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Grow Trees for Commercial Purposes : Extension Circular 17-31-2

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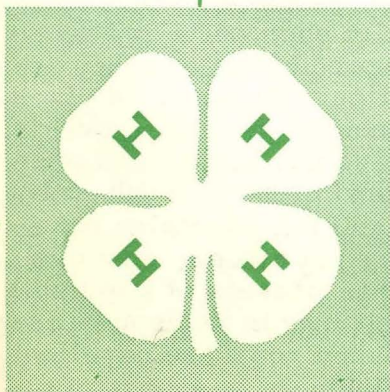
GROW TREES

for commercial purposes

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Grow Trees for Commercial Purposes

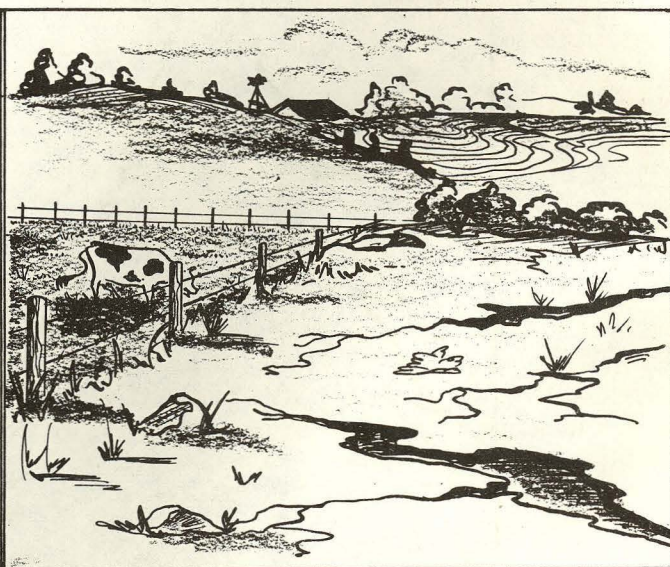
BY KARL LOERCH

Extension Forester

This manual covers Walnut Plantations, Post Plantings, and Christmas tree plantings. Project requirements are that you make a plan and follow through with it. The plan must include one of the following:

Plant and care for at least 100 trees for a commercial purpose such as the production of Christmas trees, the production of fence posts, or the planting of a walnut plantation.

For those of you who are interested in growing trees to make money, a commercial tree plantation might be worth considering. This sort of project has many advantages. It does not cost much to start. It is a project that can be expanded as you gain capital and knowledge. It can be carried on for several years and presents good possibilities for future income. Black walnut for timber, a post plantation, and growing Christmas trees are all possibilities in Nebraska.



PLANNING A WALNUT PLANTING

The black walnut is one of the most valuable native trees of Nebraska. Its timber is useful and the nuts furnish valuable food. In general there has been no management of walnut on most farms. The trees have just been allowed to grow and even under these conditions walnut timber has been sold from many farms in large quantities.

These trees have brought their owners a considerable amount of money. The returns, however, could have been much better if some care and planning had been applied to these trees. Walnut is a slow growing tree taking around 50 years to produce timber of marketable size. A walnut plantation started as a 4-H project would be a truly life-time project, with trees ready for sale in your retiring years.

Where to Plant

Walnut needs good agricultural soil. A fertile clay or sandy loam soil underlaid by clay subsoils, deep, moist and well drained, is best. Usually such soils are more profitable for crop production than they are for walnut production. However, a place where a walnut plantation does fit in well is on waste fertile land not being used presently for agricultural crops. Rough, hilly places, with good soil but otherwise not adapted to farming practices, ravines, stream banks, large pockets of good soil among rocky outcroppings in fields and pastures, and along fence rows are excellent places to grow walnut.

Planting Nuts



In establishing your plantation you can use either nuts or seedlings. If you plant nuts, it is best to do it in the fall from the time the nuts ripen until the ground freezes. Nuts should not be allowed to dry before planting. In case of a very dry fall it may be best to wait until the following spring to plant. In such a case the nuts should be hulled and stored in a cellar between layers of sand and kept moist and cool until the following spring. If you do not have a cellar, a moist, well drained sand bank will work well for a place to store walnuts. Gather nuts from fast growing, well formed trees.

