Acknowledgments

The original edition of this leaflet was planned by a committee set up by the Clackamas County Oregon Farm Forestry Association in the spring of 1957. Members of the committee were A. L. Parker, farm forester, State Forestry Department; D. H. Baisinger, research forester, Crown Zellerbach Corporation; and Charles R. Ross, Extension forestry specialist, Oregon State University, who compiled the data from committee reports and from other sources.

Information was obtained from specialists in nursery practice. The help of C. A. Rindt, United States Forest Service, and Vern E. McDaniel, then Superintendent of the Oregon Forest Nursery, was invaluable. Others consulted included personnel of the OSU School of Forestry, the OSU Forest Research Laboratory, and the University of Idaho Forest Nursery. Considerable help came from Extension publications of other states and from "Recommended Reforestation Practices and Techniques," a report prepared by the Western Forest and Conservation Association.

Revisions were made in 1972 in consultation with Lyle Baker, superintendent of the Oregon Nursery, Frank Pitkin, superintendent of the University of Idaho Forest Nursery, Dr. Roy Allen of the USDA Forestry Sciences Laboratory, and others. Lloyd T. Soule, U. S. Forest Service, Portland, contributed the information on processing seed at home.

Reprinted August 1979

Cover photo: A home nursery on the farm of Peter Peters, Cowlitz County, Washington. This trial nursery is out in the woodland, a practice sometimes followed in Europe.

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RAISING FOREST TREE SEEDLINGS AT HOME

Should I Grow My Own?

Growing seedlings in a home nursery is somewhat like growing garden plants for transplanting. With a 3- by 10-foot seedbed you can grow 2,000 Douglas-fir seedlings to one-year size or about 1,500 seedlings to two-year size. It is not likely that you can raise seedlings for less than you can buy them. Your seedlings probably would cost less if you bought them from a state-federal nursery where they are sold at cost of production. The cost of two-year seedlings generally ranges from $10 to $18 per thousand. Transplants cost about twice as much. It takes two years or more to grow your own.

Raising coniferous trees from seed is an exacting job, not recommended for the amateur. It requires special knowledge and is greatly assisted by special equipment beyond the reach of the small home nursery. The small producer can be successful, however, if he follows the procedures explained in this circular.

Growing seedlings at home offers a way to obtain seedlings when planting stock is scarce. By growing your own seedlings, you can raise species not commonly offered for sale. Also, you can use your home-grown trees for any purpose desired, whereas state laws in general forbid the use of state-federal nursery seedlings for anything but reforestation, Christmas trees, windbreaks, and other conservation purposes. State-federal seedlings cannot be planted within incorporated city limits and cannot be resold with roots attached, nor can they be used for ornamental purposes.

Order in November—Plant in Early Spring

The recommended sowing time is spring, as soon as the ground can be worked and the danger of frost is past. Most seed will germinate within 60 days if sown in the spring. Some seeds will begin pushing through the soil in about two weeks.

It is best to order seed in the fall to avoid the rush at planting time. A Seed Dealers' List is issued periodically by the United States Forest Service and copies are sent to county Extension agents and farm foresters; the list can be obtained from them. Cost of seed varies considerably from year to year. Seed dealers will send price lists upon request.

Many growers have opportunities to collect their own seed from desirable sources. See page 10 for information about processing seed at home.

Seed Source is Important

More and more stress is being placed on the sources of tree seed. The difference between two seed sources could mean a difference of 50 percent in the production of wood. Christmas-tree growers have evidenced great concern about their seed sources. At present, only limited amounts of certified seed from the desired sources may be available, but seed source deserves the greatest attention. Forest managers, at least, try to get seed from approximately the same elevation or higher (but within 500 feet) than that of the area to be forested, and if possible, from nearby locations. Seed should be collected only from trees which are healthy and which have the form desired in your own planting.

Bed Location and Preparation

Assuming that you have good seed, can collect it yourself, or buy it from the seed companies, site preparation is the first step.

1. Select an area where the soil is deep, loose, and of the sandy-loam type. You cannot work with a soil that becomes sticky in wet weather or hard and caked when dry.

2. Loosen heavy soils by adding enough sand, peat moss, or rotted sawdust to a depth of at least 10 or 12 inches. Any such materials should be mixed in with a rototiller or a spading fork.

