Experimental Design

- 600 carcasses from 3 plants
  - A Maturity
  - Yield Grade 2 or 3
  - 550 to 800 lb carcass weights
- Four Quality Levels
  - Top Choice - 2/3 Mt & 1/3 Md
  - Low Choice
  - High Select
  - Low Select
- Three cuts
  - Top loin (1 inch thick, 1/8 inch fat)
  - Top sirloin (1 inch thick, 0 inch fat)
  - Top round (5/8 inch, 0 inch fat)
- 14 to 21 day age

- Four Cities
  - Houston (Select)
  - Chicago (Choice)
  - Philadelphia (Choice)
  - San Francisco (Select)
- 300 households per city
  - Two participants per household
  - Moderate-to-heavy beef users
  - 21 to 64 years old
  - Minimum income ≥ $20,000

Data Collected

- Warner-Bratzler shear force at 140, 150, 160 and 170°C
- Trained meat descriptive attributes sensory panel
- Demographics
- Sensory Attributes (23-point scale
  - Overall Like
  - Tenderness
  - Juiciness
  - Flavor
  - Preparation Method
 - Degree of Doneness

AgriLIFE RESEARCH
Texas A&M System

Logit Model

- WB Shear converted to category data
- Determine Acceptability level - 15, 16 or 17
- Final model included:
  - Degree of doneness
 - Quality grade
  - WB shear category
  - Shear*DOD

Questions Asked?

- What is the relationship between WB shear and probability of consumer overall like?
- Did probabiltiy of acceptance differ by level – 15, 16 or 17?
- Did probabiliy of acceptance differ by cut?
- What was the effect of DOD?

Frequency Distribution for Consumer Overall Like/Dislike Ratings from Beef Customer Satisfaction

Mean = 17.07

SD = 4.508

n=26,110

■ Overall Like/Dislike Rating

Consumer Overall Like/Dislike Ratings
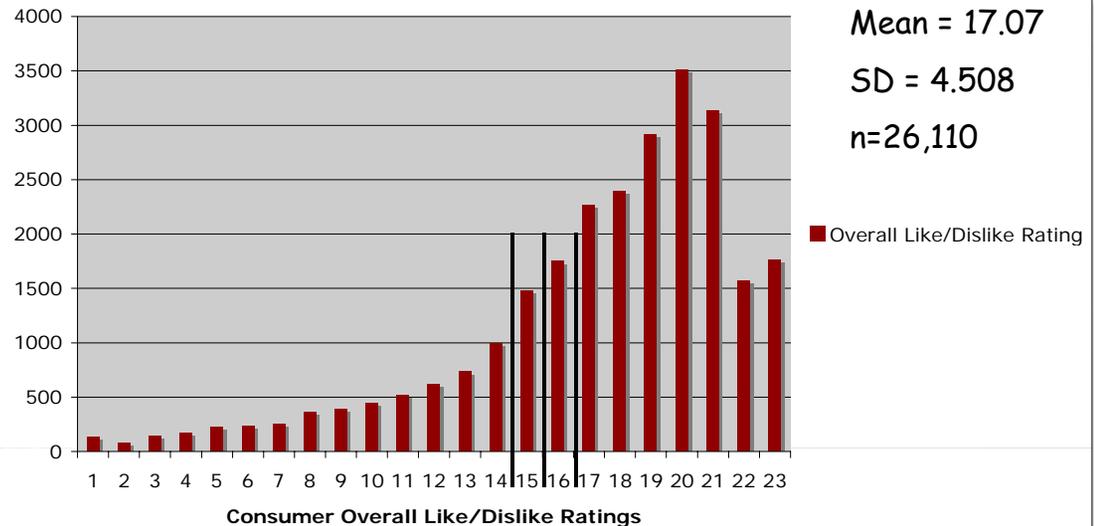
Frequency Distribution of Three Cuts for Consumer Overall Like/Dislike Ratings from Beef Customer Satisfaction

