

## University of Missouri Extension

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# How to Buy and Sell Cordwood

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One of the first questions wood burners ask about wood is "How much per cord?" Price is important, but just as important is agreement on a standard way to measure and transfer the wood. Both the buyer and seller must agree and understand the procedure.

Many people who buy cordwood for their home wood stoves admit they don't understand the transfer process. Some dealers talk in terms of a "rick," a "rank" or a "pickup load." Others mention a "face cord" and still others talk in terms of a cord or fractions of a cord. Sometimes the definitions vary from dealer to dealer and from locality to locality. For example, in most sales, no procedure of transfer even exists. The dealer dumps the pickup load in the yard at a designated point, collects the fee from the buyer, and moves on.

We would like to think that most dealers are honest and the transaction is fair. But this is no way to run a business. The wood dealer may profess to sell a half cord, but he probably never measures it. Neither the dealer nor buyer knows with any degree of accuracy how much merchandise passed in the transaction. The growing cordwood industry appears to be operating without an equitable method of sale in many instances.

This guide will discuss cordwood sales from the standpoint of

- Volume transfer (cord) and suggested transfer procedures
- Advice
- Weight considerations (species)
- Wood moisture content
- Insect problems and damage

## Volume transfer: the cord

Despite the lax procedures frequently followed, cordwood must, by law, be sold by the cord or fractional part of a cord. It must be accompanied by a bill of sale in accordance with requirements of the Missouri Department of Agriculture's Weights and Measures Division. As defined by the National Conference on Weights and Measures and Missouri rules and regulations, a gross cord of firewood is the amount of wood, ranked and well stowed, contained in a space of 128 cubic feet. "Ranked and well stowed" means pieces are placed in a line or row with pieces touching on their ends and parallel to each other and stacked in a compact manner.

Other descriptions of volumes of cordwood such as rick, rank, pickup load, and face cord should not be used. The only legal terms are "cord" and fractions of a cord.

To transfer a load of cordwood equitably, the buyer and seller must jointly measure the pile of wood. This is probably best done when the wood (tightly stacked) is still on the truck or conveyance vehicle.

A seller should prepare a price list, preferably on a printed sheet, to distribute to potential buyers (Example below).

## Price sheet example

<b>ABC Cordwood Supply Company</b>	
Quantity	Rate per cord
Less than 1/2 cord	\$95
1/2 cord to 1 cord	\$90
1 to 4 cords	\$85
More than 4 cords	\$80
Lengths, added cost per cord All wood cut to 20 inches unless buyer specifies otherwise	
18 inches	\$10
16 inches	\$15
Greater than 20 inches	No added cost
Transfer and stacking After measurement of the load of cordwood on the truck, it will be standard procedure to dump the load at a point accessible to the truck and mutually agreed upon by the parties to the transaction. If the buyer wishes to have the wood transferred beyond the dump point or stacked, costs will be as follows.	
Transfer cord to 40 feet	\$15
Transfer cord to greater than 40 feet	\$20
Stacking cost per cord	\$20
<b>Note</b> The loads may be a maximum of 10 percent more or less of the amount of wood ordered. The buyer will not be required to pay for quantities in excess of 10 percent and may ask the seller to deliver appropriate quantities to bring the total delivery to within the minus 10 percent limit at regular (no special) cost.	

The suggested selling procedure for transferring cordwood is as follows:

- Jointly measure the closely stacked pile on the bed of the truck. Measure length, width and height in inches to the closest whole inch.
- Multiply the length times width times height to get the gross volume in cubic inches. (L (inches) x W (inches) x H (inches) = Gross volume (inches<sup>3</sup>))
- Divide "gross cubic inches" by the number of cubic inches in a gross cord minus 220,000. The answer is the number of cords or fractions of a cord. Round off the answer to two places past the decimal point.
- Multiply the number of cords by the cost of the wood per cord given on the price list. This gives the retail cost of the wood. This does not include added services, such as special length, transfer or stacking.
- Buyer pays seller and seller conveys "Bill of Sale" to the buyer (Sales invoice example below). Seller "dumps load."

## Example of a complete transaction

A buyer wishes to purchase 1-1/2 cords of wood. After reviewing the pricing list, she decides the 20-inch length is acceptable. She tells the seller to dump the wood at the north end of the driveway. She and her husband will transfer the wood to a backyard location and stack it as a weekend project.

