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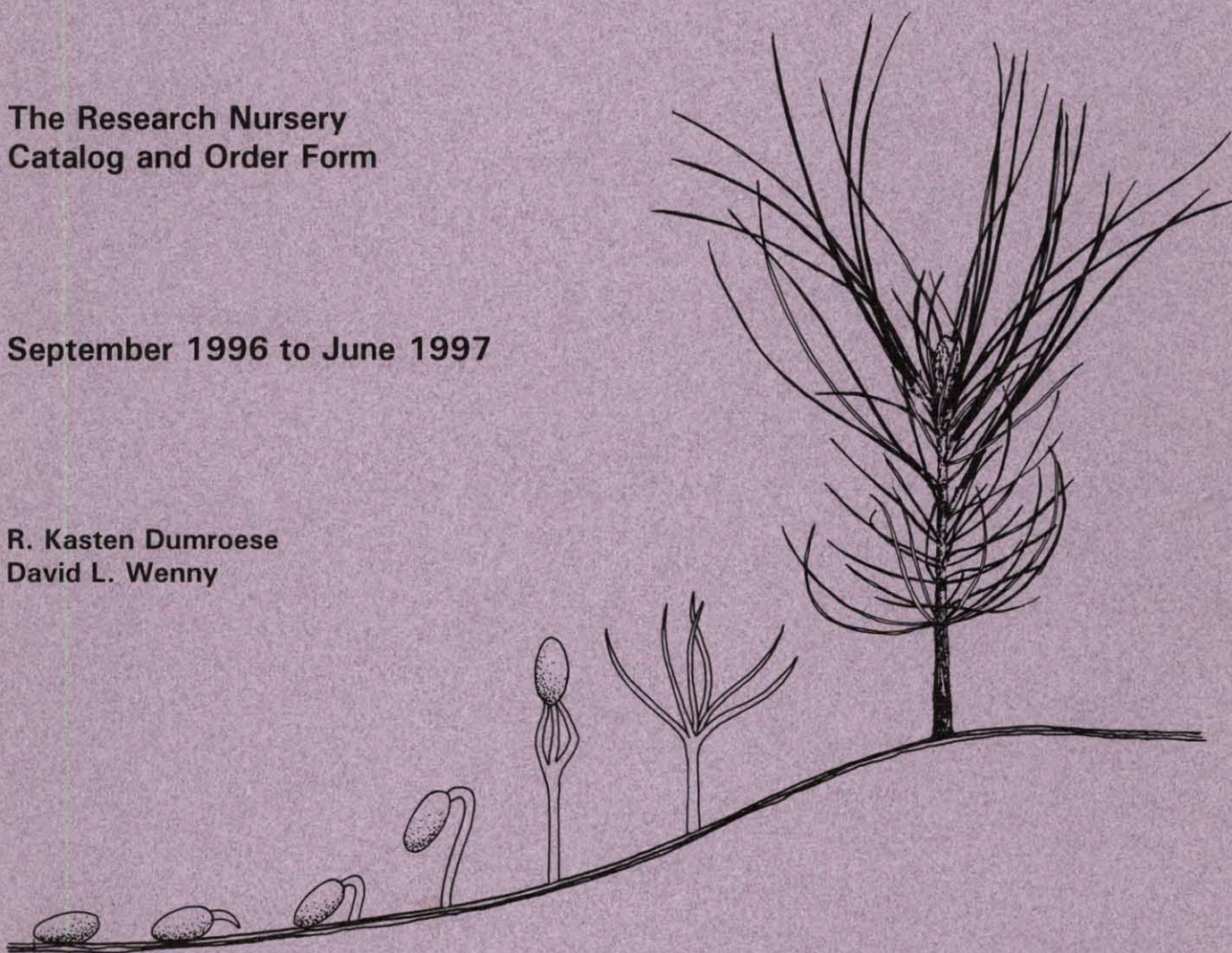
University of Idaho College of Forestry, Wildlife and Range Sciences

A Guide to Seedling Selection

The Research Nursery
Catalog and Order Form

September 1996 to June 1997

R. Kasten Dumroese
David L. Wenny



IDAHO FOREST, WILDLIFE AND RANGE EXPERIMENT STATION

Director
Charles R. Hatch

 University of Idaho

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no.18
1996



Graphics by Lorraine Ashland
Layout by Linda Geer
University of Idaho
College of Forestry, Wildlife
and Range Sciences
Moscow, Idaho 83844-1130

Idaho's State Tree Western White Pine

Trade names are used for the information and convenience of the reader, and do not imply endorsement or preferential treatment by the University of Idaho.

CAUTION: This publication discusses the use of pesticides. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife if they are not handled and applied appropriately. Read the pesticide label before purchasing and using. Use all pesticides selectively and carefully. Follow the label directions for the disposal of surplus pesticides and pesticide containers.

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Eagerly serving Idahoans, the Forest Research Nursery staff (L to R): Kas Dumroese, John Edson, Linda Geer, Sue Morrison, Kenneth Quick and Dave Wenny.

Research associate John Edson checks a crop of micropropagated hybrid poplars. Micropropagation is a technique where a small amount of plant material, perhaps a single bud or leaf, is used to grow a new, complete plant. The Research Nursery is leading Idaho in the use of micropropagation for the production of plants for reforestation and conservation plantings, selecting plants for desirable traits like disease resistance or growth habit, as well as for saving threatened or endangered plants.



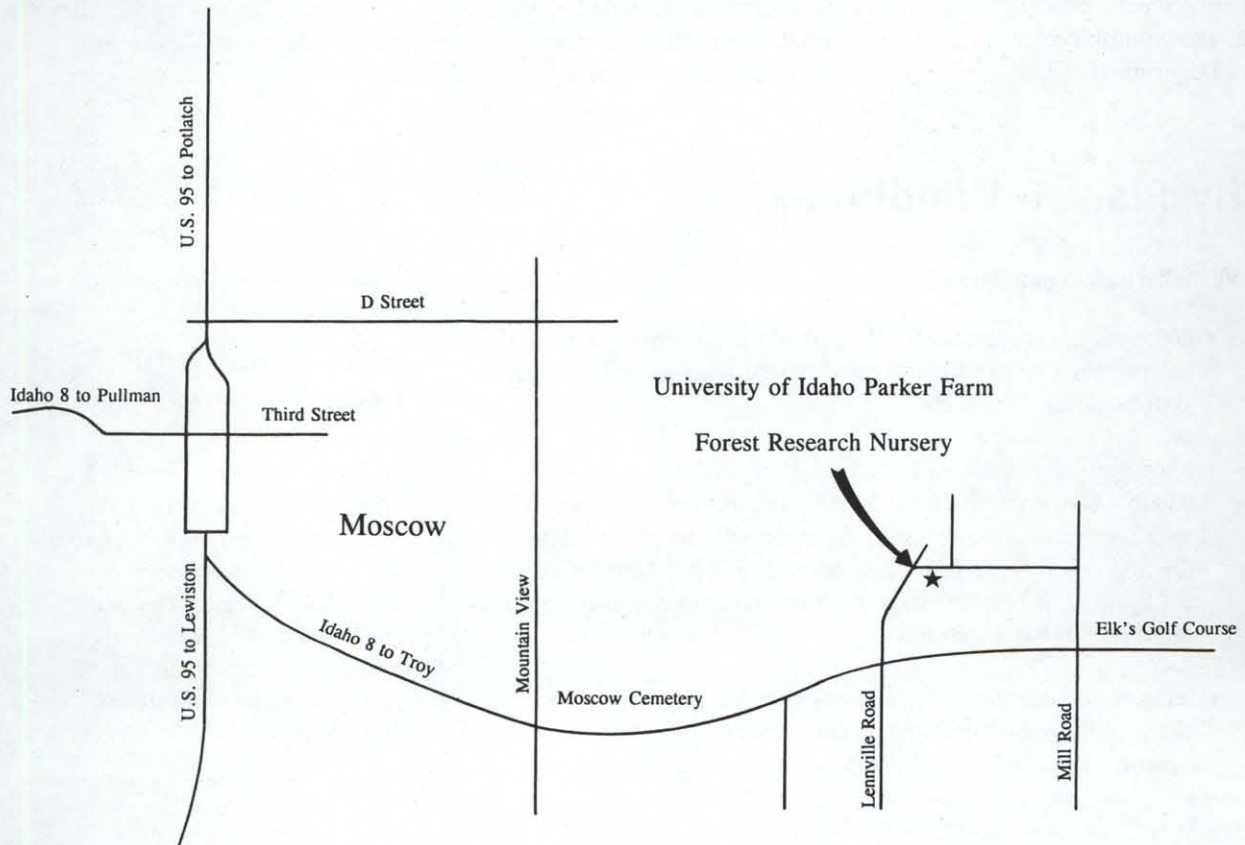
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About Us ...

Established in 1909, the Forest Research Nursery grow bareroot (field-grown) tree and shrub seedlings for conservation. In 1982, container-grown seedlings (grown in greenhouses) replaced bareroot production. The Forest Research Nursery emphasizes teaching, research and service. We teach students about forest planting, conduct research to improve seedling quality and subsequent survival and growth, and grow seedlings for the state of Idaho, private industry and the public. Almost all the revenue used to meet these obligations is received through seedling sales and outside grants. The Forest Research Nursery is a proud member of the Idaho Nursery Association and cooperates with Idaho's private nursery owners through an advisory committee, keeping them up-to-date with our research findings.



Please visit our nursery in Moscow, one mile east of Mountain View Road along Idaho 8 (Troy Highway) on the University of Idaho Parker Farm. We're open weekdays from 9:00 am until 3:00 pm. Tours for larger groups can be arranged by calling (208) 885-6444.



Please consult your county extension agent, Idaho Department of Lands woodland forester, Natural Resources Conservation Service officer, or a professional forester, and read this booklet before purchasing seedlings.

If you have any questions regarding ordering, species availability, or prices, please call Linda Geer at the Research Nursery. Her telephone number is (208) 885-6444 and her E-mail is lindag@uidaho.edu. You may write us at Forest Research Nursery, University of Idaho, Moscow, Idaho 83844-1137.

ORDER FORMS will be accepted by the nursery until the final shipping date stated on the order form. The nursery fills orders on a first-received-with-full-payment, first-reserved basis, regardless of the delivery date you select.

Get Paid to Plant Seedlings!

Cost-sharing is available for tree-planting in Idaho through both state and federal programs. Generally aimed toward rural situations, these programs help cover the costs of site preparation, seedlings, and planting. Often, small acreages are acceptable, so we encourage anyone planning to plant seedlings to check these programs for possible financial assistance.

Habitat Improvement Program (HIP) targets improvements for upland game birds and waterfowl habitat on privately owned lands. Idaho Department of Fish and Game (IDFG) administers this program. Call your nearest IDFG office, and an IDFG HIP biologist will help you assess the potential of your land, plan projects to develop your land to benefit wildlife, and share the costs of buying and planting trees and shrubs.

Stewardship Incentive Program (SIP) is a joint program of the USDA Forest Service, State of Idaho woodland foresters, and the Consolidated Farm Service Agency. SIP provides cost-sharing for a variety of tree-planting projects, including forest plantings, windbreaks, riparian enhancement, and wildlife habitat. For more information, contact your nearest Idaho Department of Lands woodland forester, Consolidated Farm Service

Agency office, County Extension office, or Natural Resources Conservation Service office.

Conservation Reserve Program (CRP) and Agricultural Conservation Practices (ACP) are administered through the Consolidated Farm Service Agency. CRP pays owners of highly erodible, previously cultivated farm lands to remove them from production, and will cost share tree and shrub planting. ACP cost-shares tree and shrub planting onto qualifying land. For more information, contact your nearest Consolidated Farm Service Agency office or Natural Resources Conservation Service office.

Why Plant a Windbreak?

Windbreaks are for . . .

- home energy conservation. Windbreaks can decrease winter heating costs 10 to 40 percent and reduce cold air infiltration into your home by 75 percent.
- improved crop yields. Yields are higher on the lee sides of windbreaks--anywhere from 5 to 44 percent--because lower wind speeds evaporate less moisture from the soil and plants. True, the first few rows next to the windbreak will not grow as well, but the area of best soil and crop protection extends to 10 times the height of the windbreak.
- reduced soil erosion. A windbreak will decrease wind speed close to the ground up to 50 percent, lessening the wind's ability to blow away your topsoil and productivity.
- better livestock performance. The energy requirements for beef cows increases 13 percent for each 10° F drop in windchill temperature below 30° F. That means when it's 10° F and the wind is blowing 25 miles per hour (-29° F windchill), cows use 77 percent more energy, standing outside, just to stay warm. A windbreak would reduce that consumption by more than half.
- snow drift control. A properly placed windbreak will keep snow from drifting across your driveway, farm lane, or access roads--a big advantage when it's time to plow.
- wildlife habitat. Wildlife will use windbreaks for cover, food and reproduction. Studies have shown 50-80 bird nests per mile of windbreak! Don't forget, birds are important predators of insects and rodents too.
- increased home value. Healthy trees around your home add value to your property.

How Long Until I Get Results?

An irrigated, weed-free windbreak will provide noticeable protection within 3 to 4 years and will give effective protection within 7 to 8 years. Dryland windbreaks will give effective protection within about 7 to 12 years, depending on soil and precipitation.

