An Analysis of Food Safety in Wisconsin

La Follette School of Public Affairs Workshop Report

Prepared for the Wisconsin Legislative Council
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Introduction

• High costs of food-borne illness in Wisconsin
  – $2.9 billion in 2009
  – $516 per resident
    
    (Scharff, 2010)

• Threats to food safety compromise Wisconsin’s agricultural industry (2007)
  – $60 billion to the state economy
  – 12.5% of total state production
    
    (Deller & Williams, 2009)
Research Question

How can Wisconsin minimize farm-level contamination that causes food-borne illness outbreaks and health threats?

Why this question? To...

– Reduce the occurrence of contamination
– Decrease the chance that contamination spreads
– Improve the healthiness of food by focusing on inputs
Presentation Overview

• Risks to food safety
• Background on regulatory structure

• Proposal 1: Addressing Production Standards for Fruits and Vegetables

• Proposal 2: Reducing High Levels of Antibiotic Use in Food-Animal Production
Risks to Food Safety

Short-term Risks
People become sick from consuming food contaminated by microbial pathogens
- 76 million people become sick annually in the U.S.
- 325,000 are hospitalized
- 5,000 die

Long-term Risks
People face health risks from inputs, such as chemicals or antibiotics
- For example, regular use of antibiotics can increase chances that bacteria become resistant to drugs
- Threatens human and animal health
Federal and State Food Safety Regulation

- U.S. Food and Drug Administration (FDA)
- U.S. Department of Agriculture (USDA)
  - Food Safety Inspection Service (FSIS)

- Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP)
Proposal 1: Addressing Production Standards for Fruits and Vegetables
Current Practices in Wisconsin

Fruit and Vegetable Production Standards

- Hazard Analysis and Critical Control Points (HACCP)
  - Packaging, processing
  - Potential federal regulatory requirements (S.510)

- Good Agricultural and Handling Practices (GAP/GHP)
  - Developed by FDA in 1997
  - Currently administered as a voluntary program by USDA
Seven-part audit system addresses:

1. Water
2. Manure And Municipal Biosolids
3. Worker Health and Hygiene
4. Sanitary Facilities
5. Field Sanitation
6. Packing Facility Sanitation
7. Transportation
Shortcomings of Current State Practices

• Voluntary compliance means less accountability, barriers to entrance
  – If a farm fails a food safety audit they are not held accountable to make changes
  – Larger wholesale markets are demanding a GAP/GHP audit and smaller farms are unable to enter

• A burden on small farms
  – Diversified crops make it difficult and time consuming for smaller farms to develop a food safety plan for each specific crop
## Proposal: A Tiered Approach

<table>
<thead>
<tr>
<th>Tier</th>
<th>Annual Sales</th>
<th>Estimated Number of Farms in Wisconsin</th>
<th>Requirement for Development of Production Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+ $1 Million</td>
<td>80-100</td>
<td>Follow GAP/GHP</td>
</tr>
<tr>
<td>2</td>
<td>$100k – $1 Million</td>
<td>800-1,100</td>
<td>Develop a food safety plan for their entire farm that is not crop specific. Incorporate water testing and sanitary hygiene regulations on the farm.</td>
</tr>
<tr>
<td>3</td>
<td>$1k-100k</td>
<td>3,000-3,500</td>
<td>Attend a food safety workshop each year</td>
</tr>
</tbody>
</table>
Proposal Impacts

- Increases accountability for Tier 1 farms where the greatest chance of microbial contamination threats may occur
- Increases food safety protocols for smaller farms
- Opens new markets for small farms
- Increased work load for smaller farms
- Cost increases to install sanitary equipment
Proposal 2: Addressing Antibiotic Use in Agriculture
Addressing Antibiotic Use in Meat Production

- Antibiotics are used for growth promotion, disease prevention, and disease treatment
  - Cattle, Poultry, Hogs
  - Use is associated with lower costs of production

