

Meat Preservation



By: Ryan Timm



Why Preserve Meat???

- Delays product spoilage
- Extends life of the product
- Improves product quality



Types of Preservation Techniques

- Freezing
- Cooking
- Dehydration
- Chemical
- Fermentation
- Irradiation



Freezing

- Optimum temperature (0°F or lower)
- Works by completely stopping enzyme activity & inhibiting spoilage microorganisms
 - ✓Bacteria
 - ✓Yeasts
 - ✓Molds



Freezing

- **REMEMBER:** Thaw meat at refrigeration temps or in the microwave
- **DO NOT THAW AT ROOM TEMPS**



How long with frozen meat last?

- Beef – 12 months
- Pork - 6 months
- Lamb – 6-9 months
- Poultry – 3-6 months



Cooking

- Works by heating products to high temperatures to kill microorganisms
- 2 types of cooking
 - Pasteurization
 - Sterilization



Pasteurized Cooking

- Products are cooked to 150-170°F
- Kills most (but not all) microorganisms
- Product must be REFRIGERATED
- Example: "Hotdogs"



Sterilized Cooking

- Products cooked under pressure to 250°F
- All microorganisms killed
- Products are shelf stable
- Example: Canned Hams



Dehydration

- Oldest forms of preserving meat
- Works by removing water from the product
 - water is required by all microorganisms to grow NO WATER = NO GROWTH



Dehydration

- Dehydrate by air drying, heating, or freezing
- Example: "Beef Jerky"



Chemical

- Chemicals inhibit microorganism growth
- Examples
 - Salt
 - Sodium Nitrite
 - Sodium Lactate



Chemical

- Other benefits:
 - Add flavor to the product
 - Improve product shelf life
 - Develop a pink cured-meat color
- All Chemicals added to meat are FDA approved



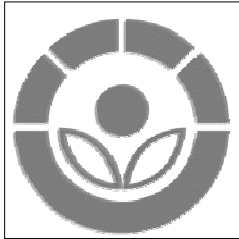
Fermentation

- Works by changing sugar into acid
- Acid prevents microorganisms from growing
- Tangy flavor and special texture developed
- Example: "Pepperoni"



Irradiation

- A new process to make food SAFER!!!!
- Works by exposing meat to radiant energy
- Destroys most (but not all) microorganisms



"Radura" sign on labels



Irradiation

- Reduces spoilage
- Irradiated meat is still nutritious
- Irradiated meat needs to be COOKED
- IRRADIATED MEAT IS SAFE TO EAT!!!!



Questions

- Please contact Dr. Elizabeth Boyle or Ryan Timm at (785)532-1247
email: lboyle@oznet.ksu.edu
rtimm@oznet.ksu.edu

OR

- Call your county extension office