When planting seed walnuts, it is best to dig the holes about four inches deep, place two inches of moist soil over the nut, pack the soil with your heel, then cover with two inches of leaves. The leaves will keep the top soil from drying out.

Planting Seedlings

In Nebraska the best time to plant seedlings is in the spring. You can raise your own seedlings from nuts planted in a row in your vegetable garden. The seedlings can also be purchased from a nursery.

In planting seedlings, the tap root should not be cut back too severely. The hole should be dug large enough to allow the roots sufficient space without crowding. Extreme care should be taken to keep the roots protected from drying. Top soil should be used in the bottom and the lower part of the hole and packed well around the roots. If the soil is not sufficiently moist, water should be added in the hole at planting time. In transplanting, the tree should be set slightly deeper than it previously grew in the nursery, and roots kept moist and protected while planting.

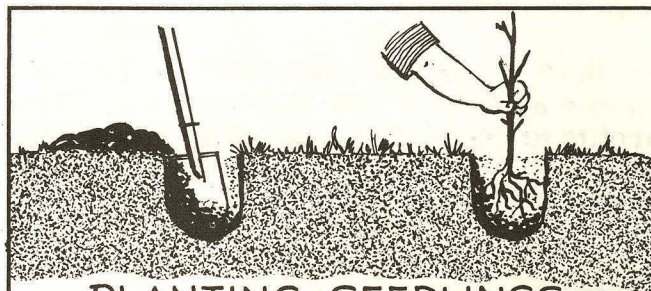
Spacing Distance

The final distance of your walnut planting should be not less than 30 feet each way. Walnut trees require lots of light. The crowns must have good space so the tree can make its best growth.

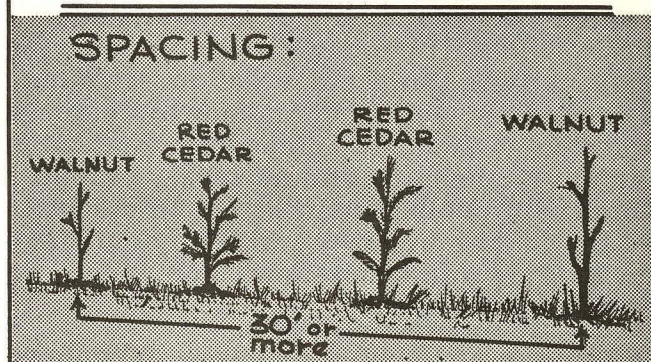
A common practice is to plant two filler trees each way between the walnuts. Red-cedar or black locust are commonly used as filler trees. These trees help shade out weeds and grass and stimulate the upward growth of the walnut in its early years of growth. They can be cut for fence posts after they have served their purpose as filler trees.

Protection

Plans should be made at time of planting to protect your walnut trees from livestock. Any mechanical damage will lower the value at time when they are ready to sell. Never staple a fence to a walnut tree-it will cost you money.



PLANTING SEEDLINGS



PROTECTION

Management

If possible, the trees should be cultivated—at least for several feet around them. Pruning should start when the trees are about five years old. Pruning should be done in the fall or early spring. Strive for the production of a straight and branch-free tree at least 24 feet from ground to first limb when the tree reaches maturity. A good practice is not to take more than one-fourth of the live crown at a pruning. Severe pruning will seriously reduce the growth rate of the tree.



PLANNING CHRISTMAS TREE PLANTINGS

Most Christmas trees purchased by Nebraskans are shipped in from other states. It is possible for you to grow your own Christmas trees and make money doing it. Home grown trees have better color, hold their needles longer, and are fresher since it is not necessary to cut them months before Christmas.

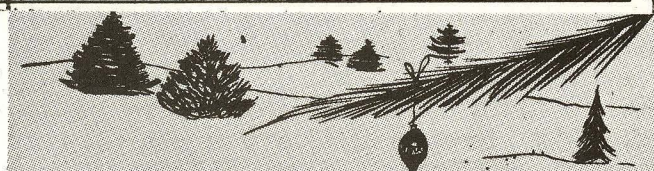
Such trees are preferred by the consumer and sell for a higher price. The profits to the producer should be good, providing he is willing to spend time in management and marketing his product correctly.

Where to Plant

In selecting a site it is best to choose neither very poor land nor very fertile land. Poor land will produce a poor appearing tree, stunted and not vigorous looking. Very fertile soil may induce too rapid a growth. The lateral branches tend to be far apart, resulting in an open, undesirable tree. This condition can be corrected by proper pruning, which requires a lot of time and know-how, and should be avoided if possible.

