HeiferHub – A decision support tool to forecast sales of beef calves and future heifer replacements

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Dairy Records Management Systems

ICAR 2024 Annual Meeting

Introduction

Historically

•All Cows bred to dairy semen

•If Short on replacements – Purchase replacement heifers

Opportunity

•Holstein x Angus cross – Sale Price of $600 - $800 right after birth

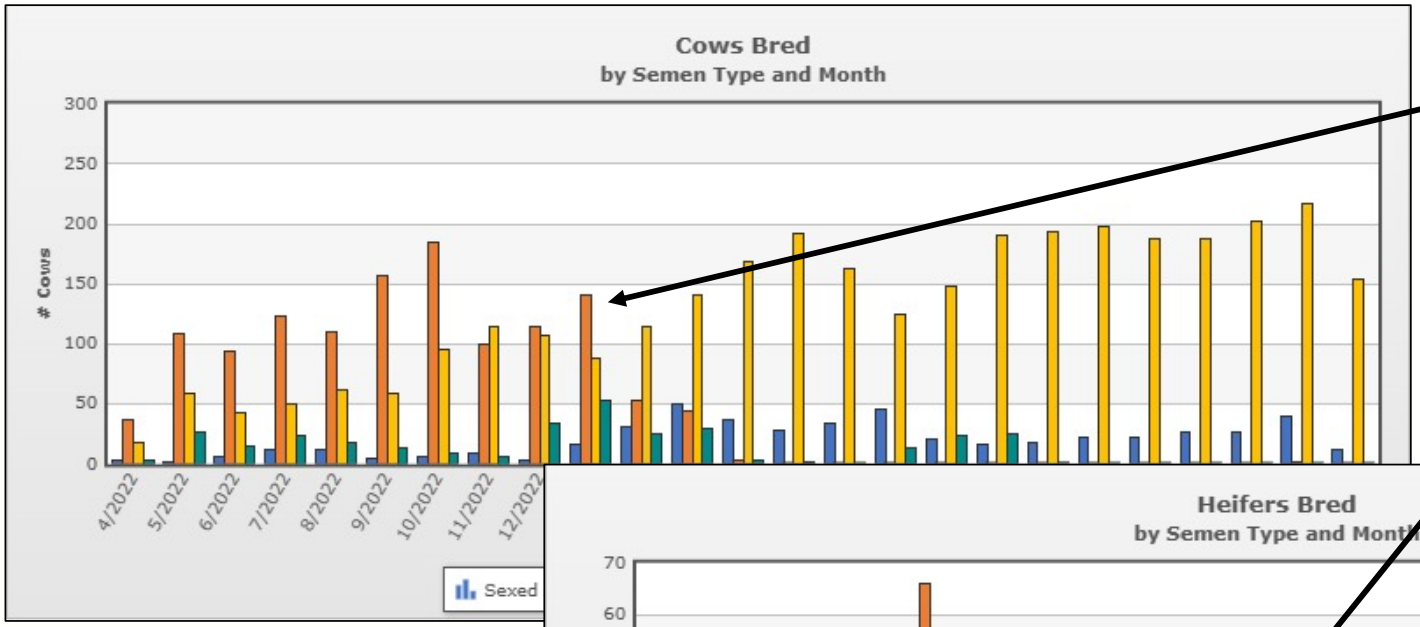
Considerations

•Replacement Heifers – Purchase price $2,400 - $3,500

•Breeding decisions made today will impact your farm 34 months later

How do I maximize returns from AI beef service sires while ensuring enough replacement heifers?

