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# *Market for Forest Products*



**Grown on  
Minnesota  
Farms**

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# Market for Forest Products Grown on Minnesota Farms

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**T**HERE is a growing interest among Minnesota farmers in the better handling of their woodlands and in making wooded portions of the farm produce their share of the farm income. At the same time the wood-using industries of Minnesota are coming to rely more and more on timber purchased from farmers and on rough wood products delivered by farmers to the mills for raw materials.

According to estimates recently made by the United States Forest Service and Bureau of Agricultural Economics, Minnesota farms, in 1937, produced forest products worth almost \$10,000,000. This included about 75 million board feet of logs and lumber; 250,000 ties; 65,000 cords of pulpwood; 2,200,000 cords of fuel wood; 120,000 poles; 11,000,000 posts; and 16 million shingles.

It is unfortunate that in the past, farmers too often have been unfamiliar with estimating and selling timber and, therefore, have been at a disadvantage in disposing of their wood products. Much farm timber has been sold for considerably less than its true value. To avoid this loss, the farmer with

timber to sell must learn something of the type of timber products in demand in his locality, and the methods of measuring their volume and value. He makes sure, moreover, that a good logging job is done on his timber.

Improved utilization and wise selling of timber products must be combined with careful woods management if the woodlands are to pay their way and become a permanently productive part of the farm. Overcutting, grazing, and burning of woods have been all too common practices in Minnesota in past years with the result that the typical farm woods is producing at only a small fraction of its capacity.

Many of the prices quoted in this pamphlet are quite stable, but others may change considerably. From time to time the Extension Service will supplement these prices with later quotations. Your county agent will be able to give you more complete information and he will have a list of dealers to whom you may want to sell.

<sup>1</sup>Prepared with cooperation of the Economics division of the Lake States Forest Experiment Station, University Farm, St. Paul, Minnesota.

## *Getting the Most from Farm Woodlands*

**B**EFORE you undertake to sell or cut your timber, find out how much is ready for harvest, and for what use this timber is best suited. Make a careful estimate of the amount of saw timber, cords of pulpwood or fuel wood, number of ties, posts, etc., you can expect to cut. This information is necessary to judge the fairness of stumpage prices if you sell standing timber, and to find markets in advance if you do your own logging. If you do not know how to estimate standing timber, get someone with experience to do it for you. Consult your County Agricultural Agent. Farmers' bulletin 1210F "Measuring and Marketing Farm Timber" published by the United States Department of Agriculture will also be a helpful aid in estimating standing timber.

### Cut Wisely

If you have the time and equipment, you can earn good wages by doing your own logging. At the same time you can make sure that a careful logging job is done.

Learn the specifications for each product to be sold and be careful to cut your timber to meet those requirements. If you have a sawlog market, cut out as many clear, straight logs as possible.

Do not cut small trees. It takes them many years to reach the smallest merchantable size. If allowed to stand and grow they will double their merchantable volume in a few years.

Avoid damage to small trees in logging. Take advantage of openings in the stand.

If you sell standing timber to be cut by the buyer, specify a lowest diameter limit, or, better yet, mark the trees to be cut. On steep land, permit logging only when ground is frozen.

Cut low stumps. The stump should be no higher than the diameter of the tree. The best timber usually is in the butt log. Salvage tops and limbs for fuel wood.

**Trees to cut**—Slow-growing trees overtopped by thrifty growers; diseased trees; fire-scarred trees; less valuable species; crooked, leaning, large-crowned, short-boled trees; dead trees; and large merchantable trees of good quality for market.

**Trees to leave**—Straight, tall, well-formed, sound, and fast-growing trees as well as good timber species and good seed trees for restocking purposes.

Increase in income from farm woodlots will come through better forestry practices which result in the production of higher grade material and better utilization of cut products.

### Find the Best Market

Meet your own home needs first. For many uses it is better business to pay \$6 or even \$9 for custom sawing per thousand board feet of lumber than to later pay \$40 to \$60 for imported lumber for the same uses.

Try to find outlets for your high-quality material. Some trees will make veneer, others good sawlogs, cross ties, or poles; others only pulpwood or fuel wood. Try to cut trees into as large a proportion of high-quality material as possible. Do not cut choice material into low-value products.

Find out what kind of timber is acceptable by buyers within reach and investigate markets some distance away. Take hauling costs into account in deciding which market is best. Valuable logs may often be shipped or hauled longer distances at a profit.

Pool shipments of quality products of the same species with neighbors to get better prices. Full carloads and truckloads are cheaper to transport.