3. Loosen the soil to spade depth and remove all foreign material, such as rocks, sticks, and hard lumps.

4. After soil is well worked, level it to provide uniform drainage to the sides.

5. Finally, rake the soil until it is smooth and press it down gently with a board to provide a uniform surface for sowing.
How big should the actual bed frame be where the seeds will be sown, and how is the bed constructed? By using 1- by 6-inch boards, the bed frame can be made 3 by 10 feet, 4 by 12 feet, or almost any other convenient size. Commercial nurseries leave the side frames off and use other means to protect the seedlings from sun, birds, and rodents, but side frames are necessary in the home nursery. In addition to boards, frames have been made of cinder blocks, ½-inch wire, or lath. The bed should be made narrow enough so it can be worked easily during weeding or root pruning. If rodents are a problem, a piece of small-mesh screen should be used for covering.

Protection From Hot Sun Is Vital

Seedbeds are shaded during dry, hot, sunny weather to prevent heat injury and drying out of seedlings and soil. Remember that almost any dry soil with considerable organic matter can get hot enough to kill seedlings in one-half hour of hot sun. Snow fence, slats, or screening which allow about 50 percent of the light to reach the seedbed are commonly used. The shading material should be placed about 12 inches above the surface of the seedbed. If shade frames of slats are to be used, plant the rows east and west in order to align the shade north and south (so the shade will move across the trees). If the home nursery is located in a place where partial shade already exists, shade frames may not be needed. Some species (pines especially) do not require such protection.

Protection From Birds and Rodents

Birds may do considerable damage to the seedlings soon after germination. Should heavy damage from birds threaten the small nursery, screens are believed to be the most practical covering. (Plastic screening could be put to the combined use of shading and bird protection.) If rodents are a problem, a piece of small-mesh screen should be used for covering.

Damping-Off May Be a Critical Problem

Damping-off fungi are capable of killing a large bed of seedlings overnight if conditions are favorable. The fungi are most active in the top 6 inches of most agricultural soils and they thrive in warm,
moist soil. Prevention is the best control. Application of a soil fungicide, such as Vorlex (readily applied to a small area), pano-drench, semasan, Citrozin, ferbam, or others, is recommended to destroy damping-off fungi and root rots. Apply the fungicide well before sowing and follow directions carefully. Allowing the surface soil to dry occasionally is suggested to help in checking damping-off. Keeping the soil surface dry at night (by ceasing to water by early afternoon) is also suggested for tender seedlings during the first month after germination.

Watch for seedlings that topple over. One nursery specialist prefers a gravelly bed for aeration and drainage to help prevent losses.

Other Problems

A soil on the acid side, in the pH range of 5.4 to 5.7, usually is desirable. Acidity can be determined by a simple litmus-paper test. More complete and accurate soil tests can be obtained through county Extension agent offices for a small fee. Soil deficiencies can be corrected.

Pests such as cutworms, symphilids, and strawberry root weevils may or may not become problems. Control of these insects is the same as for garden or field areas. Protection against birds and rodents already has been stressed.

The hot sun is likely to be the greatest killer of first-year seedlings, and also may kill second-year seedlings. Commercial nurseries are able to use light overhead sprinkling for "shading" on days with killing temperatures. Home nurseries ordinarily will need shade frames for the first growing season, as discussed previously.

Seed Preparation and Treatment

Forest tree seed usually is treated to break dormancy before sowing. This is done by the process of stratification, or placing the seed in cool, moist storage for about a month. This brings about certain biochemical changes, principally absorption of water and getting the food reserves into a readily usable form for germination and growth. Leading Oregon and Washington nurserymen use the naked stratification method outlined below. It has had ample testing with Douglas-fir and true firs, and is considered a method generally suitable for other coniferous seed, including pines, redwood, and cedar. Certain species, such as juniper, may need a special treatment.

