Role of Consumer Perceptions of Animal Health

Glynn Tonsor
Dept. of Agricultural Economics,
Kansas State University

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Schedule of Events: Tentative

- Monday, January 9 - Animal Science Arena
  5:00 to 6:00 p.m. Registration .........................................................
  6:00 p.m. Dinner: Catered by Mexico Joe's
  Receiving Calf Health Overview
  6:45 p.m. Welcome
  7:00 p.m. Consumer perceptions of animal health on human health and food safety .........................................................Glynn Tonsor, K-State
  7:40 p.m. Industry impact of receiving health: a North American perspective .........................................................Shawn Walter, PCC
  8:20 p.m. Calf immune function, stress, and disease challenges .........................................................Jodie McGill, K-State
  9:00 p.m. Questions, Discussion, Wrap-up
Why was an economist invited???

• USDA Supporting Grant:

Non Technical Summary
“... It has become clear that management of cattle health requires an integrated approach that bridges several disciplines. ... Professionals attending the conference and subsequent reviewers of the proceedings will be provided a strong knowledge of interdisciplinary aspects of managing cattle health....”


Situational Summary
Figure 1. Historical & Projected Average Net Returns for Finishing Steers in Kansas Feedyards


Historical Average Net Returns and Total Costs for Finishing Steers in Kansas Feedyards

\[ y = -0.0207x + 786.92 \]
\[ R^2 = 0.0637 \]

\[ y = 0.2153x - 7180.1 \]
\[ R^2 = 0.7385 \]
“Interesting Times” in the Beef Industry

**TRADE w/ BRAZIL**

**TPP/TTIP & US Election**

In China Beef Trade, U.S. Gain May Mean Australia Pain

**Re-emergence of MCOOL?**

**Mandatory Price Reporting & GIPSA Rule Discussions**

**CATTLE MARKETS “BROKEN”**

**NEW FED CATTLE EXCHANGE**

**Veterinary Feed Directive**
300k horses in London in 1900
“most malodorous environmental challenge facing the world’s biggest cities … was horse dung”
One decade later problem was addressed by the invisible hand of the market: Henry Ford’s Model T – by 1912 cars outnumbered horses in NYC

100 Years after being viewed as an environmental savior: oil is viewed increasingly as horse dung used to be – a menace to public health and the environment
Horses in NYC & Animal Ag

• Current challenges can be addressed *IF* we:

  1) Accurately recognize the challenge

  2) Actively pursue solutions

  3) Identify technology & “let markets work”

Changes in Consumer “Signals”

• We must appreciate essential role of consumer demand & customer product acceptance

  – Complex and changing all the time
Changes in Consumer “Signals”

- We must appreciate essential role of consumer demand & customer product acceptance
  - Complex and changing all the time

- In agriculture:
  - increasingly involves “social issues”
  - calls to document, verify, and adjust “conventional” production practices

Ongoing calls for change, verification, &/or improvement:

**Credence Attributes**
- Food safety
- Environmental impact
- Animal Welfare
- Origin labeling
- Antibiotic use

**Other Attributes**
- Price
- Freshness
- Taste
- Nutrition
- Health
- Convenience
Food Values Applied to Livestock Products (Lister et al., 2017)

• “Social Issues” less important in purchasing decisions than:
  – Safety
  – Freshness
  – Taste
  – Nutrition
  – Health
  – Price


Lister et al. (forthcoming)

<table>
<thead>
<tr>
<th>Importance Shares</th>
<th>Ground Beef</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety</td>
<td>21%</td>
</tr>
<tr>
<td>Freshness</td>
<td>20%</td>
</tr>
<tr>
<td>Taste</td>
<td>12%</td>
</tr>
<tr>
<td>Health</td>
<td>12%</td>
</tr>
<tr>
<td>Nutrition</td>
<td>8%</td>
</tr>
<tr>
<td>Price</td>
<td>7%</td>
</tr>
<tr>
<td>Hormone Free/Antibiotic Free</td>
<td>7%</td>
</tr>
<tr>
<td>Animal Welfare</td>
<td>5%</td>
</tr>
<tr>
<td>Origin/Traceability</td>
<td>3%</td>
</tr>
<tr>
<td>Environmental Impact</td>
<td>3%</td>
</tr>
<tr>
<td>Convenience</td>
<td>2%</td>
</tr>
</tbody>
</table>
Lister et al. (forthcoming)

