
Cooking
Methods

How Important is Cooking Methods

- We've talked about this before
- Muscles of locomotion vs. muscles of support
- How you cook these muscles will affect the final product

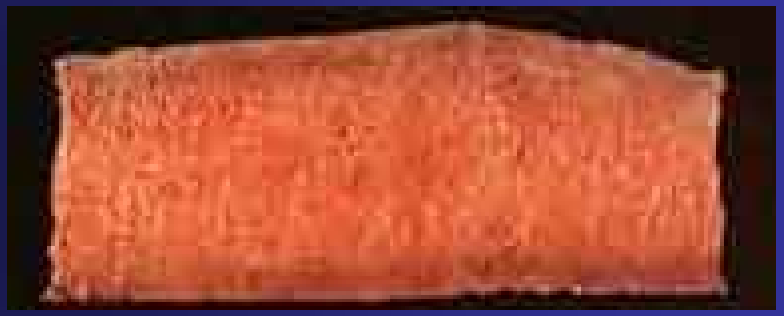
Physical Changes during Cooking

- Upon cooking myfibrillar protein structure changes
- Disintegration of filaments as temperature increases
  - Protein hardening
  - Appears over 147° F
- Connective tissue
  - 1/3 original length
  - Collagen shrinkage
  - More soluble

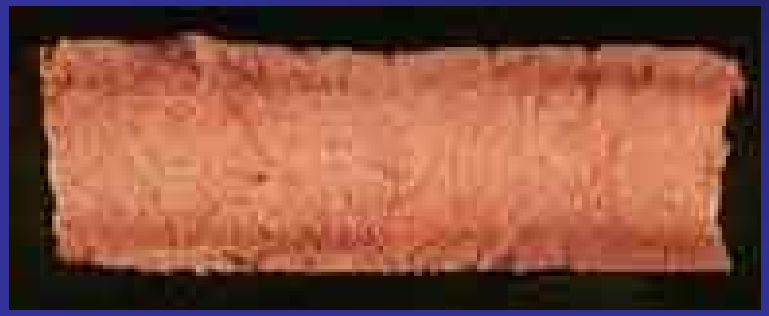
Very Rare/Approx. 130°F

Rare/Approx. 140°F

Medium Rare/Approx. 145°F



Medium/Approx. 160°F



Well Done/Approx. 170°F

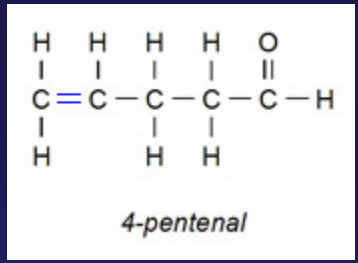
Very Well Done/Approx. 180°F

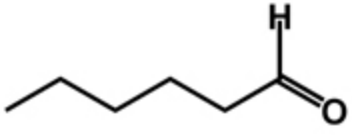
What causes meat flavor

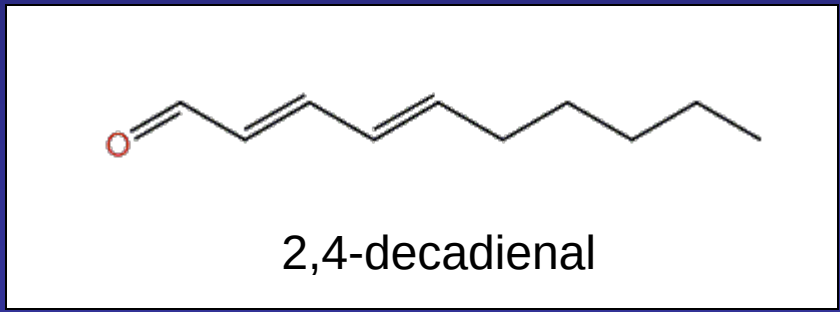
- Beef vs Pork vs Lamb
- Can you tell the difference?
- Fat
- Protein
  - Inosine monophosphate
  - Hypoxanthine
  - Flavor and aroma
- Breakdown products of ATP
- Stronger flavors

Warmed-over Flavors

- Precooked, uncured meat that are reheated
- Cardboard, old, rancid, stale, or painty flavor and aroma
- Iron-catalyzed oxidation of unsaturated fatty acids
  - Free radicals form
  - Small molecules
    - Pentanal, Hexanal, 2,4-decadienal







Warmed-over Flavors

- Fish > poultry > pork > beef > lamb
- Big problem in RTE meats
- Prevention
  - Antioxidants (BHA, BHT, propyl gallate, Vit E)
  - Phosphates w/ Ascorbic Acid
  - Rosemary
  - Cover w/ liquid