



Using Sexed Semen to Navigate the Genetic Fork in the Road

Beef Improvement Federation Symposium 2024

Advancements in Producer Applications

Kenny Wells | June 10, 2024



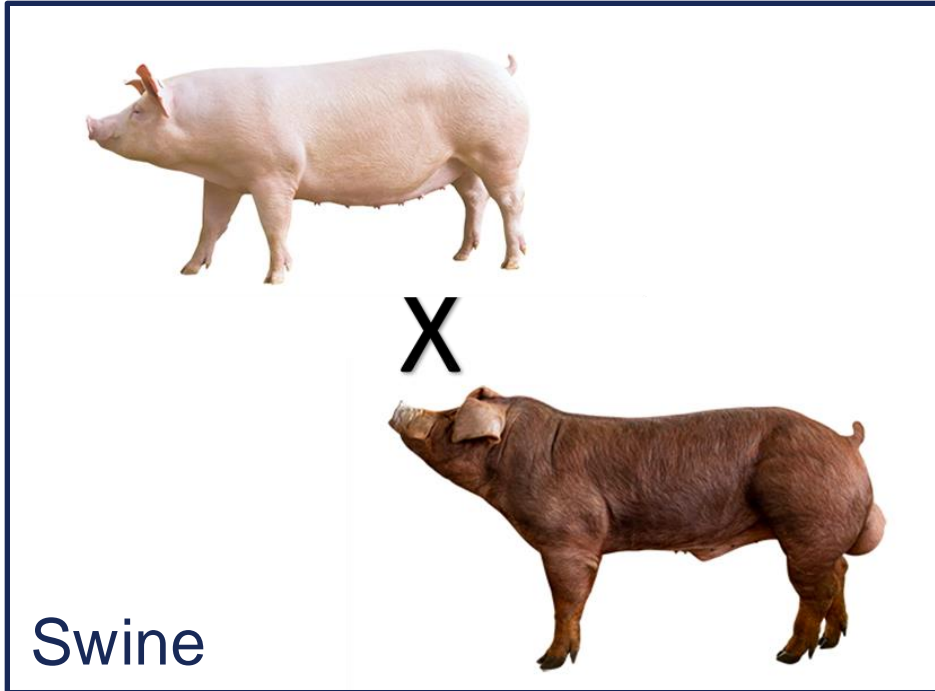
We've Come to a Fork in the Road



Key Question

Can we agree that the ideal bull to make ***replacement females*** is not the same as the ideal bull to make the ***highest value feeder cattle***?

Efficient Livestock Production Systems



- Highly specialized genetic lines
- Leverages both Maternal and Terminal heterosis
- Exceptional efficiency and flexibility



- A maternal unit optimized for a particular purpose, efficiently reproduced using **Female Sexed Semen**
- A male byproduct that has been transformed by Terminal Beef Genetics

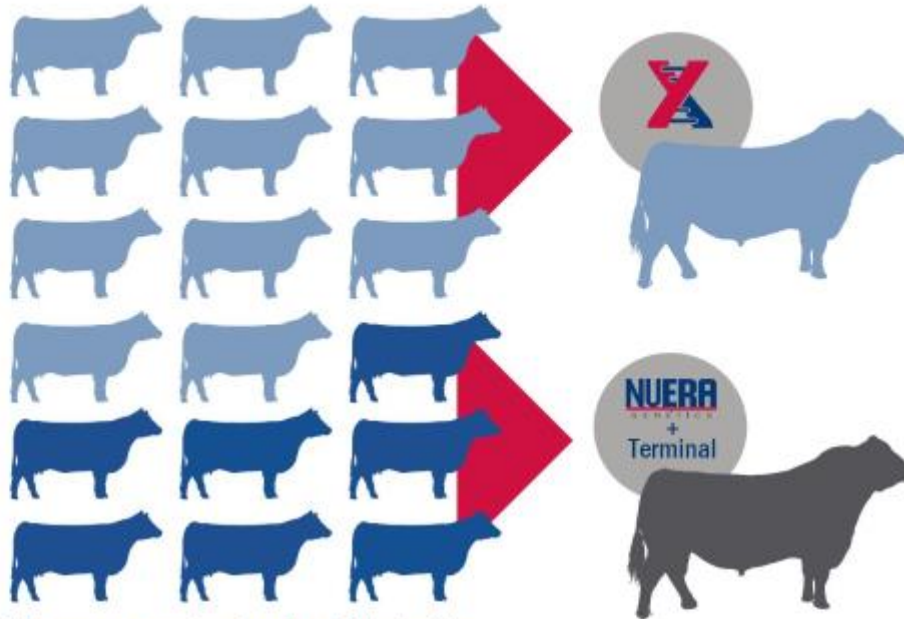
Sexed Semen is a tool to Navigate the Fork



