

Poultry House Heating with Wood Pellets

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Overview of the Presentation

- Displacement of Propane
- Biomass Furnaces
- Benefits of Dry Heat
- Installation of a Furnace and Storage
- Winrock International Study
- Potential Market Size by State
- Questions or Comments

Displacement of Propane

- The Target Displacement
80% to 85% of the total annual consumption
- Average propane usage - 6,000 gallons per house per year
546 million BTU's per year per house.
- Gallons of propane displaced at 80% input by wood pellet furnace – 4,800 gallons
- Farmer would buy
 - 1,200 gallons of propane per year
 - 36 Tons of Wood Pellets per year

Side by Side Savings

House 1 with only Propane Heat

- 8,174 gallons of propane at \$1.74/gallon = \$ 14,222.76

House 2 with Propane and Wood Pellet Heat

- Propane 2,149 gallons at \$1.74/gallon = \$ 3,739.26
- Pellets 41 tons at \$145.00/ton = \$ 5,945.00
- Total for Propane and Pellets = \$ 9,684.25

- Savings of **\$ 4,538.50** for 18 week turkey grow out.

- Current furnace in place is approximately 70% efficient
- Average temperature during 18 week grow out was 37.4 degrees.

Biomass Furnaces

- Technically Viable
- Economically Feasible Fuel
- Environmentally Acceptable
- User-Friendly
- Forced Air or Boiler Systems

Comparison of Furnace Systems

	Corn	Wood pellets	Raw litter
Technically viable	High	High	Not yet
Economically feasible (fuel)	Only with cull corn	High	???
Environmentally acceptable	High	High	Air ? Water ✓
User-friendly	High	High	Low
Benefits of "dry heat"	High	High	High

Benefits of Dry Heat

- Lower Humidity

 - Drier litter

 - Reduced ammonia levels

 - Reduced ventilation rates

- Bird Production

 - Reduced mortality

 - Improved feed conversion

 - Shorter grow-out period

- Better conditions for workers

- Bird Production statements are currently being studied.

Installation



- 500,000 Btu Furnace and Pellet Storage Unit installed in Buffalo, MO in 2008.
Barn Size 55' x 550'

Winrock International

- In May, 2008 Winrock International

Biomass Furnaces for Heating Poultry Houses in the Northwest Arkansas Region

This study compared different furnaces and fuel source.

Copies of this study can be found at

WWW.WINROCKUSPROGRAMS.ORG

Potential Market Size by State

- Alabama – 8,100
- Arkansas – 9,300
- Delaware – 2,000
- Florida – 600
- Georgia – 11,000
- Kentucky – 2,400
- Maryland – 2,400
- Minnesota – 400
- Mississippi – 6,500
- Nebraska – 200
- North Carolina – 6,200
- Oklahoma – 2,000
- Pennsylvania – 1,200
- South Carolina – 2,000
- Tennessee – 1,700
- Texas – 4,400
- Virginia – 2,000
- West Virginia – 700
- Wisconsin – 400
- California – 2,500
- Louisiana – 1,200
- Missouri – 3,500

Information derived from USDA, NASS. Number of houses based on 2007 Broiler production.

Thank You.

Questions or Comments?

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