■ Top Loin Steaks
■ Top Butt Steaks
■ Top Round Steaks

Consumer Overall Like/Dislike Ratings
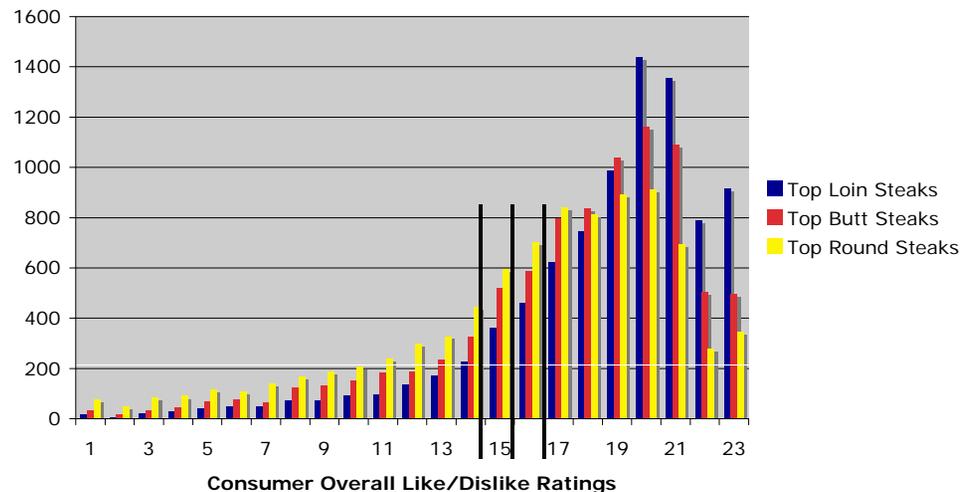
Top Loin