Investigate opportunities for cooperative action by selling through a central agency. Orders may be filled in this manner that otherwise might be in too small quantities to interest some buyers. Through cooperative action there is also greater bargaining power.

Get estimates on hauling, trucking, and freight rates for products to be shipped.

Advertise in papers if you have considerable timber for sale, or solicit bids by mail.

If you plan to sell standing timber, secure offers from buyers interested in different products. A sawmill operator may offer more than a tie-operator.

Consult your county agent if you are not familiar with available markets.

### Sell Cautiously

Watch the market. Do not sell when prices are down. Timber is not perishable; thrifty, fast growing trees will earn good interest growing. It is better to borrow money with the woodlot as security than to sell timber at low prices.

Get price offers from several buyers. Be sure that all bids are on the same basis. Learn what prices similar timber has sold for in the neighborhood.

Make sure that the buyer can be relied upon. If you sell standing tim-

ber, have a definite agreement with the buyer, preferably a written contract, covering the following points:

1. When and where logging is to be done.

2. What species, diameters, and products are to be cut.

3. Time and method of payment. Retain ownership until payment is received.

4. Disposal of brush and slash.

5. Method of scale or measurement.

6. Stump heights and top utilization.

7. Protection to young trees and precautions against fire and damage.

8. Penalty clause for infractions of agreement.

If you do your own logging, be sure you can sell the products before starting.

Do not permit a logger to take only one product, such as tie cuts, leaving cull trees standing and good post and fuel-wood material to rot on the ground.

### Get Full Measure

For products sold by the board foot, have a definite understanding as to the scale to be used. The Scribner Decimal C scale rule is the legal rule in Minnesota. **Do not accept a scale by the Doyle rule**, which under-scales. The Doyle rule gives you less profit on small logs. Logs should be measured at the small end, using the average diameter, inside the bark.

For cordwood products it is best to use the standard cord, which is a stack of wood measuring 4x4x8 feet. In case of pulpwood, specify whether measurements are to be single or double cords—and whether peeled or unpeeled cords. Find out the length of sticks required for pulpwood.

**Table 1. Comparison of the Number of Board Feet in 16-foot Logs of Different Top Diameters, According to 3 Scale Rules\***

Scale Rule	Average Diameter Inside Bark at Small End of Log (Inches)														
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Scribner Dec. C. ....	60	70	80	100	110	140	160	180	210	240	280	300	330	380	400
Doyle .....	36	49	64	81	100	121	144	169	196	225	256	289	324	361	400
International (1/4" kerf) .....	65	80	95	115	135	160	180	205	230	260	290	320	355	390	425

\* Logs less than 16 feet long have a proportionately smaller scale. For example, an 8-foot log scales one-half, a 12-foot log three fourths as much as shown in the table for 16-foot logs.

Even if you sell standing timber, it is wise to require payment on the board foot scale of logs and pieces, or cords of other cut products. Unless you know how to make a very good estimate of standing timber volume, a lump-sum sale on an acreage basis is apt to be a losing deal. Check up on the buyer's scale or have experienced help do it for you. Do not allow removal of cut products until they have been scaled.

### Keep the Woods Growing

Keep fire and livestock out of the woods. If young trees cannot become

established, the woods will become an "old folks' home" and gradually disappear.

Cut the weaker and less promising trees.

Cut large-crowned and leaning trees which take up too much room for the market value of the wood they produce.

Plan to grow some quality timber for special requirements of industry.

Do not cut trees too young. If they are thrifty, let them grow. Let cordwood trees grow into veneer stock, sawlogs, or tie timber.

## Prices and Specifications

**M**ANY of the prices listed in this bulletin are quite stable, but as price changes materially we will revise these figures. See your county agent or state and federal forest officers for a list of companies buying timber in your locality.

### Stumpage Prices

Stumpage prices vary considerably with location, timber quality, and logging conditions. The following are typical prices on national forest and state timber sales in the northern part of the state:

### Fuelwood

All species ..... 25c per cord

### Christmas Trees

5' to 8' ..... 5c each  
 8' to 10' ..... 10c each  
 Over 10' ..... 1c per foot

### Cedar Stumpage (each)

7-foot posts ..... 1 cent  
 16-foot posts ..... 3 cents  
 20-foot poles ..... 6 to 10 cents  
 25-foot poles ..... 20 to 25 cents  
 30-foot poles ..... 35 to 50 cents  
 35-foot poles ..... 75 to 80 cents  
 40-foot poles ..... \$1.10 to \$1.40  
 45-foot poles ..... 1.50 to 1.75

