

Corn and Wood Pellets Compared to Other Fuels

Heat Content of Common Fuels

- Shelled Corn = 392,000 Btu/bushel
- Fuel Oil = 140,000 Btu/gallon
- Propane = 92,000 Btu/gallon
- Natural Gas = 100,000 Btu/therm
- Electricity = 3,413 Btu/kWh
- Wood Pellets = 320,000 Btu/40 lb bag
or 16,000,000 Btu/ton

Source: University of Minnesota Extension Service

Conversion Factors

One Bushel of Corn	One 40 lb Bag of Wood Pellets
= 2.8 gallons Fuel Oil	= 2.3 gallons Fuel Oil
= 4.26 gallons Propane	= 3.5 gallons Propane
= 3.92 therms Natural Gas	= 3.2 therms Natural Gas
= 114.85 kWh Electricity	= 94 kWh Electricity



Comparisons with 80% efficiencies. Conversion factors were determined by dividing the Btu contents of wood pellets or corn by the Btu content of another fuel.

How much corn or wood pellets to heat your home?

# of units of conventional energy used per month to heat your home	÷	Conversion Factor	=	40 lb Bags of Wood Pellets or Bushels of Corn
<input style="width: 100%;" type="text"/>		<input style="width: 100%;" type="text"/>		<input style="width: 100%;" type="text"/> /month

Enter number of units of fuel oil and propane in gallons, natural gas in therms (or hundred cubic feet) and electricity in kilowatt hours.

This is the number of bushels of corn or 40 lb bags of wood pellets to replace one month's worth of the fuel you entered.

EXAMPLES: If it took 100 gallons of fuel oil to heat your home for a month, it would take 35.7 bushels of corn or 43 bags (40 lb) of wood pellets to provide the same amount of heat.

$$100 \text{ gallons} \div 2.8/\text{fuel oil} = 35.7 \text{ bushels /month} \text{ OR } 100 \text{ gallons} \div 2.3/\text{fuel oil} = 43 \text{ bags /month}$$

Calculated equivalent cost of conventional fuel

Cost of Corn/bushel or 40 lb bag of Wood Pellets	÷	Conversion Factor	=	Equivalent Cost of Conventional Fuel
<input style="width: 100%;" type="text"/>		<input style="width: 100%;" type="text"/>		<input style="width: 100%;" type="text"/>

EXAMPLES: If corn is \$4.00/bushel, the calculated equivalent cost of fuel oil would be \$1.43/gallon, meaning corn at \$4.00/bushel provides the same amount of Btu as fuel oil at \$1.43/gallon. If a 40 lb bag of wood pellets is \$4.00, the calculated cost of fuel oil would be \$1.74/gallon, meaning wood pellets at \$4.00/40 lb bag provide the same amount of Btu as fuel oil at \$1.74/gallon.

$$\$4.00/\text{bushel} \div 2.8/\text{fuel oil} = \$1.43/\text{gallon} \text{ OR } \$4.00/\text{bag} \div 2.3/\text{fuel oil} = \$1.74/\text{gallon}$$

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