7th Annual Biomass Workshop

Material Handling Challenges of Biomass

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Prairie Agricultural Machinery Institute

A Research and Development Corporation ...

with Specialized Expertise

... in Machinery.
... in Processing.
... in BioEnergy.

Innovative Solutions for Agriculture and Beyond
Overview

- Field Opportunities
- Densification (briefly)
- Harvesting Cattails
- Field to end use
Field Conditions:
Cattails - Pelly’s Lake
Monocultures

Canola

Wheat

Retrieved 03/03/14 from:
http://www.canolacouncil.org/media/509899/field2lr.jpg

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Material Handling – Key Factors

Uniformity

- Moisture content
  - Crop from harvest to end use
- Swath thickness
- Stalk length
- Orientation
- Crop Species
Biomass Densification

- Transformation of loose, bulky material into a compacted solid with a defined shape
- Increases the mass to volume ratio (density)
Mobile Densification System

- Diesel Power Unit
- Cuber
- Cooling Fan
- Cube Cooler
Straw Properties affect Cube-ability

Maximum Dwell Time
Material Handling – Cattail Swaths
Material Handling – Field Conditions
Rotary Mower
Material Handling – Square Baling
Material Handling – Square Baling

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Material Handling – Field Storage
Material Handling – Transportation
Storage - Ag bags
Elie’s Former Isobord Facility

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Questions?
Thank You!
Bale Busting