Selection
Indexes

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What is a Selection Index?

• Selection Index Internet definition: “A method of artificial selection in which several useful traits are selected simultaneously”

• Matt Woolfolk definition: a tool to help simplify genetic decision making for you and your commercial customers for the traits of importance in your herd
Index Background

• Selection Indexes were developed to help producers make genetic progress while avoiding single trait selection.
• Usually in the beef industry, a selection index is expressed as a $ value.
  - Everyone understands that higher $ means more valuable.
• Other livestock segments use them heavily.
  - Dairy and Pork
Very Basics of Building an Index (Association Side)

- Identify a production goal
  - Sell at weaning, replacement females, carcass merit, breeding heifers, Feedlot gain, etc.
- Select the traits (EPDs) important to that goal
- Weight the importance of those traits
- Build a formula that properly weights traits
Selection Indexes in Beef Cattle

• Some of the MANY examples of the available indices in the industry
  o $Weaning, $Feedlot, $Grid, $Beef (Angus)
  o All Purpose Index, Terminal Index (Simmental)
  o $Certified Hereford Beef, $Calving Ease, $Brahman Influence Index (Hereford)
  o HerdBuilder, Gridmaster (Red Angus)
  o $Terminal, $Maternal (Beefmaster)
  o $Cow (Gelbiveh)
  o PLENTY MORE
Using a Selection Index (Breeders)

• Identify which available index most closely matches your production goals
  o There is no single index that is built to cover every single trait in existence
  o Don’t throw an index out because it’s not identical to your operation scheme

• Be mindful of traits that are important to you that may not be a part of your index of choice
  • Ex. Ribeye area but using a maternal index
The Dreaded Phrase

• “Single Trait Selection”
• Is using a $Index single trait selecting?
  o It includes multiple traits, could argue NO
  o If you don’t look at other traits, could argue YES

• Do I suggest using ONLY a $Index as a selection tool?
  o ABSOLUTELY NOT
  o We don’t have measures for all important traits
    • Structure, Udder quality, fertility, etc.
Shorthorn $Indexes

• $Calving Ease
• $British Maternal Index
• $Feedlot
• $Fescue
$Calving Ease

- Fairly self-explanatory
- Assumes a bull will be mated to heifers rather than mature cows
- Measures the value of differences in calving difficulty between animals
  - Calving ease direct (CED)
  - Moderate mature size (YW)
$British Maternal Index

• Measure’s potential profitability when mated to British cow base (Angus-based cattle)
  o Maternal/all-purpose hybrid index

• Balance of Growth and Carcass traits
  o WW, moderate YW, REA, MARB

• “Strong maternal component aimed at optimum reproductive efficiency and cow longevity”
  o Milk, CEM
  o Harder to define/quantify traits
$Feedlot

- Assumes a mix of breeding to cows & heifers
- Determining value of progeny through the feedlot phase of production
- Strong emphasis on growth and carcass
  - WW, YW, REA, MARB
  - CED...Why?
- If mating to cows and heifers, having some calving ease is still important even in $Feedlot
Ways to Use Our Index Lineup

• If you want to help your customers use them:
  • $CEZ: heifer bulls
  • $BMI: Angus based cows; keeping replacements, selling feeders at weaning
  • $Feedlot: retaining feeder calf ownership