AGRICULTURAL

MU Guide

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Preparing Wood for Your Wood Stove

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This guide describes one strategy for people who cut and burn one or more cords of wood yearly. If you cut and prepare wood, have a plan, whether it be this one, a modification, or one of your own. A well-planned, one-person operation reduces the work required to produce a cord of well-prepared firewood. It also should increase the efficiency of your stove, reduce creosote production and reduce air pollution.

Logs or cutting stock

Logs should be cut in multiples of the desired final length. For example, 16 inches, plus or minus 2 inches, is a popular length that will fit most stoves. When cutting logs, remember that they can't be very long if one or two people do most of the handling. Although it works well in conventional fireplaces, crotch wood should be cut out. Do not accept elm unless that is all you can get and you don't mind a lot of extra effort when it comes to splitting the wood. Shorten the length of elm cordwood by 2 inches or more.

Cutting to length

Large-diameter pieces of wood should average 16 inches in length. You will need a sturdy sawbuck (which you can make) with cross pieces 16 to 20 inches apart (see Figure 1). The last cut on any log should be made between the cross pieces; first, a down cut until it just starts to pinch and then an up cut to sever the two parts. Be sure your sawbuck allows clearance from the bottom for your saw.

Many people have good luck with an electric 14-inch chainsaw for bucking logs. Electric saws are inexpensive and have the advantage of turning on and off easily. The motor provides ample power and has proven to be a sturdy machine.

As an option, you may choose to cut firewood-length logs with a gas-powered field saw. Instead of using a crossbuck, cut logs on the ground and simply roll them half a turn for the final cut.

Splitting your wood

Splitting wood requires more skill than any other step in preparing stovewood. To do a good job, you must become fairly skilled (accurate) at swinging a splitting maul. You must also become skilled at interpreting the knots and cracks in a piece of wood to determine where to hit a log for the best results and with the least amount of effort.

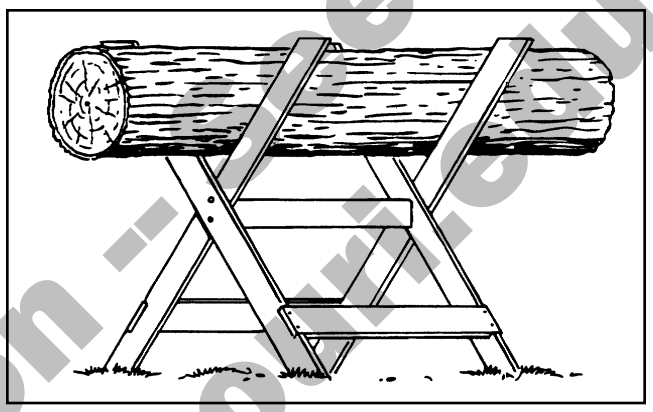

Figure 1. Use a sturdy sawbuck.

There are a number of splitting tools on the market today. For limited production (less than 10 cords per year), studies have shown that the best results are achieved with a standard 8-pound splitting maul.

It is also important to have a splitting block. One suggestion is to treat the block with a wood preservative and bury it with the top protruding about an inch above the ground (Figure 2). Another idea is to use two auto tires. Placing the tires over the block holds wood pieces in an upright position and prevents split pieces of wood from flying off.

Before starting to split the wood, decide on a maximum single cross-section dimension (see Figure 3). It is probably a good idea to make this dimension slightly less than the smallest dimension of your stove door. For example, if you have selected a 6-inch maximum splitting dimension, this means that all round pieces from 6 to 12 inches in diameter should be split into four or more equally sized pieces. It is also a good idea to split pieces less than 6 inches in diameter because this increases the exposed area of the wood so that it dries faster and burns better. Pieces 3 inches and smaller should be used unsplit. Pieces wider than 12 inches need splitting off at the outside edge (see Figure 4). Split the remaining core

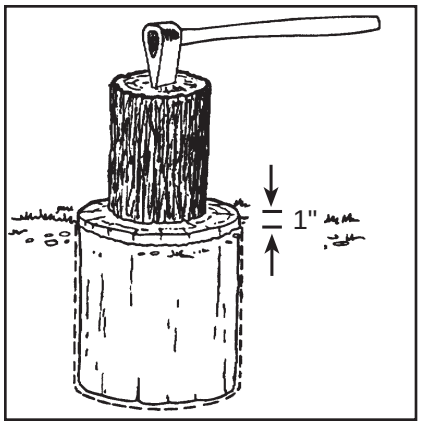

Figure 2. Bury the splitting block so that it protrudes about 1 inch above ground.

