

FY13 Research and REC Responsibilities for Existing TAES Workplans



UT Tree Improvement Program



East Tennessee Research and Education Center

UT Tree Improvement Program Workplans

East Tennessee Research and Education Center FY13 Plans for Continuing Workplans

TAES Workplan #129 Yellow-poplar (*Liriodendron tulipifera* L.) breeding orchard

Research: Eventually, the entire orchard needs to be regrafted and re-established. TIP (UT Tree Improvement Program) personnel will meet with Tennessee Division of Forestry (TDF), District 2 foresters to determine which trees need to be cut. TDF will cut and removed the trees, and TIP personnel will finish cleaning up the site. Surplus trees planted in a row by Professor Thor will also be cut in order to use the site for walnut disease resistance research (TAES Work Plan under development).

TIP personnel will plant 2011 grafts in the dormant season and make new grafts in January of clones that are not represented in TDF seed orchards using containerized root stock (TAES Workplan #136).

Breeding will occur using Clone 108 using an aerial lift. TIP personnel will conduct the cross pollinations.

Requested REC Resources: Periodic mowing around and within the orchard, as needed.

TAES Workplan #130 Loblolly pine (*Pinus taeda* L.) breeding orchard

Research: Steps will be taken each year to preserve the genetic material from the orchard in a clone bank on State of Tennessee lands. After materials are preserved, the surviving trees will be cut and removed from the site. These activities will take to approximately 2014.

TIP personnel will meet with Tennessee Division of Forestry (TDF) staff foresters to determine which clones have been preserved and develop plans for preserving clones that have not been duplicated. TDF District 2 foresters will remove any dead clones from the orchard. Loblolly pine seedlings will be containerized for grafting in 2013.

Requested REC Resources: Periodic mowing around the perimeter of the orchard, as needed.

TAES Workplan #131 White pine [*Pinus* L. subgenus *Strobus* (D. Don) Lemmon] breeding orchard

Research: This breeding orchard is aging, but still occasionally used by the Tennessee Division of Forestry for seed collection and breeding. The long-term plan is to terminate the orchard by 2015. Prior to termination, the eastern white pine (*Pinus strobus* L.) clones will be grafted and planted on State lands to preserve the genetic material.

Requested REC Resources: Periodic mowing around the perimeter of the orchard, as needed.

TAES Workplan #132 Butternut (*Juglans cinerea* L.) stool bed

Research: TIP personnel will re-map the clone bank and remove all dead clones. Large, non-grafted butternuts will be hedged to produce young, lower branches for future field grafting.

Requested REC resources: Periodic mowing around the perimeter of the clone bank, as needed.

TAES Workplan #136 Experimental seedling production in raised nursery beds and associated facilities

Raised Nursery Beds

Research: The beds will be planted with containerized nursery stock produced by Forrest Keeling Nursery via RPM™ technology for use as understock. Black walnut and butternut selections will be grafted onto the understock for eventual screening for resistance to different walnut diseases.

A drip irrigation system will be installed in each bed by Rainscapes, Inc.

Requested REC resources: Periodic mowing around the perimeter of the raised beds, as needed.

Large Shadehouse

Research: The shadehouse will house a variety of TIP and TDF experiments and grafted clones including white and loblolly pine progeny tests, yellow-poplar molecular mapping population, baldcypress grafts, polyembryonic seedlings, new grafts of various species, and grafting understock.

Requested REC resources: Periodic mowing around the shadehouse and adjacent yard, as needed.

Yard

Research: The yard will continue to contain understock for grafting.

Requested REC resources: none

TAES Workplan #137 American chestnut [*Castanea dentata* (Marsh.) Borkh.] breeding orchard

Research: The area will be cleared of stumps and debris and prepared for planting by TIP personnel. Containerized pure American chestnuts grown by TDF at Scott State will be planted by TIP personnel in the late 2012 autumn.

Requested REC resources: Periodic mowing around orchard, as needed.