60/40 Sync Program Concept – Cow Herd Segmentation

~60%

Females that display estrus with fully activated patches are time AI'd with Sexcel semen from maternally designed bulls



~40%

Females that do not display estrus are time AI'd with conventional semen from terminally oriented bulls

All cows are synchronized and fitted with Estroject™ patches. All cows are exposed to a terminally oriented sire for clean up.

Key Features and Considerations

- Works within existing estrus Sync protocol
- Applies selection for reproductive efficiency
- Ensures replacement females will be born early
- Allows for incorporation of genetic “Extremes”
- Clear template to implement a planned crossbreeding program
- Opportunity to generate the “right” calf from every mating
- Will NOT maximize preg rate to AI

RESULTING CALVES ARE APPROXIMATELY

Terminally Oriented
Steer & heifer calves to market
(includes both AI and natural service calves)

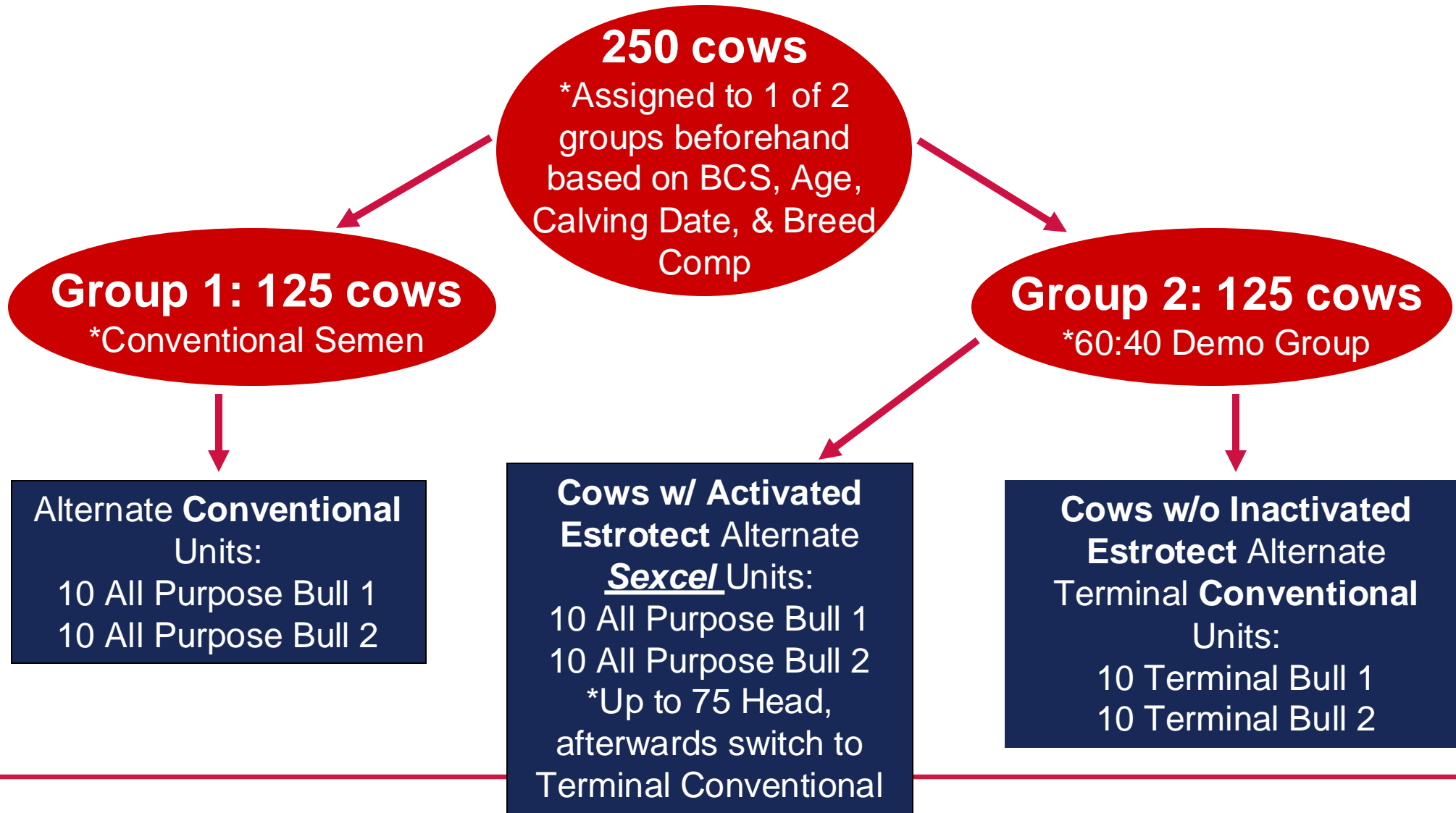


Maternally Designed
AI sired heifer calves to retain

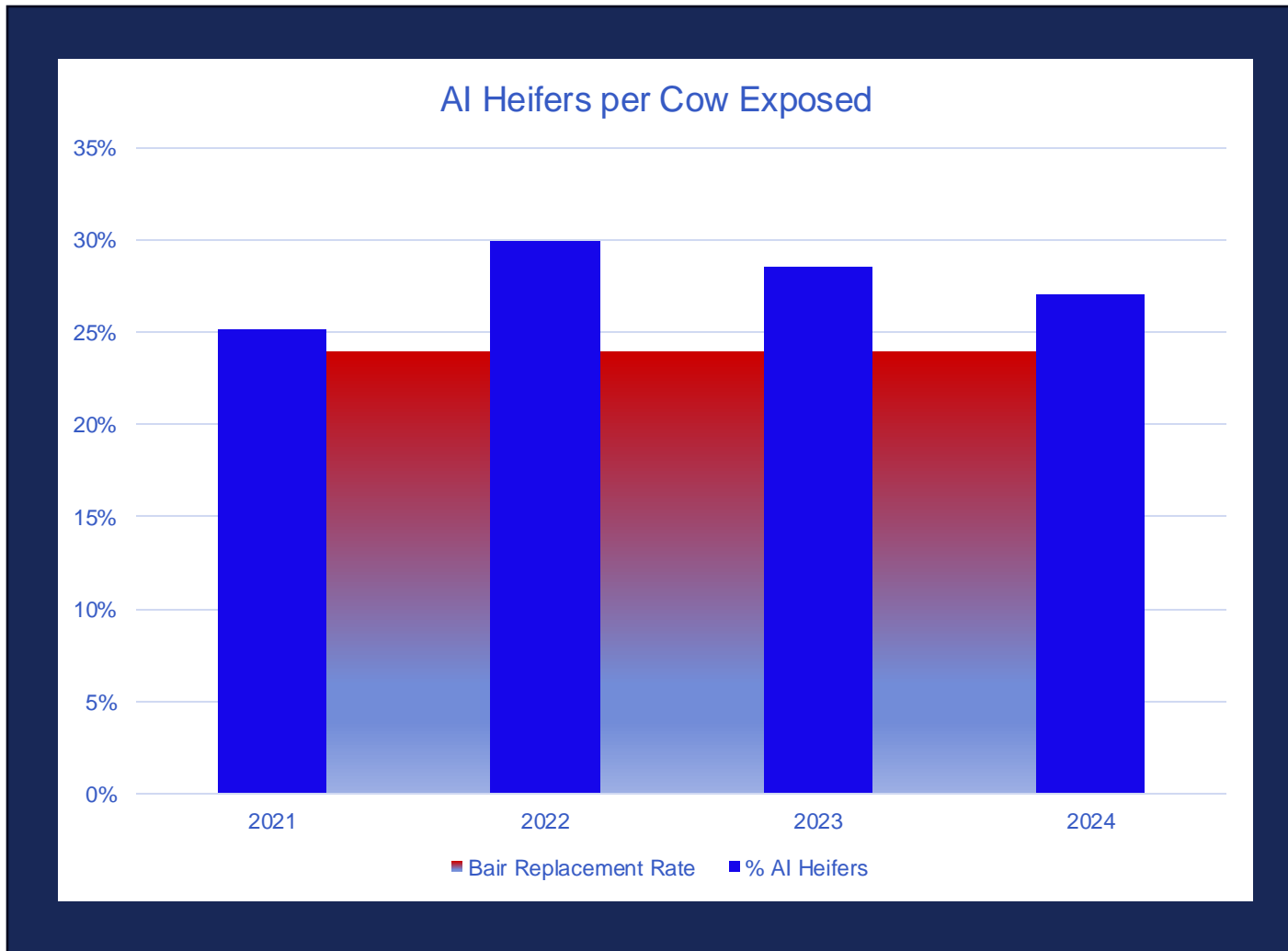
Bair Ranch Collaboration



Bair Ranch Project Structure: A 60/40 Demonstration



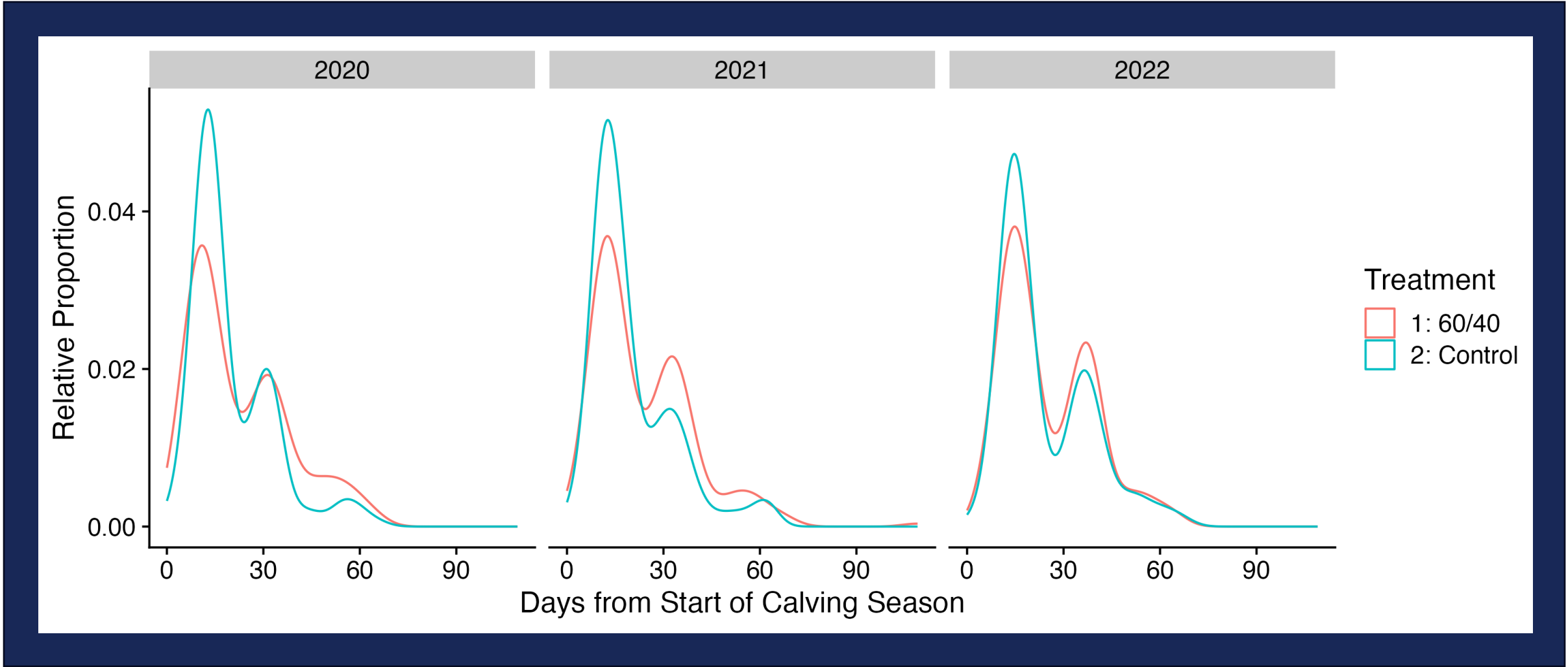
Reproductive Outcome – Heifers Produced



