

Propagation of Pine by Seed." Mr. Aart Vuyk.

## THE PROPAGATION OF PINES BY SEED

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### Seed Source

I would like to go over a number of pine varieties grown in the northern part of the United States, beginning with Pinus sylvestris or Scotch Pine. Native in Europe to western and northern Asia, seeds from Spain and France have proven to be the best suitable strains for Christmas trees and ornamental purpose with good color and straight stems. Both strains are considered short needle pines. We also collect some seed in upper New York State, which is faster growing and with much longer needles.

Pinus strobus (White Pine) natural range from New Foundland to Manitoba south to Georgia, Illinois and Iowa, seeds from the lake states and upper New York are considered the best.

Pinus ponderosa, range from British Columbia, south to Mexico and east to Nebraska, Colorado and western Texas. We think seeds from the eastern rockies are the best.

Pinus mugo mughus (Mugho Pine) central and southern Europe seeds preferable from the Swiss Alps region.

Pinus nigra (Austrian Pine) central and southern Europe.

Pinus resinosa (Red Pine) Nova Scotia to Manitoba, south to Pennsylvania, Michigan and Minnesota, the lake states and upper New York is good.

Pinus thumbergi (Japanese Black Pine) Japan.

Pinus cembra (Swiss Stone Pine) Alps, central mountain of Europe and Siberia. We never got any germination on this variety, but the book says seeds are edible, so if I get hungry enough, I'll eat them. All jokes aside, we graft this variety.

### Soil Preparation

Now we have discussed the seed source, we are ready to prepare the seed beds for fall seeding. A cover crop of sedan grass has been plowed under in late summer and beds are thrown up with a gravely garden tractor and tilled to a width of four feet. An application of Vapam is applied, which cuts down considerable the first two weedings in the spring, and fall seeding will give excellent results. Fertilizer consisting of 10-6-4 is also applied.

### Seeding Procedure

Our beds are 100 feet long and seeds are broadcast by hand. We use a 10 X 4' square and the amount of seed per bed is divided into ten equal parts to get an even distribution. The seeds are coated with red lead against rodents. Then the sand shaker straddles the bed and covers the seeds according to the size of the seeds. In other words a light cover for small seeds and a heavier coat for larger ones. Next comes the haywagon and a coat of salt hay is applied and shade racks put on top of the hay. As soon as germination starts the hay is removed and shade racks raised to eighteen inches which remain until September before taken off. In the spring the remainder of our seeding program is done in the same manner.

### Maintenance

All the seedbeds are under a portable irrigation system but used only when it is strictly necessary. All one year seedlings are sprayed to prevent damping-off. The first application with Fermate and the second one with Captan. Equipment used for all spray program is a 200 gallon Meyer sprayer with a boom.

All two year seedlings and older are sprayed for control of the pine shoot moth regardless if the moth is present or not. The timetable varies a little according to weather conditions but as a rule the first application is applied the first week in June and the second two weeks later. The beds are all kept weedfree by girls and the men take care of the weeds in the path by cultivating them.

By September a large amount of seedbeds are root pruned. For this job an Oliver caterpillar tractor is used. In December all one year seedlings are covered with salt hay to prevent heaving.

### Fertilization

In the last couple of years we have changed our fertilization program quite drastically. We always used a 20-20-20 liquid before, but now we have eliminated all liquid fertilizers and are using 10-6-4 organic only. We apply this with a regular spreader, right over the seedlings without doing any harm, and the results are better.

### Seed Storage

We store the seeds in five gallon jugs and label for species, year of seedcrop, origin and maintain a temperature of 35-40° F. Many of the pine varieties may be stored for many years without losing much viability.

I thank you.

MODERATOR O'ROURKE: Thank you, Mr. Vuyk. I am sorry we have no time for questions. If we have time at the end we will entertain questions.