OILSEED FEEDSTOCKS

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Oilseeds

- *B. napus* – canola
- *B. juncea* – brown mustard
- *B. carinata* – ethiopian mustard
- *Sinapis alba* – white mustard
- Camelina sativa
- *B. rapa* – industrial rapeseed
Key questions

• Are these crops economically viable for the farmer to produce?
  • At a price low enough for industry to be viable?
• Will farmers grow these crops?
• Impacts on natural resources and environment
• Long-term effects on agricultural productivity and economic viability
More Efficient Land Use

• Fallow
• Rotational benefits
• Double-crop or Relay-crop
Farm-level profitability

- Agronomics – oilseed productivity, input use, rotational impacts, climate and soil effects
- Local demand -> reduce transport cost -> retain oilseed value at the farm level
Oilseed Supply Analysis

Scenario: Oilseed Price = $500/Mg
298,000 Mg Oilseed
131,000 Mg Oil (35.4 million gallons)
64,400 Mg Jet Fuel (20.5 million gallons)
Farmer adoption

• Changing behavior
  • Uncertainty – how to grow, production potential, input needs, marketing
  • Risk - variability of returns
  • Investment – capital changes
  • Profitability relative to existing crops
Farmer Adoption

Northern Plains
(Blue – with insurance/ Red – no insurance)

Source: Bergtold et al. (preliminary)
Linkage to Transportation Analysis

Legend
- Optimal Preprocessors
- Optimal Biorefineries
- Optimal Destinations
- Optimal Intermodal
- Preproc to Bioref Water Flow
- Preproc to Bioref Road Flow
- Preproc to Bioref Rail Flow
- Bioref to Destination Water Flow
- Bioref to Destination Road Flow
- Bioref to Destination Rail Flow

Oilseed Feedstock (Mg)
Price = $500/Mg

- 0
- 1 - 1000
- 1001 - 2000
- 2001 - 3000
- 3001 - 4000
- 4001 - 5000
- 5001 - 5263
Key Points

• Feedstock Availability
  • Agronomics – where can feedstocks be grown?
  • Economics - profitability of feedstock production
  • Adoption - other factors influencing farmer willingness to grow

• Spatial Impacts
  • Not good enough to know how much is available, need to know where
    • Infrastructure and transportation needs
    • Environmental impacts
  • Tied to spatial characteristics
    • Soil and weather
    • Farmer characteristics