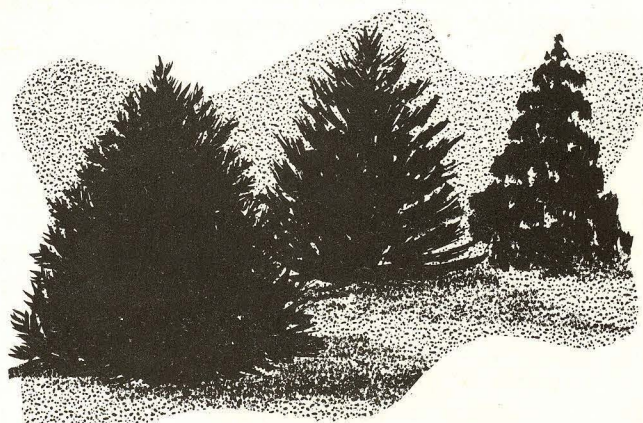
Spacing

Six feet by eight feet is standard spacing for plantings of this type and should be used where cultivation is not practical, such as on sandy, erodable soils or on steep, rough land. Cultivation should be practiced when possible and in order to facilitate this operation a spacing of four feet by twelve feet is more practical. Your Christmas tree planting should be fenced to exclude livestock.



Species to Use

The recommended species for the production of Christmas trees on average sites in Nebraska include Austrian, Scotch, and Ponderosa pine, and Rocky Mountain juniper. On exceptionally good sites, and with a great deal extra care, Colorado blue and Black Hills spruce and Douglas-fir are good possibilities. A good plan would be to use more than one of the species in your planting. Such a plan will lessen disease and insect risk and will give your customers a choice of species.



Management

As your trees grow, they may require pruning from time to time in order to maintain a dense, compact crown. Most of your pruning work will be done between the third and eighth year after planting. In case of a broken leader, repair the damage to avoid producing an ill shaped tree. This can be done by making a leader out of one of the side branches.



The profit you will make on a Christmas tree project will depend on your success in all phases of the work, from the time the trees are planted until they are finally sold. You can expect to be selling some trees by the eighth to tenth year of operation. As the trees are cut you can replant. This will give you a continuous supply of trees to sell, keep your land always in production, and give your customers a wider choice of size.

The location of your planting is important. If it can be next to a traveled highway and handy to drive to by car it will be an advantage. When the trees are ready for sale, a road sign inviting people to pick their Christmas tree from the field may solve your marketing problem. An ideal location is not always possible for your Christmas tree plantation. Pick the best one available, keeping all angles of production and marketing in mind.



PLANNING POST PLANTINGS

Good posts can be sold. They are very much in demand for use on farms all over the state. From the standpoint of dollars and cents Nebraskans should be growing more of the posts used in the state.

Species to Use

Cedar, catalpa, black locust, mulberry, and osage orange are the most satisfactory trees to grow in Nebraska if you have post production in mind. Cedar and mulberry will grow in most areas of the state. Catalpa, black locust, and osage orange grow satisfactorily in a limited area in the southeastern section of the state. The "Tree and Shrub Planting Guide" in the back of the manual will help you decide which to plant.

Where to Plant

Post plantings are usually made on land that is not very satisfactory for agricultural crops. It may be a few acres that flood from time to time, making crop production impossible, or it may be very sandy, or too steep and rough for farming operations. In many cases the protection of the land from washing and blowing is the first consideration and the production of posts is secondary. It also may be a means of establishing a permanent vegetation as almost a last resort.

Spacing

In planting trees for post production a close spacing between trees is desirable. If planted in this manner the tree growth will be stimulated upward and the tendency to branch will be less. The posts will be straighter and will vary less in diameter from end to end. Six feet by eight feet is the recommended spacing where cultivation is not practical, and four feet by twelve feet is best where cultivation can be carried on.

YOUR PREPARATIONS FOR PLANTING

The final success with tree planting in Nebraska depends largely upon how you:

- (1) prepare the ground for the planting
- (2) handle and plant the trees.
- (3) take care of them after planting .

