From the Farm to the Table: An In-Depth Look into Information Passage between the Agriculture Sector and Consumers

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Honors Program

All Pics from Google
Agriculture in the US Economy

- 1.2% of GDP
- 1% of working population (2% of people)
- 9.4% of exports
- 4.9% of imports

(CIA, 2012)
The Facts on Farms

- 2.1 million farms  (AG Census Demographics, 2007)
  - 1 million report positive net income
- 62% owned by primary operators
- 125,000 produced 75% of value  (AG Census Farm Numbers, 2007)
  - 9% of farms in nation considered large or very large family farms
USDA Budget

- $145 billion
  - 74% nutrition
  - 13% farm commodity
  - 7% forestry and conservation
  - 6% other

- Agencies overseen:
  - Forest Service
  - Animal and Plant Health Inspection Service (APHIS)
  - Food Safety Inspection Service (FSIS)
  - Nutrition programs (schools, WIC, etc)
  - Natural Resource Conservation Service (NRCS)
  - National Agricultural Statistics Service (NASS)
  - Economic Research Service (ERS)
    - United States Agency for International Development (USAID)

(USDA Budget, 2012)
<table>
<thead>
<tr>
<th>Inputs</th>
<th>Price</th>
<th>Amount</th>
<th>(Price of bags)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acreage</td>
<td>$3-5,000/ac</td>
<td>400ac</td>
<td></td>
</tr>
<tr>
<td>Tractors</td>
<td>$115,000</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Tillage</td>
<td>$80,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planter</td>
<td>$1-20,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combine</td>
<td>$175,000 +heads</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Fertilizer</td>
<td>$700/ton</td>
<td>Varies</td>
<td></td>
</tr>
<tr>
<td>Corn</td>
<td>$400/bag</td>
<td>40 bags</td>
<td>$16,000</td>
</tr>
<tr>
<td>Soybeans</td>
<td>$80/bag</td>
<td>300 bags</td>
<td>$24,000</td>
</tr>
<tr>
<td>Spraying</td>
<td>$9/ac</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>~$2 million</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acres</th>
<th>Bushels /acre</th>
<th>Yield (bushels)</th>
<th>Price</th>
<th>Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 of corn</td>
<td>190</td>
<td>19,000</td>
<td>$6.30</td>
<td>$119,700</td>
</tr>
<tr>
<td>300 of soybeans</td>
<td>55</td>
<td>16,500</td>
<td>$14</td>
<td>$231,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$350,700</td>
</tr>
</tbody>
</table>

(Cody Chesney, 2012)
Expenses & Products: Broken Down

- $297 billion in products
- $241 billion in expenses
- $8 billion in farm payments

- Sales increased 48%, Inputs increased 39%
- Every $1=$1.31 in other economic benefits

(Nebraska, 2011)
## Animal Production

### 1980 and 2010 Animal Production

<table>
<thead>
<tr>
<th>Animals</th>
<th>Number (Millions)</th>
<th>Production (billion lbs)</th>
<th>Number (millions)</th>
<th>Production (billion lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>111.2</td>
<td>40.3</td>
<td>92.6</td>
<td>41.6</td>
</tr>
<tr>
<td>Hogs</td>
<td>67.3</td>
<td>23.4</td>
<td>64.6</td>
<td>30.4</td>
</tr>
<tr>
<td>Sheep</td>
<td>12.7</td>
<td>746</td>
<td>5.6</td>
<td>405 (million lbs)</td>
</tr>
</tbody>
</table>

### 1970 and 2010 Poultry Production

<table>
<thead>
<tr>
<th>Animals</th>
<th>Number</th>
<th>Weight</th>
<th>Number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broilers</td>
<td>2,987 (million)</td>
<td>10.8 (billion lbs)</td>
<td>8,625 (million)</td>
<td>49.2 (billion lbs)</td>
</tr>
<tr>
<td>Turkeys</td>
<td>116 (million)</td>
<td>2.2 (billion lbs)</td>
<td>244 (million)</td>
<td>7.1 (billion lbs)</td>
</tr>
<tr>
<td>Eggs</td>
<td>68.2 (billion)</td>
<td></td>
<td></td>
<td>91.4 (billion)</td>
</tr>
<tr>
<td>Layers</td>
<td>339,961 (thousand)</td>
<td></td>
<td>269 eggs/layer</td>
<td></td>
</tr>
</tbody>
</table>

### 2006 and 2010 Dairy Cows

<table>
<thead>
<tr>
<th>Dairy Cows</th>
<th>2006</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Cows</td>
<td>9,137 (thousands)</td>
<td>9,117 (thousands)</td>
</tr>
<tr>
<td>Milk Production (lbs)</td>
<td>181,782 (million)</td>
<td>192,819 (million)</td>
</tr>
<tr>
<td>Milk Production/cow (lbs)</td>
<td>20,395</td>
<td>21,149</td>
</tr>
</tbody>
</table>

(USDA-NASS, 2012)
The Problem

- Three generations removed from AG
- The Agriculture Sector Has Not Helped

Survey (Roots of Change, 2011)
- 42% food system is headed in wrong direction
- 39% believe in right direction
- 19% have no clue
Consumers Want to Know

- GM crops
- Use of Hormones & Antibiotics
- Food Safety
- Animal Welfare
- Organic vs Conventional
- Environmental Impact
  - Pesticides
  - Greenhouse Gases
  - Fertilizers
  - Public Lands for Grazing
GM Foods

- GM crops
  - Risk factors: gender, age, education, income, profession, culture
Hormones in Livestock