Mean = 18.54

SD = 3.906

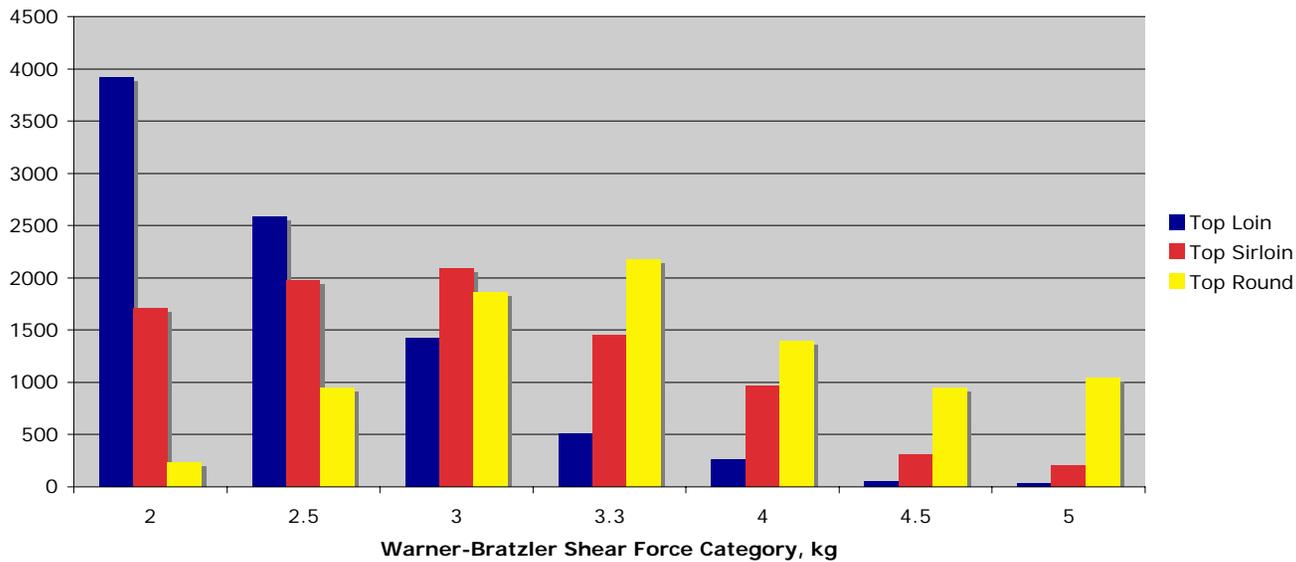n = 8772

Top Sirloin

Mean = 17.36

SD = 4.318

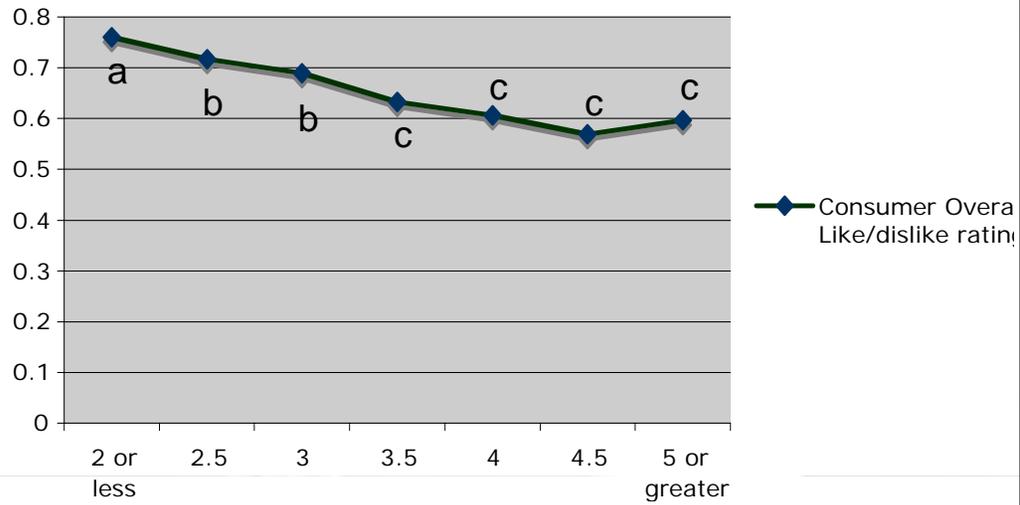n = 4.318

Top Round

Mean = 15.99

SD = 4.888

n = 8622

Frequency Distribution Across Three Cuts for Warner-Bratzler Shear Force Category (kg)

## Frequency Distribution for Warner-Bratzler Shear Force Category (KG) by Steak Type

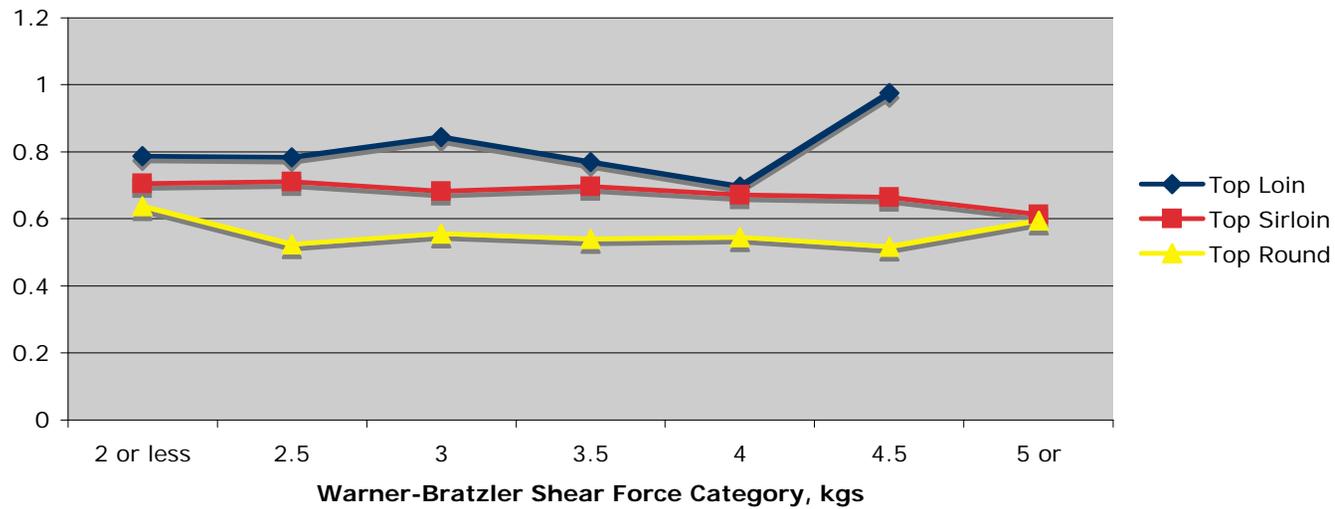## Probability of Acceptance for Consumer Overall Like/d Rating for Where 17 or Greater was Acceptable

Consumer Overa
Like/dislike rating

Warner-Bratzler Shear Force Category,

Probability of Acceptance for Consumer Overall Like/Dislike Ratings Using 17 and Higher as Acceptable

Consumer Overall
Like/Dislike Rating
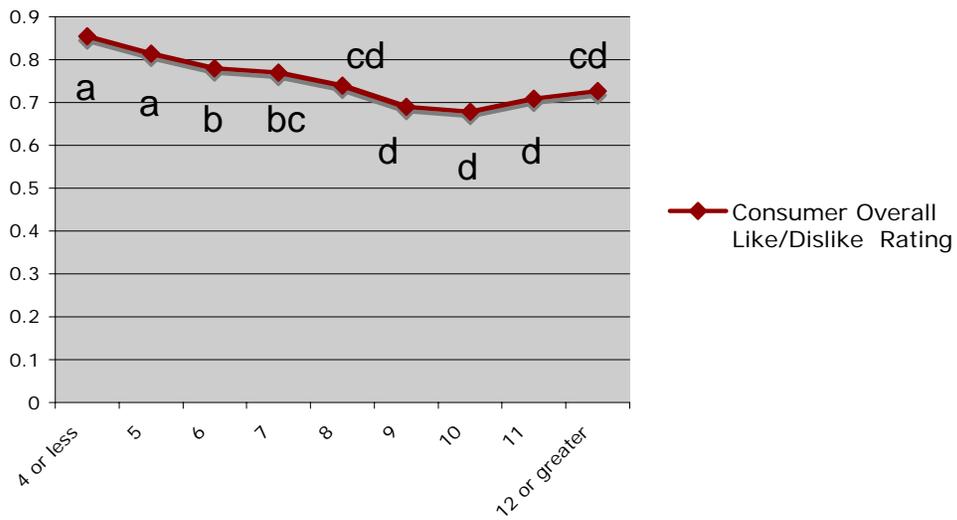
Warner-Bratzler Shear Force Category, lbs

