

Dutch Elm Disease Resistant American Elms

Dutch elm disease was introduced to the United States in the early 1920's. It quickly decimated our American elms, killing hundreds of thousands of trees. The disease first appeared in Kansas in 1957 and has now been reported throughout the entire state. Although the disease has been present for nearly a century, it continues to kill elms every year.

The fungal mold, spread by the elm bark beetles, plugs the trees xylem (water conducting cells) preventing the tree from moving water through its roots, trunk, and branches. Sanitation, fungicides, and beetle control can all help to reduce the spread of the disease. When planting new trees, Dutch elm disease resistance should be a primary consideration!

K-State's John C. Pair Horticultural Center has been researching Dutch elm resistant trees since 2007. This research is part of a national effort to breed elm cultivars for desirable traits with resistance to Dutch elm disease being a main objective.

Today, there are 18 cultivars proven to be resistant to Dutch elm disease with four being true American elm cultivars. The other 14 are hybrids or other elm species.

- **Valley Forge:** This cultivar has a vase shaped canopy with a broad spread. It has proven to be 100% resistant to Dutch elm disease and has had minimal damage by either the lacebug or European elm flea weevil. Young trees grow quickly and can be unruly if not properly pruned.
- **Princeton:** Princeton has a tight, vase shaped canopy and 100% resistance to Dutch elm disease. Its leaves are an attractive, dark, glossy green. It too was minimally impacted by either the lacebug or European elm flea weevil. It is noted to be an extremely attractive tree with a strong, upright habit.
- **New Harmony:** This cultivar has a round to vase shaped canopy and 100% resistance to Dutch elm disease and elm yellows. The canopy is more narrow than other cultivars with a more upright habit and a strong, central axis. One downside to this cultivar is lacebug damage which was more severe than the other elms.
- **Lewis and Clark (Prairie Expedition):** With a broad, oval shaped canopy, this elm has the lowest Dutch elm disease survival rate at only 80%. While it is also minimally impacted by either the lacebug or European elm flea weevil, it did show some issues with wet wood.

Both the Siberian elm (*Ulmus pumila*) and the lacebark elm (*Ulmus parvifolius*) are resistant to Dutch elm disease and adaptable to Kansas. Storm damage can be an issue with many elms. With all elm trees, proper pruning greatly reduces storm damage.

You can read more about the national trial and other notable elms here:
<https://webdoc.agsci.colostate.edu/bspm/NationalElmTrial/AUF2017.pdf>

More about treating for Dutch elm disease: <https://hnr.k-state.edu/extension/info-center/common-pest-problems/common-pest-problem-new/Dutch%20elm%20disease.pdf>