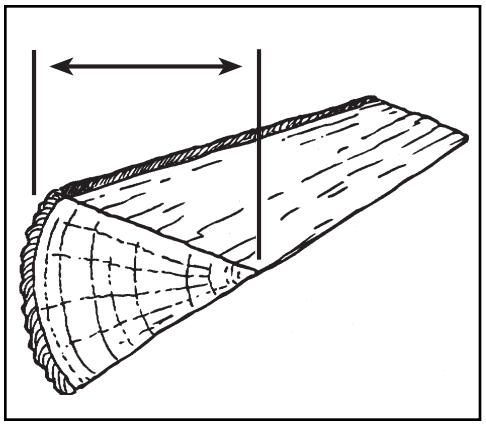

Figure 3. Before splitting wood into bolts, decide on the maximum single cross-section dimension.

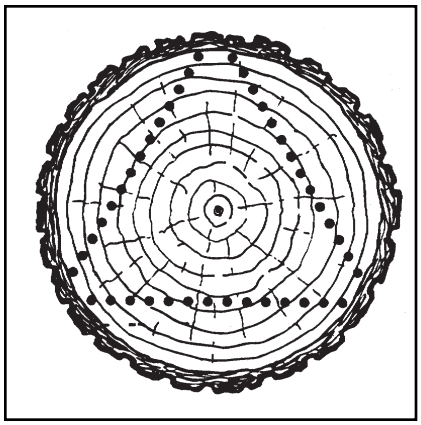

Figure 4. For large-diameter logs, split pieces off the outside first.

piece so the chunks do not exceed the specified maximum size.

Splitting strategy

Observing grain direction and knot placement for the easiest way to split wood is called reading the wood. Here are some rules of thumb:

- The angle of a branch or the taper of a bolt of wood shows which end of the wood piece was closer to the treetop. Invert this piece of wood (place the top side down). This allows splitting with the longitudinal grain.
- If the piece has a large knot, place the blows perpendicular to the knot. If a parallel hit is necessary, offset the blow from the knot as much as possible.
- Wood splits easier when green.

To summarize:

If the smallest dimension of your stove door is 6 inches, split your wood following these guidelines:

- Less than 3 inches in diameter — do not split (use as is).
- 3 to 6 inches in diameter — split in half.
- 6 to 12 inches in diameter — split into four equal pieces.
- Greater than 12 inches — split three or more pieces off the outside edge. Split the remaining core piece to produce pieces within the 6 inch maximum rate used in this example.

If you determine that your maximum splitting dimension is 8 inches, it would be necessary to substitute 8 inches for 6 inches and 16 inches for 12 inches in the above listing and so on for other maximum dimensions.

Stacking and drying

Stack cordwood in a sunny spot where the wind can move freely through the stack. Cover the woodpile if it is practical to do so.

Fresh wood often has a moisture content of 50 percent or more. Optimum moisture content is 20 percent or less. It takes a minimum of one drying season (spring through fall) to dry. Therefore, the wood planned for winter use should be stacked by spring. Many people have poor results with their wood-burning stove because their wood is too green. Frequently, they wait until late summer or early fall to stock their wood supply. If buying wood, assume the wood is wet. Therefore, buy wood in the spring, stack it and let it dry for the winter.

Operating the stove

After doing a good job preparing the wood, you will need to develop a good, safe operational stove technique. For best efficiency, buy a small stove and burn it hot; that means a fire is maintained and it is cut back to a smolder as infrequently as possible.

For further information on wood and wood stoves, see MU publications G 5452, *How to Buy and Sell Cordwood,* G 5453, *Operating Procedure for Starting a Fire in a Wood Stove,* and G 1733, *Catalytic Combustors for Wood Burning Stoves and Furnaces.*

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