



Elm Trees – Dutch Elm Disease Resistant Varieties

Throughout the state, native American elms (*Ulmus americana*), red elms (*U. rubra*) and rock elms (*U. thomasii*) are still falling prey to Dutch Elm Disease (DED). DED is one of the most widely-known tree diseases, affecting elms world-wide. Fortunately, researchers have been working to breed and select DED-resistant trees to replace those stately giants. Now, more than ever, these trees are finding their way into home landscapes due to increased demand and nursery availability.

Since 1999, the University of Minnesota has been evaluating, selecting, and screening elms for use in Minnesota. To date, they have studied thousands of elms from dozens of different varieties. Unless stated differently, all trees listed below should be hardy in USDA Hardiness Zone 4.



Cathedral Elm (photo by C. Giblin)

HYBRID ASIAN ELMS

These elms are the result of controlled breeding programs throughout North America. All have demonstrated tolerance to Dutch elm disease and are great selections for tough sites where other trees won't grow. In general, hybrid elms are smaller at maturity than their American cousins. Many also have leaves and mature forms that are distinctly different than American elm.

- **Accolade™** – Smaller at maturity but similar to the typical American elm form with strong insect resistance, such as elm leaf beetle. Widely available at most nurseries and garden centers.
- **Cathedral** – Vase-like shape, good resistance to elm leaf beetle and other leaf cutting insects. Leaf hoppers and similar pests however can be a problem and may require control practices. Limited availability.
- **Discovery** - Very slow-growing, requires crown thinning to avoid cross branches, **winter hardy to USDA Zone 3**, stress and drought tolerant. Limited availability.
- **Triumph™** – More upright in form than Accolade, but slightly less insect resistance. Limited availability.
- **Commendation™** – Hybrid of Accolade, Siberian elm, and the European field elm (*U. minor*). Excellent form when young, interesting bark texture and lower maintenance than Accolade or Cathedral. Limited availability.
- **Danada Charm™** – Upright hybrid – fast grower. Lower maintenance than some other selections. Beautiful red-tinged new growth! Limited availability.

AMERICAN ELMS

Over the last 100 years there have been dozens of American selections, unfortunately, most did not survive the ravages of DED and have been lost and forgotten. These selections have shown excellent tolerance to DED and continue to be great selections for providing the “high-canopy shade” that American elms are known for.

- **Princeton** - Selected in 1922, vigorous growth rate, upright form, available in some garden centers and also through mail-order.
- **Prairie Expedition** – A recent (2004) North Dakota State University selection. Classic vase-shaped American elm form and growth rate, outstanding autumn gold color, **winter hardy to USDA zone 3**.
- **New Harmony** – Another USDA selection of American elm (*U. americana*). Appears to have superior form when compared to Princeton and Valley Forge. Limited availability.
- **St. Croix** – Selected by Mark Stennes from a massive parent tree in Afton, MN, this elm joins the ranks of Dutch elm disease-tolerant elms with a Minnesota twist.
- **Valley Forge** – USDA selection, outstanding DED resistance, requires heavy pruning, limited availability through mail-order.

WHERE TO PURCHASE ELMS

Elms are gaining popularity and many nurseries grow these varieties. Check with your local garden center and ask if they can special order your favorite elm if not currently in-stock. Also, many American elms are available online at www.botanyshop.com.

Dutch Elm Disease Resistant Varieties

	Growth Rate	Zone	Insect Resistance ²	Form	Maintenance Requirements	Height ¹	Crown Spread
Accolade™	fast	4	excellent	vase	moderate	40	35
Danada Charm™	v. fast	4	good	vase	moderate	45	30
Commendation™	v. fast	4	good	oval/vase	moderate	45	30
Cathedral	v. fast	4	good	vase	high	45	30
Discovery	slow	3	good	upright	moderate	35	30
Frontier	slow	5	fair	upright	low	35	20
Homestead	v. fast	4	fair	upright	moderate	45	35
Jefferson	moderate	4	good	upright	moderate	45	30
New Harmony	fast	4	good	vase	moderate	45	30
New Horizon	v. fast	4	fair	upright	high	45	30
Patriot	fast	4/5	excellent	Vase	low	35	25
Pioneer	moderate	4/5	fair	globe	low	35	25
Prairie Expedition	fast	3	good	vase	moderate	45	30
Princeton	fast	4	fair	vase	high	45	30
Prospector	moderate	4/5	good	vase	high	40	25
St. Croix	v. fast	4	good	wide vase	very high	40	30
Triumph™	v. fast	4	good	vase	moderate	45	30
Valley Forge	v. fast	4	fair	vase	high	45	30
Vanguard™	fast	4	fair	vase	high	40	35

¹ Height and spread dimensions are growth estimates in a typical 30 year timeframe. This incorporates knowledge of mature specimens, where available. Some dimensions are estimated and will vary greatly and may be influenced by site conditions and maintenance, especially pruning. ² Insect resistance recommendations are based on observations at the University of Minnesota, the Morton Arboretum, and previously published work.

ELM MAINTENANCE

Many of these elms require considerably **more pruning and training** than other landscape trees and the first ten years often determine how they will perform for the remainder of their lives. In the case of elms, a small investment in maintenance during the “formative years” will have a huge payoff when they are approaching maturity. Like most trees, these elms are best maintained with a strong central leader; this ensures a straight stem and keeps the tree growing up rather than out! As the lower side branches grow and increase in diameter, they should be removed until the desired clearance for the site is reached. Knowing when and how much to prune and maintain trees requires experience so if you’re not sure how to work on young elms, contact an experienced International Society of Arboriculture (ISA) Certified Arborist to get you started right. The investment made now will pay off when your tree is growing beautifully, is structurally strong and is providing shade on your property.

Diversifying our landscapes with many different varieties of trees helps to create a sustainable ecosystem. All of the elm varieties mentioned above offer excellent potential for use in rural windbreaks. These DED-resistant elms add to our array of tree species that can be planted in the upper Midwest, contributing to greener and cooler communities throughout Minnesota!

To learn more about DED-resistant elm trees review these web sites:

- DED history: z.umn.edu/dedhistory
- DED symptoms: z.umn.edu/dedext
- *Pruning Young Elms* Book: trees.umn.edu/products
- Elms for the Twin Cities: z.umn.edu/elmstc
- University of Minnesota Urban Forestry: trees.umn.edu

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