Food & Animal Diseases

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Objectives

- Discuss the importance of animal products in the food supply
- Discuss the effects that animal diseases have on the food supply
- Discuss diseases that can be transmitted to humans from diseased animal food products
- Discuss production practices and processing procedures that are used to assure safe and wholesome foods
January 1 U.S. Cattle Inventory
1870-2008

2008 Inventory 96,668,600
Retail equivalent value of U.S. beef industry:
  2002: $60 billion
  2003: $63 billion
  2004: $70 billion
  2005: $71 billion
  2006: $71 billion
  2007: $74 billion

Total U.S. beef consumption:
  2002: 27.9 billion pounds
  2003: 27.0 billion pounds
  2004: 27.8 billion pounds
  2005: 27.8 billion pounds
  2006: 28.0 billion pounds
  2007: 28.1 billion pounds
Rate per Cow, 1998-2007
United States

18% Increase over the past 10-year period

USDA-NASS
02-15-2008
Average Number of All Layers
United States, 2005-2007

Egg Production
United States, 1997-2007
Food Animals
- Cattle
- Sheep
- Goats
- Swine
- Poultry
Diseases

Infectious
Problem

- Lowered production
  - Sick
  - Culled
  - Death
- Increased condemnation
- Decreased producer profits
- Increased retail price
  - Greater demand
  - Less product
Productivity – non-diseased

- Feeder cattle
- Dairy cattle
- Broilers
- Beef cattle
- Pigs
- Lambs
- Productivity – diseased
  - Feeder cattle
    - Rate of gain
  - Dairy cattle
  - Broilers
  - Beef cattle
  - Pigs
    - Rate of gain
  - Lambs
    - Rate of gain
Feed efficiency

- Lowered
  - More pounds of feed necessary to achieve same results
    - Increased costs for producers
  - Remain poor producer
Food Supply

- Non-diseased
  - Safe

- Diseased
  - Questionable
    - Treated vs. non-treated
    - Eye appeal
    - Low grades
    - Zoonotic diseases
Treated vs Non-treated

- Meat
  - Carcasses
- Milk
  - Bulk tank
  - Sick
Eye Appeal
  - Injection sites
Grades of Meat

- Low grades
  - Taste
  - Tenderness
Zoonotic Diseases

Possible transmission

Ex Tuberculosis
Pre-harvest Food Safety

- Live animal production
  - Prior to slaughter
- Veterinarians
- Quality Assurance Programs
Involvement
- Producers
- Veterinarian
  - Education
    - Reduce pathogens
    - Proper procedures
- Regulatory agencies
- Transportation

Prevention
- BQA (Beef Quality Assurance)
- Pork Producers
- Poultry Producers
- HAACP (Hazard Analysis Critical Control Point)
Post-Harvest Food Safety

- Slaughtering and processing food animals
- Processing milk and eggs
- Sanitation is the key
- Proper labeling how to handle foodstuffs
- Use HAACP
Inspection

- Animal Carcasses
  - Visual appraisal
    - Diseases
    - Abnormalities
  - Bacteriologic tests
    - Pathogens
  - Residue tests
    - Drugs
    - Chemicals
Swollen lymph node due to Malignant Lymphoma on the outside of a dairy cow
Malignant lymphoma tumors on the heart.
- Eggs
  - Pathogens
- Milk
  - Drugs
  - Somatic Cells (blood)
  - Bacteria
- Cattle
  - Process 350-400 head/hr
- Poultry
  - Eggs – 6000 cases/day
Agencies Involved

- FDA – Food and Drug Administration
- USDA-FSIS – Food Safety and Inspection Services
- USDA-APHIS – Animal and Plant Health Inspection Service
- DSHS – Department of State Health Services
Food Poisoning

Definition

Cause
- Food not properly handled or cooked

Diseases
- Colibacillosis
- Salmonellosis

Outbreaks
Responsibility

- Producers
  - Increase productivity
  - Increase profitability
  - Increase economic efficiency

- Federal government
  - Implement regulations

- State government
  - Enforce regulations