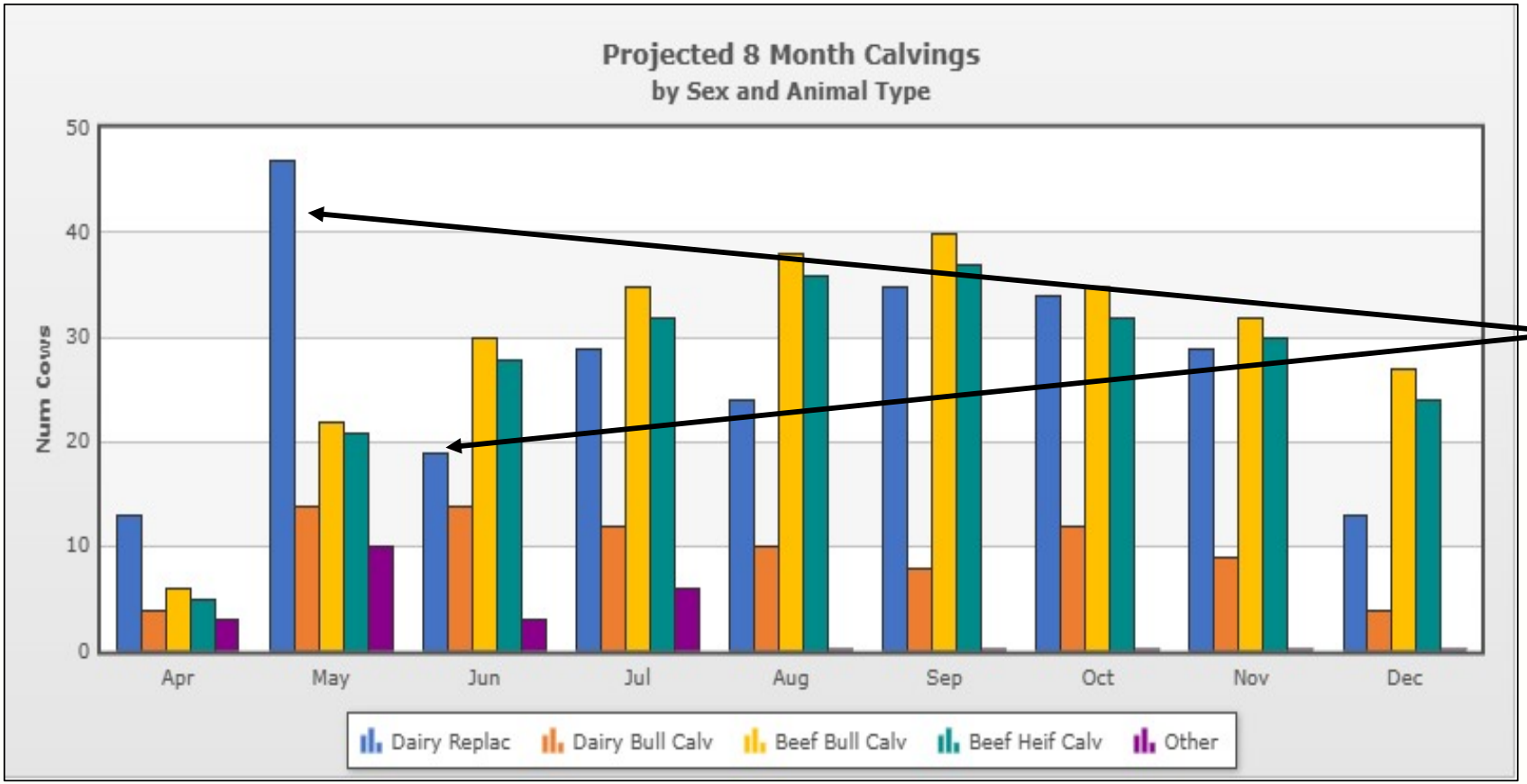
Herd Example - Breedings



This farm changed strategy by eliminating use of conventional dairy semen for milking cows

However they significantly increased the use of sexed dairy semen when breeding Heifers.

Herd Example - Projected Calving



There can be significant swings in number of available replacements from month to month.

This can impact culling decisions especially in situations with shortage of stalls or parlor capacity.

