Outline
- What is fat quality
- Iodine Value
- Factors affecting fat quality
- Why is fat quality important
- Measuring IV
- Factors for measuring
- Is there a target
- What do we know
- What is needed
- Summary
- What is Checkoff doing

What is Fat Quality?
- Lack of a Universal Definition:
  - Leanness – not too lean
  - Firmness – firmer the better
  - Color – white
  - Stability – not oily at room temperature
  - Fat Separation – from lean tissue
  - Fat Maturity, Fat Cell Fill – ????
- Fatty Acids
  - Ratio and Calculated Iodine Value
- Iodine Value
  - Default definition of fat quality

What is Iodine Value – IV
- Mass of iodine in grams that is consumed by 100 grams of a chemical substance
  - i.e., degree of unsaturated fatty acids
- Unsaturation = double bonds
- Higher IV = higher double bonds = softer fat
- High IV = liquid at room temperature
- Think of the oils in your house:
  - Vegetable/Olive oil – liquid
  - Butter – semi-solid
  - Coconut oil – relative solid

Factors Affecting Fat Quality – Production
- Health
- Gender
- Time of year – seasonality
- Genetics
- Weight
- Age
- Leanness
Factors Affecting Fat Quality Continued

- Measurement location
  - Fat layer
- Production tools
  - Focused on lean efficiencies
- Diet/Feed ingredients
  - Highest impact
  - Quickest impact
  - Not only DDGs

Why Is Fat Quality Important

- Fat layer separation
  - Loin
- Muscle separation
  - Ham
- Soft Bellies
  - Decreased sliceability?
- Undesirable appearance
- Fat smearing – processed products
- Decreased shelf-life

How is IV Measured

- Titration
  - Labor intensive and $$$
  - Chemical color change
- GC
  - $$$ and fatty acid profile
  - Calculated IV
- NIR
  - IV
  - Fatty acid profile
  - Quick

Factors to Consider for Measuring

- Location
  - Jowl, backfat/loin, belly, clear plate, others
- Fat layers
  - 1, 2 or all 3
- Melting
  - Loosing volatile fatty acids?
- Freezing then grinding
  - Available moisture
- Exposed area – using a core
  - How much, size?

Factors to Consider for Measuring

- Fatty acid profile or certain fatty acids or IV

So, What Else Do We Know?

- We know, when to expect fat quality issues
  - First pull vs. second pull vs. third pull
  - Winter vs. summer
  - Barrow vs. Gilt
  - Additive Effect
- Early diet formulations are important
  - Beginning of finisher vs. end of finisher
- We know, the issue is here to stay
  - Price will dictate alternative feed ingredients
    - Least cost formulation
What Is Needed?

- An industry definition
- Rapid, consistent, reliable methodology
- An industry defined location
- Communication
  - Processor to packer to producer to nutritionist to researchers
- Is this even possible?

Is there a Target?

- No, not really, possibly
  - Packers and Processors are monitoring and measuring
  - Some, want an IV below a certain level
- The Clint Eastwood effect
  - The good, the bad and the ugly
- Managing today’s variation of fat quality
  - Trying to eliminate the ugly

Summary

- Fat quality is a complex issue
  - Not an easy answer
- Consensus definition
- Consistent location and method
- Mitigation strategies for the:
  - Third pull gilt at the end of summer
- Constant communication
  - Throughout the chain

What is Checkoff Doing?

- Held meeting with packers 2011 – 4 main topics
  - 1. Measuring IV - equipment and protocol
  - 2. Fat depot differences - where to measure and what are the differences in IV among fat depots
  - 3. Communication from packer to producer and to nutritionists
  - 4. Alternatives during the worst quality months

What is Checkoff Doing?

- Fat Quality Research
  - Evaluate three methods (GC, NIR, Titration) by three locations (jowl, backfat, belly fat)
  - Fat quality relationship to eating quality
  - Improving fat quality by manipulating feed IV and timing of feed ingredients