The seller arrives with his load on the appointed date. The buyer and seller jointly measure the three dimensions of the load to the closest inch. The load measures as follows:

- $L = 120"$ ,  $W = 120"$ ,  $H = 24"$
- $120 \text{ inches} \times 120 \text{ inches} \times 24 \text{ inches} = 345,600 \text{ in}^3 = \text{Gross volume of load}$
- $345,600 \text{ in}^3 \div 220,000 \text{ in}^3 = 1.57 \text{ cords}$
- $1.57 \text{ cords} \times \$85 \text{ per cord} = \$133.45$  (retail cost of the cordwood)

The transaction is completed and the seller conveys "Bill of Sale" to the buyer and dumps load of wood.

## Example of a sales invoice

### ABC Cordwood Supply Company

Name \_\_\_\_\_

Address \_\_\_\_\_

Telephone \_\_\_\_\_

Measurements of load of cordwood to nearest inch

Length \_\_\_\_\_

Width \_\_\_\_\_

Height \_\_\_\_\_

Quantity (cords) \_\_\_\_\_

Price per cord \_\_\_\_\_

Price of wood \_\_\_\_\_

Total costs \_\_\_\_\_

Accessory costs \_\_\_\_\_

Length adjustment \_\_\_\_\_

Transfer \_\_\_\_\_

Stack \_\_\_\_\_

Total accessory costs \_\_\_\_\_

Sale \$ \_\_\_\_\_

Signature \_\_\_\_\_

## Advice to the buyer

- Measure your stove to make sure the 20-inch length is satisfactory. If you have a small stove that can't comfortably accommodate 20-inch logs, buy wood at 18-inch or 16-inch maximum length.

- Decide exactly how you intend to handle the wood after it is dumped. Some people like the vigorous activity of transferring and piling the wood chunks. Others don't. If you are one of the latter, be sure you decide where you want the seller to stack the wood.
- If you want the best results, stack a smaller "reserve pile" in the basement and use it to feed your stove. This wood won't freeze on cold winter days and thus will be easier to burn and will give off more heat. It could also save you the discomfort and mess of going outdoors for wood on a cold day.
- For best results, plan ahead and order your wood in the fall for next year. It takes a year for wood to air dry to approximately 20 percent moisture content.

The second best plan is to order the wood you need in the spring for the following burning season. This gives a shorter drying period but includes the best drying months. Assume all wood you buy is "green" wood (not air dried) and treat it as such. That is, air dry it before use.

- If you cover your wood with a tarpaulin before winter snowfall, wood is easier to handle in winter.

## Species of wood

The species of wood you receive makes a significant difference. The potential heat value of wood is directly proportional to its weight, and there is wide variation in weight for equal volumes of wood. For example, a cord of pine weighs about 2,700 pounds at 20 percent moisture content. An equal volume of oak weighs about 3,700 pounds at 20 percent moisture content. The pine, therefore, has about 73 percent the potential heat value as the oak, yet you may have paid the same price for the wood.

The term "mixed hardwoods" has very little meaning because many hardwoods grow in Missouri. Some have high densities and others, such as cottonwood and silver maple, have relatively low densities. If you can identify the woods, it makes sense to lower the price if the load is predominantly a less dense species. The question you should ask about any cord of firewood is, "What is the Btu potential per cord?"

In Missouri, we do not need to be too concerned about species make-up because the most common species cut for firewood are red and white oak, hickory, and ash. They are all relatively heavy woods and are considered to be among the best cordwood species.

Most people don't specify cordwood by species. Buyers are generally unaware of this important characteristic and buy primarily on faith. The Missouri Department of Weights and Measures "Uniform Regulations for the Method of Sale of Commodities, 1979" states, "A representation (any advertisement, offering or invoice) may include a declaration of identity that indicates the species group (Example: 50 percent hickory, 50 percent miscellaneous softwoods). Such a representation shall indicate, within 10 percent accuracy, the percentage of each group."

## Moisture content of cordwood

Moisture content is another important factor to consider if you use wood as an energy source and want to operate at maximum efficiency. When trees are cut, wood contains a lot of water. This quantity of water is generally called the "green moisture content." The amount of water in green wood varies with species. Some hardwood species are as low as 50 percent and others are more than 100 percent moisture content. After cordwood is cut to length, split, and stacked in a sunny and well ventilated spot, it loses moisture rapidly. Wood dried for one year may be near the 20 percent moisture content. At this level, it is considered air dried.