Naked Stratification Treatment

1. Put the seed in a tough polyethylene bag. A turkey bag will hold 10 pounds of Douglas-fir seed.
2. Put enough clean tap water in the bag to cover your seed. Close the bag and let the seed soak overnight. Keep the bag in a cool place but not where it will freeze. Oxygen shortage will ruin trees if they are immersed very long.
3. Drain off the water and flush the bag so it will continue to drain; partly close the bag, leaving an opening 1/2 inch in diameter. Place the bag in a cold place at 35° to 40° F temperature. The ordinary household refrigerator can be used. Inspect the seed at intervals and remix it thoroughly if the seed begins to dry out, moisten it. Do not let it freeze. Keep the seed in cool storage at least 2 weeks before planting. Handle it gently.
4. When you are ready to sow, take the seed out and dry it either indoors or outdoors, but avoid a warm sun. Dry the outer surface of the seeds so they will not stick together, but do not allow complete drying. Dust with Ortho 75, Spergon, or another recommended fungicide and the seed is ready to sow.
5. As one means of preventing loss of seed from rodents, one nurseryman suggests a 1 percent coating or dusting of Endrin. This coating would be applied after stratification, just prior to sowing. If necessary, the seed can be kept in this half-dry state. Put it back in cool storage, but avoid mildewing. In time is short

Even one week of naked stratification of tree seed as described above will be very helpful.

Number of Seed to Sow

Generally, coniferous seedlings can be grown with 35 to 100 seedlings per square foot, depending on the species and rate of growth. Fast growing species need more room. The table on page 6 will serve as a guide. The seeding rates suggested are higher than those used by commercial nurseries, since the home nursery may have poorer seed and lower rates of survival. If too many seedlings grow, the weaker ones should be thinned out. If seedlings are to be left in seedbeds more than 2 years, more room will be required for each

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CAUTION: Observe carefully all safety precautions as prescribed on the labels of pesticides.
### Data for Growing Seedlings for Two Years (2-0 Stock) in Same Bed

<table>
<thead>
<tr>
<th>Species</th>
<th>Approximate number seed per pound</th>
<th>Number seedlings per sq. ft. of seedbed</th>
<th>Number seeds per sq. ft. of seedbed</th>
<th>Ounces of seed per 100 sq. ft. of seedbed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Douglas-fir</td>
<td>40,000</td>
<td>50</td>
<td>75</td>
<td>3</td>
</tr>
<tr>
<td>Blue spruce</td>
<td>100,000</td>
<td>45</td>
<td>70</td>
<td>2</td>
</tr>
<tr>
<td>Norway spruce</td>
<td>64,000</td>
<td>45</td>
<td>70</td>
<td>2</td>
</tr>
<tr>
<td>Western redcedar</td>
<td>400,000</td>
<td>50</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>Port-Orford cedar</td>
<td>210,000</td>
<td>50</td>
<td>100</td>
<td>1</td>
</tr>
<tr>
<td>Incense-cedar</td>
<td>15,000</td>
<td>40</td>
<td>60</td>
<td>12</td>
</tr>
<tr>
<td>Scotch pine</td>
<td>78,000</td>
<td>40</td>
<td>60</td>
<td>12</td>
</tr>
<tr>
<td>Shore pine</td>
<td>135,000</td>
<td>40</td>
<td>60</td>
<td>12</td>
</tr>
<tr>
<td>Ponderosa pine</td>
<td>12,000</td>
<td>40</td>
<td>60</td>
<td>12</td>
</tr>
<tr>
<td>White fir</td>
<td>15,000</td>
<td>40</td>
<td>115</td>
<td>8</td>
</tr>
<tr>
<td>Grand fir</td>
<td>15,000</td>
<td>40</td>
<td>115</td>
<td>8</td>
</tr>
<tr>
<td>Noble fir</td>
<td>14,000</td>
<td>40</td>
<td>115</td>
<td>8</td>
</tr>
<tr>
<td>Shasta red fir</td>
<td>7,000</td>
<td>30</td>
<td>115</td>
<td>14</td>
</tr>
<tr>
<td>Giant sequoia</td>
<td>90,000</td>
<td>40</td>
<td>115</td>
<td>14</td>
</tr>
<tr>
<td>(bigtree redwood)</td>
<td>28,000</td>
<td>45</td>
<td>225</td>
<td>12</td>
</tr>
</tbody>
</table>

NOTE: The above rates are in line with regular nursery practice. The home nurseryman can grow healthier, larger seedlings by allowing more room per plant. (Table prepared by Lyle Baker, Superintendent, Oregon Forest Nursery.)

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The usual method of covering the seed is to press it into the soil and then use a sieve to sift the covering material over the bed. If the soil or sand does not need sifting or if sawdust is used, they may be scattered by hand and smoothed as uniformly as possible with a short board or trowel. Beds covered with sawdust alone will need protection from the wind.