Preparing the Ground

Because eastern Nebraska usually receives more rainfall than western Nebraska, recommendations as to preparing the ground vary. Sandy soils are treated differently than medium and heavy textured soils to prevent wind erosion.

In eastern Nebraska the planting site should be prepared by plowing or listing in the fall. Leave the soil in a roughened condition to prevent wind erosion and to catch and hold winter moisture. Then work the ground well in the spring by disking or harrowing.

In western Nebraska the planting site should be summer fallowed at least one year prior to planting in order to conserve moisture. Then work the ground well in the spring just before planting.

If planting is to be done on rolling land, plow or list on the contour rather than up and down the slopes. This practice will decrease runoff and save as much moisture as possible.

Sandy soils are subject to wind erosion. For this reason, no preparation of the site prior to planting is recommended. Planting should be done in shallow furrows. Leave the sod between the rows undisturbed.

Handling the Trees

When the seedling trees arrive from the nursery, open the bundle immediately and place the roots in a bucket of water or thin mud. Plant as soon after arrival as possible. Trees may be allowed to stand in a bucket of water or thin mud overnight.

If it is necessary to hold the trees for more than a day, they should be "heeled in" until ready to plant. This term means covering the roots in a sloping trench to avoid drying. Locate the trench of "heel-in bed" in a place that is protected from drying winds, preferably in the shade. If the trench runs east and west, cut the south bank off at an angle of 45 degrees. If the trench runs north and south, cut the west bank at an angle of 45 degrees.

Spread the trees along the trench with roots in bottom and tops against the sloping bank. Cover the roots and most of the tops with moist soil. Keep the soil well watered and moist. Broadleaf trees can be held for several days with little danger of injury. Evergreen transplants are a little more difficult to handle, but can be held for a few days if necessary.

Planting the Trees

When you are ready to plant, carry the trees to the field wrapped in wet burlap or with the roots immersed in a bucket of water or thin mud. Be sure not to expose the roots to the sun or wind.

Plant the trees about one inch deeper than they stood in the nursery. In planting, spread the roots out in a natural position. Work the dirt around the roots and pack it solidly as the hole is being filled. Use your heel for solid packing. Do not place sod and trash in contact with the roots. Leave the surface loose and slightly cupped to catch rainfall. If you are planting by hand, water the tree well before putting on the last shovelful of dirt. Let the water completely settle, and then add some loose dirt.

If you have over 600 trees to plant, use a tree-planting machine. Your Soil Conservation Service may have one available for use. If a planter is not available, use the furrow method. Plow one furrow at a time, space the trees, dig deeper holes with a shovel if necessary, and plant one row at a time.

Avoid planting small trees in deep depressions, especially on hard land. They may be buried by soil during heavy rains.



When to Plant

As a general rule, you will have best success in Nebraska when early spring planting is practiced. This is very important if you can not irrigate. Fall plantings may be successful with irrigation, but even then, winter drying often does great damage.

Transplanting Older Trees

Transplanting should be done during the dormant season, and early spring is considered the best time in Nebraska. It is important that the trees be moved with a ball of earth on the roots. One method that you might use is the "open-bottom bucket" method. Many people have used the method with a great deal of success.

First cut the bottom out of a five-gallon paint bucket.

Next dig the holes to the depth of the bucket where the trees are to be set.

Place the bucket over the tree to be transplanted and push it down as far as it will go.

Then with a spade dig around the bucket, being careful not to disturb the ball of earth beneath the bucket. To avoid this, set the spade at an angle and pry the dirt away from the ball.

Shave the dirt down the sides of the bucket and gradually work the bucket down to its own depth. Dig underneath, tip the bucket to one side, and with a long-handled sharp pointed shovel cut any roots beneath the container.

Lift the bucket and tree out and move to the new location. In sandy soil it may be necessary to slip a burlap sack underneath to prevent the soil from falling out.

Set the bucket with the tree in the hole and fill in some loose soil.

Pull the bucket up part way and pack the soil well. If the bucket can not be separated from the ball, pour in enough water to cause it to loosen.

Continue filling the soil until the hole is

about full. Then remove the bucket and water the tree well.

When the water has completely settled away, add some loose dirt. Leave the dirt loose and the surface slightly cupped to catch rainfall.



