

Evaluation of Chestnut Test Plantings  
in the Eastern United States

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Both the U.S. Department of Agriculture and the Connecticut Agricultural Experiment Station once had programs aimed at breeding blight-resistant chestnut trees. To test the performance of these hybrid chestnuts under forest conditions and compare their growth with that of Chinese chestnut species, 15 chestnut test plots were established in 13 eastern and mid-western states between 1947 and 1955.

In 1978, every living chestnut tree on the 15 plots was examined and data recorded on growth, blight resistance, and tree form. Out of a total of 1,746 trees planted, 26 percent survived. Survival of Chinese chestnuts was 37 percent; Connecticut hybrids 26 percent; and USDA hybrids 12 percent. USDA hybrids averaged 6.3 inches in diameter at breast height (dbh) and 44.7 feet high; Chinese chestnuts averaged 6.1 inches dbh and 43.4 feet high; and Connecticut hybrids averaged 5.5 inches dbh and 38.1 feet high.

Blight susceptibility of the trees was rated on a scale of I (severely blighted) to S (no blight). The average rating for both the hybrids and the Chinese species was about 4 (light). Forest tree form was also rated on a scale of 1 (valueless) to 5 (excellent). Average rating for USDA hybrids was 3 (average); Chinese chestnuts 2.7 (between average and poor); and Connecticut hybrids 2.5 (between average and poor).

From a summary of the data from all 15 plots, the 50 most promising trees were selected. At the time of examination, these trees were blight-free and had good to excellent timber form. Their growth rates were above average. Ten were USDA hybrids; 15 were Connecticut hybrids; and 25 were Chinese chestnuts. The 25 hybrid trees represented 10 percent of the 250 surviving hybrids. These 50 trees offer a good source for further genetic studies toward the development of blight-resistant chestnuts.