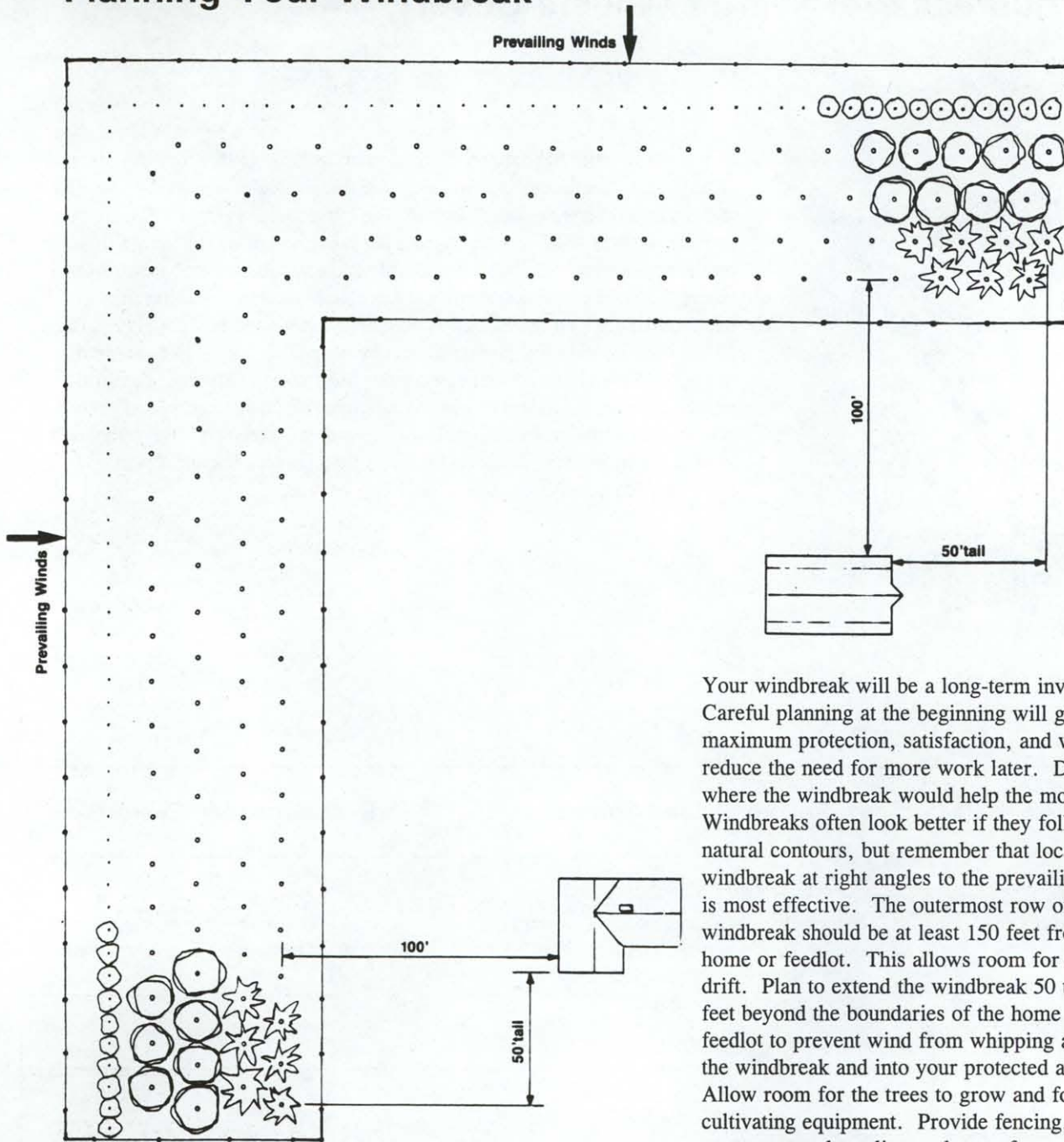
Windbreaks for Winter Wildlife Cover



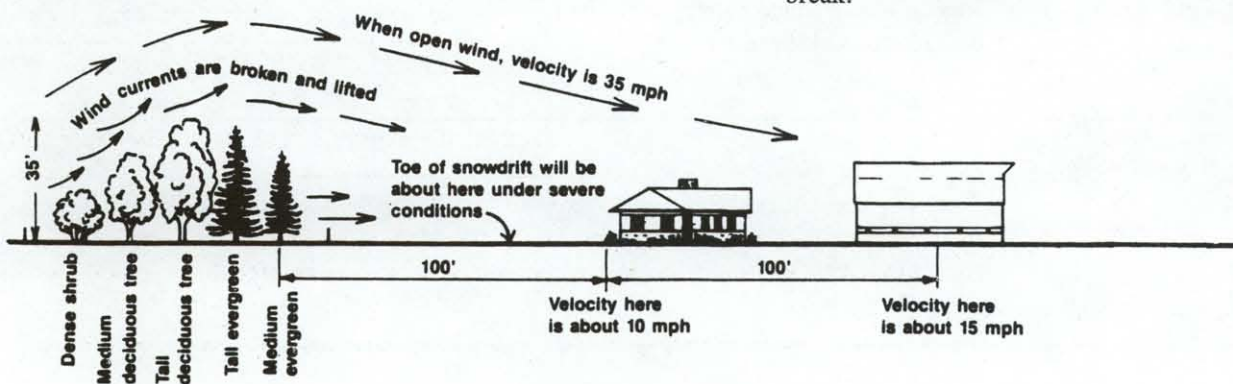
Good wildlife habitat can be created on as little as ½ acre. An ideal arrangement has at least 5 rows, with the three middle rows being evergreen, and the two outer rows deciduous shrubs. Windbreaks planted east to west provide the best wildlife benefit. During winter months, sun shines directly on the southern rows. This allows birds and animals to "sun" themselves where the wind protection is often the greatest, thereby lowering their metabolism and putting less stress on them. Plant food-bearing shrubs in the outer rows. Good food-producing shrubs include Russian-olive, autumn-olive, Nanking cherry, American plum, choke cherry, Siberian peashrub, golden currant, cotoneaster, western sand cherry, honeysuckle, skunkbush sumac, native mountain-ash, and rose. Good evergreens are types that don't grow too tall, but stay dense and bushy. Fine choices include Rocky Mountain juniper, Austrian pine, and blue spruce.

Region of Idaho	Recommended Shrubs	Recommended Evergreens
Northern	Siberian peashrub, rugosa rose, western sand cherry, autumn-olive, American plum, Nanking cherry, serviceberry, cotoneaster, golden currant	Rocky Mountain juniper, blue spruce, Austrian pine, and Engelmann spruce
Southwestern	Siberian peashrub, American plum, rugosa rose, skunkbush, autumn-olive, Russian-olive, choke cherry, serviceberry, cotoneaster, golden currant	Rocky Mountain juniper, Austrian pine, Scotch pine, and blue spruce
Southeastern	Siberian peashrub, choke cherry, American plum, skunkbush, Nanking cherry, rugosa rose, serviceberry, cotoneaster, golden currant	Rocky Mountain juniper, blue spruce, Austrian pine, Scotch pine, and Norway spruce

Planning Your Windbreak



Your windbreak will be a long-term investment. Careful planning at the beginning will give maximum protection, satisfaction, and will reduce the need for more work later. Decide where the windbreak would help the most. Windbreaks often look better if they follow natural contours, but remember that locating the windbreak at right angles to the prevailing wind is most effective. The outermost row of the windbreak should be at least 150 feet from the home or feedlot. This allows room for snow to drift. Plan to extend the windbreak 50 to 100 feet beyond the boundaries of the home or feedlot to prevent wind from whipping around the windbreak and into your protected area. Allow room for the trees to grow and for cultivating equipment. Provide fencing, if necessary, to keep livestock out of your windbreak.

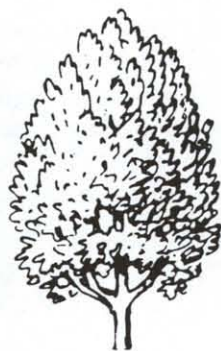


How Many Rows Do I Need?

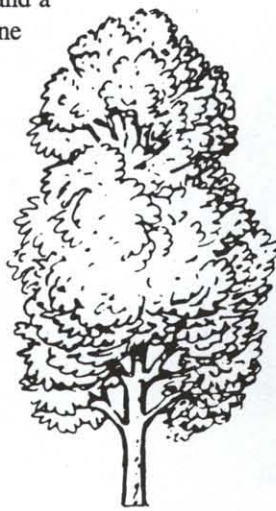
Plan your windbreak to fit the space you have available. Keep in mind that protection increases with the number of rows planted if the trees have room to grow. A 5-row windbreak provides the most protection, and a 5-row windbreak, 450 feet long, uses only about one acre of land.



Dense shrub



Medium size deciduous



Tall deciduous



Tall evergreen



Medium size evergreen

See page 12 for an index of species.
Species descriptions start on page 13.

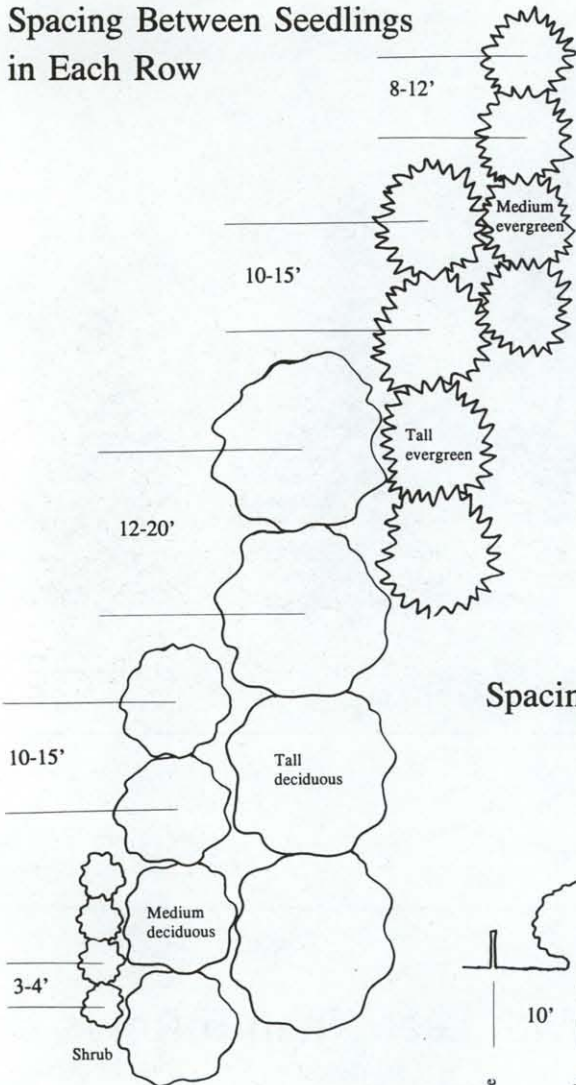
Tree Selections for Windbreaks With Less Than 5 Rows

If limited space prevents planting a 5-row windbreak, use fewer rows rather than crowding the trees. Crowded trees grow more slowly, stop growing at an earlier age, and are more susceptible to insect and disease problems.

If you have room for only	First Choice	Second Choice
4 rows	Dense shrub Medium height evergreen Tall evergreen Medium height evergreen	Dense shrub Medium height evergreen Tall evergreen Medium height evergreen
3 rows	Dense shrub Tall evergreen Medium height evergreen	Dense shrub Tall deciduous Medium height evergreen
2 rows	Medium height evergreen Tall evergreen	Dense shrub Tall evergreen
1 row	Medium height evergreen	Tall evergreen

How Far Apart Do I Plant?

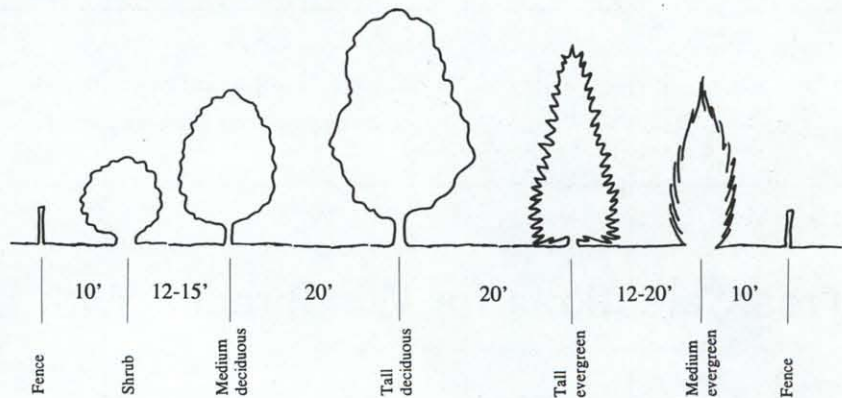
Spacing Between Seedlings in Each Row



Adequate growing space assures a longer, more useful life for your windbreak. The recommended spacings look quite large when planting small seedlings, but the trees will grow rapidly to fill the areas (see figures to left and below for recommended spacings between rows, and between seedlings within the row).

Use wider spacings in areas with lower precipitation. Row spacing should be at least 4 feet wider than cultivation equipment. Tall deciduous trees should be at least 20 feet from shrubs and evergreen trees. Use close spacings in the windward row and in windbreaks with only two rows. Wider spacings will work better in the interior and lee rows of multi-row windbreaks.