- Focus: Subtherapeutic (Preventative) Use
  - Over 83% of U.S. feedlots administer subtherapeutic levels of antibiotics in feed (USDA, 2000)
### Uses of Antibiotics

<table>
<thead>
<tr>
<th>Subject</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humans</td>
<td>Therapeutic (i.e. medical, treatment of disease)</td>
</tr>
<tr>
<td>Livestock (cattle, hogs, poultry, goats, etc)</td>
<td><strong>Subtherapeutic (i.e. growth promotion, disease prevention)</strong></td>
</tr>
<tr>
<td></td>
<td>Therapeutic (i.e. medical treatment)</td>
</tr>
</tbody>
</table>
Development of antibiotic resistance due to subtherapeutic antibiotic administration
   - In both animals and humans (WHO, 2002)
     • Development of resistant *E.coli* documented on Wisconsin farms (Shere et al. 1998)

Public health is at risk (U.S. GAO, 2004)
   - Antibiotic-resistant bacteria
     • Lead to more severe illness and higher mortality rates
     • Resistant food-borne infections are increasing
Subtherapeutic use in food-animals is a significant source of antibiotic-resistant bacteria (Silbergeld et al., 2008; World Health Organization, 2002)

Who is responsible for monitoring antibiotic use in agriculture and food-animal production?

- Few regulations in place for monitoring
- Food and Drug Administration’s (FDA) Role
Prospects for Legislation

- U.S. House and Senate have considered bans
  - Preservation of Antibiotics for Medical Treatment Act (PAMTA) 2009
- Other entities also advocate decreased use
- Subtherapeutic antibiotic bans in other countries
- Potential role for state legislation
Meat-Purchasing Preference Proposal

- Policy would require state institutions to purchase meat produced without subtherapeutic levels of antibiotics

- Political precedents
  - Wisconsin Assembly Bill 837 (2005)
  - Other states

- Enacting legislation similar to AB 837 could reduce prevalence of resistant bacteria at the farm level
Analysis of Meat-Purchasing Preference Proposal

Costs Incurred by State Institutions

– Purchase price costs for UW-System for meat could increase 20-50% (Fiscal Note for AB 837, 2005)

– Ex: UW-Madison residence halls
  – 42,000 pounds hamburger/year at $2.87. Antibiotic-free hamburger patties cost $3.94 (37% price increase)
  – Similar price increases for pork and chicken

– Ex: Public Schools, Chilton School District
  – Purchases 720 pounds beef/month at $2.05. Antibiotic-free ground beef costs around $3.75
Costs Incurred by Producers

– Antibiotic use is related to reduced production costs

– Estimated production cost increases after subtherapeutic antibiotic ban in hogs
  • Total increase of 2% for hog production. Short run costs greater than long run (Brorsen et al., 2002)
  • Other studies estimate a 1% increase (WHO, 2003)

– Limiting antibiotic use may reduce costs associated with management of animal waste
Analysis of Meat-Purchasing Preference Proposal

Impacts On Consumers

– Higher production costs passed to consumers
  • Reducing antibiotic use may cause the price meat to rise 1 to 8 cents per pound (NRC, 1999)
  • Higher costs for UW dining may be passed on to students

Impacts On Other Industries

– Feed additives are a large pharmaceutical industry
  • 90% of antibiotics used as prophylactics or growth promoters; $600 million industry (USDA, 2001)
  • Some veterinarians derive income from sales
Other Considerations

– Not enough supply to meet state agency demand
  (Fiscal Note for AB 837, 2005)

– Would Wisconsin producers have a competitive disadvantage?

– Some meat producers could still use subtherapeutic antibiotics and sell to out-of-state or non-state agency buyers
Conclusion

*Improve food safety*

- Reduce incidence of bacterial contamination in food production
- Maintain health of both human and animal populations
- Increase demand for meat produced without subtherapeutic levels of antibiotics

*Maintain high quality agricultural products*

- Preserve Wisconsin’s position as national model; continue a legacy of growing high quality fruit and vegetables
- Improve the value of Wisconsin products
What questions do you have?