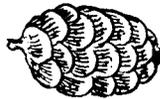


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UNIVERSITY OF WISCONSIN

### *Collecting & Planting Seeds of Cone-Bearing Trees*



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• Raising coniferous trees from seed is an exacting job. It requires special knowledge and equipment and is not recommended for the amateur. Furthermore, it is usually more economical to buy seedlings and transplants from state and commercial nurseries than to grow your own trees from seed. However, most nurseries depend on private sources for seed, providing a source of income for tree seed collectors. Also, some landowners may wish to raise trees from a specific source, or just for the experience of growing their own planting stock.

#### COLLECTING CONES FOR SEED

Seeds are found inside the cone on the upper surfaces of the cone scales. Open cones have dropped their seed; so collect closed cones only, preferably by picking them from trees. Collect cones from well-formed, vigorous trees. When collecting cones, remember to:

1. Collect ripe cones. Cones will ripen at different times, depending on the species and on the part of the state. Generally balsam fir, spruces and tamarack cones ripen from late August to early September; white cedar from August to October; jack pine during September; red and white pine and hemlock during September and October, and Scotch pine from October to March.



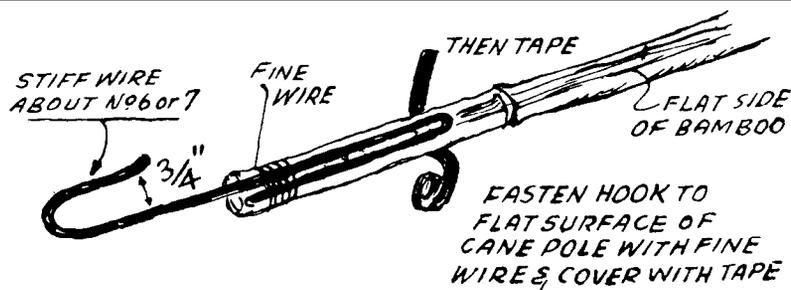
Each variety of ripe cone looks different. However, usually all ripe cones are brown or purplish. The best test of ripeness is to examine the individual seeds. If a seed is full, plump and white -- but not milky -- the cones are ready to pick.

2. Squirrels often cut down ripe cones. These can be picked up from the ground. However, be sure to check ripeness.
3. A step ladder will help you reach cones on the tops of smaller trees.
4. If seed-bearing trees are harvested for lumber, pulpwood, or other purpose, during the period when cones are ripe, cones can be collected from the tops.

5. When picking cones by hand, bend the needles back and twist off the cone.



6. To pick cones with a cone hook, fasten a stout wire (in the shape of a hook) on the end of a pole. Cones, which would otherwise be out of reach, can be pulled from the trees with this hook.



## SELLING RIPE CONES

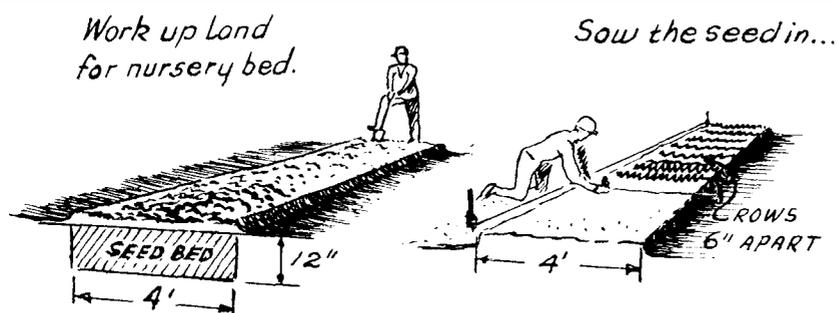
Ripe cones are usually purchased by the standard bushel measure (quantity not weight). After you've collected the cones, empty them into a gunny sack or bushel basket and deliver them promptly. The Wisconsin Conservation Department usually buys cones in the fall. Private cone dealers also purchase cones. For the current state price lists, contact the Superintendent of Nurseries, Griffith State Nursery, Wisconsin Rapids, Wisconsin.

## RAISING YOUR OWN TREES FROM SEED

Every year many millions of trees are produced by state and commercial forest nurseries for forest plantings, shelterbelts and

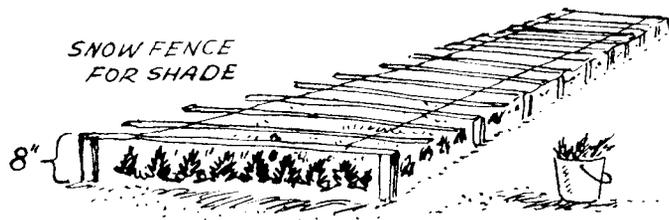
windbreaks. Trees for reforestation can be purchased at near the cost of production from the state forest nurseries. The state puts some restrictions on the uses of these trees. For example, a certain number of trees must be left per acre to grow into sawtimber, and trees cannot be harvested with roots attached. Commercial nurseries produce a wide variety of species and sizes. No restrictions are placed on trees purchased from commercial nurseries. Purchasing planting stock is usually cheaper than raising your own trees from seed. However, if you decide to raise your own trees, follow these five steps:

1. Dry the cones. Spread them on a dry surface in direct sunlight so they will dry out and the scales will open. A hard surface or a tarpaulin works well for this purpose. You can apply artificial heat (not over 120° F) such as from an oven.
2. Next, take out the seed from the dry cones when the scales open. Use a box or tray with the bottom made of half-inch hardware cloth. Half-fill the box with open cones and shake vigorously. The seed will fall through the bottom. Seed for home production of trees does not have to be cleaned.
3. Store the seed until planting time. Coniferous seed should be sown in the fall. However, the seed may be stored over winter for spring planting. Red and jack pine, hemlock and white cedar seed should be in a dry, air-tight container and kept in a cool place (40-50° F). Balsam fir, white pine and spruce seed should be mixed with moist -- not wet -- sand at the rate of 3 parts sand to 1 part seed and kept at a temperature of 36 to 38° F.
4. Plant the seed in a nursery bed. A loamy sand or sandy loam is the best kind of soil for this purpose. Spade the ground to a depth of one foot and remove all trash, rock and litter. Pulverize the soil thoroughly.



Sow the seed broadcast or in drills 4 to 6 inches apart to a depth of four times the size of the seed. Plan to raise about 50 seedlings per square foot of seed bed. On the average, to raise 50 seedlings per square foot, the following quantities (in ounces) of uncleaned seed will be needed for every 100 square feet of bed:

Tree	Seed	Tree	Seed
Balsam fir	10 ounces	White pine	7 ounces
Hemlock	4	Norway spruce	3
Jack pine	3	White spruce	3
Red pine	3	Tamarack	5
Scotch pine	2	White cedar	3



- After the seeds germinate, you will need to shade, weed and water them. Fungicides for control of "damping off" disease may be needed. Weeds can now be controlled with chemicals, saving much hand labor. Thinning the seedlings to 50 per square foot may be necessary. For details on fungicides, herbicides and thinning operations, consult publications such as these published by the Forest Service, U. S. Department of Agriculture:

Woody-Plant Seed Manual, Misc. Publication No. 654  
Forest Nursery Practice in the Lake States, Agric.  
 Handbook No. 110

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