Spacing Between Rows

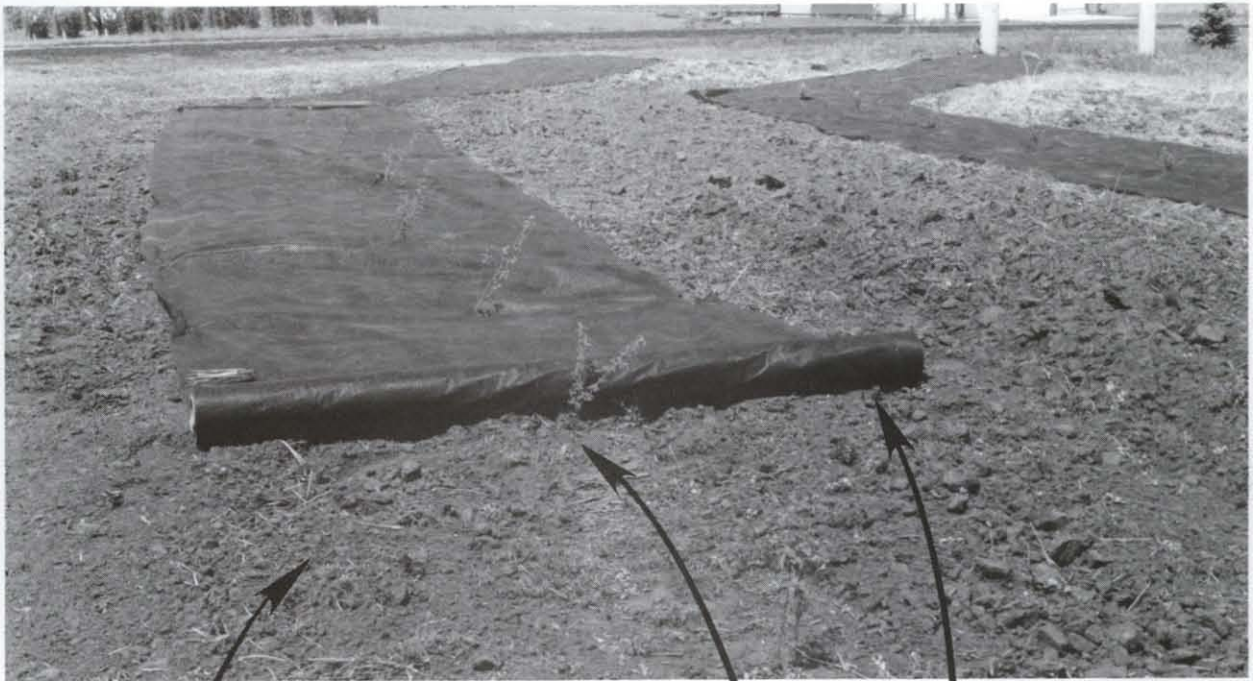


How Many Trees Do I Order?

For windbreaks and wildlife winter cover areas, divide the length of each row by the in-row spacing to calculate how many seedlings you'll need per row. For Christmas tree or timber planting, use the general guidelines shown to the right. Remember, the drier the site, the wider the spacing.

	Spacing in feet	Trees per acre
Christmas trees	5 x 5	1,742
	6 x 6	1,210
Timber	9 x 9	538
	10 x 10	436
	12 x 12	303

5 Planting Steps to Give Your Windbreak the Best Start



1. Weed competition is the number one cause of seedling death. If weeds aren't much of a problem, clean cultivate the planting area **BEFORE** your seedlings arrive. If weeds are a problem, especially perennial weeds such as thistle or bindweed, herbicide applications may be necessary. Please consult your county agent before using herbicides, as carry-over effects may damage your seedlings.

2. Plant your seedlings according to the instructions we ship with your order. Plan to have a shovel or hoedad ready to use when your seedlings arrive. We recommend against dibble planting as dibles often severely damage the soil and reduce seedling survival and growth.

3. Use a weed barrier such as Typar that allows water and air to pass through it but prevents weed establishment. Shown here is a 6-foot-wide strip, the minimum we recommend.

4. Cover the weed barrier with a mulch of wood chips or decorative rock. This will increase the life of the weed barrier, make the barrier more effective, and preserve soil moisture.



5. Use a pre-emergent herbicide like Surflan or Casoron to keep weeds from sprouting on the mulch. Always dress appropriately when applying chemicals and follow all label directions. If you don't like chemicals, the weed barrier will keep weed roots from reaching the soil so they'll pull out of the mulch with little effort.

Weeds vs. Seedlings



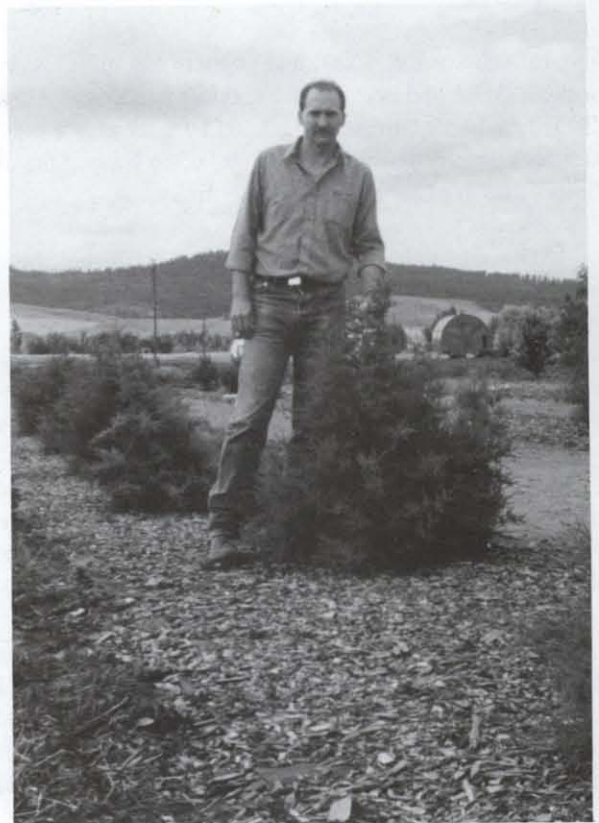
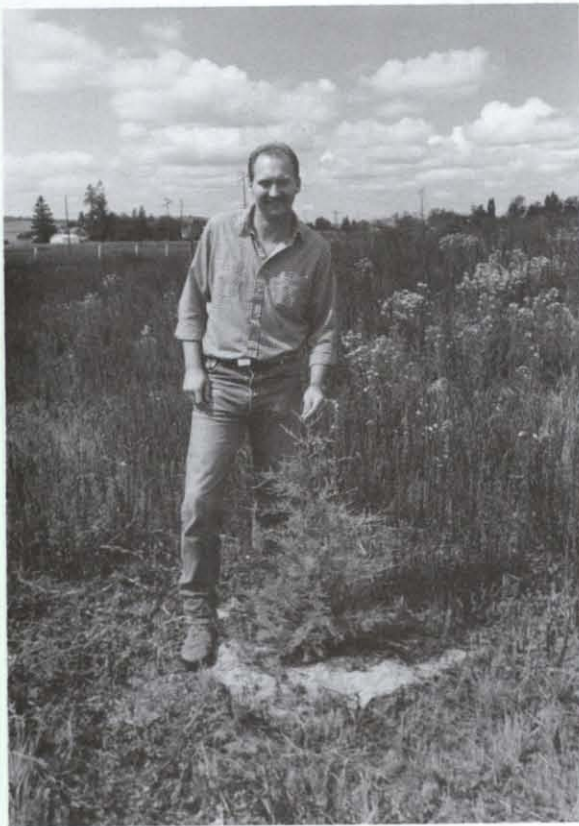
You'll get larger, healthier trees and shrubs faster if you control weeds and grass. Weeds and grass growing next to seedlings reduce growth and are the number one cause of seedling mortality.

The two rows of Siberian peashrub shown in these photos (taken in 1993) were both planted in spring 1989 near the nursery. We think they clearly demonstrate the importance of weed and grass control. In the top photo, Secretary and Records Manager Linda Geer poses by a row of peashrub in which the lawn grass was allowed to grow within the row. The owners have had a difficult time keeping the row looking neat and the peashrub growth has been slow. In the bottom photo, the peashrub were protected by a 6-foot-wide weed barrier covered with wood chips.



More Weeds vs. Seedlings

Need some more proof that weed control improves seedling growth? Compare these three photos (taken in 1993) of Rocky Mt. juniper planted in spring 1990. In the right photo, Research Associate Kas Dumroese kneels next to a seedling growing in a jungle of grass. Without any form of weed control, this juniper has struggled to about 14 inches in height. In the lower left photo, the juniper looks much better, having benefitted from twice-yearly cutting of the grass and weeds in a 6-foot-diameter circle around it. This tree also had a 3-foot-square weed barrier placed around it at the time of planting. The best looking juniper is in the lower right photo. The combination of a 6-foot-wide weed barrier covered with wood chips and a 3-foot-wide tilled strip on either side of that has allowed this juniper to achieve maximum growth.



Animal Damage

Seedlings can be damaged by livestock, deer and elk, rodents, or other small animals. Broadleaf species are especially vulnerable to browsing. Here are a few hints to help you protect seedlings from animal damage.

Big Game

Deer and elk can inflict serious damage to seedlings, especially deciduous trees and shrubs, although evergreens also can be browsed. You can protect seedlings with mechanical barriers or by using chemical browse inhibitors.

Mechanical barriers - Fencing is an option but can be expensive to construct since the fence will need to be at least 6 - 8 feet tall. Another option is tree tubes, but they only work for deciduous trees (see photo on page 11). These tubes, made of photodegradable plastic, come in various lengths; a tube at least 6 feet tall is necessary to prevent deer and elk browsing. The trees grow taller and faster inside these tubes. Soon they are above the browse line, and eventually the tube disintegrates. If you would like more information on these tubes, please contact the Research Nursery.

Chemical inhibitors - Several chemical inhibitors are available. Your local Idaho Department of Fish and Game officer will have information on these products. Some folks have had success keeping elk and deer from browsing by simply stringing a bar of Lifebuoy soap on seedlings and trees.

Livestock

Your windbreak will grow best if you keep livestock out of it. Livestock trample and eat small seedlings. Once the trees are bigger, livestock can cause damage by rubbing off or eating the bark, and browsing on lower branches. Removal of lower branches by browsing reduces the effectiveness of your windbreak. Fencing is the easiest way to keep livestock away from your windbreak.

Rodents

In Idaho, mice, voles, and gophers can inflict serious damage to seedlings and older trees, especially during winter. Mice and voles injure and kill seedlings by gnawing off the bark around the base of seedlings or small trees. If the tree is not completely girdled by gnawing, it may be left in such a weakened state that summer stress will kill it. Gophers usually gnaw off the roots, often leaving the above-ground portion of the seedling or tree standing. Sometimes gophers eat seedlings entirely.

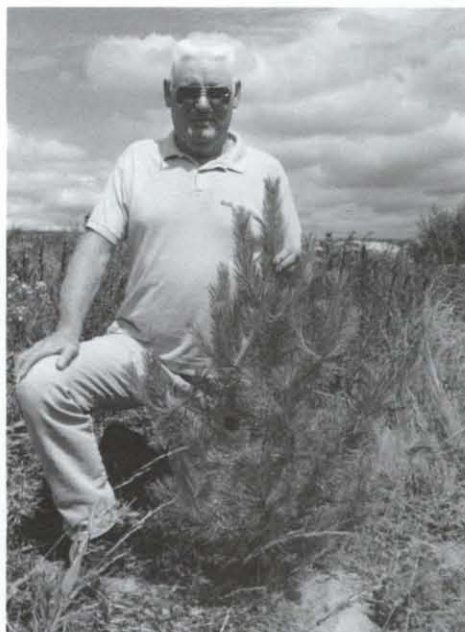
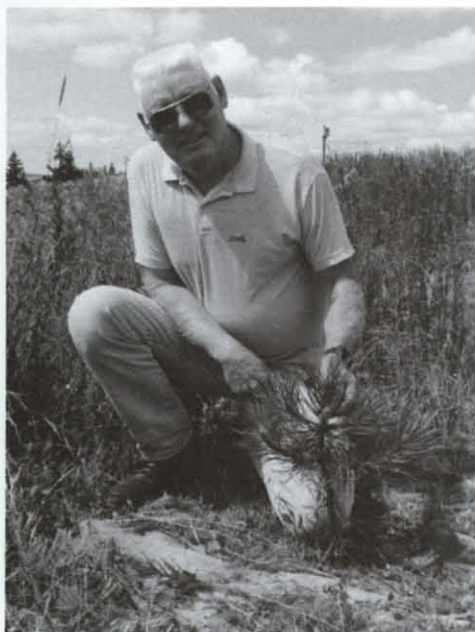
Mice and voles - Common throughout Idaho, these rodents attack the base of seedlings and small trees. Trees can be protected in several ways: clean cultivation, barriers, poisons and traps. Clean cultivation is a simple way to keep these pests from your seedlings. Neither mice nor voles like to cross bare soil so a weed-free zone around your trees will help discourage feeding. Plowing or tilling a 6-foot-wide strip on either side of the row should keep the pests away. This also improves the growth of your seedlings by reducing competition for water and nutrients by weeds. A piece of 4-inch PVC pipe or plastic drain tile, about 8 to 10 inches long, placed around newly planted seedlings, will help keep the rodents away. Wooden stakes may be needed to keep the pipe from blowing over. At the Research Nursery, we also have good success in reducing gnawing damage by hanging chemical browse inhibitors on individual seedlings. Finally, poisoning voles may be necessary when populations are very high. These pesticides often require a pesticide license to buy and apply.

Gophers - Pocket gophers can be a terrible problem. They are extremely difficult to eradicate from an area, and their feeding on small seedlings is usually fatal for the seedlings. Clean cultivation, as described for mice and voles, will greatly reduce gopher feeding. Trapping can be effective if you are persistent. Stop by your local University of Idaho extension office and ask for a copy of EC 1255: *Controlling Pocket Gopher Damage to Conifer Seedlings*. Contact the Research Nursery if you need more information.

Other Problems

If you have any questions or suspect an insect, disease or planting site problem, contact your local county extension agent or Idaho Department of Lands woodland forester.

Why Buy SuperStock?



Nursery Technician Kenneth Quick knows why you should buy SuperStock seedlings. Both of these photos (taken in 1993) show Ken with Austrian pine seedlings planted in spring 1990. On the left he's kneeling by one grown in a 4-cubic-inch container. Compare that with the 20-cubic-inch SuperStock shown in the right photo.



Nursery Manager and Professor of silviculture, Dr. David Wenny proudly holds a 20-cubic-inch SuperStock blue spruce (left) and a 4-cubic-inch blue spruce.



Assistant Nursery Technician Sue Morrison likes the growth of this SuperStock Russian-olive, planted in spring 1992 and photographed in 1993. It's growing in a 2-foot-tall plastic tree tube to protect it from rabbit and vole gnawing. Besides protection from rodent damage, tree tubes can also protect seedlings from herbicide applications and grass trimming.

