PLACERVILLE NURSERY HIGHLIGHTS

NURSERY

Preparation of Seed Beds - Area to be planted is plowed in March, fumigated the first of April with 57% methyl bromide and 43% chloropicrin at a cost of $300.00 per acre. The beds are rotatilled twice with a 54" rotatiller the last week in April. The seed is sowed the first week in May. All seed is stratified before sowing. Most of the seed beds are 265 feet long.

1. Water System - Water is bought from the El Dorado Irrigation District. The nursery water system is connected direct to the E.I.D . pipeline The reservoir and pumps were used when water was used from the EI.D. ditch system. Now that the E.I.D. has a pipeline with sufficient pressure we no longer use the reservoir or pumps. The nursery main pipeline is a 6" transite pipe, two inch risers approximately every 42" apart. At the meter there is 100 lbs. pressure and up to 65 lbs. pressure at the high points on the 2" pipeline. Sprinklers are rainbird 29A-9/64" holes. All sprinklers have pressure valves set at 45 lbs. pressure spaced 40 feet apart. All sprinklers are moved 20 feet along the line every week so as to get full coverage of water.

2. Sugar pines and all firs must be shaded the first year. Cost of putting on shading each year (not including the cost of material.) is fifty cents per thousand.

3. JP x JxC hybrid.

4. Knobcone x Monterey pine hybrid.

5. Red Fir Zone I was sowed here. Germination test before planting was 35%. Later another test was made and it was 5%. Less than 5% germinated.

6. Line between fumigated and non-fumigated ground.

7. Most sugar pine and all firs are held over for 2-0 stock and all other species are shipped 1-0.

8. This seed was not stratified. Note the seedlings are much smaller.

9. This row was not fumigated. Weeds have been bad all summer.

PACKING HOUSE

10. The sorting table was made by Nursery personnel, costing S1200.00 in 1959. Twelve women can sort and count 300 M ponderosa pine trees per day. Trees are counted and tied in bundles of 50 then put on the table.

11. Sorting table was from surplus and remade at a cost of over $500.00. It could handle 14 sorters.

12. Packing material includes shingle tow bought from Oregon, soaked in tubs mixed with vermiculite. Shingle tow costs $1.85 per bale, vermiculite $1.65 per sack. Cost approximately 13$ per M.

13, For 1-0 stock, 2500 trees are packed in each crate. Shook for packing boxes is bought and boxes are made at the Nursery. Total cost is S1.30 per box.

14. Boxes are stored eight to a pallet with 1" x 2" sticker between each box. Each box is labeled by Forest, District, species, zone, age, date packed and amount. When packing is finished, the tables are disassembled and stored against the walls. The packing building is then used for storage in the summer and drying cones in the fall.

15. Refrigeration - Pallets are stacked two high by Forest and District. 3320 M can be stored. Temperature is set at 34 .

16. Cone Trays - Three sacks of cones are put in each tray to dry. Trays are labeled by Forest, species, zone, elevation and date collected. Most green cones will be open and ready to put through the cone shaker from seven to ten days. We have enough cone trays for 400 sacks of cones at one time.

17. Cone Shaker - Cones are sorted and ran through the cone shaker. Cones not open are either returned to the drying trays or put in the dry kiln. The cone shaker was designed similar to the cone shaker at the State Division of Forestry Nursery at Davis, at a cost of $1400.00. Cost of conveyor was S450.00.

18. Dry Kiln - The dry kiln has a capacity of three sacks of cones. If the cones are pre-dried by the sun, the dry kiln will open them in four hours. Cost of dry kiln - S1500.00. After all cones are dried the equipment is stored and the area is used for other purposes.

SEED EXTRACTORY BUILDING

19. Dewinger - Sand and seed are mixed thus removing the wings. Cost of mixer-S439.00. In eight hours it can dewing 250 lbs. of clean seed of ponderosa pine or 500 lbs of clean seed of sugar pine.