Take Aways

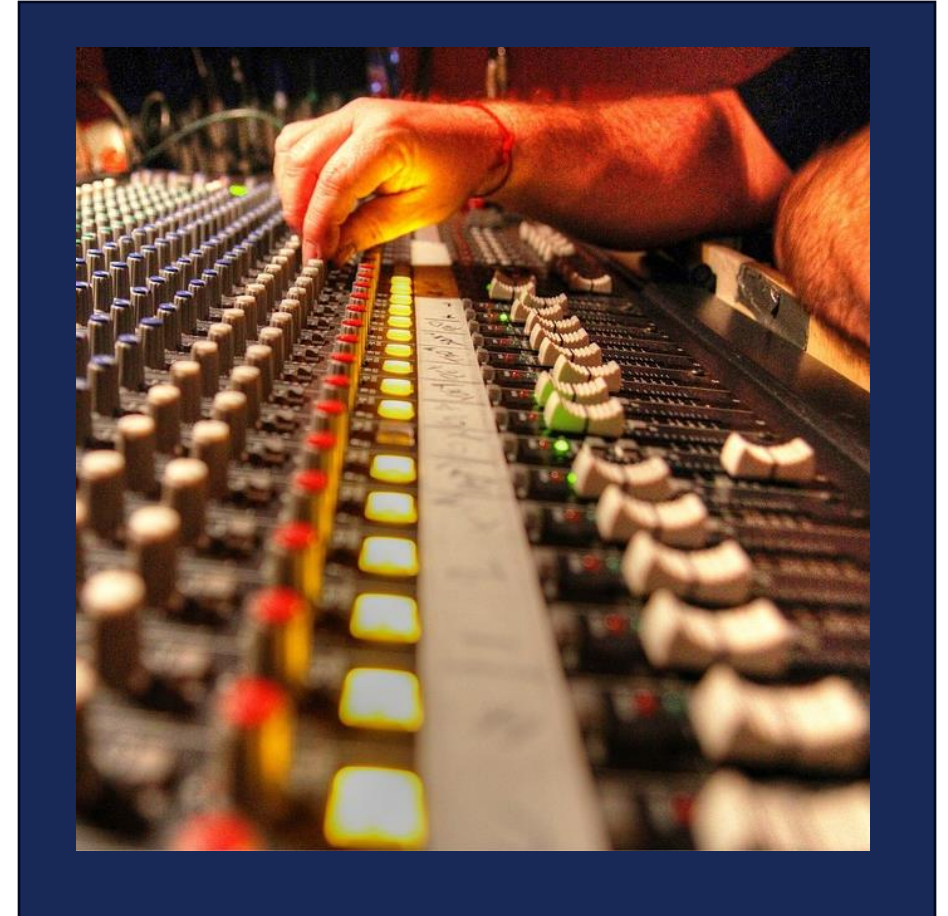
- 4 Years of data, >500 matings per year
- Female Sexed and Overall Preg Rate in **60/40** program lower than **Conventional**
- Average 91% ($\pm 6\%$) heifer calves from female sexed semen
- Average 28% ($\pm 2\%$) AI sired heifer calves per cow exposed to 60/40 Synch
- Exceeded target number of replacement heifers in every year of project