Species by Size

Dense Shrubs

	Height	Page
Amur honeysuckle	10-15'	18
Arctic blue willow	10-15'	17
Autumn-olive	10'	17
Golden Currant	3-6'	14
Lilac	10-15'	17
Mt. big sagebrush	3-6'	13
Nanking cherry	6-10'	15
Peking cotoneaster	6'	15
Redosier dogwood	6-15'	16
Rugosa rose	4-6'	14
Russet buffaloberry	8'	16
Siberian peashrub	10-15'	16
Skunkbush sumac	3-4'	13
Western sand cherry	3-6'	13
Western syringa	6-9'	15

Medium-Size Evergreens

	Height	Page
Austrian pine	40-60'	25
Blue spruce	50-60'	25
Rocky Mt. juniper	20-30'	25

Tall Evergreens

	Height	Page
Douglas-fir	60-80'	26
Engelmann spruce	100-120'	27
Grand fir	120'	28
Norway spruce	60-80'	26
Ponderosa pine	60-80'	27
Scotch pine	40-70'	26

Medium-Size Deciduous

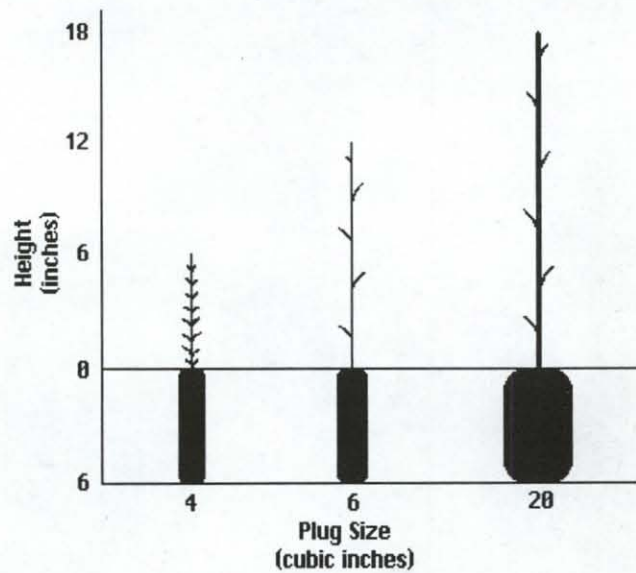
	Height	Page
American plum	20-30'	19
Black cherry	40-50'	21
Choke cherry	10-25'	18
Common wild apple	25-30'	20
Gambel's oak	15-30'	24
Golden willow	40-50'	21
Green ash	35'	20
Native mountain-ash	6-20'	19
Quaking aspen	40'	21
Russian-olive	20-30'	20
Serviceberry	20'	19
Sitka alder	10-15'	18

Reforestation Species

Douglas-fir	26
Engelmann spruce	27
Grand fir	28
Ponderosa pine	27
Western larch	28
Western redcedar	28
Western white pine	27

Tall Deciduous

	Height	Page
Black locust	40-75'	22
Bur oak	60-75'	24
English oak	75-90'	24
Honeylocust	40-70'	22
Idaho hybrid poplar	50-80'	23
Paper birch	80'	23
River birch	50-60'	22
Sugar maple	60-70'	23



Species Descriptions



Skunkbush Sumac (*Rhus trilobata*), also known as oakleaf sumac, is very drought tolerant. Only growing 3-4 feet tall, it will form clumps. The deep green summer foliage changes to bronzy red in fall, and spikes of red fruit develop in late summer. It prefers a well-drained soil. **Wildlife benefit:** The shrubby growth provides cover for upland game birds, and small animals and songbirds eat the fruits.

SuperStock seedlings are 14-16" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



Western Sand Cherry (*Prunus besseyi*) is a very hardy shrub that grows 3-6 feet tall. This cherry withstands heat, cold, wind and drought. Spring blooming white flowers are replaced with large, purplish, sweet cherries good for jams, jellies and pies. We think this species will do well in the outer rows of multi-row windbreaks. **Wildlife benefit:** The cherries provide a great food source for many species of birds.

SuperStock seedlings are 16-18" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



Mountain Big Sagebrush (*Artemisia tridentata ssp. vaseyana*), an Idaho native, is an evergreen shrub that grows 3-6 feet tall. Sage prefers deep, well-drained soils and around 14 inches of annual precipitation. The aromatic, evergreen nature of this plant makes it useful for low maintenance landscaping in the drier regions of Idaho and the outer rows of multi-row windbreaks. **Wildlife benefit:** We grow the Hobble Creek cultivar released by the USDA Natural Resources Conservation Service. This cultivar is preferred winter browse by mule deer and domestic sheep, and provides winter forage for sage grouse. It also provides good cover for small animals, sage thrashers, and sage sparrows.

SuperStock seedlings are 12" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



Golden Currant (*Ribes aureum*) is an Idaho native shrub. This deciduous plant has many desirable characteristics: attractive form, height growth of 3-6 feet, yellow flowers early in spring, edible fruits, no thorns, drought tolerance, and works well as a natural hedge, good wildlife browse, and excellent for soil stabilization. This plant would look good in the yard or would be a valuable addition to the outer rows of multi-row windbreaks. Grows best with moderate summer watering. **Wildlife benefit:** Provides good cover for upland game birds and the edible fruits eaten by an assortment of songbirds and small animals. Also browsed by big game.



SuperStock seedlings are 8-12" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each

Rugosa Rose (*Rosa rugosa*) is an extremely hardy rose, withstanding hard freezes, wind and drought, while still showing off good fall color. This rose grows 4-6 feet tall, making it good for single-row hedges or the exterior rows of multi-row windbreaks. Deep purple to pink to white flowers, up to 3 inches in diameter, give way to large red fruits (hips). They may flower the same year planted! **Wildlife benefit:** Birds, chipmunks and deer eat the hips. Deer and elk also will browse the foliage.



SuperStock seedlings are 8-12" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each

According to Jean Gordon, author of *The Art of Cooking with Roses* (The Noonday Press, A division of Farrar, Straus and Giroux, New York), "There are innumerable recipes for rose sauces, jellies and marmalade. Sauce Saracen is made of rose hips and almonds pounded together and cooked in wine sweetened to taste. A tart marmalade for deer and venison is favored by French chefs, while the English use a seasoning for these same dishes by soaking dried rose hips, then mashing and blending them with salt, pepper and marjoram. Rose wine or rose hips added to gravies in the cooking of rabbit and other small game provide a delicate flavor which often disguises the objectionable 'gamey' taste." Here's one recipe that will tempt your taste buds!

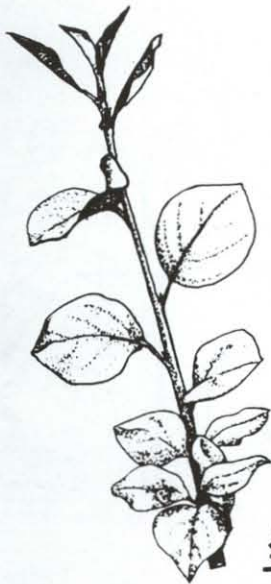
ROSE HIP JAM

2 pounds rose hips and seeds
 4 tart apples

2½ pounds sugar
 1/3 cup lemon juice

Boil rose hips and seeds in 2 pints of water and cook until tender. Rub through a fine sieve, making a puree. Peel and core the apples, and cook in very little water until tender. Rub through a sieve. Combine rose hip puree with the apple puree, the sugar and lemon juice. Boil 15 minutes after reaching the boiling stage. Put in sterilized jars and seal.

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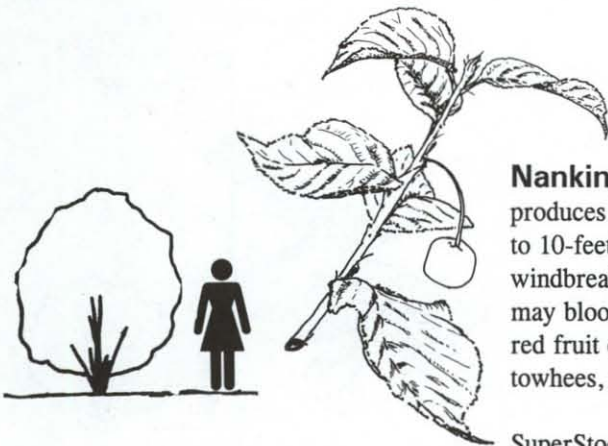
Peking Cotoneaster (*Cotoneaster acutifolia*) will grow throughout Idaho. Cotoneaster? How's that? According to the *Sunset Western Garden Book*, the most-often-used way to say Cotoneaster is koe-toe-nee-AS-tuhr. This deciduous shrub will grow to 10 feet tall with a similar spread. Branches are stiff with dark green leaves set closely together. Orange-red fall color. Small white flowers are replaced with black fruits. Works well as an informal, sheared hedge or ground cover on banks. **Wildlife benefit:** Fruits eaten by songbirds, game birds and small animals. Provides good cover and nesting sites for many species of birds.

SuperStock seedlings are 12-18" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



Western Syringa or Mockorange (*Philadelphus lewisii*), an Idaho native and the state flower, grows 6-9 feet tall. In early summer, delicate and fragrant white flowers cover this shrub. It's very drought tolerant, often growing on rocky hillsides and in cracks in basalt fields. Syringa could probably be used in the outer rows of multi-row windbreaks. **Wildlife benefit:** Chipmunks and birds eat the seeds.

SuperStock seedlings are 8-16" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each

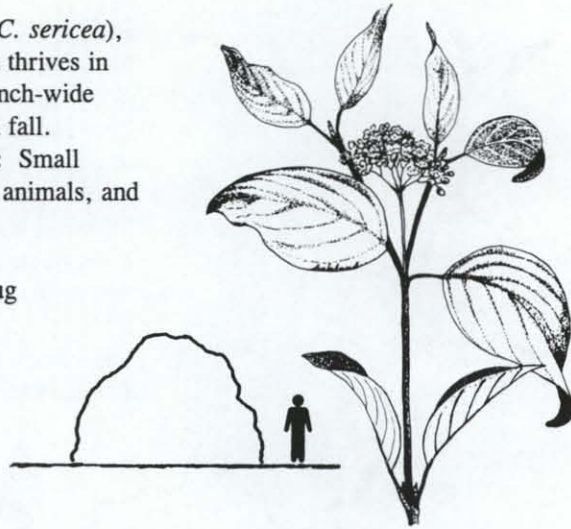


Nanking Cherry (*Prunus tomentosa*) is an attractive, upright shrub that produces abundant, edible fruit good for making jelly. Its fast growth and 6- to 10-foot height make it a good choice for the exterior row of multi-row windbreaks. Nanking cherry withstands heat, drought, cold and wind and may bloom 2-3 years after planting. **Wildlife benefit:** Produces abundant, red fruit eaten during the fall by robins, finches, waxwings, pine siskins, towhees, and catbirds.

SuperStock seedlings are 16-18" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each

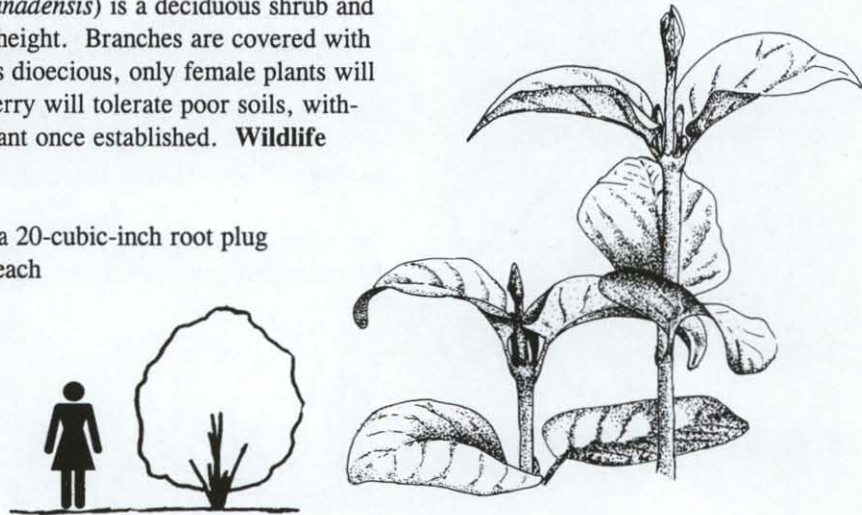
Redosier or Redtwig Dogwood (*Cornus stolonifera* or *C. sericea*), an Idaho native, is a deciduous shrub that grows 6-15 feet tall. It thrives in our coldest areas. Its new stems are bright red and bear 2- to 3-inch-wide clusters of small, white flowers in spring. Brilliant red foliage in fall. Prefers moist, rich soils in either sun or shade. **Wildlife benefit:** Small whitish to bluish berries are eaten by a variety of birds and small animals, and the multi-stem growth habit provide ideal nesting sites for birds.

SuperStock seedlings are 16-18" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



Russet Buffaloberry (*Shepherdia canadensis*) is a deciduous shrub and an Idaho native. It will grow to 8 feet in height. Branches are covered with cinnamon-colored fuzz. Since this plant is dioecious, only female plants will produce yellow or orange fruit. Buffaloberry will tolerate poor soils, withstands cold and wind, and is drought tolerant once established. **Wildlife benefit:** Sour fruits are eaten by birds.

SuperStock seedlings are 16-18" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



Siberian Peashrub (*Caragana arborescens*) is a dense, short shrub with multiple branches and thick foliage. It will reach mature heights of 12-15 feet in 5-7 years on irrigated land, 10-12 years on dryland. It is ideal for planting in the outer rows of windbreaks, or for single-row hedges as it can be trimmed easily. Its foliage extends to the ground making it a good snow and sound barrier. Siberian pea is probably the most frost/drought/alkaline-soil resistant shrub suited to Idaho growing conditions. **Wildlife benefit:** The yellow, pea-like flowers are a favorite of hummingbirds. Birds, including pheasant, quail, juncos, and chukars, eat the "peas" that form later.

