2018 Empire Swine Youth Scholarship

Review Sheet

This review sheet has the main information that will be on your knowledge review. There may still be a few questions on the test that you will not find on this review sheet so please be sure to read the chapters. If you have questions, please don't hesitate to reach out to someone.

Chapter 4:

Market Quality:

- Highest quality is dependent upon management techniques, carefully planned nutrition program, and genetics.
- Hogs with the stress gene will have more muscle and less fat, but will have tougher/poor quality meat
    - Meat can sometimes be light colored and watery

Major Genes:

- Scientific advances in genetic technology have allowed the sine industry to identify the major genes affecting carcass quality. Knowledge of these genes allows for producers to make improvements on the quality of pork produced.

Porcine Stress Syndrome:

- The PSS Gene or Stress Gene is an inherited recessive condition in pigs, and has been identified in and associated with the Pietrain breed.
- Stress Positive: pig has 2 copies of the stress gene and denoted as "nn" genotype
    - Susceptible to external stress
    - 90% of the time, stress positive pigs will produce Pale, Soft, and Exudative (PSE) carcasses.
    - Carcasses will be 2-3% higher in lean content
- Stress Carrier: pig has one stress gene (n) and one normal gene (N) and denoted as Nn
    - Not susceptible to dead due to stress
    - 30-60% produce PSE carcasses
- Producers should avoid the Stress Gene due to poor quality muscle/meat

Napole Gene

- Associated with poor water holding capacity, excessive moisture loss during cooking, and poor processing characteristics
- The Naploe Gene has been identified in the Hampshire breed

USDA Feeder Pig Guidelines

- You will need to know the main differences between the USDA Feeder Pig Grades

Pork Carcass Evaluation

- The value of a market hog at slaughter is determined primarily by the amount of lean meat produced
- **Weight**
    - You will need to understand Dressing Percent and how to calculate it (equation will be provided)
    - Animals with a higher Dressing Percentage have a higher proportion of their live weight in the carcass.
- **Fat Depth**
    - Fat Depth is determined at the 10^{th} rib
    - Genetic selection for reduced back fat has been successful in the swine industry
    - The primary factor affecting the pounds of lean meat in a pig is the depth of the exterior fat that covers the animal
- **Muscle Mass**
    - You will need to understand Muscle Mass
    - The average loin muscle area is 5.75-6.50
- **Calculating Percentage of Lean**
    - You will need to be able to calculate Percent Carcass Lean (you will be provided the equation)
- **Rate of Lean Growth/Carcass Lean Estimation Equations**
    - Understand the meaning and why they are important
- **Pork Muscle Quality Characteristics**

    You will need to know and understand the Pork Muscle Quality Characteristics

    - Know the difference between PSE, RFN, and DFD

<u>Chapter 11:</u>

Feeder and Waterer Space

- Self-Feeder: 1 space per 4 pigs

- Waterer: one space per 15 pigs

Building Floor Space

- 40-100lb- 4 sq. ft./pig
- 150-Market- 8 sq. ft./pig

Shape or Design of Pen

- Know why a rectangular pen is best and the best design

Environment

- A pig's environment results from a number of factors including temperature, air movement, humidity, and insulating
- The proper environment depends on the pigs age, weight, activity level, stage of production, and body condition
- Know why ventilation is important
- Know the different ways to keep pigs cool
- Know the preferred temperature range for growing and finishing pigs

Manure Disposal

- Wastes must be managed in a manner that will maintain sanitary conditions for pigs, prevent fly breeding, minimize odors, and protect ground water quality
- A manure handling, storage, or disposal system should quickly convert manure, urine, and other wastes to either a very dry form or a very wet form. This will also minimize odors.
- Know the sources of odors
- The 2 principle compounds that cause odor are sulfur (Hydrogen Sulfide) and those materials containing nitrogen (Ammonia)
- Know the factors that affect the amount of odor produced

Water Quality

- When soils containing manure nutrients and fertilizers move into water negative things can happen.
    - You will need to know the bullet points with the negative affects
- You will need to be familiar with the diagram on page 11-8