

**Publications by NC State University Cooperative Tree Improvement Program
Scientists, Students, & Associates**

Compiled from Cooperative Annual Reports (1957-2023)

2023

- Alan, M., K. Payn, S. McKeand, and F. Isik. 2003. Genetic parameter estimates from a polymix breeding population of *Pinus taeda* L. For. Sci. (in press).
- Shalizi, M.N., T.D. Walker, A.J. Heine, K.G. Payn, F. Isik, B.P. Bullock , and S.E. McKeand. 2023. Performance based on measurements from individual-tree progeny tests strongly predicts early stand yield in loblolly pine. For. Sci. (in press).

2022

- Heine, A.J., T.D. Walker, J.B. Jett, F. Isik, and S.E. McKeand. 2022. Pollination bag type affects ovule development and seed yields in *Pinus taeda* L. For. Sci. (in press, available online at: <https://doi.org/10.1093/forsci/fxac052>)
- Isik, F. 2022. Genomic prediction of complex traits in perennial plants: a case for forest trees. Chapter 18 (p. 493-520) in: Complex Trait Prediction, Methods and Protocols. Ahmadi, N. and J. Bartholomé (Eds.). Methods in Molecular Biology 2467. Springer Protocols. Humana Press, NY. 648p. <https://doi.org/10.1007/978-1-0716-2205-6>.
- Jackson C., N. Christie, S.M. Reynolds, G.C. Marais, Y. Tii-kuzu, M. Caballero, T. Kampman, E.A. Visser, S. Naidoo, D. Kain, R.W. Whetten, F. Isik, J. Wegrzyn, G.R. Hodge, J.J. Acosta, and A.A. Myburg. 2022. A genome-wide SNP genotyping resource for tropical pine tree species. Mol. Ecol. Resour. 22(2):695-710. <https://doi.org/10.1111/1755-0998.13484>
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- Shalizi, M.N., K. Payn, and F. Isik. 2022. Genetic linkage between the training and selection sets impacts the predictive ability of SNP markers in a cloned population of *Pinus taeda* L. Tree Genetics & Genomes 18(1):1-17. <https://doi.org/10.1007/s11295-021-01532-9>.
- Shalizi, M.N., K.G. Payn, T.D. Walker, F. Isik, A.J. Heine, and S.E. McKeand. 2022. Long-term evaluation of intra- and inter-provenance hybrids of loblolly pine in the Piedmont region of the southeastern United States. For. Ecol. Manag. 522 (in press, available online at: <https://doi.org/10.1016/j.foreco.2022.120469>)
- Walker, T.D., W.P. Cumbie, and F. Isik. 2022. Single-step genomic analysis increases the accuracy of within-family selection in a clonally replicated population of *Pinus taeda* L. For. Sci. 68(1):37-52. <https://doi.org/10.1093/forsci/fxab054>

2021

- Alan, M and F. Isik. 2021. Genetic relationships between terminal shoot length, number of flushes and height in a 4-year-old progeny test of *Pinus brutia* Ten. Annals of Forest Science, 78(2). <https://doi.org/10.1007/s13595-021-01040-9>
- Caballero, M., E. Lauer, J. Bennett, S. Zaman, S. McEvoy, J. Acosta, C. Jackson, L. Townsend, A. Eckert, R.W. Whetten, C. Loopstra, J. Holliday, M. Mandal, J.L. Wegrzyn, and F. Isik. 2021. Toward genomic selection in *Pinus taeda*: Integrating resources to support array design in a complex conifer genome. Appl. In Plant Sci. 9(6): e11439. <https://doi.org/10.1002/aps3.11439>

- Chan J.M. and F. Isik. 2021. Genetic variation in frost tolerance, *Uromycladium acacia* rust resistance, and growth in an *Acacia mearnsii* population. For. Sci. 67(5):574–586.
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- Gräns, D., F. Isik, R.C. Purnell, I.M. Peszlen, and S.E. McKeand. 2021. Genetic variation and the effect of herbicide and fertilization treatments on wood quality traits in loblolly pine. For. Sci. 67(5):564–573. <https://doi.org/10.1093/forsci/fxab026>
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- Lauer, E., A. Sims, S. McKeand, and F. Isik. 2021. Genetic parameters and genotype-by-environment interactions in regional progeny tests of *Pinus taeda* L. in the southern USA. For. Sci. 67(1):60-71. <https://doi.org/10.1093/forsci/fxa035>
- Lu, Y., K.G. Payn, P. Pandey, J.J. Acosta, A.J. Heine, T.D. Walker, and S. Young. 2021. Hyperspectral imaging with cost-sensitive learning for high-throughput screening of loblolly pine (*Pinus taeda* L.) seedlings for freeze tolerance. Transactions of the ASABE 64(6): 2045-2059. <https://doi.org/10.13031/trans.14708>
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- Mphahlele MM, F. Isik., G.R. Hodge, and A.A. Myburg. 2021. Genomic breeding for diameter growth and tolerance to *Leptocybe* gall wasp and Botryosphaeria/Teratosphaeria fungal disease complex in *Eucalyptus grandis*. Frontiers in Plant Science. 12:228.
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