SuperStock seedlings are 10-14" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



**September 1996
to
June 1997**

Seedling Order Form

**Please remove this center section and fill it
out completely. Return it along with your
check or money order to:**

***Seedlings
College of Forestry, Wildlife
and Range Sciences
University of Idaho
Moscow, ID 83844-1137***

**Questions? Call (208) 885-6444
or E-mail lindag@uidaho.edu**

YOU GET WHAT YOU PAY FOR...

When you buy our seedlings, you can be assured they will be shipped to you dormant, cold-hardy, and with the greatest potential for new root growth. Our seedlings are packed into freezer storage mid-winter during their peak physiological condition, locking in their hardiness, dormancy and root growth potential. We ship seedlings directly to you, hopefully just before you plan to plant them. That way, they still possess all of the vigor we've conditioned into them. Planting these dormant, cold-hardened seedlings is one of the best ways to ensure your plantation will flourish. Planted right away, these seedlings will even tolerate frost or a late season snow. Seedlings stored improperly (not refrigerated) or for a long period of time prior to planting, lose their dormancy, hardiness and their ability to grow new roots -- meaning growth is reduced and perhaps survival as well. Therefore, it's important you select the proper delivery date. For most folks in Idaho, prime planting time is mid-March through April, depending on elevation.

REMEMBER...

Your pickup or delivery date can be changed with just a phone call. We realize unexpected things can happen -- like the weather -- and the date you select on your order form may not always work out. You may also find that more than one pickup or delivery date is necessary. Please call us at (208) 885-6444. We are here to help you in any way we can!

You get what you pay for... dormant, cold-hardy seedlings with the ability to grow new roots, conveniently delivered to your doorstep just in time for planting.

Please Provide: Name _____ Date _____

Mailing Address _____
 Street _____ City _____ State _____ Zip _____

Do you want to receive next year's catalog? _____ Telephone (day) _____

Orders that are picked up:

DO NOT SHIP. Your seedlings will be packaged Monday or Tuesday of the delivery week you select below and may be picked up between 9:00 a.m. and 3:00 p.m., Monday through Friday at the nursery. See map on page 1 for directions. Orders cannot be held past June 1st.

Orders that are shipped:

Seedlings will be sent U.P.S. on Monday or Tuesday of the week you circle below. In Idaho, you can expect delivery by Friday of the week selected. To change your delivery week, please advise the nursery, by phone or in writing, at least 2 weeks in advance. The nursery is not responsible for undeliverable packages or delivery delays.

Pick up or shipping date selection:

Circle a pick-up or delivery week and **MARK THIS WEEK ON YOUR CALENDAR.** Your order must be received 2 weeks prior to the delivery week you select. Late orders may be shipped the delivery week following the one you select.

February 18	March 3	April 7	May 5
February 24	March 10	April 14	May 12
	March 17	April 21	May 19
	March 24	April 28	May 27
	March 31		

Order Identification Label

This is your U.P.S. shipping label -- please print clearly. Rural route addresses **MUST INCLUDE A TELEPHONE NUMBER.** Packages cannot be delivered to a post office box. Shipments to an Idaho address must include Idaho sales tax.

Name _____

Shipping Address _____

City/State/Zip _____

Telephone (day) _____

Shipping and Handling

There is no shipping or handling cost for orders picked up at the nursery. For all others, use the shipping and handling chart below to determine your cost.

Amount of Order	UP to \$100.00	101.00 to 200.00	201.00 to 300.00	301.00 to 400.00	401.00 to 500.00	OVER \$501.00
Send this Amount	\$8.50	\$14.00	\$22.00	\$29.00	\$35.00	C.O.D.

Order Total Cost

Total Conifer Cost		
Total SuperStock Conifer Cost		
Total SuperStock Hardwood Cost		
Total Special Package Cost		
	Subtotal	
Shipments to, or pickups in, Idaho must add 5% sales tax or give tax exempt number		
Shipping and handling cost		
	Total	

Make your check or money order payable to:

RESEARCH NURSERY - UNIVERSITY OF IDAHO. Do not send cash. *No refunds for orders cancelled after March 1, 1997. All cancelled orders are subject to a 20% restocking charge.*

Mail your check and order form to:

SEEDLINGS, College of Forestry, Wildlife and Range Sciences, University of Idaho, Moscow, ID 83844-1137.

Conifers

Quantity (multiples of 20 only)	Cost per Seedling 20 - 480	500+ of the same species	Cost
_____	Western larch .40	.28	_____
_____	Western white pine .40	.28	_____
_____	Ponderosa pine .40	.28	_____
_____	Blue spruce .40	.28	_____
_____	Douglas-fir .40	.28	_____
_____	TOTAL ORDERED	TOTAL COST \$	_____

Substitutions: _____ **No Substitutions**

SuperStock Conifers

Quantity (multiples of 5 only)	Cost per Seedling	Cost
_____	Rocky Mt. juniper 1.75	_____
_____	Western larch 1.75	_____
_____	Norway spruce 1.75	_____
_____	Engelmann spruce 1.75	_____
_____	Blue spruce 1.75	_____
_____	Western white pine 1.75	_____
_____	Austrian pine 1.75	_____
_____	Ponderosa pine 1.75	_____
_____	Scotch pine 1.75	_____
_____	Western redcedar 1.75	_____
_____	TOTAL ORDERED	TOTAL COST \$

Substitutions: _____ **No Substitutions**

SuperStock Hardwoods

Quantity (multiples of 5 only)	Cost per Seedling	Cost	Quantity (multiples of 5 only)	Cost per Seedling	Cost
_____	Sugar maple 1.75	_____	_____	Black cherry 1.75	_____
_____	Sitka alder 1.75	_____	_____	Nanking cherry 1.75	_____
_____	Serviceberry 1.75	_____	_____	Choke cherry 1.75	_____
_____	Mt. big sagebrush 1.75	_____	_____	Bur oak 1.75	_____
_____	River birch 1.75	_____	_____	English oak 1.75	_____
_____	Paper birch 1.75	_____	_____	Skunkbush sumac 1.75	_____
_____	Siberian peashrub 1.75	_____	_____	Golden currant 1.75	_____
_____	Peking cotoneaster 1.75	_____	_____	Black locust 1.75	_____
_____	Redosier dogwood 1.75	_____	_____	Rugosa rose 1.75	_____
_____	Russian-olive 1.75	_____	_____	Golden willow 1.75	_____
_____	Autumn-olive 1.75	_____	_____	Arctic blue willow 1.75	_____
_____	Green ash 1.75	_____	_____	Russet buffaloberry 1.75	_____
_____	Honeylocust 1.75	_____	_____	Native mountain-ash 1.75	_____
_____	Amur honeysuckle 1.75	_____	_____	White lilac 1.75	_____
_____	Common wild apple 1.75	_____	_____	Purple lilac 1.75	_____
_____	Western syringa 1.75	_____	_____	TOTAL ORDERED	TOTAL COST \$
_____	Hybrid poplar 1.75	_____	_____	_____	_____
_____	Quaking aspen 1.75	_____	_____	Substitutions:	_____ No Substitutions
_____	American plum 1.75	_____	_____	_____	_____
_____	Western sand cherry 1.75	_____	_____	_____	_____

Special Packages

Quantity	Cost per Package	Cost
_____	State of Idaho Package 30.00	_____
_____	Wildlife Lover's Package 70.00	_____
_____	TOTAL ORDERED	TOTAL COST \$

Remember to order early! Orders are accepted on a first-received-with-payment, first-reserved basis. For assistance with species selection or availability, call (208) 885-6444 or E-mail <lindag@uidaho.edu>



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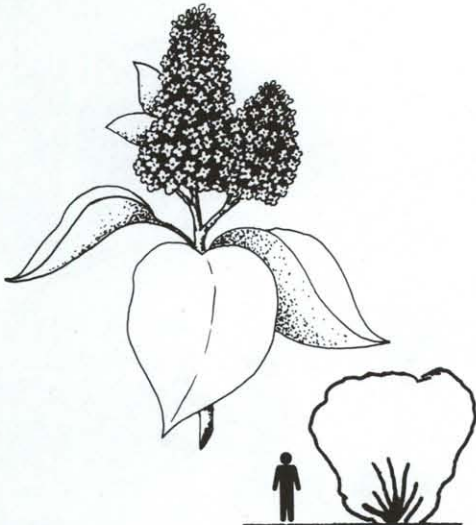
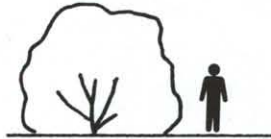
Arctic Blue Willow (*Salix purpurea*) grows into a very dense mound, making it a superb living snow fence. It's also ideal for planting as a single-row windbreak or in the exterior rows of multi-row windbreaks. Arctic blue willow has a moderate rate of growth, prefers moist soils, and reaches a mature height of 10-15 feet. **Wildlife benefit:** This dense plant is a fine source of cover for rabbits and birds. In Moscow, the pheasant, quail, and partridge roost and scratch under them during the winter.

SuperStock rooted cuttings are 18" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



Autumn-olive (*Elaeagnus umbellata*) is a dense shrub that tolerates heat and wind, and once established, also tolerates drought. It grows about 10 feet tall, making it suitable for the exterior rows of multi-row windbreaks and excellent for single-row hedges or screens. The foliage adds a silvery gray-green accent to any planting. **Wildlife benefit:** It abundantly produces red fruits in the fall highly sought by birds, including pheasants.

SuperStock seedlings are 10-16" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



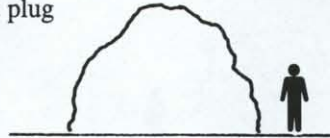
Purple and White Lilacs (*Syringa vulgaris* and *S. pekinensis*) have a moderate growth rate and reach 10-15 feet in height. Their dense growth and adaptability to a wide range of environments make them excellent choices for the outer rows of windbreaks. Lilacs do well on alkaline soils and may bloom 3 years after planting. Their large blossoms add aesthetic value in the spring. They are highly resistant to drought and cold and are very long lived. **Wildlife benefit:** Lilac provides cover and nesting sites for many species of birds.

SuperStock seedlings are 8-16" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75each

Amur Honeysuckle (*Lonicera maackii*) is a small, dense shrub ideal for a screen around buildings or driveways. Honeysuckle's moderate to fast growth and 10- to 15-foot mature height make it an ideal candidate for single-row plantings or the exterior portions of multi-row windbreaks. It bears many white flowers followed by red fruit that hold until fall. This drought-hardy shrub is also an effective living snow barrier. **Wildlife benefit:** Robins, waxwings, finches, woodpeckers, and other birds quickly eat the fruits as they ripen. The dense growth of this species provides cover for small animals, nesting sites for many birds, and winter cover for game birds.



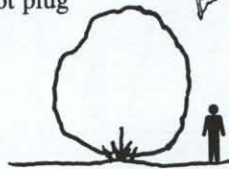
SuperStock seedlings are 10-16" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



Sitka Alder (*Alnus sinuata*), an Idaho native, matures into a 10- to 15-foot-tall shrub, growing at elevations up to timberline. It prefers moist slopes and streamsides where it will form thickets. Bacteria on Sitka alder roots remove nitrogen from the air which the shrub then uses for growth. It's a good choice for erosion control, planting on disturbed sites, and riparian zone enhancement. **Wildlife benefit:** Seeds are relished by songbirds, including pine siskins, American goldfinches and common redpolls, while the dense growth provides good nesting habitat. Also used by beaver and browsed by deer and elk.



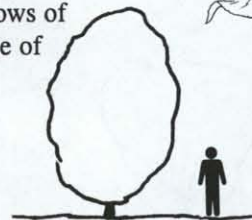
SuperStock seedlings are 8-10" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



Choke Cherry (*Prunus virginiana*) is a very hardy, large shrub or small tree, growing fast to a mature height of 10-25 feet. It bears white flowers clustered in hanging spikes that later produce dark, purple fruits. The fruits are a wildlife favorite and make good jellies and pies. Because of its dense, bushy growth form, choke cherry is an excellent choice for the outer rows of multi-row windbreaks. **Wildlife benefit:** The fruits are a prime source of food for chipmunks and many songbirds during the fall.



SuperStock seedlings are 14-18" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each





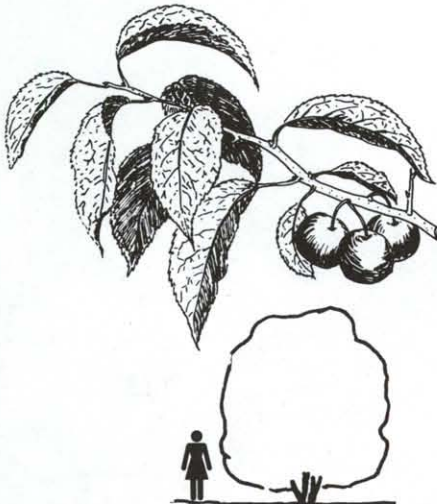
Native Mountain-ash (*Sorbus scopulina*) will grow to 6-20 feet in height in the mountains of Idaho. These shrubby trees provide good cover and nesting sites for birds, but it's the bright orange berries that hang into the winter that make this a wildlife favorite. Robins, waxwings and grosbeaks find them particularly tasty.

SuperStock seedlings are short but have good caliper and will grow well
Purchase in multiples of 5: \$1.75 each



Serviceberry (*Amelanchier alnifolia*) is an Idaho native called many things: Juneberry, shadblow, serviceberry, sarvisberry, Saskatoon, Saskatoon serviceberry, Amelanchier. Serviceberry is a deciduous shrub or small tree, growing to about 20 feet. In spring, it has drooping white or pinkish flowers that fade rapidly, replaced with pinkish fruits that turn purple when ripe. New foliage is purplish--fall color is red. Extremely cold-hardy and drought resistant once established. **Wildlife benefit:** The fruits are prized by birds -- often eaten by grosbeaks and orioles before they even have a chance to ripen! Fruits also eaten by bears and chipmunks. Foliage is browsed by deer, moose and elk.

