



# FORESTRY EXTENSION NOTES

## COST OF CUTTING YOUR OWN FIREWOOD

A formula has been developed for calculating the cost of cutting your own firewood:

$$\text{COST PER CORD} = S + [(P/M + F) (ND)] + [(T + ND/R) (L)]$$

- where:
- S = chain saw cost (variable & fixed) for cutting one cord
  - P = price per gallon for truck fuel
  - M = miles per gallon for truck
  - F = fixed cost per mile for truck
  - N = number of round-trips required to haul one cord
  - D = round-trip hauling distance
  - T = hours required to cut, split, load and unload one cord
  - R = average speed of truck during haul
  - L = labor charge per hour

The first component in the formula (S) is the chain saw cost per cord and includes variable costs and depreciation. Variable costs would depend upon gasoline and oil consumption per cord plus maintenance per unit of volume produced. Depreciation charge would be determined by the initial cost of the saw and the depreciation schedule used.

The second component in the formula identifies transportation cost per cord (exclusive of labor) and includes costs for gasoline plus a fixed charge per mile for depreciation, taxes, insurance, and maintenance. The magnitude of this component is also directly affected by hauling capacity of the truck and the hauling distance involved.

The final component represents the labor cost per cord; it includes both labor for cutting the cord and labor time involved in hauling. The labor charge per hour appropriate to particular situations depends upon alternative employment opportunities available during the wood cutting period. If no charge is to be made for labor, the final component would disappear; this situation may be appropriate for individuals cutting their own fuel on weekends.

An example will illustrate how the the formula works. Let's assume chain saw costs per cord at \$1.30 for gasoline and oil plus \$0.60 for depreciation and maintenance. A 1/2-ton pickup truck with a load capacity of 2,000 pounds is to be used for hauling. The pickup averages 10 miles per gallon at an average hauling speed of 35 miles per hour; gasoline is \$1.00 per gallon. A charge of \$0.14 per mile is assessed for maintenance, depreciation, taxes, and insurance. The green firewood to be transported weighs 6,000 pounds per cord; three round-trips will be required to transfer one cord from the woods to your house. A total of 10 hours are needed to cut, split, load, and unload one cord of firewood.

F-335/August 1998

IOWA STATE UNIVERSITY  
University Extension

Ames, Iowa

**...and justice for all**

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Many materials can be made available in alternative formats for ADA clients. To file a complaint of discrimination, write USDA, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964.

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Stanley R. Johnson, director, Cooperative Extension Service, Iowa State University of Science and Technology, Ames, Iowa.

The cost per cord for firewood under five different hauling distances and three different labor costs is shown in the following table.

COST PER CORD FOR FIREWOOD

<u>Labor cost per hour (\$)</u>	<u>Round trip hauling distance (miles)</u>				
	<u>2</u>	<u>10</u>	<u>20</u>	<u>40</u>	<u>60</u>
0	\$ 3.34	\$ 9.10	\$16.30	\$30.70	\$ 45.10
3	33.85	41.67	51.44	70.99	90.53
6	64.37	74.24	86.59	111.27	135.96

Obviously, labor charges are a major factor in determining the total cost for producing a cord of firewood. Even if you are not charging for labor, you can use the formula to determine the value of your time for firewood production. The difference between prevailing market price for a delivered cord of firewood and the production cost (excluding labor) divided by the number of hours required will give an estimate of the hourly wages you are earning.

Hauling distance is also a very significant factor; as fuel prices rise, the importance of this item may increase. A larger truck or a truck-trailer combination would reduce the number of trips required to haul a cord, but operating and investment costs would also rise. Drying firewood to reduce weight before hauling may also reduce the number of trips needed to haul a cord.

The formula assumes free stumpage (standing trees). Any charges for standing timber can, of course, simply be added to the total cost of producing a cord of firewood generated by the formula.

The key to this type of analysis is identification of costs relevant to your own specific situation. This analysis should not be considered as the only approach. However, it is one logical way of estimating the cost of “cutting you own” firewood.

---

*prepared by Dean R. Prestemon, extension forester*