Pork Products & Records Analysis

Instructor:
Dr. Dana J. Hanson
North Carolina State University
Raleigh, NC
(919)515-2958
Email: Dana_Hanson@ncsu.edu

Upon completion of the course students will be able to:

- Identify pre-harvest factors affecting pork quality and safety.
- Describe growth and development of muscle tissue.
- Demonstrate knowledge of the pork harvest process.
- Define traits and characteristics of quality pork products.
- Identify post-harvest factors affecting pork quality and safety.

SECTION 1 – ON-FARM IMPACTS ON QUALITY AND SAFETY OF PORK

LESSON 1
- Introduction to Meat Science / History of the Pork Meat Industry in the U.S.
  - What is meat science?
  - History of the meat packing industry in the U.S.
  - Pork meat packing industry structure
  - Employment opportunities in the meat industry

LESSON 2
- On- Farm Hazards to the Food System
- Outdoor production versus in-door production
- Effect of pre-slaughter feed withdrawal
- Management & dietary impact (use of pro-biotics, antibiotics, and vaccinations)

LESSON 3
- Biological Hazards Associated with Production of Pork
  - Parasites
  - Bacterial pathogens

LESSON 4
Section Activity – Reaction paper on antibiotic use in food animal production

SECTION 2 – ANIMAL IMPACTS ON QUALITY AND SAFETY OF PORK

LESSON 5
- Muscle Growth and Development
- Bone and muscle tissue growth
- Structure of muscle
- Use of beta-agonists in production

LESSON 6
- Pre-Harvest Animal Handling
  - Farm to plant transportation issues
  - Animal welfare, animal loading, Trucker Quality Assurance, lairage at the plant

LESSON 7
Animal Harvest
  - Process flow harvest
  - Carcass chilling

SECTION 3 – MEAT SCIENCE IMPACTS ON QUALITY AND SAFETY OF PORK

Break - NO CLASS

LESSON 8
- Conversion of Muscle to Meat
  - Biochemical events that occur in living muscle tissue as it is changes to edible meat

LESSON 9
- Carcass Evaluation
  - Carcass characteristics - dressing percentage, loin eye area, fat measurement
  - Pork primal and basic retail cuts
  - Porcine Myology Website

LESSON 10
- Introduction to Pork Muscle Quality – Lesson I
  - Defining pork muscle quality
  - Methods to determine and assess pork muscle quality
    - Tenderness, pH, meat color, water holding, etc.
  - Fat quality

LESSON 11
- Introduction to Pork Muscle Quality – Lesson II
  - Defects in pork muscle quality
    - Pale, soft and exudative (PSE), Dark firm and dry (DFD)
LESSON 12
  o Section Activity – Retail Pork Quality Audit

SECTION 4 – FURTHER PROCESSING IMPACTS ON QUALITY AND SAFETY OF PORK

LESSON 13
  o Value-Added Pork Processing
  o Basic sausage production
  o Enhancement and marination
  o Packaging technology

LESSON 14
  o Food Safety
    o Post-harvest interventions
    o Irradiation

LESSON 15
  o Product Preparation
    o Cooking techniques
    o Degrees of doneness / sensory evaluation

Class Grades:

Total Points for the Class = Weekly Quiz (20 points x 15 weeks)

300 points

Weekly quizzes will be due (need to be posted in the Moodle system) by Thursday of each weeks lesson. There will be no make up for missed quizzes. STAY CURRENT!

Weekly lessons will be posted 2-3 weeks in advance, so you will be able to “work ahead” to some degree.

Grading Scale:

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