

## **ML 2018 Project Abstract**

For the Period Ending June 30, 2023

**PROJECT TITLE:** Winning the Dutch elm disease battle: developing resistant elms for Minnesota

**PROJECT MANAGER:** Benjamin Held

**AFFILIATION:** Plant pathology, College of Food, Agriculture, and Natural Resource Sciences

**MAILING ADDRESS:** 495 Borlaug Hall, 1991 Upper Buford Circle

**CITY/STATE/ZIP:** St Paul, MN 55108

**E-MAIL:** bheld@umn.edu

**WEBSITE:** <https://mitppc.umn.edu/research/research-projects/developing-dutch-elm-resistant-trees>

**FUNDING SOURCE:** Environment and Natural Resources Trust Fund

**LEGAL CITATION:** ML 2018, Ch 214, Art 4, Sec 2, Subd 6a

**APPROPRIATION AMOUNT:** \$233,924

**AMOUNT SPENT:** \$233,924

**AMOUNT REMAINING:** \$0

### **Sound bite of Project Outcomes and Results**

This subproject identified and propagated new survivor elms from Minnesota that may have resistance to Dutch elm disease (DED). We screened elms from prior years and found most trees to have very good to partial resistance thus far. Resistant trees were planted in Minnesota landscapes where elm was once common.

### **Overall Project Outcome and Results**

Dutch elm disease (DED) is one of the most critical invasive pathogens in Minnesota. Caused by the fungus *Ophiostoma novo-ulmi*, it has decimated the American elm in urban Minnesota, a tree known for its elegant form, full canopy, and winter hardiness. As cities also contend with the widespread loss of ash trees to emerald ash borer, there is a need for new trees to fill the gap. Researchers have been studying surviving elm trees in the region with the goal of understanding their natural resistance to DED.

Held and his team have identified, propagated, and tested survivor elms from the Minnesota landscape, with some initially showing resistance to Dutch elm disease. They identified 23 new survivor American elm trees and propagated them for future testing. From the 23 trees, they made 300 grafts to be used for future inoculation studies. They also made over 200 grafts that were planted in parks and natural areas. This includes Nerstrand Woods, Elm Creek Park Reserve, and Izaak Walton League in the Mississippi River Valley. In addition, they screened by inoculation studies 15 elm selections from prior years. These showed very good to partial resistance in most selections.

### **Project Results Use and Dissemination**

Multiple public presentations were made through conservation events and academic conferences. This project engaged a large number of local governments, NGOs, and state agencies and enlisted a robust volunteer effort to help with planting of seedlings. A full listing may be found on the MITPPC [webpage](#) dedicated to this research project.