**Table 2. Minimum Stumpage Prices on National Forest**

	Sawlog—M.B.F.		Mine Timbers M.B.F.	Cabin Poles M.B.F.	Tie Bolts Each	Pulpwood—Cord	
	Chippewa	Superior				Chippewa	Superior
Red and white pine	\$6.00	\$5.00		\$9.00			\$0.75
Jack pine	3.00	2.50	\$4.00	3.00	8-11c	\$0.75	.75
Spruce	3.50	2.50	4.00	4.00		1.50	1.50
Balsam fir	1.50	1.50		2.00		.75	.75
Tamarack—cedar		1.50			8-12c		
Basswood	3.50	2.50					
Sugar maple		1.50			8-10c		
Birch	3.50	1.50			8-10c		
Oak	4.00	1.00			8-12c		
Aspen	1.50	1.00				.50	.25
Misc. hardwood	1.00	1.00					

**Sawlogs**

Selling logs by the thousand board feet is a very desirable method of marketing. Prices paid for logs depend on size and quality. Settle all grade and log prices before selling or delivering. Consider special uses logs may be suitable for before selling to sawmills.

Sawlogs are bought in 8- to 16-foot lengths, with minimum top diameter of 6 inches for softwoods or aspen and 8 inches for hardwoods. Most mills allow up to a 4-inch deflection from a straight line on the larger 16-foot logs. Sharp crooks should be avoided. It is better to cut a 12- or 14-foot straight and clear log than 16 feet with 2 feet of knotty or crooked wood at the end. Prices vary with locality and quality of logs but average range per thousand board feet for woods run in northern Minnesota is as follows:

Red and white pine	\$18.00 to \$22.00
Jack pine	12.00 to 14.00
Balsam fir	12.00 to 14.00
Hardwood	10.00 to 15.00
Aspen	12.00

The demand for sawlogs in Minnesota is very limited. Some of the larger mills contract the bulk of their season's need to one or two of the larger operators so that when a local farmer desires to sell logs he must accept what-

ever price the sawmill operator is willing to pay. Most small sawmills operate on a custom basis or in timber owned by the operator. Some logging operators will give small contracts to farmers, but the prices paid are usually less than quoted above.

In some cases, a better average price can be obtained by grading logs and selling to different purchasers. No. 1 logs should bring about double the average woods-run price at veneer mills or commercial sawmills. No. 2 logs can be sold to local box or tie mills. No. 3 logs, which will not bring enough to justify hauling any long distance to market, may be sawed for home use by portable custom mills or, in some cases, may best be used for fence posts and fuel.

The specifications for hardwood log grades used in the Forest Survey of the Lake States are as follows:

**No. 1 logs.** (12 to 16 feet long).—Must be 12 inches or more in diameter inside bark at small end. Logs 12 to 14 inches permit one standard defect or equivalent and 10 per cent heart rot; those 14 to 17 inches, two standard defects and 15 per cent heart rot; and those 17 inches and over, three standard defects and hollow, rotten, or shaky hearts up to 20 per cent of diameter.

Logs of this grade should cut 60 per cent or more of No. 1 common and better, or should be suitable for veneer logs.

**No. 2 logs.**—To be classified as No. 2 logs, 8-foot logs must be 10 inches or more in diameter inside bark at small end and have no defects. However, 10- to 16-foot logs may be 8 inches and over inside bark at small end. All logs less than 10 inches wide to be surface-clear, straight, and sound. Those 10 inches and over must be reasonably straight, having not more than 3 inches sweep in 16 feet, and they must have at least 6 inches of sound wood around any hollow rot or shake. One tight seam not diverging more than 4 inches from end to end and up to three standard defects are permitted. Logs should be 75 per cent sound and cut 30 per cent or more No. 1 common or better.

**No. 3 logs.**—This includes 8- to 16-foot logs which are 8 inches or more in diameter inside bark at small end. Should be usable for producing ties, timbers, and low-grade lumber suitable for the manufacture of boxes and crates. These logs should correspond closely with the poorest logs now being utilized by good operators in the region concerned. They should be 50 per cent or more sound.

A standard defect is defined as one sound, bright knot with a maximum diameter of not more than 3 inches,

or its equivalent in damage to the product of the log.

**Note on grading logs.**—Sugar maple, yellow birch, basswood, elm, and white ash found in this region usually saw out better than they look. On the other hand, red maple, aspen, black ash, and scrub oak usually open up and show up worse than the surface defects would indicate. For these reasons the logs in the first group should be graded up and those in the second should be graded down.

**Lumber**

Many lumber dealers do not like lumber sawed on the farm because often the job is done poorly and the grade is poor compared to that of lumber processed by better mills.

