Bioenergy Feedstocks
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The DAM Project

Stover project structure and scope

“Sustainable” harvest  Transport  Storage  Conversion

Large scale joint work

Individual research scale work

Monsanto imagine
Feedstock improvement

John Deere
Improved tillage, planting and harvest

ADM
Biofuel production Improvement
Corn Stover Supply Chain: Risk Mitigation Stage & Gate Process

**STAGE 1:**
Corn plant growing conditions, final grain yield = harvestable stover
Time: 120-180 days

**STAGE 2:**
Grain harvest to stover baling
Time: Minutes to several weeks

**STAGE 3:**
Baling to staging or storage area
Time: Minutes to several days

**STAGE 4:**
Long term storage area
Time: Up to 12 months

**STAGE 5:**
Storage to Bioreactor
Time: Minutes

**STAGE 6:**
Bioreactor and downstream markets

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**Key Needs:**
- To achieve $50/dt supply chain, real data set for supply chain model needed with material identification and predictable quantify/quality at the reactor gate
- To achieve $25/dry ton supply chain, likely need a step change innovation

**Key Challenge:**
- Need monitoring and/or prediction tools at millions of ton scale
DAM 2.0 Project Goal:
_Demonstrate a Robust Supply Chain that Cost-Effectively Delivers Quality-Specified Corn Stover_

**DAM 2: Draft Objectives**

1. Develop a business model that can be profitably operated at $6/bu corn and at $4/bu corn

2. Develop a supply chain strategy to deliver year round supply of quality corn stover to a bioreactor at $50/dt (short term) and $25/dt (long term)
   - A. Identify and develop strategies to mitigate losses in _quality_
   - B. Identify and develop strategies to mitigate losses in _quantity_

3. Identify “real-time” assessment tools to measure and predict quality and quantity of stover coming to central processing facility

4. Develop stover harvest sustainability standards
   - A. To meet the needs of the grower
   - B. Longer term, to enable downstream market development
   - C. Stage 2: Just after grain harvest
   - D. Stage 3: During stover harvest
   - E. Stage 4: During stover storage
   - F. Stage 5: From storage to bioreactor