- “Social Issues” < safety, freshness, taste, price…

<table>
<thead>
<tr>
<th>Importance Shares by Product</th>
<th>Ground Beef</th>
<th>Beef Steak</th>
<th>Chicken Breast</th>
<th>Milk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety &amp; Freshness</td>
<td>41%</td>
<td>37%</td>
<td>39%</td>
<td>38%</td>
</tr>
<tr>
<td>Taste, Health, Nutrition, Price, Conv</td>
<td>41%</td>
<td>47%</td>
<td>44%</td>
<td>45%</td>
</tr>
<tr>
<td>HF/AF, AW, Origin/Tr, Env</td>
<td>18%</td>
<td>16%</td>
<td>17%</td>
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</tbody>
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Lister et al. (forthcoming)

- Heterogeneity must also be appreciated

<table>
<thead>
<tr>
<th>Importance Shares by Product and Population Group</th>
<th>Ground Beef</th>
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<tr>
<td></td>
<td>Group 1</td>
<td>Group 2</td>
</tr>
<tr>
<td>Safety &amp; Freshness</td>
<td>42%</td>
<td>40%</td>
</tr>
<tr>
<td>Taste, Health, Nutrition, Price, Conv</td>
<td>46%</td>
<td>39%</td>
</tr>
<tr>
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</tr>
<tr>
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<td>69%</td>
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<tr>
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<td>69%</td>
<td>32%</td>
<td>68%</td>
</tr>
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<td>41%</td>
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<tr>
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<td>19%</td>
</tr>
<tr>
<td>Class Size</td>
<td>21%</td>
<td>79%</td>
</tr>
</tbody>
</table>

Current Situation

➢ Importance of attributes is clear

➢ **HOW** public wants outcomes achieved is less clear

➢ *May also be changing over time*…
Economic Realities Going Forward

• Center for Food Integrity’s Sept. 4, 2013 tweet:
  “Science tells us if we can do something. Society tells us if we should do it.”

➢ Think about beta-agonists, feeding GM corn, gestation stalls, laying hen cages, handling techniques, euthanasia practices, …

Economic Realities Going Forward

• Outcomes will only partially align with “best science” approaches or recommendations

➢ Public will give license to utilize only a subset of available production options that ‘technically work’

➢ Economic & political optimality critical to see
Economic Realities Going Forward

• Outcomes will only partially align with “best science” approaches or recommendations
  – **Vote-buy disconnect will persist**

<table>
<thead>
<tr>
<th>Production Practice</th>
<th>Vote to Ban/Limit</th>
<th>Pay a Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit antibiotic use for cattle to only disease treatment</td>
<td>70.9%</td>
<td>48.0%</td>
</tr>
<tr>
<td>Ban cattle castration without use of pain control</td>
<td>66.1%</td>
<td>35.9%</td>
</tr>
<tr>
<td>Ban use of sow gestation stalls in the swine industry</td>
<td>51.3%</td>
<td>34.9%</td>
</tr>
<tr>
<td>Ban use of laying hen cages in the egg industry</td>
<td>49.7%</td>
<td>40.5%</td>
</tr>
</tbody>
</table>

• Short-term “unfunded mandates” will continue…
Benchmarking Cattle Producer & Public AW Perceptions

• “Beef and Dairy Cattle Animal Welfare: Market Opportunities and Threats”
  – USDA AFRI Integrated Grant, 2012-68006-30178
  – Economists: Chris Wolf (MSU) & Melissa McKendree (KSU)
  – Animal Scientist: Janice Swanson (MSU)
  – Veterinarian: Dan Thomson (KSU)

• Nationally representative U.S. public & producer surveys
  – Nov. 2013 – May 2014
    • Cow-Calf Producers (n=686) & U.S. Public (n=1,992)
    • Dairy Producers (n=656) & U.S. Public (n=2,001)

Comparisons of Cow-Calf Producer and U.S. Public Survey Responses

• Supporting Resources Available on www.AgManager.info
  – http://www.agmanager.info/livestock/marketing/AnimalWelfare/default.asp
Public’s vote-buy consistency & producer perceptions of behavior

**PUBLIC SURVEY**
- Would you support the following restrictions on food production practices if asked to vote on them?
- Would you pay a price premium for the following food products?

