Economic Implications of Aseasonal Breeding

ASI and Lamb Council
New Orleans, LA
January 25, 2019

Levin Porter
David P. Anderson
Overview

- Seasonality
- Production Impact
- Cost and Returns
- Changing Seasonality
- Economic Thoughts
Aseasonal Breeding to Take Advantage of Seasonal Price Differences Has to be Profitable for Producers or it Will Not Happen

- Start this research from a baseline of producer profitability
Seasonality

- Supply – Biology
- Demand – Holidays, Seasons
- Markets Work
  - Deal with seasonality using imports, stocks, lamb feeding
SEASONAL PRICE INDEX – SLAUGHTER LAMBS
Negotiated National Weekly, 2008-2017

Data Source: USDA-AMS, Compiled & Analysis by LMIC
Livestock Marketing Information Center
BOXED LAMB SINGLE LEG PRICES
Trotter Off, 5 Day Rolling Average

Data Source: USDA-AMS
Livestock Marketing Information Center
BOXED LAMB LOIN PRICES
Trimmed 4x4, 5 Day Rolling Average

$ Per Cwt.

Data Source: USDA-AMS
Livestock Marketing Information Center
Production Research

- Reduced Conception Rates
- Little Research on Twinning
- Little Research on Hair Sheep
- Based on Past Research We Assume 5, 10, and 20% Fewer Lambs to Sell
Cost and Returns Data

- ASI Project on Costs and Returns
- Extension Cost of Production Budgets
  - WY, TX, ND, KY
  - Weighted avg. to get national costs and returns
- No Change in Costs
- Only Change was to Lambs Sold
  - Reduced by 5, 10, 20%
Dollars/Ewe Drop In Returns Based On Reduction Of Lamb Crop By Percent

Dollars Return / Ewe

National  Wyoming  North Dakota  Texas  Kentucky

Base  -5%  -10%  -20%

Legend: Base  -5%  -10%  -20%
Premium Needed

- Calculate Price Increase Needed to Offset Fewer Lambs Sold
Percent Increase In Price of Lamb Necessary To Offset Drop In Lamb Production

Percent Increase in Price

- National
- Wyoming
- North Dakota
- Texas
- Kentucky

Base
-5%
-10%
-20%

Percent Increase in Price: -5% to 35.00%
Probability Prices Increase Enough

- Used the 1998-2018 Period
- Observed Number of Times Seasonal Price Change Exceeded 5, 10, and 20 Percent
- Probability Price Seasonality Offsets Production Decrease
Probability of Seasonal Price Change

percent of years covered by percent price change

- Q2 vs. Q1
- Q4 vs. Q1
- Q3 vs. Q1

1998-2018
1998-2011

- 5%
- 10%
- 20%
Changing Seasonality

- Moving Lambs From One Season to Another Should Change Seasonality
- Equilibrium Displacement Model
  - 1% change in lambs supplied
  - 1% less in summer, 1% more in spring
  - Own price elasticity of demand -0.35
- Results: Smaller Seasonal Price Change
  - 5 year avg from $42 to $32 per cwt
A Few Thoughts

• Significant Shift Likely to Result in Fewer Total Lambs
  – Biological/production effect
• Fewer Total Lambs, Higher Average Prices
• Higher Prices Spur More Production and More Imports
• Fewer Lambs Impact on Infrastructure
  – Feeders, packers, retailers
• Effect on Retail Lamb Composition