Lumber is put to many different uses having different requirements, so it is best to study these requirements before sawing or selling.

By eliminating cull material that lowers prices, before hauling, rejection of part of the haul at point of delivery will be avoided.

Lumber prices in general have been rising in the United States largely due to increased residential building, partly to national defense. Manufacturers of northern pine and northern hardwood lumber are having difficulty filling orders. The result is that the market is gaining strength rapidly.

**Table 3. Sample Prices Per Thousand Board Feet at Mills in Northern Minnesota—Spring 1940**

	Mill-run rough	Surfaced
White and red pine .....	\$18.00 to \$25.00	\$28.00 to \$31.00
Jack pine .....	15.00 to 20.00	18.00 to 23.00
Aspen .....	12.00 to 18.00	
Oak (side lumber) .....	20.00 to 25.00	
Balsam fir .....	18.00 to 20.00	
Birch and maple #2 and better.....	22.00 to 24.00	
#3 " " .....	16.00	

Sample prices per thousand board feet at mills in northern Minnesota, Spring 1940, are given in table 3.

Sample prices per thousand board feet for rough lumber (mill run) in southeastern Minnesota are:

Pine .....	\$36.00
Oak .....	26.00
Cottonwood .....	23.50
Elm .....	22.50
Tie side lumber .....	22.50

Custom sawing usually costs from \$5 to \$7 per thousand for softwoods; \$6 to \$8 for hardwoods—the price depending somewhat on how much the farmer contributes in power and labor.

### Veneer Logs

There are usually two grades of veneer logs specified. No. 1 logs must be 12 to 16 feet long and 13 inches or more in diameter at small end. They must be straight, sound (except for small center rot), have no more than two knots, and be free from “shake” and other defects that will prevent turning. No. 2 logs include usable logs falling below No. 1. The farmer should find out the minimum requirements of second grade veneer so that none of his logs will be rejected upon delivery. Nearest regular veneer mills are in Wisconsin where the following prices are quoted:

	Per thousand board feet
Yellow birch .....	\$35.00 to \$50.00
Basswood .....	35.00
Elm .....	20.00

Eight-foot basswood veneer logs suitable for making into cheese boxes, baskets, etc., can be sold in Minnesota for about \$25.00 per thousand board feet.

### Match and Clothespin Bolts

Paper birch veneer bolts, 44 inches in length and 9 inches or more in diameter, are worth about \$11.00 per single cord at Cloquet. Aspen match bolts, 53½ inches long and 8 inches in diameter, bring about \$9.00 per single cord. These must be smooth and straight and have at least 4 inches of clear wood around a defective center.

Clothespin bolts are 50 inches long and have a 6-inch minimum top diameter for aspen and 7-inch for birch. Prices are about \$6 for aspen and \$7 for birch.

### Railroad Ties

Demand for ties fluctuates considerably in any region, and the demand is quite seasonal. Before deciding to have logs sawed into ties, the farmer should be sure that he can get just as much for the ties as he could for lumber sawed out of the same material. However, low grade lumber may bring in poorer prices than high grade ties.

Ties must be made from sound, live timber, free from decay, splits, shakes, holes, large or numerous knots, or other imperfections that will impair strength or durability. They must be straight, well-hewed, slabbed or sawed, cut square at the ends, and have bottom and top parallel. All hewed and slabbed ties must be peeled. May vary from 1 inch to 2 inches over in length, ½ inch over or ⅓ inch under in thickness, and 3 inches over or 1 inch under in designated width.

Railroads have been paying the prices per tie shown in table 4, but most buying is done through tie dealers who make a commission by concentrating the ties in large lots for the railroads.



mum allowable crook and the maximum butt rot; not more than 10 per cent of the number of pieces in any lot or shipment may contain the maximum crook or butt rot.

The following defects are not permitted: Hollow knots extending in close to the center of the post, rapid crooks, short kinks, or two-way sweep in the form of the post, cat faces, sap rot, or ant holes or other holes.

A large proportion of the posts handled by post dealers are of 7-foot length and 3, 4, or 5 inches in top diameter. A few 2-inch posts are handled commercially, and probably many more of these small-sized posts are cut by farmers for their own use. There is some demand for 8-, 10-, 12-, and 14-foot posts of 4 to 8 inches in top diameter but not in quantities to compare with the smaller sizes. There is also a moderate demand for split posts particularly 7-foot lengths when split in half.