Tend your Trees the Year Around

Many tree planters are very enthusiastic about getting their trees planted in the spring. They do a good job of everything up through the planting of the trees, then seem to forget them. These same people would not think of planting their corn, then forgetting it. They become frantic if the weeds and grass start to grow in their corn field and certainly would not allow livestock to tramp and eat their corn. Oddly enough, these people seem to give little thought as to the effect of poor care and lack of protection for their trees.

Treat your trees as you would any other crop. Help them in their fight for survival against drought, weeds, insects, and animals by giving them the best of care and protection. Visit your tree planting often, the year around, to determine any attention it may need.

Protect from Animals

Animals are injurious to trees, regardless of whether your trees are young or old. The packing of the soil around the roots, the browsing, the barking by large animals, and the scratching of earth from around the root collar and exposing roots of trees by poultry are some of the damages from which your trees will need protection. Rabbits and mice are harmful usually during the fall and winter. Barking and even cutting off some species of small trees by rabbits is possible. Your trees can be protected by a guard made of hard-

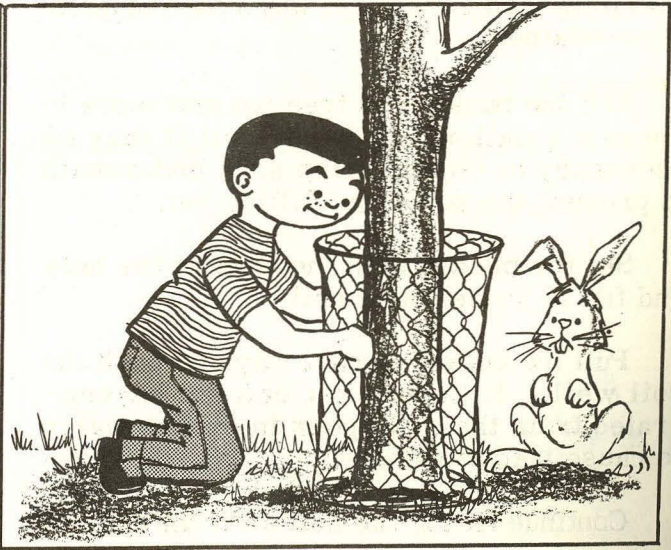
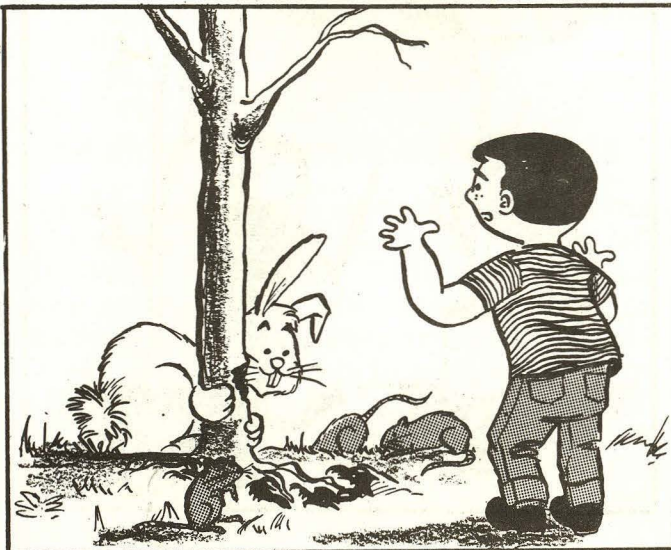
ware cloth placed around the stem of the tree. Mice usually cause little damage if all trash is removed from the area directly around the base of the tree.

Cultivation

In all parts of the state the grass and weeds should be removed in the area of the tree row by cultivation and hand hoeing. However, on sandy land where your trees are planted in a furrow, leaving the vegetation between the rows, the strip along the tree row is all that should be cultivated.

In parts of the state where the ground has been prepared for planting by plowing, it is best to cultivate and remove all the weeds and grass not only in the row but also between the rows of trees. The cultivation should not be deep and the land should be left as level as possible without ridging the soil up around the trees. Your trees should be cultivated for several years or until they have reached a growth that will partially shade out grass and weed growth. The trees by this time will be well established, and after several years of clean cultivation the weeds will be much less of a problem.

Some attempts have been made to control weeds by planting brome grass or other aggressive grasses between the rows of trees after the first year of cultivation. This is a very poor practice and should not be used. Such grasses will smother out weeds but will give your trees the worst kind of competition for available moisture and plant food.



