Current Controversies in Food Safety

Which side of the fence are you on?
Culture Independent Diagnostics

Dr. Robyn Atkinson Dunn, Utah
Dr. Vickie Baselski, UTHSC
Are you familiar with the term Culture Independent Diagnostics (CIDT)?

1. Yes
2. No
Are you aware of the threat to public health surveillance due to CIDTs?

1. Yes
2. No
Should clinical laboratories maintain the capability to perform culture for foodborne pathogens?

1. Yes
2. No
3. No opinion
Culture Independent Diagnostics

VS.
Should clinical laboratories maintain the capability to perform culture for foodborne pathogens?

1. Yes
2. No
3. No opinion
Should clinical laboratories maintain the capability to perform culture for foodborne pathogens?

33% Yes
33% No
33% No opinion

First Slide
Second Slide
Raw Milk Testing

Audrey Pilkington, North Carolina
Dan Rice, New York
Is regulatory testing of raw milk for pathogens a good use of public health resources?

1. Yes
2. No
3. No opinion
NC Dairy Law and Regulations

- Do not allow sale of raw milk for human consumption
- Allow raw milk sales for animal feed if labeled “NOT FOR HUMAN CONSUMPTION”
- Adopted PMO for Grade A Milk
- Adopted USDA AMS Recommended Requirements for Manufactured Milk
Farmstead – A milk or milk product processing facility that uses only milk from its own animals in its products and has no other source of milk.
Farmsteads in NC

- 2012 – 31 farms
- 2013 – 47 farms

Products
- Cheese – pasteurized & raw milk
- Butter – pasteurized milk
- Frozen Desserts – pasteurized milk

- ~75% Goat
- ~25% Cow
- A few sheep

Consumer base = 1,000’s
On farm, retail, restaurants, farmer’s markets and online sales
Raw milk cheese & food safety

- **1950** – FDA 60-Day Rule
  - age cheese a minimum of 60 days
  - > 30 natural cheeses that can be made legally from raw milk in the US under this rule
Raw milk cheese & food safety

- **Feb 2013** - FDA published “Draft Risk Assessment of Listeriosis from Soft-Ripened Cheese”
  - Joint effort between USFDA and Health Canada
  - Comment period closed 4/29/13
  - Outcome may impact the 60-Day Rule
“The 60-day aging rule is based on the theory that pathogens, if present, will die-off to levels below the infectious dose during the aging process. However, the effectiveness of this system depends on the initial microbiological quality of the milk and other ingredients used, and the hygienic practices used during cheese processing.”

Support for NC Farmsteads

- Educate then Regulate
- 2 POCs
  - Dairy Compliance Officer
  - Field Inspector
- Pre-startup Inspections
- Facility and Process Inspections 4x/yr
Support for NC Farmsteads

- **Milk Testing**
  - Farmer pays shipping costs only

- **Supplies**
  - Insulated shipper
  - Sampling containers
  - Labels

- **Unofficial Samples**
Sample Collection & Analysis

- **Raw Milk**
  - ✓ Somatic cell count - DMSCC
  - ✓ Bacterial count - APC
  - ✓ Drug residue - Beta-Lactams
  - ✓ Sediment
  - + Pathogen Screen
  - + Aflatoxin M1

- **Frequency**
  - ~ monthly

- **Finished Product**
  - Pathogen Screen

- **Operations Water**
  - Coliform
  - APC
<table>
<thead>
<tr>
<th>2012</th>
<th># samples tested</th>
<th>% violations</th>
<th>Lab testing cost/year</th>
</tr>
</thead>
</table>
| Raw Milk | 125 | 20% | DMSCC [14]  
APC [10]  
drug residue [1]  
*Salmonella* [1] | ~ $25,000 |
| Cheese * | 31 | 7% | *E. coli* [2] | ~ $6,000 |

* Finished product collected during inspections or follow-up to violative raw milk samples.
Should regulatory agencies test for pathogens in raw milk used for the mfg of cheese?  Yes

- Cost of testing is low vs. cost of foodborne illness
- Large consumer base - wide distribution of farmstead products
- Cheese consumer may not be aware the cheese they are purchasing is made from raw milk
Should regulatory agencies test for pathogens in raw milk used for the mfg of cheese? Yes

- 60-Day Rule may not be an adequate food safety control
- Pathogen testing....
  - is not a silver bullet
  - one key component of the services provided in a partnering, educational relationship between regulatory agency and farm
Raw milk in NY State

• Sales of raw milk for human use are legal in NY only at the farm of production
• Farms must have a permit from NY State Dept. of Agriculture and Markets (NYSDAM)
• > 40 permitted farms
• Customer base = 1,900 consumers statewide
Raw milk in NY State

• NYSDAM inspect permitted farms monthly
• Collects raw milk samples quarterly
• Samples tested for foodborne pathogens
• Positive samples initiate a recall, implicated product destroyed
• Point of sale have prominent sign warning consumers of risk
Testing results

• < 2 % are pathogen positive

• Most common pathogen is *L. monocytogenes* followed by *Campylobacter coli* and *jejuni*

• Raw milk implicated in less than 1 outbreak/year in NY State
What happens when a sample is positive?

- Positive samples initiate a recall, implicated product destroyed, permit to sell suspended
- Weekly samples collected and tested until 2 negatives in a row – permit to sell reinstated
- Many recalls result in lawsuit by producer against NYSDAM
Resources commitments

• NYSDAM has one attorney who works on raw milk litigation full time

• ~ 180 samples/year tested, 10 % of total samples tested for pathogens consumer base = ~ 1,900

• Remaining 90 % of samples represent a consumer base > 18 Million

• Raw milk is tested for pathogens 10,000 X more intensively than other high risk foods
Statement against testing

• Raw milk consumers generally aware of the public health professions evidence-based assertion that consuming raw milk is dangerous to one’s health – choose to ignore warnings
Statement against testing

• Testing raw milk 10,000 times more intensively than other high-risk foods is hard to justify

• Limited laboratory surveillance resources should be dedicated to high-risk foods consumed by the general population
Discussion
Is regulatory testing of raw milk for pathogens a good use of public health resources?

1. Yes
2. No
3. No opinion
Is regulatory testing of raw milk for pathogens a good use of public health resources?

- Yes: 33%
- No: 33%
- No opinion: 33%