SuperStock seedlings are 16-18" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



American Plum (*Prunus americana*), a large shrub or small tree (20-30 feet tall), is best adapted to moist soils. It has rapid growth with wide-spreading branches and grows well in the outer rows of multi-row windbreaks. This plum flowers profusely in the late spring, making it an attractive addition to any planting. The plum can be used to make jams, jellies, and pies. **Wildlife benefit:** Its dense growth provides cover and nesting sites for many species of birds. Bears and songbirds, including robins, woodpeckers, grosbeaks, finches and waxwings, eat the fruits.

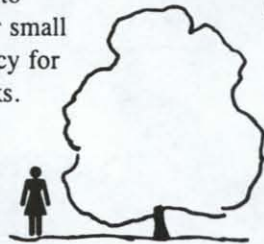
SuperStock seedlings are 16-18" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



Russian-olive (*Elaeagnus angustifolia*) is a dense, large shrub or small tree (20-30 feet tall) native to Europe and Asia. Early settlers were aware of its hardiness, and it's been planted for over 150 years. Russian-olive grows very well on droughty sites, alkaline soils, and very windy areas. Experts consider it one of the best species for dryland plantings. It has a rapid growth rate, and does especially well on good soil with ample moisture. Russian-olive is suitable for both single and multi-row plantings. The silvery green leaves and deeply furrowed bark make Russian-olive a very attractive tree for any use. It will spread by seed if moisture is adequate and has naturalized itself extensively in the Boise Valley, along the Snake River and its tributaries from Weiser to Pocatello, along the lower Clearwater River, and from Salmon to Challis on the Salmon River. New trees growing from seed spread by birds may interfere with farming operations in fields and pastures and may block irrigation canals. There is also concern that Russian-olive may displace native streamside vegetation. Once established, it is nearly impossible to eradicate. **Wildlife benefit:** The dense growth provides fine cover for small animals and nesting sites for birds. Ripening in fall, fruits are a delicacy for songbirds including chickadees, juncos, finches, towhees, and grosbeaks.



SuperStock seedlings are 10-16" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each



Common Wild Apple (*Malus pumila*), introduced from Europe and Asia, is now commonly naturalized throughout Idaho. Given full sun and moderate moisture, it will grow about 25-30 feet tall with a nearly equal spread. Small edible apples follow fragrant white flowers. **Wildlife benefit:** The small apples provide food for bears, chipmunks, robins, woodpeckers, waxwings, pheasants and deer. If left unpruned, the drooping lower branches provide winter cover for upland game birds.



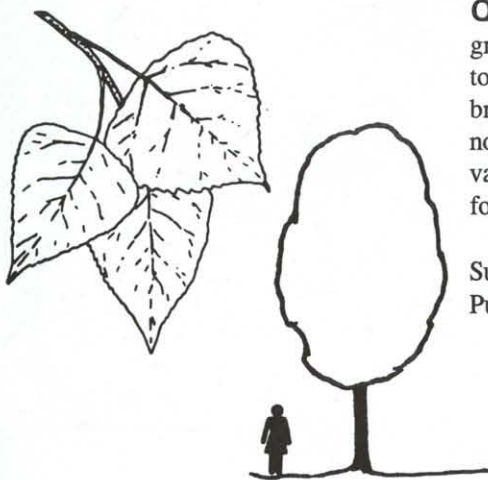
SuperStock seedlings are 10-16" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each



Green Ash (*Fraxinus pennsylvanica*) is a native to the eastern U.S. It grows moderately fast to 35 feet with an oval, compact, dense, twiggy crown. Leaves are nearly 12 inches long, made up of five to nine 5-inch-long leaflets. A tough tree, it will take wet soil and bitter cold and is drought tolerant once established. Leaves will burn in hot, dry winds so regular watering is necessary. Would make a good tree for the outer rows of multi-row windbreaks and riparian rehabilitation. **Wildlife benefit:** Songbirds love to nest in these trees and seeds are eaten by birds and small animals.

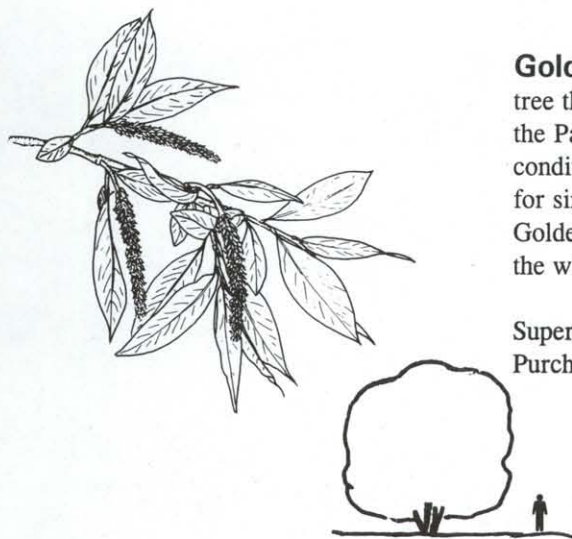


SuperStock seedlings are 12-18" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each



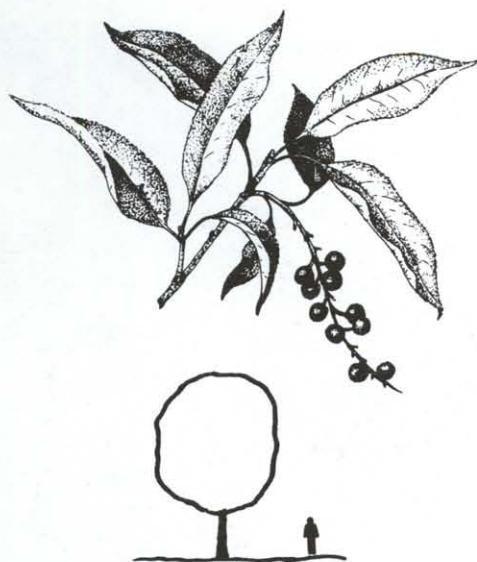
Quaking Aspen (*Populus tremuloides*) is an Idaho native which quickly grows to about 40 feet. The limbs and trunk are smooth, white to light-green to gray in color. Its leaves are round and "quake" or flutter in even a slight breeze and turn a splendid golden color in fall. Hardy throughout Idaho and not too particular about soil as long as the soil is moist. **Wildlife benefit:** A valuable browse species for big game, a favorite of beaver, and often drilled for sap by red-naped sapsuckers.

SuperStock seedlings are 18" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each



Golden Willow (*Salix alba var. vitellina*) is a medium-sized, fast-growing tree that attains heights of 40-50 feet at maturity. This willow grows well on the Palouse and on moist sites but has a wide adaptability to soil and moisture conditions. It should be watered if used in dryland plantings. It may be used for single-row plantings or for the central portions of multi-row windbreaks. Golden willow has bright yellow foliage in the fall and reddish-orange bark in the winter. **Wildlife benefit:** Perching sites for hawks and owls.

SuperStock rooted cuttings are 18" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each

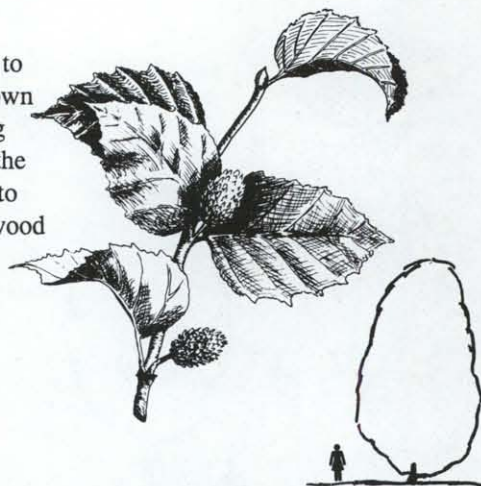


Black Cherry (*Prunus serotina*), most commonly known for its use in fine furnishings, is a medium-sized tree (40-50 feet tall). Growing best in deep, well-drained soils, it has proven to be very hardy in Idaho, easily withstanding late spring and early fall frosts. This species is moderately drought resistant, but may need supplemental water for establishment. Black cherry is one of our most handsome domestic woods, long sought for its excellent quality and high value. With a reddish-brown color and high luster when properly finished, this wood has excellent working qualities, low shrinkage, and freedom from checking and warping, making it a favorite material of cabinetmakers. These wood qualities, combined with its hardiness, high wildlife value, and the relative scarcity of this species, make it an ideal tree for planting in plantation and conservation settings. **Wildlife benefit:** Produces abundant, red fruits eaten during the fall by robins, waxwings, finches, towhees and grosbeaks.

SuperStock seedlings are 12-18" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each

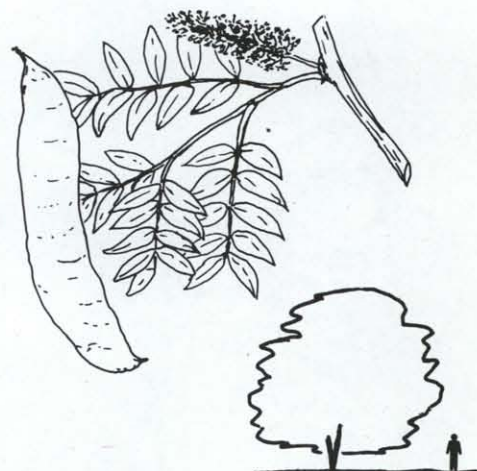
River Birch (*Betula nigra*), a medium-sized tree, is a graceful addition to plantings. Young bark is smooth and flaking, curling off in cinnamon-brown sheets as the tree matures. River birch enjoys ample moisture, responding with fast growth to a mature height of 50-60 feet. This tree will work in the outer rows of multi-row windbreaks or for sun and wind reduction closer to home where its beauty can be enjoyed. This species is more resistant to wood borers than many other birches. **Wildlife benefit:** Songbirds, especially juncos, pine siskins and redpolls, eat the scale-like seeds each winter.

SuperStock seedlings are 12-18" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



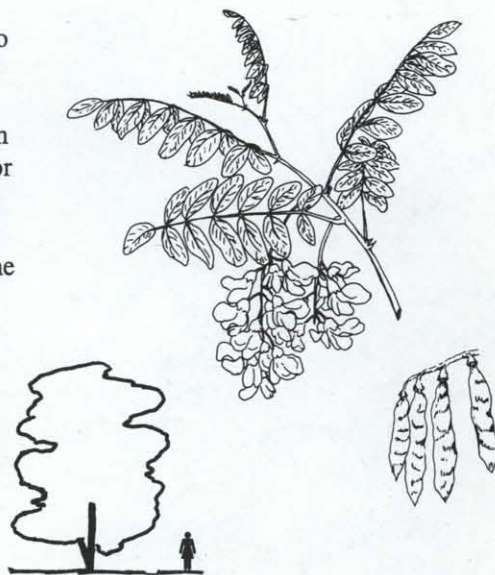
Honeylocust (*Gleditsia triacanthos var. inermis*) will grow under a variety of moisture and soil conditions and does well on hot, dry sites. We recommend it for the center portions of multi-row windbreaks. It's hardy up to 5000 feet in southern Idaho and 3500 feet in northern counties. Honeylocust is becoming popular as an ornamental due to its wide-spreading crown and relative freedom from insect and disease problems. The variety *inermis* does not produce the 2- to 4-inch long thorns found on other varieties of honeylocust. **Wildlife benefit:** Good roosting and nesting tree for hawks and owls.

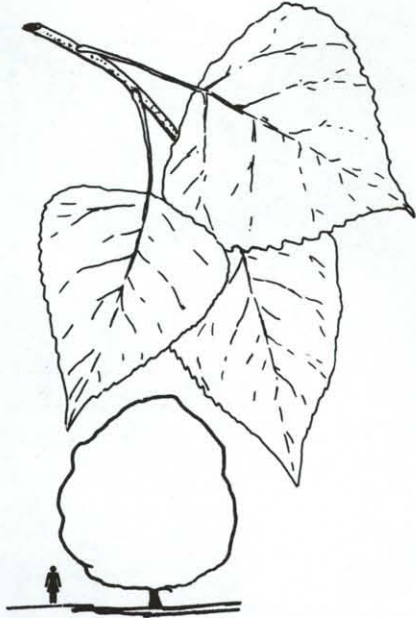
SuperStock seedlings are 10-16" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



Black Locust (*Robinia pseudoacacia*) is a rapidly growing tree adapted to a wide range of soils. It does well in hot, dry areas and is very drought tolerant. Black locust's wide-spreading root system is useful in controlling erosion. The roots have nitrogen-fixing nodules that actually release nitrogen into the soil. This "fertilizing" characteristic is very beneficial on disturbed or sterile soils. The nitrogen released into the soil by the system may stimulate growth of neighboring plants in multi-row plantings. Black locust is a long-lived tree that, at maturity, will be 40-75 feet tall. This tree grows best in the center portions of windbreaks. Black locust has very dense wood and therefore is excellent for fence posts or firewood. Wood borers are killing this tree in some areas of southern Idaho; check with your county agent if borers are a problem in your area. **Wildlife benefit:** Good roosting and nesting tree for hawks and owls. Bees actively visit the white flowers in spring.

SuperStock seedlings are 14-18" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each





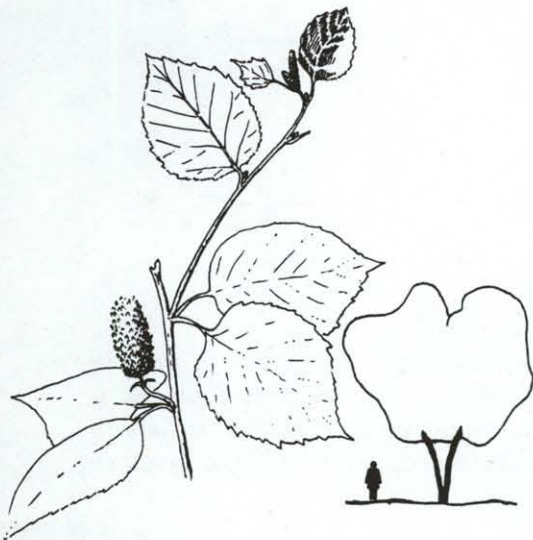
Idaho Hybrid Poplar (*Populus spp.*) grows rapidly, as much as 6-10 feet a year under irrigated conditions. Discovered approximately 40 years ago, this variety is especially well adapted to the climate, soil, and growing conditions encountered in Idaho. If properly cultivated, this hybrid will offer quick wind protection or screening. In 5-7 years this tree will be large enough to harvest as firewood. Hybrid poplar burns more quickly than many conventional firewood sources. The two most important aspects of planting poplars are 1) the soil, and 2) weed control. Poplars grow best on well-drained soils with high water and nutrient availability. They will grow on just about any type of soil, but as available water and nutrient levels decrease, or drainage becomes limited, growth will be reduced. Controlling weeds in your plantation allows all the available nutrients and moisture to be used by the trees, thus improving their growth. **Wildlife benefit:** Good roosting and nesting tree for hawks and owls, and nesting by many species of birds.