“Hormone-free”
- No such thing!
  - “Estrogens are in many foods - specifically phyto or plant estrogens. Soy flower has 755,000,000 (ng/500g), Tofu 113,500,000 (ng/500g), Milk 32 (ng/500g) and Beef from implanted steer 7 versus non implanted steer 5 (ng/500g). A pregnant woman produces 19,600,000 ng/day, non-pregnant woman 513,000 ng/day, adult man 136,000 ng/day, pre-puberal children 41,000 ng/day and 500 g of beef from implanted cattle 7ng” (Fox News, 2012)

rBST (rBGH) in cattle

5 hormones used (FDA, 2011)
- testosterone, estrogen, progesterone, trenbolone, zeranol
- None used in Pork or Poultry

EU (WTO Dispute, 1998)
Antibiotics in Livestock

- Antibiotics
  - Fed to keep animals healthy
  - FSIS monitors residues
  - “Not surprisingly, US Meat is banned worldwide” (Healthy Child Blog, 2010)
  - Antibiotic resistance
    - Human abuse of drugs?
Food Safety

- Decreased salmonella & E.coli
- The FSIS (American Agri-Women, 2009)
  - 2876 food inspectors
  - 1862 consumer safety officers
  - 1801 complicity officers
  - 1382 food technologists
  - 701 veterinarians
  - 9397 people with 6200 plants
- FDA (food safety and recalls)
  - 210,000 FDA inspected plants ($538 million)
- CDC-Vital Signs
Organic

- Raised without use of hormones or antibiotics (USDA, 2010)

- Revert to small, backyard farms (American Agri-Women, 2009)
  - 165 million more acres need in production

- Healthier? Safer?
  - No proof
  - Same amount of e.coli (use manure as fertilizer...)
Environmental Impact

- Pesticides  (EPA, 2012)
  - Federal and State

- Fertilizers  (TFI, 2012)
  - Federal & State
  - 4Rs

- Manure management/Greenhouse Gases
  - 6.5% of US gas emission in 2010  (EPA, 2012)
  - Innovation?

- Public Grazing
Chart 1. Shares of expenditures for selected categories, United States, Canada, United Kingdom, and Japan, 2009

Food, Inc.  See: safefoodinc.com

Agriculture a Waste of a Degree  (Clemson, 2012)

Need to (and are starting to):
- Use Social Medias
- Tours
- Public Relations
The Responses

- Corn Farmer’s Coalition
- NCBA
- NPB
- Canadian Quality Milk
- CTIC
- Wyoming CRM
- Agritourism
- USFRA
  - Food Dialogues
US Farmers and Ranchers Alliance (USFRA)

- Alabama Farmers Federation
- American Egg Board
- American Farm Bureau Federation*
- American Farm Bureau Women’s Leadership Committee
- American Farm Bureau Young Farmers & Ranchers
- American Farmers for the Advancement and Conservation of Technology
- American National CattleWomen
- American Sheep Industry
- American Soybean Association
- American Sugar Alliance
- Arkansas Farm Bureau Federation
- Association of Agriculture Production Executives
- California Farm Bureau Federation
- California Pork Producers Association
- Cattlemen’s Beef Board/Beef Checkoff*
- Dairy Farmers of America
- Federation of State Beef Councils*
- Georgia Farm Bureau
- Illinois Farm Bureau
- Illinois Soybean Association*
- Indiana Farm Bureau Federation
- Indiana Soybean Alliance*
- Kansas Farm Bureau Federation
- Kansas Soybean Commission
- Kentucky Farm Bureau Federation
- Michigan Farm Bureau Family of Companies
- Minnesota Farm Bureau
- Minnesota Soybean Research & Promotion Council*
- Mississippi Farm Bureau Federation*
- Missouri Farmers Care
- National Association of Wheat Growers
- National Cattlemen’s Beef Association*
- National Corn Growers Association*
- National Cotton Council
- National Milk Producers Federation*
- National Pork Board*
- National Pork Producers Council*
- Nebraska Farm Bureau Federation
- Nebraska Soybean Board*
- New York Farm Bureau Federation
- North Carolina Animal Agriculture Coalition
- North Carolina Farm Bureau Federation
- North Dakota Soybean Council
- Ohio Farm Bureau
- Ohio Soybean Council
- Pennsylvania Farm Bureau
- South Carolina Farm Bureau Federation
- Southern Peanut Farmers Federation
- Tennessee Farm Bureau Federation
- Tennessee Soybean Promotion Council
- Texas Farm Bureau
- United Egg Producers*
- United Fresh Produce Association
- United Sorghum Checkoff Program
- United Soybean Board*
- USA Rice Federation
- U.S. Grains Council
- U.S. Poultry & Egg Association*
- U.S. Soybean Federation
- Virginia Farm Bureau Federation
- West Virginia Farm Bureau

*Board Participants
Solutions to Industry Issues

- COMMUNICATE with the public
  - Explain skills required in each field
  - Show Social Responsibility

- Target consumers correctly
  - High Price “Natural” does not appeal to income-constrained consumers

- Don’t Hold Back Information
  - Allows Extremists to Exploit
    (Croney & Reynnells et al., 2008)
“It ain’t what you don’t know that is a problem—it is what you know that just ain’t so, that is the problem.” – Will Rogers

Walt Bones, SD Secretary of AG
http://www.youtube.com/watch?v=Y3vkXV4P1lY&context=C4f12489ADvjVQA1PpcFOGO7oAgZMrIDhAGJoeYkt_RD1txN3Pydw=
References

- Cody Chesney, personal communication, Mar 3 2012.