### December 2014

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**Wood as a Heating Fuel**

**John Hobbs**

**Where are you getting your firewood?**

Does the higher cost in heating fuel prices or electricity have you dusting off that old wood stove in the corner or researching the latest wood stove technology? If so, then you’ll also want to spend some time contemplating where you are going to get your firewood.

Wood is plentiful and accessible fuel for many Missourians and for those who think “green”, it is a renewable resource as compared to coal or oil. As a rule of thumb, a cord of air-dry hardwood fuel yields about the same usable heat as 250 gallons of propane (LP), a ton of hard coal, or about 6500 kilowatt hours of electricity.

By comparing the cost of other fuels with cordwood, you can figure out the savings you’ll realize by burning wood to heat your home.

Don’t expect to go out in the backyard when the weather turns cold to cut down a few trees to saw up and throw into the new stove. It takes time to cure and dry firewood. Burning green firewood is very inefficient, and it can be unsafe.

The moisture content of green wood averages 60 to 80 percent of the total weight of a cord of firewood depending on when it was cut. Evaporating all that water in your stove will use as much as 15 percent of the potential heat in your firewood, so you are better off letting nature do it for you by air-drying your wood before you burn it.

Burning green wood also promotes a buildup of creosote in the chimney, increasing the risk of a dangerous chimney fire.

It will take about six months to air-dry a cord of cut and split wood to 30 percent moisture content and nine months to reach 20 percent moisture content. So if you haven’t started cutting and splitting your wood pile, you won’t catch up before cold weather arrives this fall. That means you’ll probably need to buy dry firewood this year and plan on using any wood you cut now during the next heating season.

**What is the best wood to burn?**

Not all firewood is created equal. Some species of trees are denser thus able to produce much more heat per cord of wood. A cord is the amount of wood in a well-stacked woodpile measuring 4 feet wide by 8 feet long by 4 feet high.

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Following are heat values in million BTU’s (per cord for various species of tree. The higher the BTU value, the more potential heat generated.

<table>
<thead>
<tr>
<th>Species</th>
<th>Heat Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ash, Green</td>
<td>23.6</td>
</tr>
<tr>
<td>Hackberry</td>
<td>21.6</td>
</tr>
<tr>
<td>Locust, Black</td>
<td>28.1</td>
</tr>
<tr>
<td>Maple, Silver</td>
<td>20.8</td>
</tr>
<tr>
<td>Oak, Post</td>
<td>27.0</td>
</tr>
<tr>
<td>Elm, American</td>
<td>20.1</td>
</tr>
<tr>
<td>Red Oak</td>
<td>25.3</td>
</tr>
<tr>
<td>Hickory</td>
<td>29.1</td>
</tr>
<tr>
<td>Mulberry</td>
<td>25.3</td>
</tr>
<tr>
<td>Sycamore</td>
<td>20.7</td>
</tr>
<tr>
<td>Osage Orange (Hedge)</td>
<td>30.7: Sparks, do not use in open fireplace</td>
</tr>
</tbody>
</table>

Heating a house with wood is relatively clean and economically beneficial. That burning wood is physically healthful, and that experiencing it is comforting to the body and soothing to the spirit.

Can the woolly bear caterpillar predict the weather?

Article source: Bruce A. Barrett

The woolly bear caterpillar (Pyrrharctia Isabella), often called the “weather worm,” is said to predict what Old Man Winter has in store. Folklore says the narrower the reddish-brown band on the caterpillar, the more severe the winter. But the width may be a better indication of the previous winter and spring than a prediction of the upcoming winter.

As they begin to age they will start to lose that pattern and an early spring will give the caterpillar a head start in feeding and growing. The better the growing season, the bigger it will grow. The color pattern for the woolly bear will change each time it sheds its skin, or molts, and it molts several times.

The black tips get smaller and smaller with each molt. If you spot a woolly bear early, the reddish-brown band will be very narrow and later in its development, the band will be wide.

This 1 1/2-inch caterpillar is covered with dense, stiff hairs called setae. The bristles, and the coloration, may have more to do with defense than weather prediction.

If disturbed, the woolly bear will roll up into a ball so the stiff bristles jut out, this may discourage some predators. While the bristles do not inject venom, they may cause dermatitis in some people, so handling the caterpillar is discouraged.

As for the coloration, red on black is a type of aposematic (warning) coloration that may make a hungry predator hesitate. The woolly bear can be found from northern Mexico to southern Canada. There can be several broods each year, depending on location. There are two to three generations per year. In the southern part of the country you’ll see three. As you move north into Canada you will only have one.

In the fall, once the woolly bear reaches a certain size, large numbers of the caterpillars can be seen on the move. They have one goal: to find a place to hide. Just like its mammalian namesake, the woolly bear hibernates. The caterpillar produces natural antifreeze called glycerol. It allows the body to freeze but keeps the fluid in the cells unfrozen.

As the weather warms in the spring and the woolly bear thaws, it will spin a cocoon and emerge as an adult called the Isabella tiger moth. Males and females will mate, and the female will then lay her eggs on a suitable plant. Then the life cycle starts again.

The woolly bear folklore was with us long before Doppler radar. Whether or not you take stock in the woolly bear’s prediction powers, here in Missouri it’s best to be prepared. Make sure warm clothes are at the ready and place a snow shovel by the door after Nov. 1.
Farm Bill Crop Provisions
Brent Carpenter, Ag Business Specialist, Pettis County

You've been hearing about it for months. Now is the time to think seriously about the crop provisions of the new farm bill and how they may impact your farm(s). Both landowners and operators have important decisions to make for each FSA farm unit. These decisions are made once and will stay with the farm for the life of the bill, 2014-18.

Sign up dates and action have been announced as follows:

- **September 29, 2014 to February 27, 2015**
  Land owners make base reallocation/yield updates

- **November 17, 2014 to March 31 2015**
  Producers make election between ARC and PLC

- **Mid April through Summer 2015**
  Producers sign contracts for 2014 & 2015 crop years

Basically, there are three new programs to consider: Agriculture Risk Coverage-County (ARC-CO), Agriculture Risk Coverage-Individual (ARC-IC), and Price Loss Coverage (PLC) which includes the option to purchase supplemental crop insurance (SCO). No previous farm bill has given producers as many choices.

This farm bill also allows land owners the choice to redistribute base acres among crops and update program payment yields. Base acres and yields are used to calculate potential program payments. Generally, higher program yields are going to give more risk protection.

The ARC programs are triggered by crop revenue per acre. A farm receives a payment if crop revenue falls below a benchmark level. The benchmark is a calculation of a moving average of revenues in previous years.

PLC payments are triggered by low crop prices. The reference prices for PLC are set in law as follows: Com $3.70; Soybeans $8.40; Grain sorghum $3.95; Wheat $5.50. As of this writing, projected prices for corn and grain sorghum will trigger PLC payments for the 2014 crop.

The level of risk protection, a.k.a. government support, from either ARC or PLC depends on what happens with future crop prices which is unknowable. However, there is excellent educational assistance available to help make an informed business decision.

We strongly recommend that producers use at least one of the two online calculators to evaluate the programs for each of their farms. Find the tools and program details at [http://www.fsa.usda.gov/FSA](http://www.fsa.usda.gov/FSA). Many MU Extension Ag Business Specialists are prepared to help you understand these decisions.

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**Fun Farm Facts**

- Like snowflakes, no two cows have the same spot pattern.
- In the US there is about 1 million acres dedicated to just tree farming. Each acre provides enough oxygen for 18 people.
- There are 350 million Christmas trees growing on farms in the United States. There are about 317 million Americans.