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Minnesota Poplar Project



www.hybridpoplar.org

AURI is a 501 (c)3 nonprofit corporation created to improve the economy of rural Minnesota through the development of new uses and new markets for the state's agricultural commodities.



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Hybrid Poplar Program

The **Minnesota Hybrid Poplar Research Cooperative (MHPRC)** was formed in 1996 with support from the state of Minnesota. Its mission is to produce genetically superior cottonwood and hybrid poplar trees, improve cultural practices, improve wood yields and provide technical assistance to cooperative members and the public. The cooperative is a public/private partnership between the wood industry and public research institutions.

The focus of the MHPRC is to provide a research base to produce wood fiber that has high value to both the grower and industry user. Development of new and improved cultural practices will bring costs down and increase the profits to producers growing trees as an alternative crop.

The development of **fast growing hybrid poplar trees** makes it realistic to consider producing large volumes of wood in rotation cycles more common to agriculture than forestry. Recent research in Minnesota has shown that hybrid poplars can be an excellent planting choice for conservation purposes or in wood farms to produce materials for fuel or wood products. Compared to native aspen which can take 40-60 years to mature, hybrid poplar can reach **maturity in 8 to 10 years**, providing a fast-growing source of wood fiber.

Program Goal

- *Improve wood yield, winter hardiness and disease resistance through tree breeding*
- *Develop optimum site selection criteria based on soil/yield data*
- *Develop best management practices for growing trees as a crop on agricultural land*
- *Provide technical assistance to growers*
- *Test hybrid poplar in product applications*

The focus of these efforts is to provide a research base to produce wood fiber that has **high value to the grower and the industry** user. The development of new and improved cultural practices will bring costs down and increase profits to the farmers who are growing the trees as an alternative agricultural crop.

Program Benefits

- *Economic diversification of Minnesota's rural areas*
- *Development of an alternative crop and source of income for Minnesota's farmers*
- *Maintain competitiveness and provide job opportunities in the forest products industry*
- *Provide increased wood supplies*

Hybrid poplars can be an attractive cash crop for landowners, especially in areas where trees were the native vegetation or soil and drainage conditions make farming of grain or row crops difficult. Hybrid poplars have been found to be **tolerant of many insects and diseases** and can withstand most harsh winter conditions.



Current Research

Another goal of hybrid poplar research is to **help diversify Minnesota agriculture**, to establish protection against wind and water erosion, to intercept nutrient runoff near streams, rivers and wetlands and to achieve high wood yields through intensive management and short rotations.

Projects that are currently being implemented include:

- *Breeding and field testing of new hybrids*
- *Evaluation of various planting and maintenance practices*
- *Evaluation of existing hybrids from throughout the northern hemisphere*

Highlights

- *Produced 10,000 new crosses*
- *70 new clones are presently in multiple field evaluations*
- *50 new clones field tested each year at multiple sites*
- *Fertilization trials are showing promising increases in wood production*
- *Product application tests are promising for paper and oriented-strand board*



As is the case with other agricultural crops, short rotation forestry involves more management than is required with native stands. Producers considering **short rotation forestry** need to evaluate a number of factors. They include:

Choice of land. The choice of land is always an important factor in achieving good results. **Hybrid poplars will grow well under a wide range of soil characteristics.** However, it has also been shown that these plants perform better when grown on more fertile soils than on poorer soils.

Choice of clones. Researchers are continuing to evaluate poplar clones for growth, disease resistance and durability. It is essential that the best suited clones be selected for the conditions in a particular area.



Site preparation Like other agricultural crops, hybrid poplar plantations produce better with proper pre-planting tillage including soil preparation and herbicide application.

Weed control. Hybrid poplars need good weed control for the first three to four years. Once the hybrid poplar canopy is well developed, its shade is very effective in **eliminating further weed competition** until harvest.

Fertility management. Proper fertility management is as essential to successful hybrid poplar production as it is to most common farm crops. Field tests of poplars indicate a good growth response to fertilizers, particularly nitrogen.