Farm Energy IQ
Farms Today Securing Our Energy Future
Making Pellets on the Farm
Daniel Ciolkosz, Penn State Extension
Making Pellets on the Farm

What you need

How it’s done
The Local Pellet Concept
What You Need

• Feedstock
• Equipment
• Patience

How to Do It

• Prepare feedstock
• Run the equipment
What You Need - Feedstock

• Woody material

  – Sawmill sawdust
  – Shrub Willow
  – Woodlot Thinnings
  – Not as available on most farms
  – Lower ash content, if bark excluded
What You Need – Feedstock

• Herbaceous (grassy) material

– Perennial grasses (switchgrass, Miscanthus)
– Crop Residues (corn stover, wheat straw)
– Available at relatively low cost
– High ash content (about 3 to 6%)
What You Need – Equipment

Grinder to reduce particle size

1. Tub grinder
2. Hammer mill
3. Collection System
What You Need – Equipment

Moisture control to add or remove moisture
What You Need – Equipment

Pelletizer to create pellets
What You Need – Equipment

Cooling Equipment

– Pellets dry and harden as they cool
What You Need – Patience
How to Do It – Prepping the Feedstock

• Grind material to a uniform size – use screen no larger than pellet diameter

• Adjust moisture content – 12 to 18% is best for most setups
How to Do It – Running the Machine

Keep rollers snug
Consider using a pre-mix at startup
How to Do It – Running the Machine

• Adding feedstock: dump all at once or add gradually?

• In open-hopper machines, dumping material all at once works better than does gradual feed

• For sealed hopper machines, gradual feed may work
How to Do It – Running the Machine

• Reduce machine speed
How to Do It – Running the Machine

• Extra binders or additives?
Will it pay off?

Typical costs for producing pellets

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cost per ton of final product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growing feedstock</td>
<td>$60-$80</td>
</tr>
<tr>
<td>Grinding</td>
<td>$10-20</td>
</tr>
<tr>
<td>Drying/Moisture Control</td>
<td>$0-10</td>
</tr>
<tr>
<td>Pelletizing</td>
<td>$10-30</td>
</tr>
<tr>
<td>Bagging</td>
<td>$5-10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$85-$150</strong></td>
</tr>
</tbody>
</table>
Conclusions

- The right feedstock
- The right equipment
- The right technique

- The right stuff!
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Questions?