Reproductive Outcome – Calving Distribution



Choosing the Right Genetic Inputs – 60/40 Sync

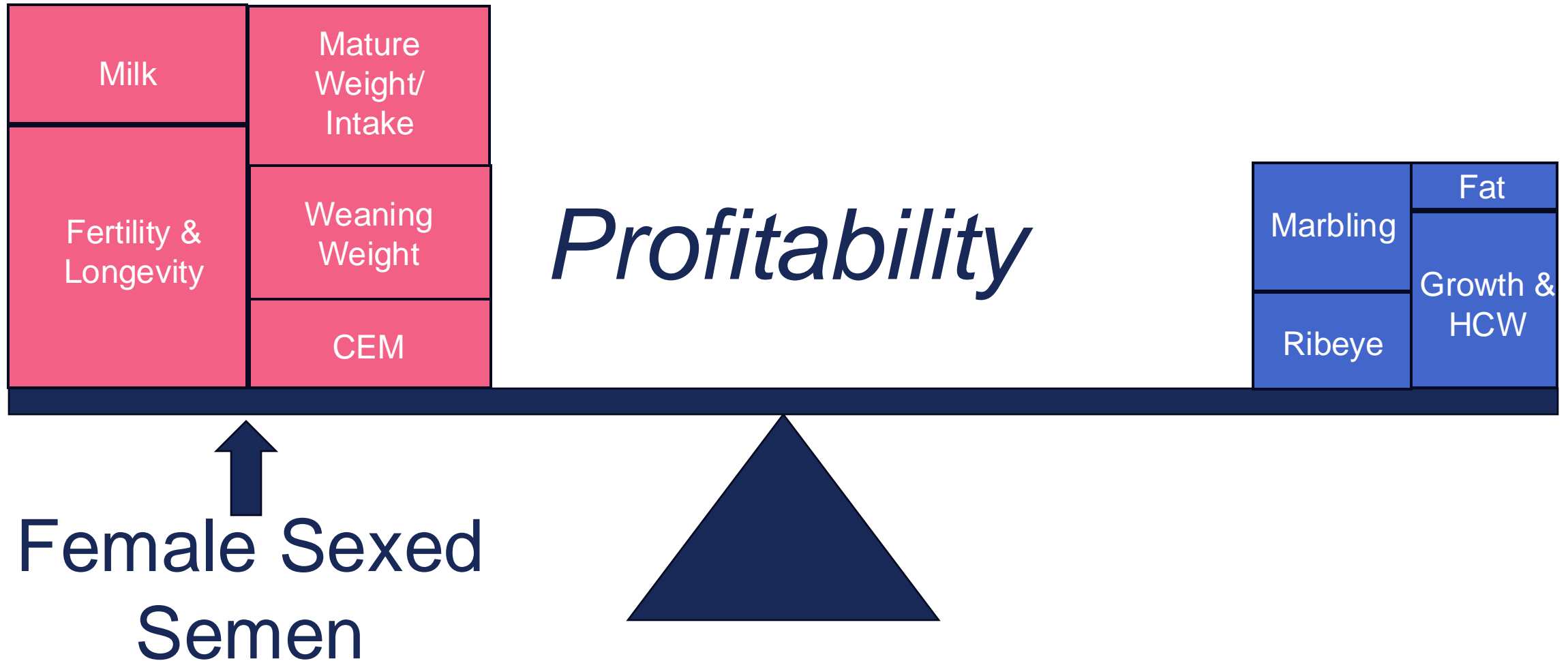
- Many currently available industry indexes assume a significant portion of progeny go to slaughter
- Maternal sire selection must focus more heavily on fertility, longevity and efficiency
- Selection of Terminal Profitability Sires in remainder of calf crop is only limited by CE/BW
 - Both AI and Natural Service Sires
- Implementation of crossbreeding will have significant impacts, particularly on the lowly heritable maternal traits
- With Sexed Semen we can adjust knobs we previously could not