20. Scalper - Cost $445.00.

21. Clipper Cleaner - Cost S481.00

22. Gravity Separator - Cost $945.00. One man can operate all four pieces of equipment at the same time.

23. Dust Eliminator - It has a 4000 CM fan with 3/4 H.P. motor exhaust blower with 18" duct through roof. Cost S650.00. It eliminates a good 90% of the dust in the building. Building is used for work shop when not being used for cleaning seed.

24. Seed Storage - Seed bank for all sugar pine and true fir in Region 5 and all other seed from midway Sierras south. Seed is kept at 0 temperature with a storage capacity of approximately 50,000 lbs. At present there is 11038 lbs stored or about a five year supply of seed.

TREE IMPROVEMENT

Climbing Equipment

1. Linesman's Belt - this belt is standard equipment for Tree Improvement work here.

2. Swiss Tree Bicycle - A device for climbing trees that doesn't use ladders. The steel bands encircle the tree and hold the stirrups as the man climbs. It is light weight and can be used on smooth bark trees that have little taper.

3. Cable Belt - For use with the Tree Bicycle. The two cables are used when the change is made from the bicycle to the limbs and vice versa. The climber puts one cable over the limb before going into the crown and when getting out. This way he is always attached to the tree at this critical point.

4. Wire - This is regular #9 galvanized telephone wire. A hook is brazed onto the end for grabbing the limbs. The wire can be wrapped around other limbs to hold the limb freeing both hands for work.

POLLINATION EQUIPMENT

1. Pollination Bags - Casein Bag - These bags are casein skins with an end stapled closed. Cotton is wrapped around the branch and the bag slipped over the "flowers" to prevent stray pollen from entering. The cost per bag is about 3(each.

   Parchment Bag - This bag is used the same as the casein bag. The cost is about each but they are reusable,

2. Syringe with Needle - this syringe is used to apply pollen to the "flower" within the pollination bag. The tube inside the syringe mixes the pollen with the air and gives as even application.

3. Cone Sacks - After the "flower" has developed and the pollen bag removed, the cone sack is put over the ccnelet to protect the cone from cone and seed insects.

GRAFTING EQUIPMENT

1. Illustrated here is the grafting box used for field grafting. It holds all of the equipment necessary for grafting.

   a. Grafting knife
   b. Clippers
   c. Tree seal
   d. Budding bands, rubber
   e. Polyethelene bags
   f. Paper bags
   g. String
   h. Thumb tacks
   i. Water cans

j. Sharpening stone
k. Hand cleaner
1. Etc.

LATH HOUSE

In the Lath House, we pot some of our stock for grafting and hold some grafted trees here, the greenhouse at the Institute of Forest Genetics is also used.

1. Sugar Pine Progeny - The sugar pine progeny in the boxes is from crosses we have made with Rust Resistant Sugar Pine. There are 6 rows of 10 trees in each box with each row labeled Each cross has 5 replications. The progeny will be set out at Happy Camp next March under severe rust conditions. Readings will be taken after two years to find those crosses that are resistant to White Pine Blister Rust.

2. Potted Stock - This stock is potted for grafted root stock. It will be grafted this winter and set out next spring.

3. Grafts - DO NOT HANDLE SCIONS - They are Tender.

    a. Douglas-fir- On the westside of the Lath House is grafts of the Douglas-fir selections. On the eastside are grafts in which the scions are from different parts of the crown. This is a study of how location of the scion will effect the development of the scion.

    b. Sugar Pine - The grafts here are of the Rust Resistant Sugar Pine candidates for outplanting at Happy Camp and Badger Hill. You will notice three different grafts here:

        (1) Bottle Grafts - shows a bulb at the bottom of the scion.
        (2) Cleft Graft - root stock on both sides of the scion at the top.
        (3) Side Graft - root stock on only one side of the scion.

    c. Ponderosa Pine - This is a study of grafting with succulent scionwood (collected in the spring during growth).

        The box of trees was developed to use for grafting. There are 24 trees in the box. It is compact and easy to graft, but is very heavy.