### Sowing in Rows

Beds ordinarily are easier to take care of if the seed is sown in rows rather than broadcast. Make very shallow trenches, a little deeper than the diameter of the seed, 6 inches apart, using a stick about 3/4 inch wide. The seed can be sown in the trench by hand. If you have many rows, make the trenches with a marking board (as illustrated on page 7).

The main advantage of planting in rows is that you can prune the roots of the plants with a knife or spade after the first growing season.

Sow the number of seed per square foot of bed that the table indicates, with 2 feet of trench per square foot of bed. If the seeding rate for Douglas-fir is 75 seed per square foot, sow 38 seed per linear foot of trench or drill. Cover the seed to a depth of twice its diameter. If necessary, a bed covering other than basic nursery soil can be used, such as a thin layer of sand, peat moss, or sawdust. Clean sawdust makes an excellent covering. Some nurserymen cover seed with sawdust alone; some mix sterile sand and sawdust in equal parts; and some prefer sand alone, pointing out that sawdust and peat moss will move by wind and water action. A scientist who grows seedlings for research purposes prefers very fine gravel, a little coarser than sand, to improve aeration and drainage and reduce damping-off. With this material, a deeper covering over the seed does not do any harm; covering can be less exact.

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### Sowing Broadcast

As a general practice, nurserymen sow in rows and this is probably the best method for home nurseries because weeding, root pruning, and lift-
ing are easier. Occasionally there may be a reason for sowing broadcast. Therefore, suggestions on this method also are given here.

As previously explained, the soil is worked well and leveled to provide uniform drainage to the sides. It then is raked smooth and pressed down gently with a board to provide a uniform surface for the seed.

Three-fourths of the seed is scattered evenly over the surface of the seedbed. The remainder of the seed is used to fill in the sparse places. The seed should be lightly pressed into the soil with a board, then covered in the manner described under "Sowing in Rows."

**Watering and Shading**

Water with a light spray to maintain a moderate moisture content on the surface and in the top foot of soil. (A water-breaker hose attachment that gives a soft spray is excellent for this purpose.) Avoid flooding so that the seed will not float away. Before and during germination, the soil must not be allowed to dry out during the day. This may mean watering more than once a day. Later, as seedlings develop, watering may not be needed as often. Prior to germination, watering may be done any time during the day. After germination, however, when the seedlings are still tender, it is better to water during the morning and early afternoons. Then the soil will be dry by nightfall, and the chances of losses from "damping-off" fungus will be lessened. Stop watering after mid-August to allow the seedlings to harden-off before cold weather begins.

First-year seedlings require about 50 percent shade during hot weather. Use the type of shade frame already described. Shade is not needed the second year.

**Damping-Off Danger**

Watch carefully; the damping-off disease is likely to cause trouble. It causes the stems or roots of the seedlings to decay. (Some cautions have already been mentioned.) Treatments with acids, other chemicals, or fungicides are often used. Get advice from a nurseryman if damping-off persists.

**Weeding**

Weeds will smother the trees if they are not removed promptly. Also, if the weeds get as much as 1 inch tall, it is hard to pull them without injuring the root systems of the tiny trees. Large weeds should be cut off, but it is best to weed often so that large weeds will not develop. Planting trees in rows helps in weeding. The use of chemical weed killers is not recommended.
H. W. Chappell, Linn County, Oregon, grows Shasta and red firs for planting on his own lands. When in use, the roll-up shade frames are supported by the slim poles nailed to stakes.

Thinning and Root Pruning

If trees are to be grown to 2-0 stock (2 years old at time of planting), rows should be thinned to 20 to 25 seedlings per running foot before the second growing season begins. Early spring is the best time for thinning since the danger of additional seedling loss to freezing weather is past.

Seedlings should remain in the seedbed until adequate root systems are developed. If they are to be raised until they are 2 years old, it is ordinarily recommended for forest planting sites, the trees should be root pruned at the end of the first growing season after the plants are dormant. The best time to do this is in late fall when the soil is moist and soft but before winter rains have soaked it. If trees are being grown in an area where frost heaving occurs, root pruning should be done the following spring before new growth is started. With trees down in row, root pruning can be done with a long thin-bladed knife or spade as shown in the diagram on page 9.