Planning for Future Replacements

Breeding decisions made today will impact number of available replacements in the future

Needed replacements depend on:

- Involuntary culling rates
- Voluntary culling rates (selling heifers)
- Expansion plans

Generated replacements depend on:

- Number of animals bred this month/week to the different semen types
- Conception Rates
- Pregnancy Loss
- Stillbirths
- Heifer losses (from live birth to the heifer's own calving)
- Age at first calving (when will the heifers be available)

} ← Many farms don't have easy access to this data

HeiferHub

New Online Tool to predict future replacements

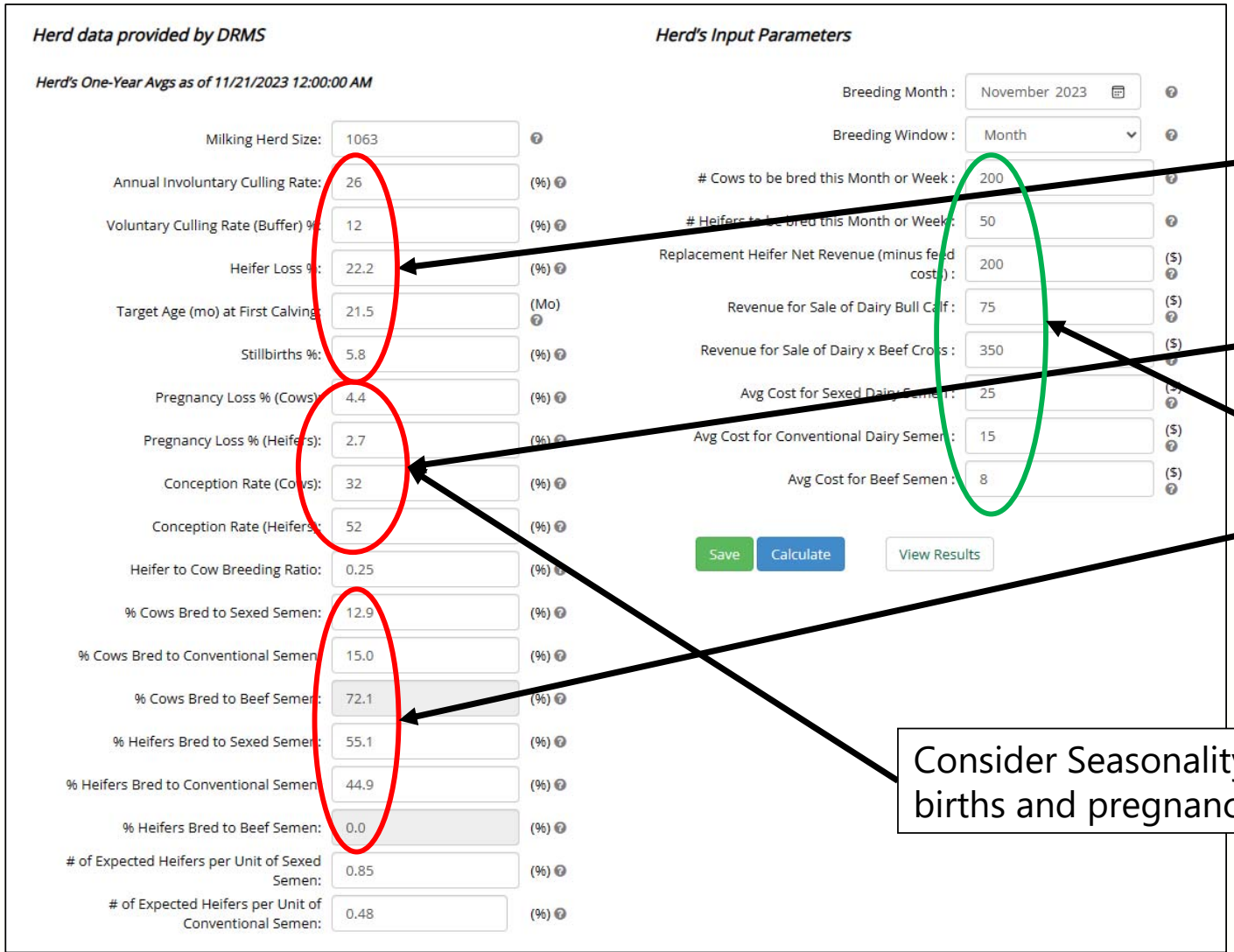
Simulate different strategies to:

- Ensure enough replacements are available
- Maximize revenues from selling beef x dairy crosses
- Measure impact of management changes

Uses DRMS herd info

- Provides actual numbers based on the farm's performance

DRMS and Producer Inputs



Accounts for involuntary and heifer losses from birth to calving

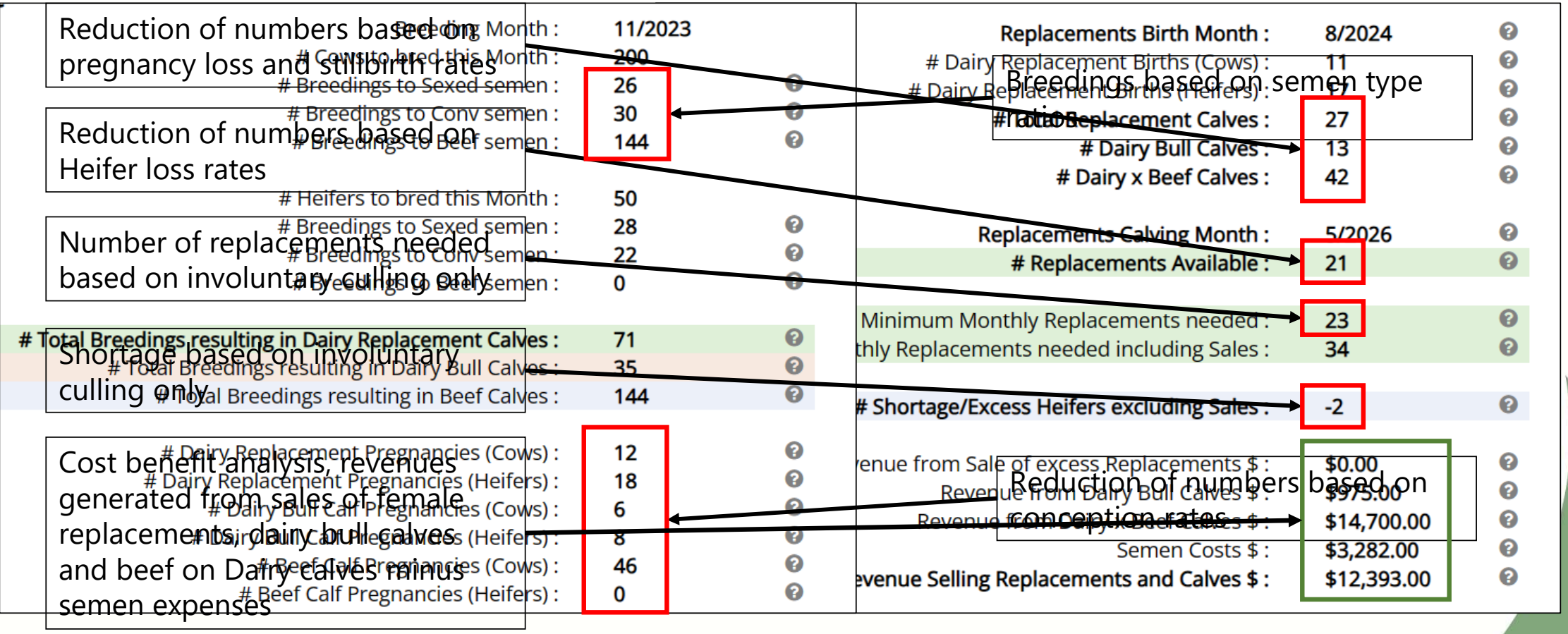
Reproductive performance and apparent pregnancy losses

Producer provide number of animals to breed by month or week, revenue from sale of calves and costs of semen