The Age-old Balancing Act



The Age-old Balancing Act



An Input Focused Maternal Index - iGenDec

Emphasis values of the MEV

WW - M MW - D STAY - D HP - D CE - D CE - M



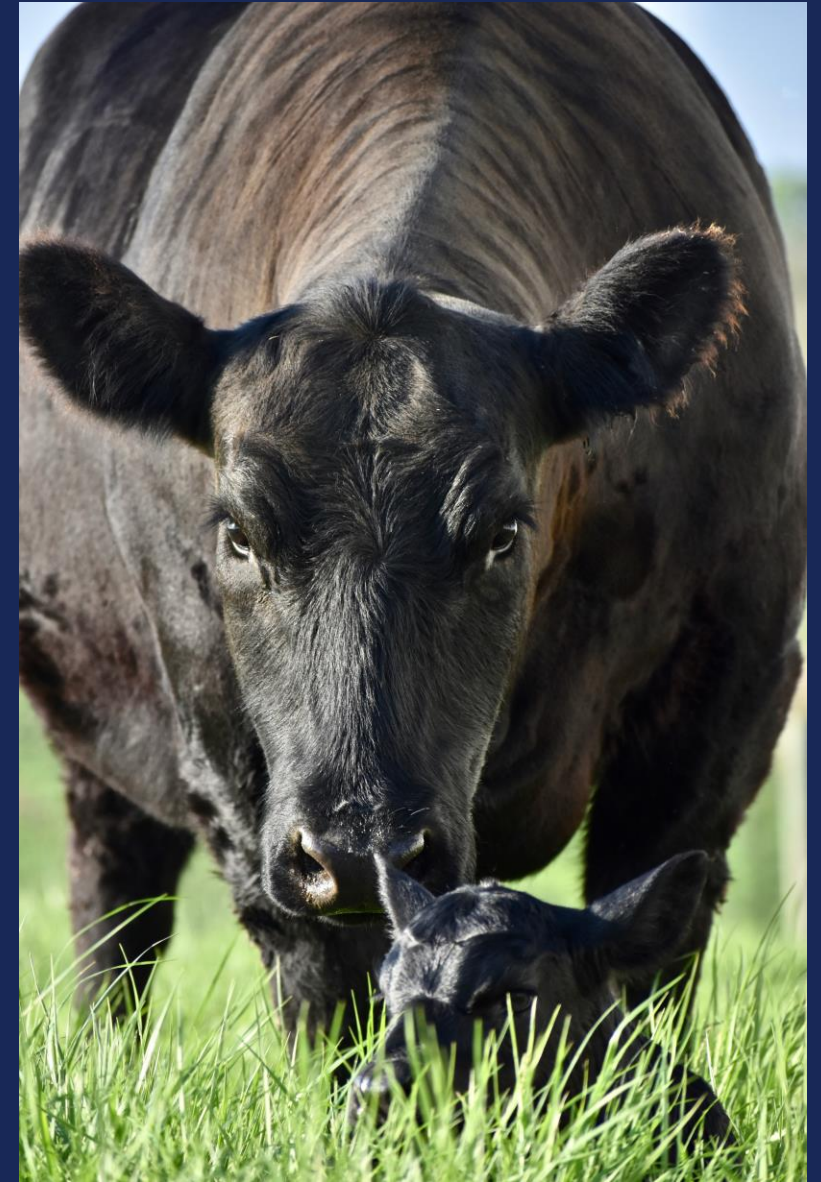
A Clear Path to Planned Crossbreeding

- **Breed Complementarity**
 - Performance and Carcass Traits
 - Environmental Adaptability
 - Hide Color
- Allows incorporation of breeds from which a male offspring would be less desirable
- **Hybrid Vigor**
 - Fertility, Stayability
 - Health and Fitness Traits
- Fits operations from small producers who can't afford multiple bulls and or breeding pastures, all the way to large ranches with dedicated cow groupings



Concluding Thoughts

- Template for an efficient, sustainable, and resilient system
- Impact of early born heifers and selection pressure on fertility traits should result in cumulative and ongoing improvement in reproductive efficiency
- Decoupling Maternal and Terminal breeding decisions allows for laser focus on creating the right calf from every mating, even natural service sired calves
- Ability to optimize sync protocol should further improve system efficiency (ie. 7&7 sync)
- Concept is ***Flexible*** and ***Adaptable***