Evergreens

Redcedar	1, 2, 3, 4, 5	Hardy. Plant on windward side of your windbreak makes fair posts. Do not plant in Otoe, Cass, Sarpy, Washington, Richardson, Nemaha and Douglas counties.
Ponderosa pine	1, 2, 3, 4, 5	Hardy. Good rate of growth after establishment. A possibility for Christmas tree plantings. Good windbreak species.
Austrian Pine	1, 2, 3, 4, 5	Hardy. Good rate of growth after establishment. Probably a little better than Ponderosa for Christmas tree plantings due to its shorter leaves. Will tolerate alkali soils.

Douglas-fir	1, 5	Good rate of growth. Has not been planted extensively in Nebraska. Seems satisfactory. Worth trying on limited basis. Will make attractive Christmas tree.

Shrubs

Nanking Cherry	1, 2, 3, 4, 5	Excellent for low garden windbreaks. Fruit makes good jelly. Good wildlife food also.
Lilac	1, 2, 3, 4, 5	Hardy, will tolerate alkali soils.
Honeysuckle	1, 2, 3, 4, 5	Bushy, good shelter for wildlife.
Buffalo-berry	1, 2, 3	Valuable for wildlife food.
Cotoneaster	1, 2, 3, 4, 5	Provides food and protection for wildlife.
Multiflora rose	1	Valuable as wildlife protection. Could be used as a living fence around wildlife habitats.
Chokecherry	2, 3, 4, 5	Source of food for wildlife.
American Plum	2, 3, 5	Protection and food for wildlife.
Sand Cherry	4	Source of food for livestock. Do not plant on alkali soils.

TREE AND SHRUB PLANTING GUIDE

Tall Growing Deciduous Trees

Species	Areas	Recommendations
Chinese Elm	1, 2, 3, 4, 5	Drought resistant, fast growing, short lived, will tolerate alkali soils.
American Elm	1, 2, 3, 4, 5	Plant where moisture is abundant. Use caution because of phloem necrosis, Dutch elm disease, and European elm scale.
Honeylocust	1, 2, 3, 4, 5	Hardy, does well in western Nebraska. Will tolerate alkali soils.
Cottonwood	1, 2, 3, 4, 5	Rapid growing. Plant on moist, well drained sites.
Hackberry	1, 2, 3, 4, 5	Relatively slow growing, drouth resistant.
Green Ash	1, 2, 3, 4, 5	Hardy, rapid grower on good sites, some trouble with borers.
Bur Oak	1	Slow growing, moist creek beds and banks.
Black Walnut	1	Slow growing, needs fertile moist soils, very valuable for its wood.

Medium to Short Deciduous Trees

Russian Olive	1, 2, 3, 4, 5	Hardy, rapid growing, tolerates alkali soils.
Russian Mulberry	1, 2, 3, 4	Bushy, suitable for outside row of windbreak and wildlife plantings. May freeze back near northern and western limits.
Boxelder	4, 5	Hardy, will grow in all regions but should be replaced with more valuable species in areas 1-2-3.
Willow	1, 2, 3, 4, 5	Plant on poorly drained sites, swampy lands.
Osage Orange	1	Moist soils; one of the best post species.
Black Locust	1	Subject to borer damage. Good post species.
Catalpa	1	Moist to moderately wet sites. Good post species.

further reading

EXTENSION CIRCULARS.....

- E.C. 1704 Evergreen Planting Suggestions
E.C. 1729 Marketing and Harvesting Black Walnut in
Nebraska
E.C. 55-1732 Sawmills in Nebraska
S.B. 441 The Great Plains Shelterbelt in 1954
S.B. 446 How We Buy Christmas Trees in Nebraska

U.S.D.A. BULLETINS.....

- F1210 Measuring and Marketing Farm Timber
F2109 Shelterbelts for the Northern Great Plains
F1567 Propagation of Trees and Shrubs
F1989 Managing the Small Forest
F2049 Preservative Treatment of Fence Posts and
Farm Timbers
F2090 Logging Farm Wood Crops
L86 Protect Hardwood Stands from Grazing
I244 Community Forests for Rural People
L374 The Multiflora Rose for Fences and Wildlife



LAYOUT AND ILLUSTRATIONS
By
DeLoris Clouse
Extension Artist



GROW TREES for commercial purposes