Typical prices for posts, f.o.b. cars in northern Minnesota:

7-foot, 3-inch top .....	5 cents
7-foot, 4-inch top .....	10 "
7-foot, 5-inch top .....	12 "
10-foot, 5-inch top .....	20 "
12-foot, 5-inch top .....	30 "
16-foot, 5-inch top .....	45 "

### Cedar Poles

For the commercial markets poles must be cut from live timber and must be peeled. Knots must be trimmed close and both ends cut square. No pole should be more than 3 inches shorter or 6 inches longer than its specified length.

Poles must be free from sap rot, bird holes, and serious checks and splits. Sound scars and cat faces are permitted up to one fifth of the circumference of

the pole, provided that no part of the scar shall appear in the upper one fourth of the pole or within 2 feet of the ground line.

Poles 25 feet long with 6-inch top or larger may have center butt rot up to 8 per cent of the area of the butt (approximately 1/4 diameter). Smaller poles must not have more than 5 per cent butt rot (approximately 1/5 diameter). Tops must be sound.

The maximum amount of sweep measured between the top and the ground line (4 to 6 feet from butt) is one inch for each 5 feet of length of pole.

Poles must be free of unsound knots. Poles less than 35 feet long should have no knots more than 2 1/2 inches diameter, and the sum of diameters of all knots in any one-foot section should not exceed 9 inches.

Twists are permitted up to one complete turn in 20 feet.

Sample prices for poles in northern Minnesota are:

20-foot pole, 5-inch top .....	\$0.55
25-foot pole, 6-inch top .....	1.60
30-foot pole, 6-inch top .....	2.25
40-foot pole, 7-inch top .....	5.00
45-foot pole, 7-inch top .....	6.00

### Fuel Wood

No other woodlot material has brought such large aggregate returns as fuel wood in spite of the fact that fuel wood brings the smallest return per cord of any timber marketed. Fuel wood offers a means, however, of disposing of limbs, tops, and unused parts of logged trees as well as undesirable trees.

Oak, hickory, maple, etc., are the best fuels, but they may bring larger returns for the more exacting uses of

industry. Fuel wood does provide a chance to improve growing conditions in woodlots through thinning and other needed management practices.

A few samples will give an indication of fuel-wood prices paid to farmers by fuel dealers:

Dry oak (Twin Cities) .....	\$5.00
Dry oak (Duluth) .....	4.50
Dry oak (La Crosse) .....	4.50
Tie slabs and edgings (4 miles La Crosse) .....	3.00

Residents in the Twin Cities and Duluth pay from 2 to 3 times these amounts for small orders of wood cut in stove lengths. This suggests possible profit to farmers in taking orders and making direct delivery.

Roadside sales of fireplace wood and kindling have been successfully tried in some places.

### Pulpwood

Pulpwood in Minnesota is handled in 100-inch lengths. Ends must be cut square and all knots trimmed smooth. Wood must be cut from live, sound, straight timber, and sticks must have at least the following diameter inside bark at the small end:

Peeled spruce and balsam .....	3½ inches
Peeled jack pine .....	4 "
Peeled poplar .....	5 "
Rough spruce and balsam .....	4 "
Rough jack pine .....	4½ "

One company has established a straight 5-inch minimum, partly in the interests of conservation and partly from the standpoint of quality of fiber.

The pulp companies require that the wood seller certify that taxes have been

paid in full on the lands from which the wood is cut and that wages and hours conform with the requirements of the Fair Labor Standards Act of 1938.

Latest quoted prices at Cloquet and Brainerd are:

Peeled spruce .....	\$10.50 per single cord
Peeled balsam .....	8.00 " " "
Peeled poplar .....	6.15 " " "

Last year's prices on rough wood:

Rough spruce (Cloquet) .....	\$7.75 per cord
Rough spruce (Grand Rapids) .....	7.50 " "
Rough jack pine .....	5.00 " "

Pulp and paper prices are rising a little, on account of the War; this trend should eventually be reflected in pulpwood prices. However, on July 31, 1940, Minnesota companies reported an 11-months' stock of pulpwood on hand.

### Conversion Wood

Conversion wood is similar to pulpwood but may be of smaller size and need not be peeled. It is cut in 100-inch lengths. Approximate prices per cord delivered are:

Rough poplar, spruce and jack pine, 3-inch top .....	\$4.50
Rough jack pine, 4½-inch top .....	5.50
Rough balsam fir, 4-inch top .....	5.50

### Excelsior Bolts

Aspen and basswood bolts 55 inches long are worth \$8 to \$9 per cord (144 cubic feet). However, most of the material is purchased by jobbers operating from one company. A market should be definitely located and specifications clearly understood before any lumber is cut for this purpose.

### UNIVERSITY FARM, ST. PAUL, MINNESOTA

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