**PRODUCER SURVEY**
- What percentage of the U.S. public do you believe would:

### Public’s vote-buy consistency & producer perceptions of behavior

<table>
<thead>
<tr>
<th>Vote to ban cattle castration without use of pain control</th>
<th>Consumer-Yes</th>
<th>Consumer-Don’t know</th>
<th>Producer-Conditional Average</th>
<th>Producer-Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>66%</td>
<td>15%</td>
<td>53%</td>
<td>16%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pay a premium for beef from cattle castrated with pain control</th>
<th>Consumer-Yes</th>
<th>Consumer-Don’t know</th>
<th>Producer-Conditional Average</th>
<th>Producer-Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>36%</td>
<td>38%</td>
<td>26%</td>
<td>18%</td>
</tr>
</tbody>
</table>

30% gap

27% perceived gap

Note: Cow-calf producers were asked what they thought typical American would do.
Effective and Practical Actions to Improve Welfare of Beef Cattle in the U.S.

Provide access to **fresh, clean feed and water** appropriate for the animal's physiological state.

Provide adequate comfort through the use of **shade, windbreaks, and ventilation** assuring clean, dry, sanitary environmental conditions for cattle.

Promptly **treat or euthanize** all injured or sick animals.

Develop a **herd health plan** with the help of a veterinarian.

Consistent **training program** for owner and employees focusing on principles of animal care and handling.

Restrict use of **antibiotics** to only disease treatment.

**Castrate** male calves either within the first three months of age or with pain control.

**Dehorn/disbud** calves either before horn tissue adheres to skull or with pain control.

**Third party verification** that appropriate animal care and facilities are provided on farm.

---

Best-Worst (Max-Min) Example

There are many different options being discussed for the U.S. beef industry to adopt in response to growing animal welfare discussions. Please consider the following six sets of actions and your ranking of the action which would be most effective and least effective to improve welfare of beef cattle in the U.S.

(Check only one issue as the most and only one as the least effective)

<table>
<thead>
<tr>
<th>Most Effective</th>
<th>Action</th>
<th>Least Effective</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Provide access to fresh, clean feed and water appropriate for the animal's physiological state (appropriate energy for milk production, pregnancy, or weight gain).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide adequate comfort through the use of shade, windbreaks, and ventilation assuring clean, dry, sanitary environmental conditions (housing, pasture, or dry lots) for cattle.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Restrict use of antibiotics to only disease treatment.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Promptly treat or euthanize all injured or sick animals.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dehorn (remove horns)/disbud calves either before horn tissue adheres to skull or with pain control.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Castrate male calves either within the first three months of age or with pain control.</td>
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Most Effective and Practical Actions to Improve Welfare of Beef Cattle in the U.S.

- **Same 3 actions for producers & consumers**
  1. Provide access to **fresh, clean feed and water** appropriate for the animal's physiological state.
  2. Provide adequate comfort through the use of **shade, windbreaks, and ventilation** assuring clean, dry, sanitary environmental conditions for cattle.
  3. Promptly **treat or euthanize** all injured or sick animals.

Will Consumers Pay for Changes?

- Short-Term: NO
- Long-Term: YES
Will Consumers Pay for Changes?

➤ Not the only question we must consider…

Will we survive if we do not recognize, adapt, and evolve to changes?

Who wants to go home with a new phone?
Who wants to go home with **THIS** phone:


---

Who wants to go home with **THIS** phone:

Consider how much phones have changed…


Consider how much MORE phones WILL change…

How should we think about feedlot processes and calf health and well-being?