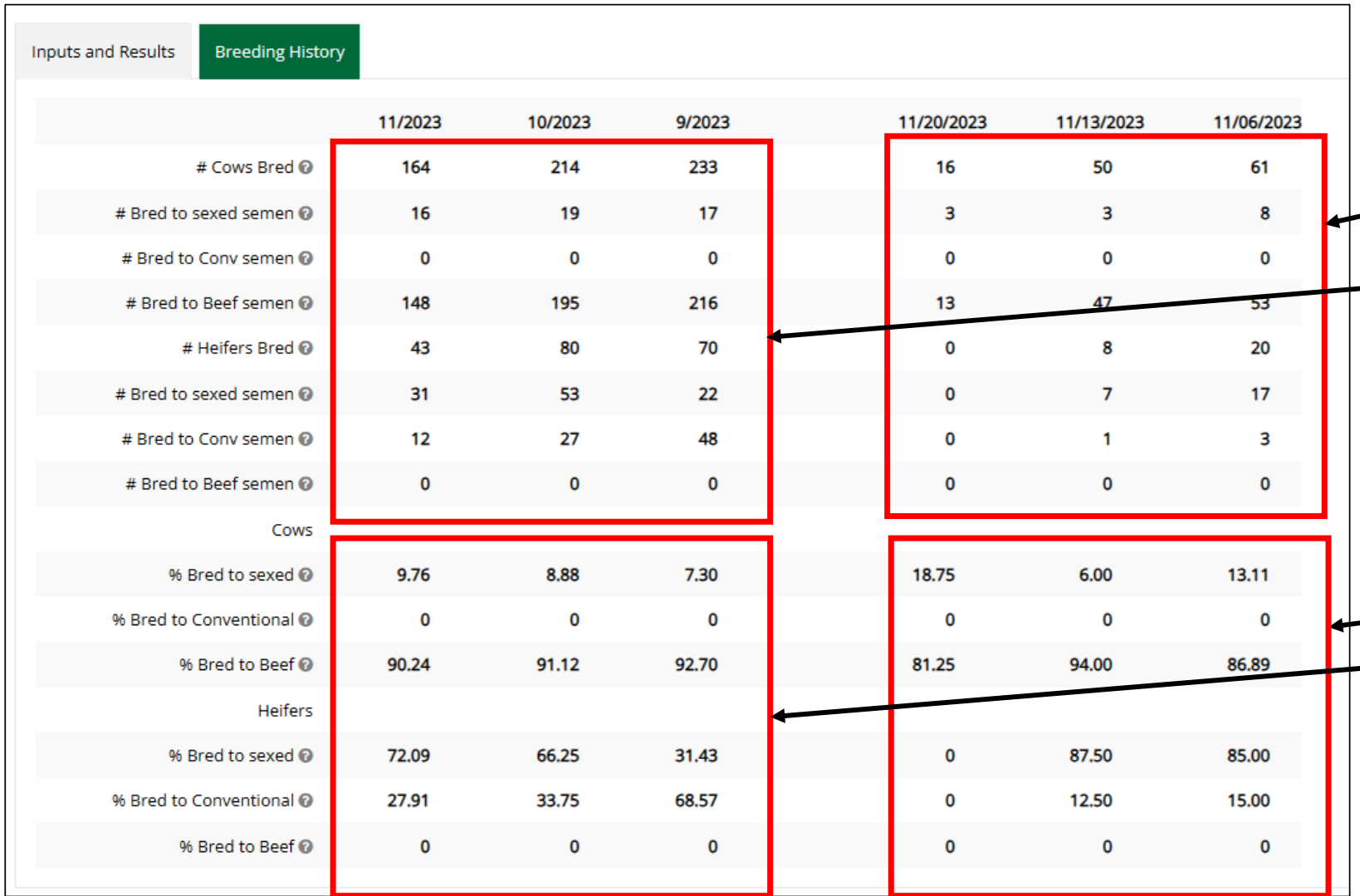
% annual distribution by semen type

Consider Seasonality of conception rates, still births and pregnancy losses

Results


Reduction of numbers based on pregnancy loss and stillbirth rates
Reduction of numbers based on Heifer loss rates
Number of replacements needed based on involuntary culling only
Shortage based on involuntary culling only
Cost benefit analysis, revenues generated from sales of female replacements, dairy bull calves and beef on Dairy calves minus semen expenses
Breedings based on semen type ratio
Reduction of numbers based on conception rates
Breeding Month : 11/2023
Cows to bred this Month : 200
Breedings to Sexed semen : 26
Breedings to Conv semen : 30
Breedings to Beef semen : 144
Heifers to bred this Month : 50
Breedings to Sexed semen : 28
Breedings to Conv semen : 22
Breedings to Beef semen : 0
Total Breedings resulting in Dairy Replacement Calves : 71
Total Breedings resulting in Dairy Bull Calves : 35
Total Breedings resulting in Beef Calves : 144
Dairy Replacement Pregnancies (Cows) : 12
Dairy Replacement Pregnancies (Heifers) : 18
Dairy Bull Calf Pregnancies (Cows) : 6
Dairy Bull Calf Pregnancies (Heifers) : 8
Beef Calf Pregnancies (Cows) : 46
Beef Calf Pregnancies (Heifers) : 0
Replacements Birth Month : 8/2024
Dairy Replacement Births (Cows) : 11
Dairy Replacement Births (Heifers) : 17
Total Replacement Calves : 27
Dairy Bull Calves : 13
Dairy x Beef Calves : 42
Replacements Calving Month : 5/2026
Replacements Available : 21
Minimum Monthly Replacements needed : 23
thly Replacements needed including Sales : 34
Shortage/Excess Heifers excluding Sales : -2
venue from Sale of excess Replacements $: $0.00
Revenue from Dairy Bull Calves $: $975.00
Revenue from Dairy x Beef Calves $: $14,700.00
Semen Costs $: $3,282.00
evenue Selling Replacements and Calves $: $12,393.00

Recent Semen Usage



Inputs and Results | Breeding History