When you buy wood, assume it is green and dry accordingly. Few dealers stack firewood and hold it for a year because they are generally not compensated adequately, if at all, for this effort. The drying then is up to you, the buyer, if you think the effort is worth the gain. Green wood will burn in a stove. Contrary to popular thought, it is not responsible for the deposit of creosote on the lining of your chimney. Green wood does burn more slowly than air dried wood and may be somewhat slower on the "uptake" when you start a fire.

If you burn green wood, you stand to lose 10 to 12 percent of the original heat potential of the wood.

## **Insect problems and damage**

Insects can cause damage or be bothersome when you store wood. Pests include wood borers (round and flat head wood beetles), wood roaches, and termites.

People who often use wood to heat their homes usually have had experience with wood borers. In the summertime you can frequently hear the borers chewing wood in most older wood piles. Once borers become established in a wood pile, they can reduce its weight by 20 to 30 percent per year. This means that from the standpoint of borer damage, it is probably not a good idea to hold your wood outside for more than a year or two at most.

If you can delay felling trees cut for cordwood until after the first frost, your wood will be relatively free of wood borers for at least the first year. The adult borers do not fly after the first frost and thus do not infest the logs. If adequate drying takes place before spring, the adult borer will be less attracted to the wood. We are not advocating that everyone should always wait for a frost before cutting trees for cordwood. However, it is a good idea to consider this as an option in your time schedule.

People frequently ask about the consequences of bringing borers inside the home with the cordwood. Borers do not reproduce inside nor do they contaminate the wood of your home. Their normal habitat is outside. Inside, they emerge from the wood as adults and die within a short time. The worst scenario is that you will sweep or pick up a few adult borers where the wood is piled.

Wood roaches can be bothersome when you store wood inside the house. Wood roaches seem to inhabit an outdoor wood pile after the bark loosens. It usually takes one or more years of outside storage for bark to loosen. It loosens because the wood shrinks as it loses moisture. The action of bark beetles and other insects also loosens the bark.

Wood roaches are not the "common house roach" usually associated with dirt and filth. Even though wood roaches look like cockroaches, they are completely out of their environment inside the house. Like wood borers, they don't reproduce and multiply inside the house. Instead, they either die or seek passage to the outside. They may enter the home in the fall or during heavy rains and may also be carried in on firewood. Winged males are attracted to lights. They generally do not become a persistent problem in homes.

Termites may infest wood piles, especially if they are stacked on the ground. The degree of infestation and damage usually depends on location and time. For example, wood piled on a concrete or asphalt pad may be somewhat protected from termite damage.

Termites, like wood borers, can reduce the heating potential of cordwood. This again suggests that holding wood outside for about 1-1/2 years or more could be a losing situation.

It is not wise to pile your cordwood against your house, especially a house with a wood exterior. This could not only discolor the exterior, but more importantly, it could promote entry of termites into the wood structure of your home.

## **Summary**

You as a buyer have a high degree of control over the efficiency of cordwood procurement and wood preparation before burning. Properly purchased, handled and prepared wood can create a much more pleasant operation and can save money on your heating bill.

## **Wood buying tips**

- Do not accept randomly piled cordwood for measurement purposes. You cannot estimate the volume of a randomly piled load to the needed degree of accuracy. Insist on a tightly stacked and stowed piling.
- Only buy cords or fractions thereof. A seller may say he will sell you a rank of wood. When you ask him how

much that is, he may reply "about a half cord." At that point, you should tell him you would prefer to buy a half-cord and proceed with your transaction.

- Measure pile dimensions in inches (not feet) to the closest full inch. Practice the simple steps in calculating the cord or fractions of a cord to get a fair and measured cost.
- Non-split pieces (smaller whole round branches) tend to be crooked, and therefore they reduce the net volume in a well-stacked pile. All trees contain some of this wood, but an excess amount of the smaller parts will increase the cost of your wood energy source.

## Related MU Extension publications

- G5451, Preparing Wood for Your Wood Stove  
<http://extension.missouri.edu/p/G5451>
- G7384, Cockroaches  
<http://extension.missouri.edu/p/G7384>
- G7420, Subterranean Termites  
<http://extension.missouri.edu/p/G7420>

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