

COOPERATIVE TREE IMPROVEMENT PROGRAM

OUR MISSION

To increase value to landowners and citizens through continuous genetic improvement of forest trees.

OUR PROCESS

We breed, test, and select improved genotypes of loblolly pine that will stock the seed orchards responsible for reforestation.

TEACHING

The program's faculty teach more forest genetics courses than any other institution in the US, including: FOR 411, FOR 725, FOR 726, FOR 727, and FOR 728.

EXTENSION AND OUTREACH

Numerous guest lectures, site visits, and education booths at landowner events, forestry societies, forestry associations, and the scientific community.

OUR MEMBERS

More than 30 industry, federal, and state organizations contribute financial and in-kind support.

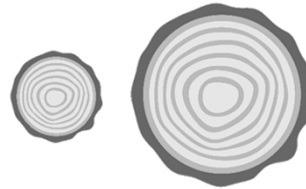


OUR PEOPLE

Four faculty, five staff, 5+ graduate students, and numerous undergraduate student assistants on a regular basis.



IMPACT BY THE NUMBERS



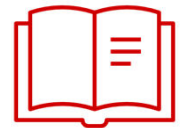
75+%
increased growth rate over the wild, non-improved



~1 million
acres annually planted with program's genetics



250+
graduate student alumni



400+
publications in refereed journals



\$5 million+
from 15 grants in the last decade



1st
application of genomic selection in pine



2200+
progeny tests planted during 1980-2020



1,500+
tons of seed produced by member's orchards

ABOUT THE COOPERATIVE:

Founded in 1956, our program leverages industry and government agency partners to breed, test, and select the seed orchard parents responsible for more than half of the reforestation in the southern United States.

We have 3 membership classes: 1) Full Members give their in-kind support to develop improved germplasm, 2) Contributing Members provide financial support in exchange for access to the database of genotype performance scores, and 3) Research Associate Members receive consulting, experimental design advice, and can sponsor graduate student research for a specific project. Finally, Benefactor Members provide financial support as a gift.

We typically employ 5+ graduate students and 5+ undergraduate students. Our research areas include genomics, reproductive biology, and all aspects of quantitative genetics of forest trees. Research is funded by member support and grants from federal and state agencies.



Full Membership



Germplasm for seed orchards.

Contributing Membership



Database of genotype performance scores.

Research Associate Membership



Consultation and research project development.

Genomics

Development and application of DNA markers for:

- Genomic selection
- Marker-assisted selection
- Pedigree quality control

Orchards and Breeding

Reproductive biology research including:

- Controlled pollination
- Pollen cloud composition
- Soil fertility

Quantitative Genetics

- Disease resistance
- QTL mapping, GWAS
- Phenotyping
- Realized gain
- Breeding strategy
- Wood properties

www.treeimprovement.org
information@treeimprovement.org

NC State University, College of Natural Resources
Department of Forestry and Environmental Resources

Tree Improvement Program
Campus Box 8002
2800 Faucette Drive
Room 1019 Biltmore Hall
Raleigh, NC 27695

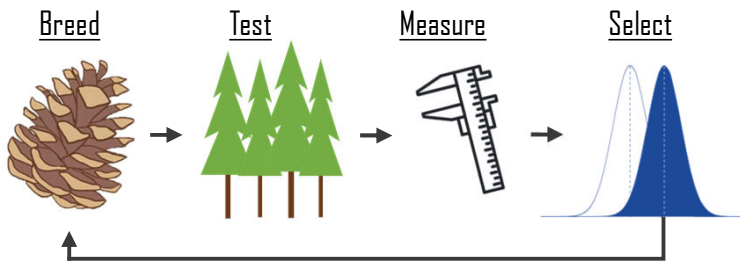
COOPERATIVE TREE IMPROVEMENT PROGRAM

OUR MISSION

To increase value to landowners and citizens through continuous genetic improvement of forest trees.

OUR PROCESS

We continuously breed, test, and select improved genotypes of loblolly pine that will stock the seed orchards responsible for reforestation.



OUR MEMBERS

More than 30 industry, federal, and state organizations contribute financial and in-kind support.

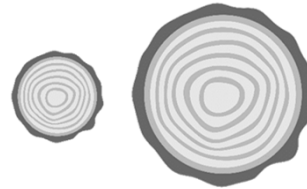


OUR PEOPLE

Four faculty, five staff, 5+ graduate students, and numerous undergraduate student assistants on a regular basis.



IMPACT BY THE NUMBERS



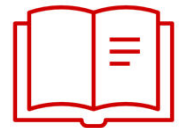
75+%
increased growth rate over the wild, non-improved



~1 million
acres annually planted with program's genetics



250+
graduate student alumni



400+
publications in refereed journals



\$5 million+
from 15 grants in the last decade



1st
application of genomic selection in pine



2200+
progeny tests planted during 1980-2020



1,500+
tons of seed produced by member's orchards

ABOUT THE COOPERATIVE:

Founded in 1956, our program leverages industry and government agency partners to breed, test, and select the seed orchard parents responsible for more than half of the reforestation in the southern United States.

We have 3 membership classes: 1) Full Members give their in-kind support to develop improved germplasm, 2) Contributing Members provide financial support in exchange for access to the database of genotype performance scores, and 3) Research Associate Members receive consulting, experimental design advice, and can sponsor graduate student research for a specific project. Finally, Benefactor Members provide financial support as a gift.

We typically employ 5+ graduate students and 5+ undergraduate students. Our research areas include genomics, reproductive biology, and all aspects of quantitative genetics of forest trees. Research is funded by member support and grants from federal and state agencies.



Full Membership



Germplasm for seed orchards.

Contributing Membership



Database of genotype performance scores.

Research Associate Membership



Consultation and research project development.

Quantitative Genetics

- Disease resistance
- QTL mapping, GWAS
- Phenotyping
- Realized gain
- Breeding strategy
- Wood properties

Orchards and Breeding

Reproductive biology research including:

- Controlled pollination
- Pollen cloud composition
- Soil fertility

Genomics

Development and application of DNA markers for:

- Genomic selection
- Marker-assisted selection
- Pedigree quality control

www.treeimprovement.org
information@treeimprovement.org

NC State University, College of Natural Resources
Department of Forestry and Environmental Resources

Tree Improvement Program
Campus Box 8002
2800 Faucette Drive
Room 1019 Biltmore Hall
Raleigh, NC 27695