SuperStock rooted cuttings are 18" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each



Sugar Maple (*Acer saccharum*) is a large deciduous tree native to the northeastern U.S. A source of maple sugar, it grows moderately fast to about 60-70 feet or more. Good fall color of yellows, oranges and reds. Plant where it has access to plenty of water--deep watering and periodic fertilizing will help keep roots down below the soil surface.

SuperStock seedlings are 12-18" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each

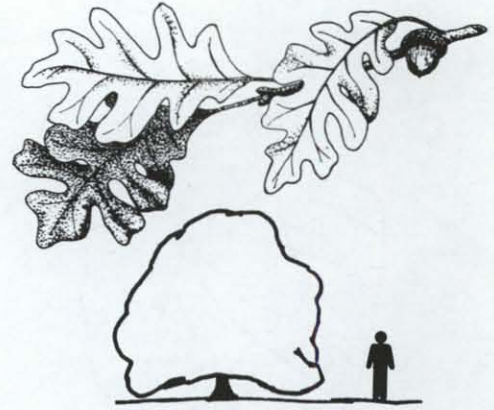


Paper Birch (*Betula papyrifera*) is native in northern Idaho and may grow to 80 feet. Its crown, more open than on other birches, is rounded or pyramid-shaped with leaves sometimes 4 inches long. The bark turns white and peels in long, narrow, papery, horizontal strips. It is hardy throughout Idaho and not too particular about soil as long as the soil is moist. Lack of moisture during the growing season will make this tree susceptible to borers. **Wildlife benefit:** Songbirds, especially juncos, pine siskins and redpolls, eat the scale-like seeds each winter.

SuperStock seedlings are 12-18" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each

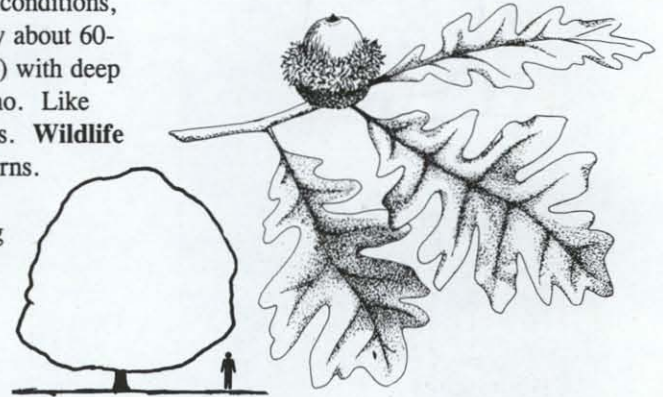
Gambel's Oak (*Quercus gambellii*) is native to the central Rocky Mountains, although not to Idaho. Grows slowly to 15-30 feet. The trunk is usually light-gray to whitish and leaves are light green before turning yellow, orange, or red in fall. Tolerates most soil conditions and once established very drought tolerant. **Wildlife benefit:** Acorns eaten by deer, squirrels, bear, and turkey.

Gambel's Oak is not available this season.



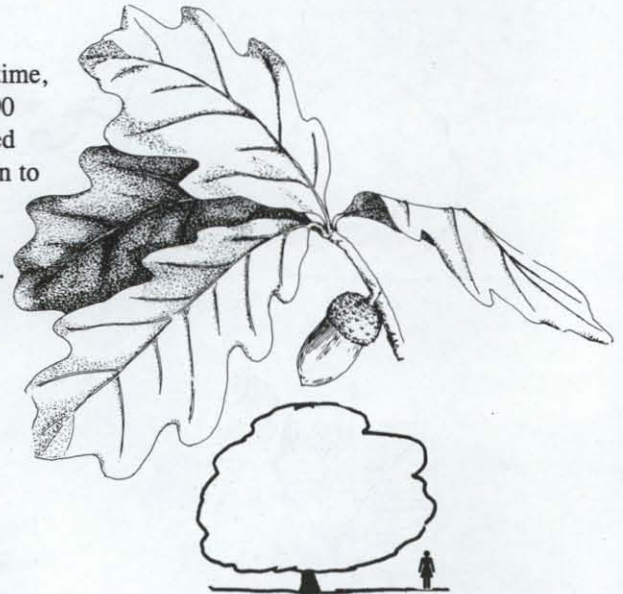
Bur Oak (*Quercus macrocarpa*), rugged and tolerant of adverse conditions, this lovely oak ranges westward into the Great Plains. It will grow about 60-75 feet tall with a 30-foot spread. Its leaves are large (8-10 inches) with deep lobes. We grow seedlings from acorns collected in Pocatello, Idaho. Like the other oaks, it should be watered during the first 2-3 dry seasons. **Wildlife benefit:** Squirrels, chipmunks, deer, birds and turkeys eat the acorns.

SuperStock seedlings are 12-18" tall with a 20-cubic-inch root plug
Purchase in multiples of 5: \$1.75 each



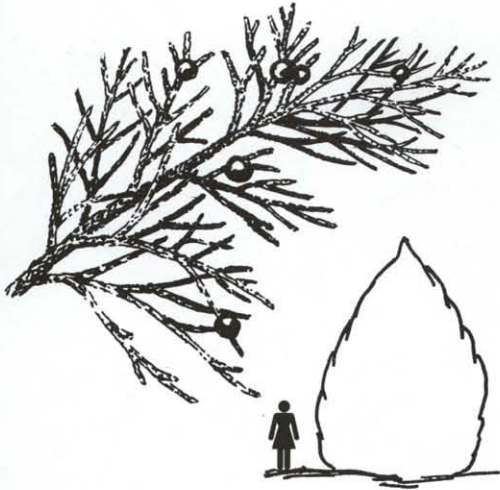
English Oak (*Quercus robur*) grows, in a moderately short period of time, into a wide-spreading tree with a short trunk. It may grow as tall as 75-90 feet and has leaves with rounded lobes that persist into late fall. It's suited only for areas along the Snake River, the Clearwater River from Lewiston to Orofino, Moscow vicinity, and the valleys from Coeur d'Alene north to Bonners Ferry (*Sunset Western Garden Book* zones 2 or 3). This oak withstands drought but should be watered during the first 2-3 dry seasons. **Wildlife benefit:** Squirrels, chipmunks, deer, birds and turkeys eat the acorns.

SuperStock seedlings are 10-14" tall with a 20 cubic inch root plug
Purchase in multiples of 5: \$1.75 each



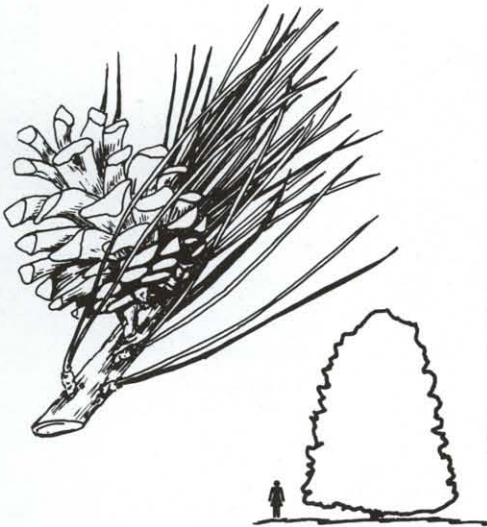
How to Get Your Oaks to Grow Faster

According to the *Sunset Western Garden Book* published by Lane Publishing Company of Menlo Park, California, oaks planted in your yard should grow vigorously (1½ - 4 feet per year). The authors go on to say, "By nature, many young oaks grow twiggy. Growth is divided among so many twigs that none elongates fast. To promote faster vertical growth, pinch off the tips of unwanted small branches, meanwhile retaining all leaf surface possible in order to sustain maximum growth."



Rocky Mountain Juniper (*Juniperus scopulorum*), an Idaho native, attains heights of 20-30 feet with a medium to rapid growth rate. Although highly drought tolerant, Rocky Mountain juniper grows on a wide range of soils and will tolerate a high water table. It forms a very dense, symmetrical crown and is a superior small tree for windbreaks in this region. In winter it changes color from shades of grey to purple grey. **Wildlife benefit:** This tree provides excellent cover and food for Idaho birds and is also useful for nesting and roosting sites.

SuperStock seedlings are 18" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each



Austrian Pine (*Pinus nigra*) has a fast rate of growth, growing 18-24 inches a year once established, and eventually achieves heights of 40-60 feet. It has a dense, dark green crown. It holds its lower branches very well, and is an excellent tree with irrigation. If planted without supplemental watering in localities with less than 20 inches of annual precipitation, it needs a deep, fertile soil with good moisture-holding capacity. **Wildlife benefit:** If the lower branches are retained, this tree will provide excellent winter cover for pheasant, quail and partridge, as well as for small animals and other birds. Songbirds, including nuthatches, crossbills and chickadees, eat the seeds.

SuperStock seedlings are 6-10" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each



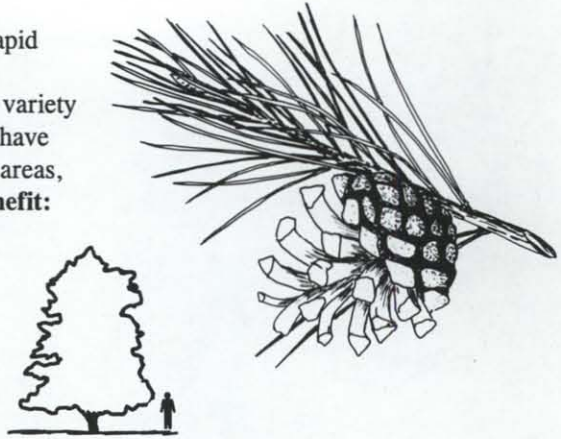
Blue Spruce (*Picea pungens var. glauca*) can grow unusually slowly the first 1-3 years after planting, but has a medium growth rate after that. Its crown is very dense with attractive pyramidal form, reaching heights of 50-60 feet. It makes an excellent windbreak species in most regions of the state and traps and holds snow well. The color varies from green to blue, but we grow seedlings from seed collected on the Kaibab National Forest to ensure more blue foliage. **Wildlife benefit:** Blue spruce provides excellent winter cover for upland game birds and small animals.

Seedlings are 6-8" tall with a 4-cubic-inch root plug
 Purchase in multiples of 20: 20-480 \$.40 each
 500+ \$.28 each

SuperStock seedlings are 8-14" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each

Scotch Pine (*Pinus sylvestris*), native to northern Eurasia, has a rapid growth rate, reaching mature heights of 40-70 feet. Widely used for windbreaks, this pine is generally easy to establish, adapting well to a variety of soil conditions. There are many strains of Scotch pine, and not all have good form; we sell the Guaderrama variety. It's not suited for desert areas, and the lower branches tend to die out at close spacings. **Wildlife benefit:** Chipmunks and birds eat the seeds.

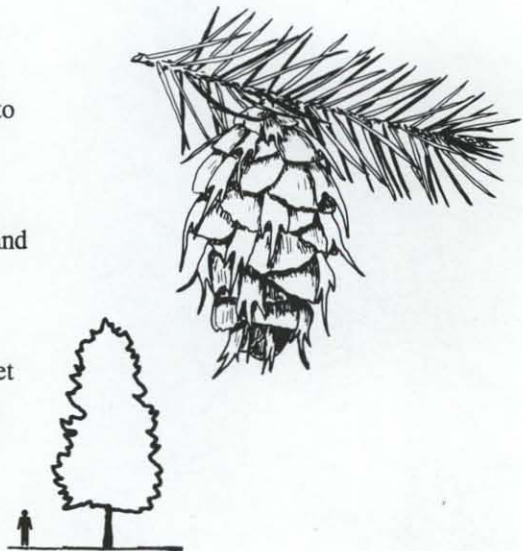
SuperStock seedlings are 6-12" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each



Douglas-fir (*Pseudotsuga menziesii*), an Idaho native, has a medium growth rate. It needs a well-drained soil for best growth and can reach mature heights of 60-80 feet in windbreaks. Douglas-fir is more difficult to establish under irrigation than Scotch pine or Norway spruce. Growth is generally slow without supplemental watering in areas with less than 18 inches of annual precipitation. **Wildlife benefit:** Seeds eaten by many species of birds, including crossbills, nuthatches and chickadees. Hawks and owls use it for roosting.

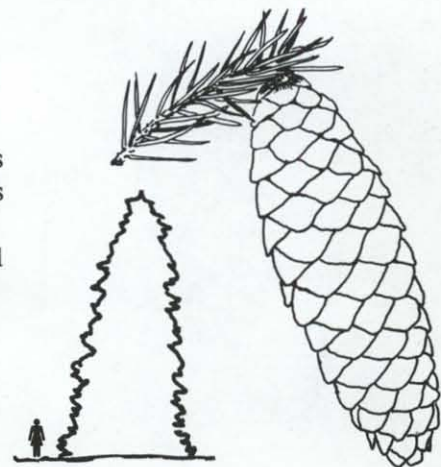
Reforestation information: Bovill, Idaho seed source, 3100' elevation. Doug-fir, red-fir, or yellow-fir all name this tree that grows to 100-130 feet with a 2-3 feet diameter. It's most abundant on moist sites, but also with ponderosa pine on drier sites.