Place the blade in the soil midway between the rows at an angle which will make it possible to prune the roots off about 8 or 9 inches below the ground line. This pruning should be done on both sides of each row. The object of this procedure is to develop a spreading fibrous root system rather than a long spindly root which will be longer than the planting hole the tree is to be placed in later. During root pruning, try not to loosen the soil around the test roots any more than necessary. If the soil is loose and very much, it would be well to tamp it down along each side of the row when you are through pruning the roots.

If seedlings are to be transplanted to other beds, root pruning is done as part of that operation after the seedlings are lifted. Use a heavy knife on a board. Trim the roots of conifers to leave a root system only 4 or 5 inches long. Keep the roots moist at all times.

Mulching

During the first winter, it may be well to protect the young trees with a 3- or 4-inch layer of straw mulch free of weed seeds in order to prevent frost-heaving and damage. The straw should be removed as soon as the frost period has passed. Most Northwest forest nurseries prefer 1/2 inch of sawdust. It can be spread by hand and the fine sawdust can be brushed off the seedlings. If sawdust is used for mulch, it does not have to be removed (as is necessary with straw). Rodent-protective screens should remain on the beds.

Fertilizing

At the beginning of the second growing season, about April 1, apply a top-dressing of one-fourth of an ounce of 4-8-12 fertilizer per square foot. Repeat by applying another one-fourth of an ounce.

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Cuts are made here too. Insert knife about 3" from root collar, or midway between rows spaced 6" apart.

![Prune roots at depth of 8"

Root pruning can be done with long thin-bladed butcher knife if seedlings are in rows and the soil is soft. The job can be done with a sharp spade. The purpose is to develop compact root systems for better transplanting.

about June 15. Do not burn the trees. To avoid burning with fertilizer, apply it on a dry day when the seedlings are dry. After putting on the fertilizer, immediately sprinkle the trees with water to get all of the fertilizer off of the leaves.

Remember you are applying one-half ounce of fertilizer to one square foot to be divided for two applications of one-fourth ounce each.

Care the Second Year

During the second growing season, the beds again should be kept free of weeds but should not be watered except during extremely dry periods. In the first part of the second growing season, however, the soil should not be allowed to dry out to a depth of more than 3 or 4 inches. Shade should not be used during the second growing season.

Lifting and Handling

Coniferous trees generally are lifted for planting at the end of the second growing season. It is known now that Douglas-fir and ponderosa pine are in the best condition for lifting after the roots have become dormant. Research has shown that this dormancy can occur from the middle of November in areas west of the Cascades. East of the Cascades, the same condition occurs in October. Therefore wait until the trees are in a state of dormancy before lifting them. They can be lifted with an ordinary spade, but take care not to break the roots. If desired, bunch the trees for tying in bundles of 25 or 50. The nursery soil must be damp. Shake the excess soil gently from the roots and pack the trees in a suitable container, such as a bucket or a long, narrow box, with a wet material (like peat moss or shingletow) around the roots. Trees can be held in this manner for a short time, several hours or overnight. Roots should never be exposed or allowed to dry. Always allow free air circulation around the tops, and do not expose trees to sun or drying winds. Excessive handling between the nursery and the planting site will decrease survival.

Transplanting

Transplanting of nursery stock to other beds slows down top growth and stimulates root development. Nursery stock is sometimes transplanted, however, when it is desired to produce larger, sturdier trees with heavy root systems and

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tougher stems for planting on adverse sites. While transplants are more costly, some planters will pay more for larger vigorous stock that will "surge" ahead when planted. Many areas require a sturdier tree to get adequate stocking in competition with grass and brush and to resist being bowed under by dead vegetation. Studies show that transplants have a 12 to 20 percent advantage.

Transplanting is done in the dormant season, usually in the fall or early spring. Beds are prepared in the same way as for seedbeds. Trees usually are spaced with a transplanting board. Douglas fir often is spaced at 2-inch intervals in rows. Home-nursery operators who wish to use transplanting beds should get further information from forestry texts or forestry agencies.

Field Planting Suggestions

More trees will be grown if care is given to planting stock. Follow these precautions for a successful tree planting:

1. Do not break the roots when lifting young trees from the seedbed or transplant bed. Cut the tops of broadleaf seedlings back to about 9 inches, and trim the roots back to about 10 inches for field planting. Trim off the roots on conifers to match the length of the blade of the hoe or other tool that will be used for planting, but not shorter than 8 inches.

