



UPPER MOUNTAIN RESEARCH STATION
8004 NC HWY 88 E
LAUREL SPRINGS, NC 28644



Upper Mountain Research Station Laurel Springs, NC

Christmas Tree Seed Center

Ashe County produces more Christmas trees than any other county in the U.S. and is known for the "Cadillac" of Christmas Trees, the Fraser Fir, which is native to the Southern Appalachian mountains.

The Upper Mountain Research Station conducts trials on Fraser Fir seedlings and transplants, focusing on overall improvement as well as post-harvest studies to lengthen the freshness of these trees.

The Fraser Fir seed orchard at the Upper Mountain Research Station is the only orchard in the world that has been selected for post-harvest needle retention. This is a highly desirable trait for consumers of real Christmas trees and greenery products. Additionally, the station has planted a seed orchard that will become the only source of "certified" Fraser Fir seed in the world. This means that we have been inspected by the NC Crop Improvement Association to verify the breeding records of these trees as well as the orchard establishment process. The orchard will be inspected in the future during cone harvest, processing, and storage to ensure the seed meets the standard for "Blue Tag" certification.

The Christmas Tree Seed Center's goal is to have seeds commercially available to growers by 2029.





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The Story of the Christmas Tree Seed Center

GENETICS PROGRAM WAS FOUNDED

The Christmas Tree Genetics program in NC started in 1977. NCDA and NCSU have worked closely together on Christmas tree improvement ever since.

SEARCHING FOR THE BEST

All 6 natural locations for Fraser Fir were scouted and the best trees for "Christmas trees" were selected from each location.

SELECTING TRAITS

The transplants were then grown in the field and evaluated for traits desirable to Christmas tree growers as well as consumers of "real" trees.

ELITE TREES

After the clone banks were established, work continued in order to identify the most "elite" trees of the 305 that were originally selected. This continued work led to the 25 most desirable individual clones (trees) being identified and were used to populate the Upper Mountain Seed Orchard.

CONSTRUCTION

We estimate construction of the building to be completed sometime during the calendar year of 2025, and then we can begin installation the seed processing equipment in 2026.

CONSTRUCTION

Our best estimation is that the Upper Mountain Seed Orchard will begin to produce a "meaningful" amount of cones (seed) somewhere around 2026 - 2028.

2000 PROGENY TEST SERIES

The "2000 Progeny Test Series" is the research program that led to the development of the Upper Mountain Seed Orchard.

GROWING TRANSPLANTS

Once seeds were collected from the "natural stands" of trees, they were grown into transplants and evaluated for desirable traits while in the nursery. Originally, there were ~28,000 entries into the program.

SELECTING THE BEST

There were 305 individual clones (trees) that passed the test and they were preserved into two clone banks so these highly desirable trees could be used as the "breeding stock" for the Christmas tree genetics program.

SEED CENTER FUNDED

In 2022 a grant was submitted to NC Tobacco Trust Fund to construct the facility. The grant was funded, providing the necessary funds to kickstart the "Seed Center".

EQUIPMENT

NCDA and NCSU traveled throughout the USA, Canada, and Europe, searching for the best seed processing equipment suited to extract and process Fraser Fir seeds. Many of the machines that will be used have been specifically built for the Christmas Tree Seed Center to handle the fragile seeds of Fraser Fir trees without causing damage to them.

IN HOMES

From the collection of these "elite" trees from all 6 natural stands into a seed orchard, through processing, to getting them into the hands of growers will be the culmination of many years of work. These trees will make their appearance in living rooms across America around 2036.