Probability of Acceptance for Consumer Overall Like/dislike Ratings Usine 17 or Higher as Acceptable Across Three Cuts

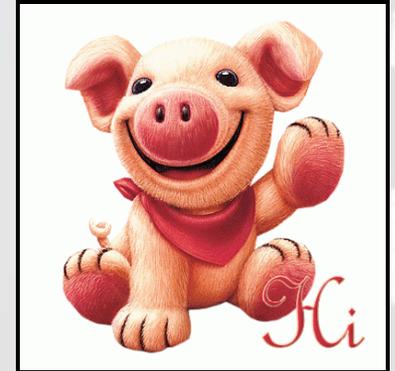Top Loin: p = 0.07

Top Sirloin: p = 0.75

Top Round: p = 0.52

Warner-Bratzler Shear Force Category, kgs

Legend: Top Loin, Top Sirloin, Top Round

Probability of Acceptance for Consumer Overall Like/dislike Rating Using 17 or Higher as Acceptable

p = 0.0028

Warner-Bratzler Shear Force, kg

Legend: 140, 150, 160, 170
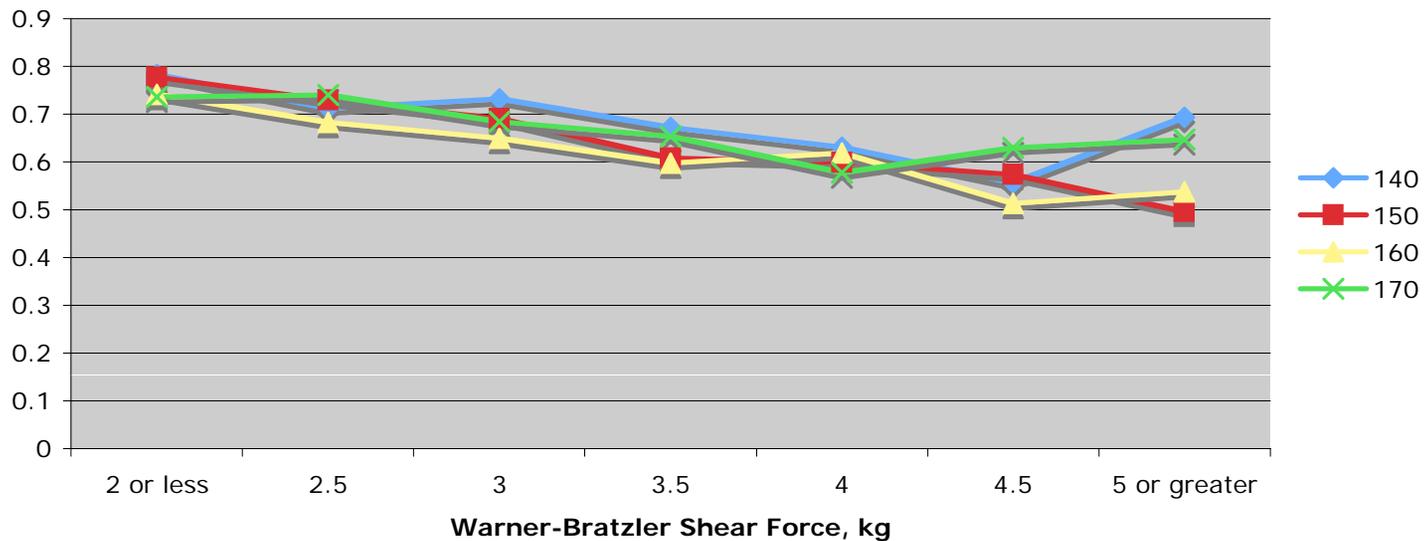
Pork follows the same trends!

- Results from the Pork Quality Benchmark study have been analyzed in a similar fashion

- Results will be available for public information in the Fall upon release from the National Pork Board

The Ohio State University