

# Stewardship Notes

Indiana Division of Forestry



## Heating With Firewood

Heating costs seem to rise each year with the ever-increasing demand on our nations' energy sources. Many have found wood is an excellent asset in offsetting yearly heating costs. A warm, glowing fire can be a practical complement to any central heating system and can go a long way toward aiding the pocketbook.

Unlike most energy sources, wood is a renewable fuel source. New trees are continually growing. For many people, wood has the advantage of being readily available, easily cut and relatively inexpensive. However, when fuels are burned, pollutants are created; wood is no exception. The EPA has found wood burned for home heating is a leading cause of air pollution in many western cities. Wood stoves sold after July 1, 1988 must meet certain air quality standards. Secondary burning chambers and catalytic combustors are two methods being used by manufacturers to reduce pollutants. Proper stove operation is important to maintain the low emission capabilities of new stoves.

### The Best Kinds of Firewood

Certain species of wood produce more heat than others. The heat a log produces depends on the density, moisture content, resin and ash in the wood. The chart to the right shows the densities and heat values of various tree species common in Indiana. The heat value of hickory is set at 100. The chart lists those woods that burn longest at the top of the list, while those toward the bottom will ignite and burn more quickly.

When low-density woods are mixed with high-density woods, the fire will start quickly and burn a long time. Fruit tree woods added to the fire will give off various sweet-smelling aromas. There are some species of wood, such as elm, that tend to yield less desirable aromas when burned.

| Species      | Density | Heat Value |
|--------------|---------|------------|
| Apple        | .58-.62 | 83-84      |
| Ash          | .57-.61 | 81-82      |
| Aspen        | .37-.39 | 53         |
| Basswood     | .37-.39 | 53         |
| Birch        | .55-.64 | 79-86      |
| Black Locust | .69-.70 | 95-98      |
| Blue Beech   | .65-.61 | 89-91      |

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|--------------|---------|---------|
| Cherry       | .50-.52 | 70-71   |
| Cottonwood   | .37-.41 | 54-55   |
| Dogwood      | .70-.79 | 100-107 |
| Elm          | .50-.59 | 71-80   |
| Gum          | .48-.52 | 69-70   |
| Hard Maple   | .58-.65 | 83-88   |
| Hickory      | .70-.74 | 100     |
| Hophornbeam  | .70-.75 | 100-101 |
| Mulberry     | .59-.63 | 84-85   |
| Oak          | .60-.73 | 86-99   |
| Osage Orange | .78-.83 | 112     |
| Sassafras    | .44-.46 | 62-63   |
| Soft Maple   | .47-.54 | 67-73   |
| Sycamore     | .49-.52 | 70      |
| Tulip Tree   | .40-.42 | 57      |
| Walnut       | .52-.55 | 74      |
| White Pine   | .35-.37 | 50      |

## Where To Get Firewood

Indiana woodland owners have an excellent source of firewood on their own properties. Not only is the heat source provided, but also the quality of the woods can be upgraded with the removal of more undesirable trees for firewood. Undesirable trees are those that are poorly formed, diseased, or damaged. Some trees may need to be removed as part of a thinning operation, and these can also be used for firewood.

Many woodland owners have performed Timber Stand Improvement (TSI) work and can use trees that have been deadened as a source of firewood. Another excellent source is from the tops of trees left after a logging operation. Since treetops take up to five years to deteriorate, they provide a long-lasting wood source.

A professionally trained district forester can give assistance on determining which trees on a woodlot should be removed. Always get permission to cut or remove trees from another persons' property.

For those with no access to a woods, there are many other means of obtaining firewood.

Wood is often available as industrial wood scraps. There are several sawmills in Indiana, and some mills offer slabs, edgings and trimmings for firewood. Most mills will sell a

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pickup truck load for a reasonable price. Some mills will deliver a truckload to your residence for an extra fee.

Firewood cutting permits are available at state forests. The low cost permits are issued on a daily basis for a specific area and are obtained at the office of each state forest.

### **Buying Firewood**

Most firewood is sold by the cord. A standard cord is a stack of wood 4 x 4 x 8 feet.

Since few people burn wood in four or eight foot lengths, most sales are a "face cord" or "rick" (i.e. a 4' x 8' face cut into desired lengths). A face cord of 16" pieces is actually one third of a standard cord. In some areas in the state, firewood may be sold by weight. A ton of air-dry, dense hardwood such as oak, hickory or beech is equal to approximately one-half a cord. When buying wood by weight, species of wood and moisture content are very important.

### **A Standard Cord**

Most wood species will not burn readily if they have been freshly cut, so the wood should be reasonably seasoned. Wood should be purchased months prior to use. Proper wood size, well-seasoned wood and a mixture of various kinds of wood will enhance the enjoyment of your fireplace or wood stove.

*A standard cord is a pile of wood that is 4 feet high, 8 feet long and 4 feet wide.*

The Purdue University Cooperative Extension Service has several publications on heating with firewood. FNR-100 *Residential Wood Stove Installation*, is available for 50 cents, and FNR-79 *Wood for Home Heating* is available for 75 cents from:

Ag Communication Service  
Media Distribution Center  
301 South 2nd Street  
Lafayette, IN 47901-1232