2. Keep the roots moist all of the time.

3. Make the hole or slit in the ground large enough for the roots to take a natural spreading position. The ground line on the planted tree should be at the same place on the stem as it was in the nursery bed.

4. Place only moist soil next to the roots and press it down firmly.

If you are planting an area you cannot plow and work down, scalp a spot 18 by 24 inches for each tree. Plant the trees in the centers of these scalped places. This cuts down competition from weeds and grass. The young trees will stand a better chance of survival if they are placed on the north sides of stumps and fallen logs. Do not plant close to large brush clumps or trees.

Processing Tree Seed at Home

Collecting Cones

Many people who grow their own seedlings find it desirable to collect their own seed. They may want to obtain a supply of seed not available from dealers, to collect from a specific source or specimen, or to gather quantities that are too small for commercial dealers to handle. For more detailed information about cone collection, refer to


Seed Processing Equipment

Seed can be processed at home with readily available equipment. This includes a simple extractor or shaker box, a burlap bag, and a fan. For storage, it is necessary to have jars or plastic bags and a freezer. A bench dust brush and several rubber or plastic containers of one- or two-quart size will also be helpful.

A shaker can be made by replacing the bottom of any convenient-sized wooden box with hardware cloth. Quarter-inch mesh will be satisfactory for some species, such as Douglas fir. Large winged seeds, such as true firs, require 1/2- or 3/8-inch mesh. It will probably be most convenient to have boxes with various sized screens available. A hand-operated tumbler is better for large quantities of cones.

Precautions in Handling Seed

In order to grow good seedlings, it is as important to handle seed properly as it is to follow good practices in the seedbeds. Most conifer seeds can be easily damaged. This is especially true for the various true firs (Abies) because of their soft seed coats. Avoid practices that will cause cracking or severe abrasion, such as too vigorous stirring or rubbing.

Drying Cones

Cones can be air dried by spreading them out in single layers on a warm dry place. A concrete driveway or a well-ventilated shed can be used.
Basic steps in processing dried cones: First shake the cones in a box with a screened bottom; then roll or knead in a burlap bag to remove wings; then pour slowly in front of a fan to separate good seed from hollow seed and chaff.

After preliminary drying, the cones can be opened more completely by moving them to a warmer spot where the temperature will not exceed 100° F. Too high a temperature will kill the seed. A suitable spot is often found in the basement over the furnace or under hot air vents. Spread the cones in a single layer on screen racks and allow adequate air circulation.

Extracting Seed

After the cones have opened, seed is extracted by tumbling in the tumbler or shaking in the box. In the case of true firs where the cones break apart, this extracting separates the seed from the cone scales. Additional screening with a smaller sized screen will be helpful in removing debris such as cone parts and twigs.

Dewinging and Cleaning

Dewinging seed is done after extraction. Dewinging and cleaning make it easier to handle and store the seed. Dewinging can be done by gently kneading the seed in a burlap bag. This process normally requires only a few minutes. Do not overdo this dewinging or excessive abrasion of seed coats will occur. Cleaning is then done by winnowing or fanning. Slowly pour the seed from one container to another in front of a fan or outdoors in the wind. This operation will need to be repeated several times. Fanning is not the most thorough way of cleaning seed, but it is satisfactory for small quantities.

Separating Hollow and Filled Seed

Although cleaning will have removed some of the hollow seed, quality can be improved by additional processing. Let the seed fall in a slow stream in front of the fan onto the table. The hollow seed will be blown the farthest away. Careful examination should then show the line between hollow and filled seed. Repeat the process several times to refine the quality of the seed.

Seed Storage

Conifer seed must be stored properly. Commercial dealers have stored Douglas-fir seed successfully for periods up to 10 years. Other species can also be stored for a number of years. The most successful method is to keep seed in airtight containers at a temperature of about 5° F. This can be done in the home freezer by putting the seed in airtight jars or plastic bags. For shorter periods of time, it is possible to store seed in a home refrigerator in an airtight container at a temperature of 40° F or lower. One of the most important points to remember in storing seed is to keep its moisture content low. This is accomplished easily by using airtight containers.