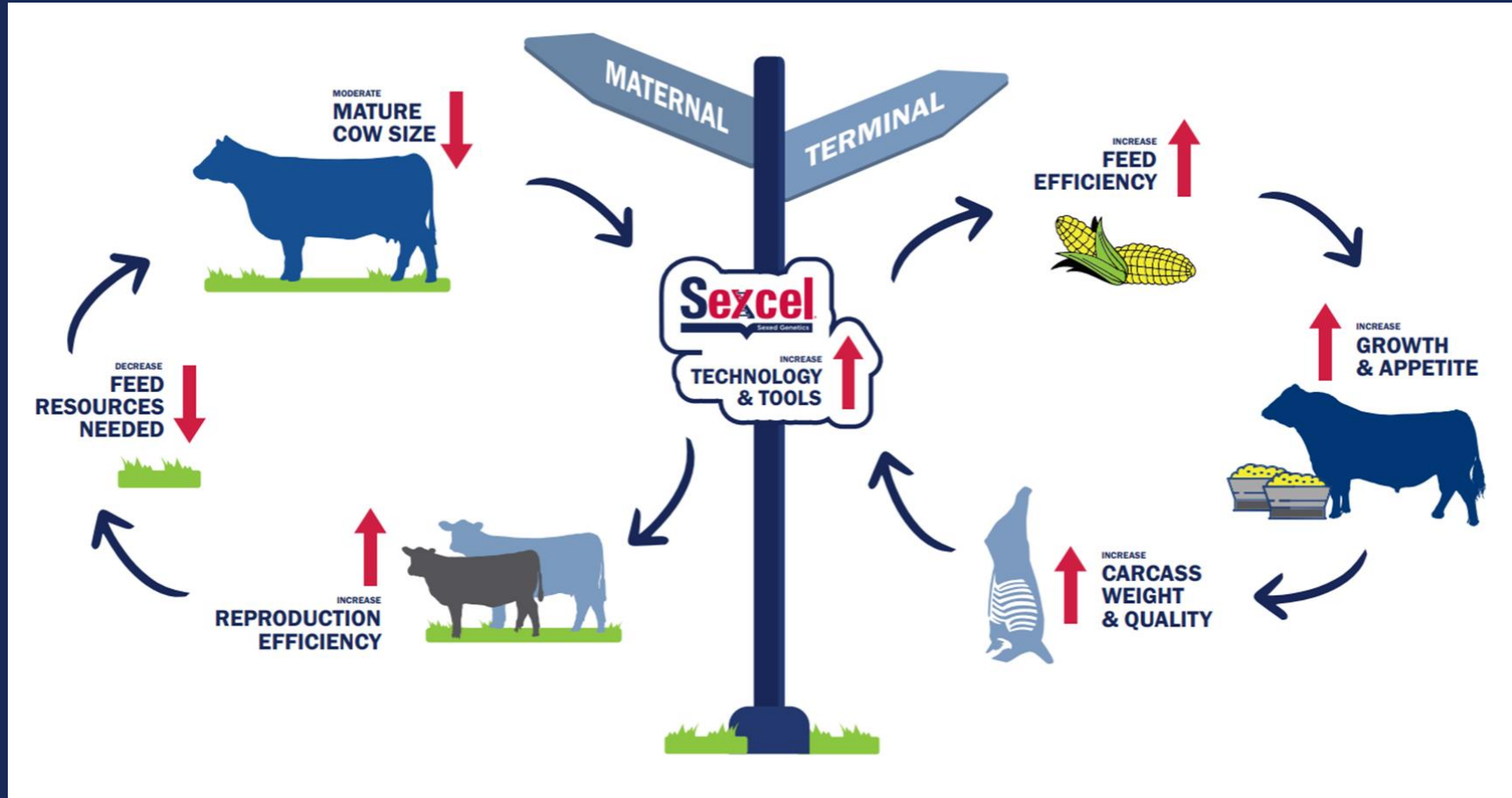
Acknowledgements



Contributors

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 - Treston Vermandel
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 - Casey Martin & Team
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- ABS Reps: Travis Cline, Sam Berg & Alan Tinsman
- Dr. Troy Rowan and Team
- iGenDec Developers
- ABS Beef Product Development Team

There's a fork in the road...



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... we can take it!