Forestry Notes

Firewood: Which Species Produces the Most Heat?

Species listed by the amount of heat generated per species by burning a cord of dry wood (about 20% moisture content) as measured in millions of British Thermal Units (BTUs)

Species	BTUs	Species	BTUs	Species	BTUs
Osage-orange	32.9	Walnut, black	22.2	Pine, shortleaf	19.0
Oak, white	29.1	Coffeetree, Kentucky	21.6	Maple, red (swamp)	18.7
Dogwood	28.6	Elm, red (slippery)	21.6	Boxelder	18.3
Hop hornbeam (ironwood)	27.9	Hackberry	21.2	Redcedar, eastern	18.2
Locust, Black	27.9	Persimmon	21.0	Alder	17.6
Hickory, shagbark	27.5	Elm, Siberian & Chinese	20.9	Willow	17.6
Apple	27.0	Birch, paper	20.8	Pine, pitch	17.1
Ash, white	26.6	Tamarack (larch)	20.8	Pine, red	17.1
Hickory, bitternut	26.7	Douglas-fir	20.7	Gum, black (tupelo	17.0
Locust, honey	26.7	Sweetgum	20.6	Buckeye, Ohio	16.4
Mulberry	25.8	Catalpa	20.4	Hemlock	15.9
Maple, sugar*	25.0	Cherry, black	20.4	Cottonwood	15.8
Oaks, red	24.6	Ash, green	20.0	Pine, eastern white	15.6
Beech, American	24.0	Elm, American	20.0	Spruce	15.5
Birch, black (sweet)	24.0	Sycamore	19.5	Yellow-poplar (tulip tree)	15.0
Birch, Yellow	23.6	Maple, silver	19.0	Basswood (linden)	13.8

*One dry cord of sugar maple will produce about the same amount of heat as one ton of anthracite coal (25.0 BTUs)

Although some species of trees are preferred for firewood over others, wood from practically all species can be burned to heat homes and buildings (except for wood that has been pressure treated, painted or stained, as these can release toxic materials when burned).

Proper seasoning (drying) is the key to heating efficiently with firewood. Ideally the moisture content of firewood should be at 20% or below for the greatest heat value.

Live standing trees contain as much as 60% or more of their weight as water. This high percent of water makes the wood hard to ignite and burn. Proper drying of green (wet) wood to about 20% moisture content makes the wood easier to light and burn efficiently.

Properly air-drying wood requires cutting, splitting, and stacking it outside, off the ground, protected from rain by a top cover for six to nine months.

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