Can we fly and eat too?

Michael Bomford
Biofuels for Aviation Summit
Arlington, VA
September 2009
US Food System, 1995 (millions of pounds)

1.67 trillion lbs = 0.8 billion tons

Figure from University of Michigan Center for Sustainable Systems (css.snre.umich.edu)
U.S. Corn Use, 1990 - 2008

Bushels in Billions

- Ethanol
- FSI less ethanol1/
- Exports
- Feed & Residual

FSI = Food, seed, and industrial less ethanol.

USDA Media Briefing May 19, 2008
A Billion Tons by 2030?

• “Relatively modest changes” or unrealistic assumptions?
  – Yields of corn, wheat, and other small grains increase by 50%
  – Recover 75% of crop residues
  – All cropland no-till
  – Convert 55 million acres of cropland, pasture to perennial bioenergy crops
No-till adoption, 1994-2004
## Fractional Stover Harvest

<table>
<thead>
<tr>
<th>Harvest Scenario</th>
<th>Stover Collected (Mg/ha)</th>
<th>% Harvested</th>
</tr>
</thead>
<tbody>
<tr>
<td>High cut</td>
<td>4.9</td>
<td>46</td>
</tr>
<tr>
<td>Low cut</td>
<td>6.7</td>
<td>64</td>
</tr>
<tr>
<td>Normal cut</td>
<td>5.1</td>
<td>49</td>
</tr>
</tbody>
</table>

Biofuels

Benefits

Liabilities

Fossil fuel & greenhouse gas offsets

Environmental & human well-being

Biofuels extent