Program Examples
1. Transportation
2. Feed Additives & Implants
3. Pens – Mud, Shade, and Space

How should we think about feedlot processes and calf health and well-being?

Must directly consider:
1) Effectiveness
2) Feasibility
3) Acceptability
Effectiveness & Feasibility

• Why create something with limited odds of industry adoption?
  – *How would investors react?*

Effectiveness & Feasibility

• Just because something “works” doesn’t mean it will be 100% implemented
  
  – Feasibility, effectiveness, & net econ. value (reflects acceptance) are key

  • *E.coli vaccines for fed cattle are prime example*
“Consumer is Always Right”
-even if they “technically speaking” are wrong

“If you think you can, you can.
And if you think you can’t, you’re right.”

Henry Ford (1863-1947)
>40% of Americans are in top 10% of Global Wealth

“Some of those railing against the global elite probably do not even know they belong to it.”
Take-Home Message

• Public’s role in Animal Health is here to stay
  – Documenting, verifying, &/or changing practices is increasingly a cost of doing business

• The industry can effectively respond if it:
  1. Accurately recognizes the challenge
  2. Actively pursues solutions
  3. Identifies technology & lets markets work

Take-Home Message

• Our approach to Animal Health will change with:
  – Technology availability
  – Dynamic consumer perceptions & preferences
  – Market signals & Regulations
Take-Home Message

• Our approach to Animal Health will change with:
  – Technology availability
  – Dynamic consumer perceptions & preferences
  – Market signals & Regulations

AND THAT’S OKAY!!!

More information available at:

www.agmanager.info

Glynn Tonsor
Professor
Dept. of Agricultural Economics
Kansas State University
Email: gtonsor@ksu.edu
Twitter: @TonsorGlynn

http://www.agmanager.info/about/contributors/individual/tonsor.asp

KANSAS STATE UNIVERSITY
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AgManager.info website is a comprehensive source of information, analysis, and decision-making tools for agricultural producers, agribusinesses, and others. The site serves as a clearinghouse for applied outreach information emanating from the Department of Agricultural Economics at Kansas State University. It was created by combining departmental and faculty sites as well as creating new features exclusive to the AgManager.info site. The goal of this coordination is to improve the organization of web-based material and allow greater access for agricultural producers and other clientele.

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http://www.AgManager.info/Evaluation/Email.htm

**Food Values Descriptions**

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshness</td>
<td>The expected freshness of the product as indicated by expiration date and visual perception of the food product</td>
</tr>
<tr>
<td>Taste</td>
<td>The extent to which consuming the product is appealing to the senses including flavor, smell, and texture</td>
</tr>
<tr>
<td>Price</td>
<td>The price per unit paid for the food product</td>
</tr>
<tr>
<td>Safety</td>
<td>With proper handling, consuming the product will not cause illness</td>
</tr>
<tr>
<td>Convenience</td>
<td>The ease with which the product can be prepared and/or consumed including preparation and cooking time</td>
</tr>
<tr>
<td>Nutrition</td>
<td>The extent to which consuming the product provides essential nutrients such as protein, carbohydrates, vitamins, and minerals. Also, how consuming the product provides necessary calories and energy, as part of a daily diet</td>
</tr>
<tr>
<td>Health</td>
<td>The extent to which consuming the product positively contributes to long term health including the amount and type of fat and cholesterol in the product</td>
</tr>
<tr>
<td>Origin / Traceability</td>
<td>The extent to which the locations and identities of producers and processors are known</td>
</tr>
<tr>
<td>Hormone Free / Antibiotic Free</td>
<td>Whether the animal source of the food product was produced using added hormones or antibiotics</td>
</tr>
<tr>
<td>Animal Welfare</td>
<td>The extent to which the animal source of the food product was raised using animal friendly physical and psychological means</td>
</tr>
<tr>
<td>Environmental Impact</td>
<td>The extent to which production and marketing of the food product impacts the environment locally, regionally, and globally</td>
</tr>
</tbody>
</table>