



By the Cord

Spring is here, and the snow has retreated for another season. Are you planning to cut a little firewood before the black flies and mosquitoes arrive? The information in Table #1 will provide you with a quick and easy method of determining how many trees you will need to cut for your winter's supply.

Measuring Your Wood

A standard cord (128 cubic feet) of firewood, including wood, bark and the air space between the bolts, measures 4 feet in width x 4 feet in height x 8 feet in length. For those of you who prefer to measure your wood after it has been cut and piled, here is the formula to determine the volume of your woodpile (all measurements in feet).

Width x Length x Height = cords

$$\frac{1.5 \times 20 \times 5}{128} = 1.17 \text{ cords}$$

For example, a cut and split pile of firewood measuring 18 inches in width by 20 feet in length by 5 feet in height would have a volume of 1.17 cords.

Rule of Thumb – a ¾-ton pickup truck will hold approximately ¾ of a cord stacked, or ½ of a cord if the pieces are thrown in at random.

Table: 1 – Fuelwood Volume Table
Number of trees to yield one cord of wood
(128 cubic feet)

Diameter of Trees (inches)	Hardwood	Conifer
5	35	
6	20	
7	15	20
8	11	13
9	8	10
10	6	8
11	5	7
12	4	6
13	3.5	4.5
14	3.0	3.7
15	2.5	3.0
16	2.0	2.5
17	1.7	2.1
18	1.5	1.9
19	1.3	1.6
20	1.2	1.5
21	1.0	1.4
22	0.9	1.2
23	0.8	1.1
24	0.7	1.0
25	0.6	0.9
26	0.58	0.8
27	0.5	0.77
28	0.44	.07
29	0.43	

All measurements are taken at breast height outside the bark. Source – Wood ... Take a Stand and Make It Better, Ministry of Natural Resources, 1991.

Heating Value

Different tree species provide for different quality of fuelwood. While certain species may be easier to split and are more readily available, there are two main factors you should consider when cutting or buying your winter's fuelwood.

Moisture content – seasoned air-dried wood contains approximately 20% moisture and will yield about 13,000 BTUs per kilogram. Green wood containing approximately 60% moisture content will yield about 9,200 BTUs per kilogram. By cutting your fuelwood a year in advance, you will be burning dry wood and will increase your heating value by 30%. Burning dry wood will also reduce the amount of creosol buildup in your chimney.

Species – a second and more important factor in determining the heating value of wood is its density. This varies according to species. Table #2 shows the gross heating value of one cubic metre for the various native species found in Ontario.

Wood Burning and Global Warming

Wood differs from fossil fuels such as oil and gas because it is a renewable resource. As a tree grows, it absorbs carbon dioxide from the air and stores it in the wood as carbon. This carbon makes up approximately half of the weight of wood. When wood is burned, carbon dioxide is released again into the atmosphere. The same amount of carbon dioxide would be released if the tree died and were left to rot on the forest floor. Your woodlot can be a continuous source of fuel provided it is cared for and managed properly.

For more information on burning wood for heat, you may want to obtain a copy of the following guide:

A Guide to Residential Wood Heating. Natural Resources Canada and Canada Mortgage and Housing Corporation. ISBN 0-662-21085-9. Fax (819) 994-1498.

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Table: 2 – Heating Value of Ontario Tree Species

Species	Gross Heating Value (million BTU) *
Rock Elm	32.0
Shagbark Hickory	30.6
White Oak	30.6
Sugar Maple	29.0
Beech	27.8
Red Oak	27.3
Yellow Birch	26.2
White Ash	25.0
White Elm	24.5
Red Maple	24.0
Tamarack	24.0
Black Cherry	23.5
White Birch	23.4
Hemlock	17.9
Trembling Aspen	17.7
White Pine	17.1
Basswood	17.0
White Cedar	16.3
White Spruce	16.2
Balsam Fir	15.5

* BTU value based on an air-dry cord of wood.