Seedlings are 6-8" tall with a 4-cubic-inch root plug
 Purchase in multiples of 20: 20-480 \$.40 each
 500+ \$.28 each



Norway Spruce (*Picea abies*) is a rapid growing tree that attains heights of 60-80 feet. Its crown is dense and extends to the ground unless the base is in heavy shade. Norway spruce has higher moisture and fertility requirements than the pines, but it does fairly well in dryland plantings if soil is deep and fertile. **Wildlife benefit:** Provides good winter cover for birds and small animals, and it's a good roosting tree for hawks and owls.

SuperStock seedlings are 14-18" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each



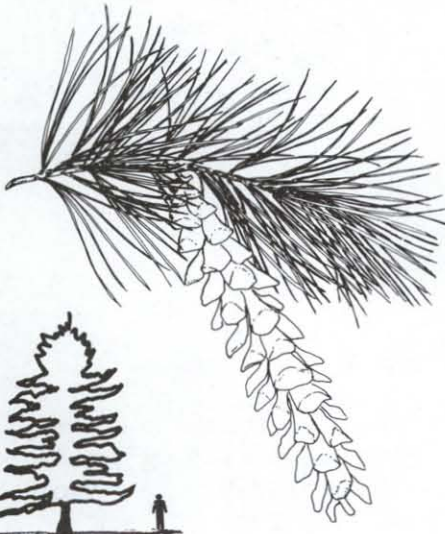


Ponderosa Pine (*Pinus ponderosa*), an Idaho native, has a fast growth rate (18-24 inches a year once established) and attains a mature height of 60-80 feet in windbreaks. It withstands hot, dry sites well, and adapts well to a variety of soil conditions but must have good drainage and full sunlight. Many consider this pine to be the most reliable evergreen for windbreaks. **Wildlife benefit:** Ponderosa pine provides excellent cover and nesting sites for many birds. Chipmunks, ground squirrels and birds, including grosbeaks, chickadees, finches, siskins, crossbills, nuthatches, and turkeys will eat the seeds.

Reforestation information: Northern Idaho seed source, 3000' elevation. Ponderosa pine is not exacting in soil requirements and has great resistance to drought. It grows best on moister sites, but also is a good choice for southerly exposures.

Seedlings are 6-8" tall with a 4-cubic-inch root plug
 Purchase in multiples of 20: 20-480 \$.40 each
 500+ \$.28 each

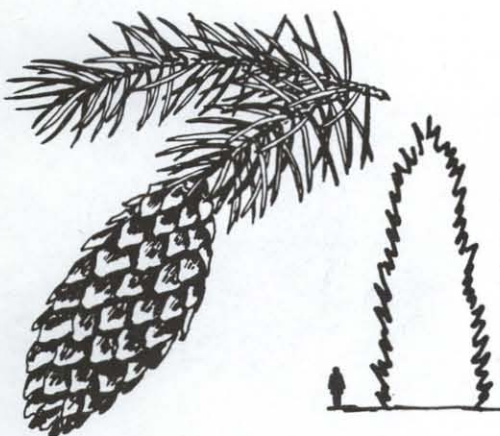
SuperStock seedlings are 6-12" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each



Western White Pine (*Pinus monticola*) is an Idaho native and the state tree. We recommend it only for reforestation or limited landscape usage. This rapid growing evergreen with blue-green foliage grows best on rich, porous soils in moist valleys and on middle and upper slopes of northerly exposure. Our seed source, the Moscow Arboretum, offers the highest available blister-rust resistance. It's the same seed source used by the U.S. Forest Service, Idaho Department of Lands, and private industry.

Seedlings are 4-6" tall with a 4-cubic-inch root plug
 Purchase in multiples of 20: 20-480 \$.40 each
 500+ \$.28 each

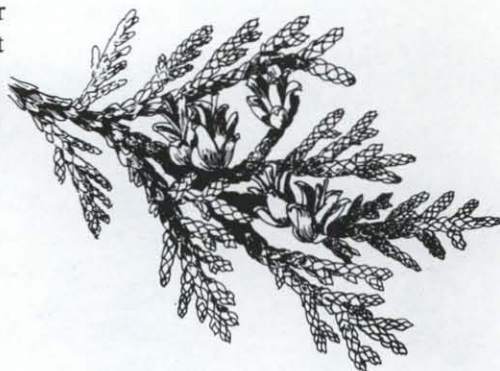
SuperStock seedlings are 6-10" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each



Engelmann Spruce (*Picea engelmannii*), typically a mountain species, will attain heights of 100-120 feet and d.b.h. of 18-30 inches. It prefers deep, rich, loamy soils of high moisture content. Seedling development is poor in deep shade or full sun.

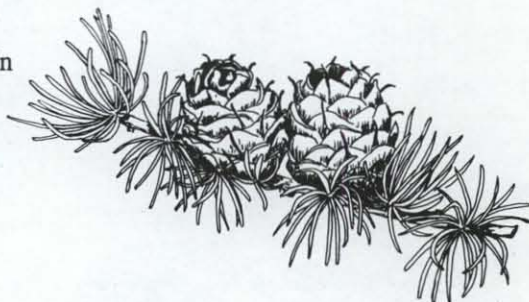
SuperStock seedlings are 10-12" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each

Western Redcedar (*Thuja plicata*) is an Idaho native recommended for reforestation and riparian enhancement. Mature height is 150 feet and 4 feet d.b.h. although in the wild, trees grow to over 18 feet d.b.h. This cedar prefers to grow on moist flats and slopes, and along stream banks and bogs. It's a fast grower, but it must have plenty of water. Sandpoint, Idaho seed source, 3000' elevation.



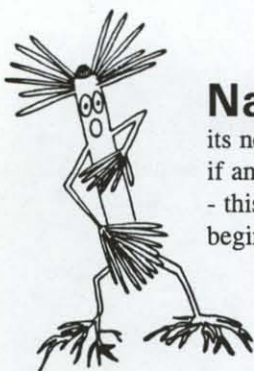
SuperStock seedlings are 12-18" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each

Western Larch (*Larix occidentalis*) is an Idaho native recommended primarily for reforestation. It attains maximum growth on deep, moist, porous soils in high valleys, and on northerly or westerly exposed slopes. Seedling growth is exceptional, as 4-year-old plants may exceed 8-10 feet in height. Kootenai National Forest seed source, 2700' elevation.



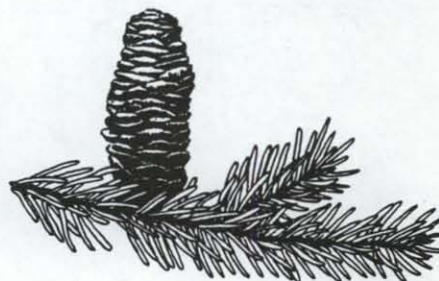
Seedlings are 10" tall with a 4-cubic-inch root plug
 Purchase in multiples of 20: 20-480 \$.40 each
 500+ \$.28 each

SuperStock seedlings are 12-18" tall with a 20-cubic-inch root plug
 Purchase in multiples of 5: \$1.75 each

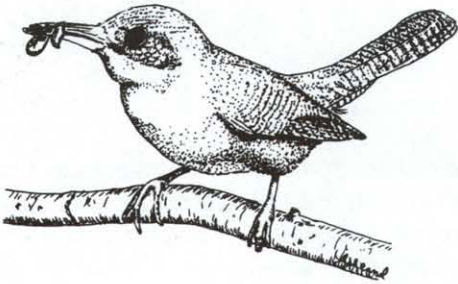


Naked Larch! Western larch is one of very few deciduous conifers, that is, it loses its needles each winter. If you ordered larch seedlings, you'll notice they have very few needles, if any, and the needles are a deep red to maroon. Although the seedlings look dead, don't worry - this spring the buds will open and new, green needles will grow. Next fall the needles will begin their annual ritual of turning yellow and falling to the ground.

Grand Fir (*Abies grandis*), an Idaho native also known as white fir, seldom exceeds 120 feet or 3 feet d.b.h. It occurs most frequently on deep, moist alluvial soils, in gulches, along streams, and on gentle slopes of northerly exposure. We grow the Sears Creek, Idaho seed source as it has better form for Christmas trees.



Grand Fir is not available this season.



WILDLIFE LOVER'S PACKAGE

This pre-packaged offer contains 50 seedlings that will grow into prime sources of food or cover for wildlife. Each package contains 10 species, and all species are suitable for both northern and southern Idaho. You will receive American plum, Nanking cherry, choke cherry, western sand cherry, autumn-olive, rugosa rose, wild apple, cotoneaster, blue spruce, and Austrian pine.

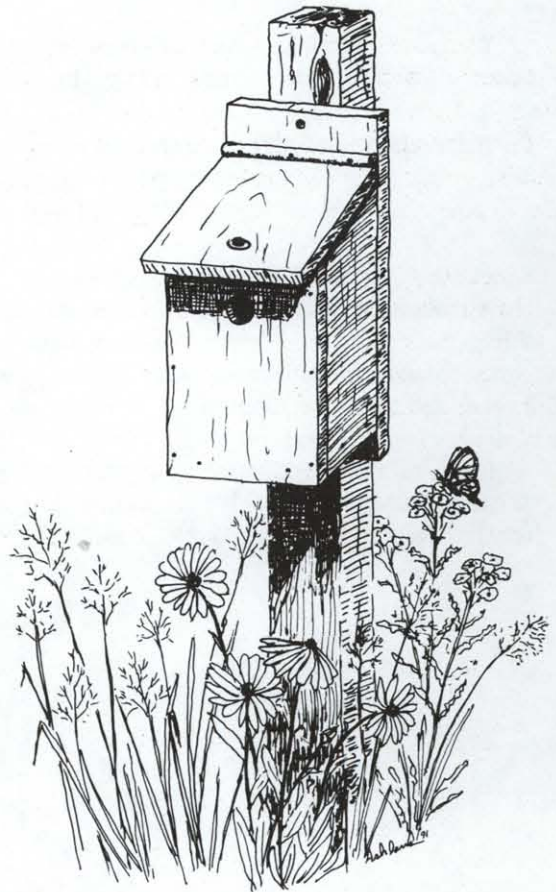
Each Wildlife Package is \$70.00

No substitutions, please!

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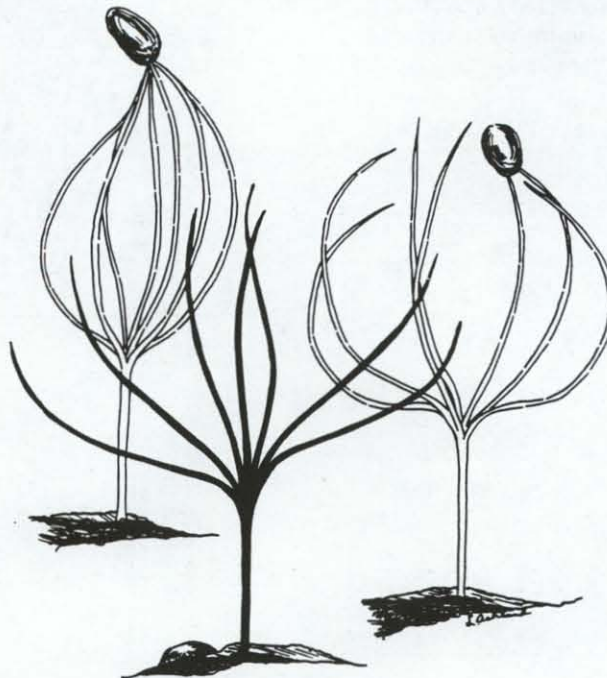
We invite companies which supply reforestation or closely related products or services to advertise in a special section of our Fall 1996 - Spring 1997 guide.

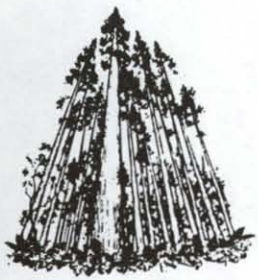
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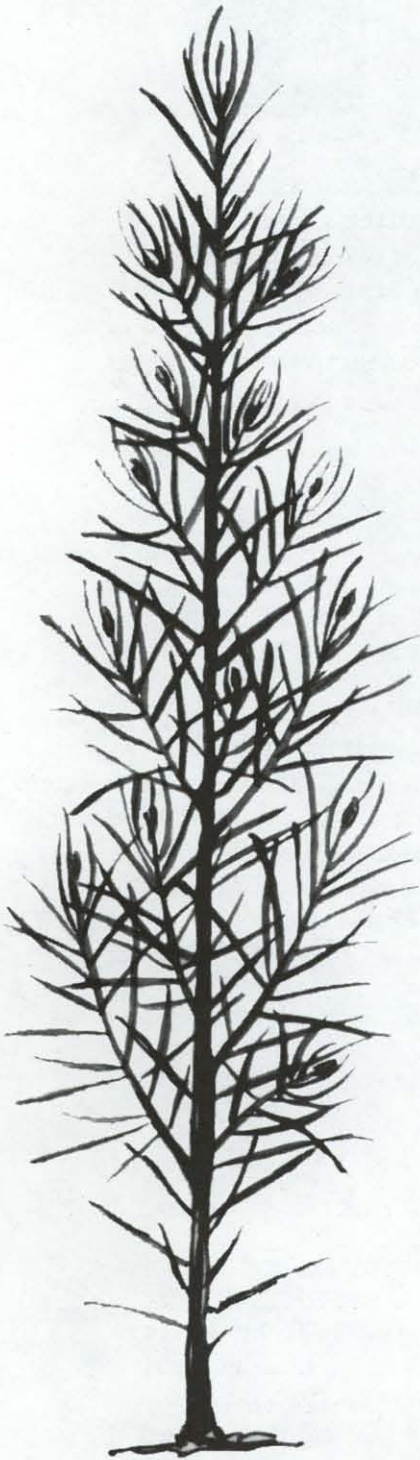
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