	11/2023	10/2023	9/2023	11/20/2023	11/13/2023	11/06/2023
# Cows Bred	164	214	233	16	50	61
# Bred to sexed semen	16	19	17	3	3	8
# Bred to Conv semen	0	0	0	0	0	0
# Bred to Beef semen	148	195	216	13	47	53
# Heifers Bred	43	80	70	0	8	20
# Bred to sexed semen	31	53	22	0	7	17
# Bred to Conv semen	12	27	48	0	1	3
# Bred to Beef semen	0	0	0	0	0	0
Cows						
% Bred to sexed	9.76	8.88	7.30	18.75	6.00	13.11
% Bred to Conventional	0	0	0	0	0	0
% Bred to Beef	90.24	91.12	92.70	81.25	94.00	86.89
Heifers						
% Bred to sexed	72.09	66.25	31.43	0	87.50	85.00
% Bred to Conventional	27.91	33.75	68.57	0	12.50	15.00
% Bred to Beef	0	0	0	0	0	0

Using actual breeding data, HeiferHub can determine # of replacement heifers and adjust if necessary.

The default semen distribution uses annual average % of each semen type. However farms can see monthly or even weekly variation. Compare the annual number with most recent breeding pattern

Measure impact of “What–if”

Improve management

- Lower involuntary culling rates
- Breeding Program
  - Higher conception rates
  - Lower pregnancy losses
- Environment
  - Reduce still births and calf losses

Changes in breeding philosophy

- Try different ratios of dairy versus beef
- Maximize breeding to beef and use of dairy sexed semen to generate enough replacements
  - Can I generate enough replacements from breeding my heifers with sexed semen?

HEIFER HUB

Summary

KEEP OR BEEF

- Use of Beef Semen will continue as long as it is profitable
- Challenge is to plan far enough ahead to ensure enough replacements are available while maximizing returns from beef on dairy calves
- Make the most informed culling and mating decisions to maximize profitability
- DRMS has key data and two new and exciting tools to support dairy producers to make the most informed decisions.

DRMS

Thank You!

Acknowledgements: DRMS Staff

Not all Staff pictured

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DAIRY RECORDS MANAGEMENT SYSTEMS