smaller) than the trunk or limb from which it arises. If the branch and trunk are close to the same size, their attachment may be weak and breakage may occur. Competing leaders and upright-growing branches with acute angles of attachment also are areas of potential weakness.

Some tree species such as horsechestnut, silver maple, linden, tulip tree and willow are more likely to break because of their inherent poor branching habits. These species should be examined carefully when they are young so that structural flaws can be corrected.

## Reducing the Risk

Early detection of tree defects can prevent tree failures and potential damage to property and injury to people and pets.

Reducing the risk associated with hazardous trees might take one of the following forms:

- **Remove the target**—While homes or power lines cannot be moved, sometimes picnic tables, cars, landscape features, play areas, etc. can be relocated to prevent them from being crushed by a falling tree.
- **Remove the tree**—Some hazardous trees are best removed from the landscape. Remember, "When in doubt, take it out!"
- **Prune the tree**—Removing defective branches might alleviate a hazardous situation.

Trees that are suspected of being hazardous should be examined by a Certified Arborist. If the tree is located near a power line, contact your local utility. (MJF)



## Garden Guide

### Things to do this month

Watering roses with soaker hoses or drip irrigation will reduce the spread of black spot disease.

Plant ground covers under shade trees that do not allow enough sunlight to grow grass. Vinca minor or English ivy are ground cover plants that grow well in shade.

Mulch around newly planted trees and shrubs. This practice reduces weeds, controls fluctuations in soil temperature, retains moisture, prevents damage from lawn mowers and looks attractive.

When you visit botanical gardens and arboreta, take your camera and note pad with you. Plan now for changes you will make in your landscape.

For maximum landscape interest in a small, vertical space, try annual vines. They can disguise ugly walls and fences. When trellised, they can create shade and privacy while hiding undesirable views. Try morning glory, nasturtium vine and scarlet runner bean.

Plan a landscaping project on paper first. Do not over plant. Be sure you know the mature size of each plant and allow for growth.

Lawns maintained at the correct height are less likely to have disease and weed infestation. Kentucky bluegrass and tall fescue should be mowed at approximately three inches in height. Mow frequently, removing no more than one third of the blade at each cutting.

Grass clippings can be used as a mulch in flower beds and vegetable gardens if allowed to dry well before use. Never use clippings from a lawn that has been treated with a herbicide.

Cabbage loopers and imported cabbage worms are green worms. They eat large holes in the leaves of plants in the cabbage family. For control, caterpillars can be picked off by hand or sprayed with Bt (*Bacillus thuringiensis*) a natural, non-toxic preparation available by various trade names.

Newly transplanted vegetable plants should be protected from cutworms with collars. Cut strips of cardboard two inches wide by eight inches long, staple them into circles and place them around the plants. Press the collar about one inch into the soil. These collars will fence out the cutworms and protect the stems of the vegetable plants.

Four or five layers of newspaper will serve as an effective mulch in the garden. Cover it with grass clippings or straw to prevent it from blowing away. (MJF)