Culling and Replacement Strategies
Matt Lippert
Wood Co. Agriculture Agent

Stable to declining herd
- Since 1946 long term trend is the same or fewer cows
- No need to grow the herd, only replace

Under the magnifying lens
- There are up and down trends
- You may have different goals for your own dairy
- Herds getting larger
Reproductive Capacity exceeds replacement needs…
• On individual dairies, high culling or low calf survival may alter this relationship
• Herd growth or reduction a factor

How many replacements needed?
• Fourteen month calving interval- .86 calves/cow
  – 10% stillbirth
  – 10% mortality
  – 45% non-twin female
• .31 live heifers per cow
• 100% utilization for 31% culling rate (national average)

Improvements in herd reproductive capacity
• Sexed semen
  – 90% female on resulting pregnancies
• Ultrasound pregnancies for gender
  – Cull, manage differently
• Synchronization programs
  – Reduce calving interval by one month

How many replacements needed?
• Thirteen month calving interval- .92 calves/cow
  – 7% stillbirth
  – 3% mortality
  – 45% non-twin female
• .37 live heifers per cow
• 100% utilization for 37% culling rate (not unusual)

How many replacements needed?
• Twelve and a half month calving interval- .96 calves/cow
  – 7% stillbirth
  – 2% mortality
  – 75% non-twin female
• .66 live heifers per cow
• More than needed?
How much cost to raise 2X the needed replacements?
• Lost opportunity to sell heifer - $150
• $2.00/day to raise for two years
• $4.00/day wet calf
• $1730/ heifer
  – $2.14/ cwt. (31% cull rate)
  – $4.56/ cwt. .66 heifers raised/cow/year
  – 132% inventory

What replacement herd is typical?
• Some specialized dairies maintain 0 replacement inventory, invest their money in productive assets, which heifers are not
• Raising all replacements and calving at 2 years of age typically about 85-90% of cow herd
• Sexing, freshening heifers later, raising all replacements while downsizing 125% of cow inventory

Replacement Costs
• 25,000 RHA Herd
• 35% culling rate
• Purchases all replacements
• $1,500
• $2.10/ cwt. (gross)

Replacement Costs
• 18,000 RHA Herd
• 45% culling rate
• Purchases all replacements
• $1,500
• $3.75/ cwt. (gross)

Replacement Costs
• 12,000 RHA Herd
• 15% culling rate
• Raises replacements for half the cost of conventional ($880/ heifer)
• 1.10/ cwt. (gross)
• -$0.31/ cwt. (net)

Replacement Costs
• 25,000 RHA Herd
• 35% culling rate
• Purchases all replacements
• $1,500
• Sells cows and calves averages $350/ cow per year ($1.40/cwt.)
• $0.70/ cwt. (Net)
Replacement Costs

- 25,000 RHA Herd
- 35% culling rate
- Purchases all replacements
- $1,500
- Sells cows and calves $1.88/cwt.
  - $ 1400/ cow $0.70/ lb. averages feed $470/ cow/year ($980 and $127 calf)
- 0.22/ cwt. (Net)

Rearing costs

- How long you take to raise
- How much you spend per day
- How many you need
- How much production to spread it over

The examples are arbitrary but they demonstrate the cost is a very important factor in herd replacement programs.
25,000 raise 2X+ needed replacements

$860/cow

$37/cow

12,000 15% cull, low rearing expense

Difference $823/cow

What to do with those extra heifers you worked so hard to produce?

Choices:
- Market immediately
- Market extra springers
- Market surplus milking cows
- Grow the herd

Reduction in rearing cost:
- $552.50
- Heifer needs to bring $984

Extra calves (heifers) $55
Extra milk 5% $0.09 $144
Selection, Quality premiums $0.00
Dairy Sale Cow must sell for $1,994

Surplus heifers may be a byproduct of a successful reproduction program, good management, or new technologies

Maintaining high heifer inventories puts you in the heifer rearing business. Are you a low cost, competitive producer?
Is this a fair comparison?
• Comparing highest input system to lowest
• Better to compare within your farm
• Reducing mortality, increasing fertility are always desirable
• If you produce heifers for more than the market price, they need to provide extra value to your own business, or you need to be able to market the extra value

Think about what culling means.
• Voluntary culling is a very positive thing.
• Gray line between voluntary and involuntary.
• Involuntary culling is a very bad thing.
• Death is even worse!

All other factors equal
• Increased culling = increased production
• Increased culling = fewer management problems
• Increased culling = improved selection

Must fit your operation…
• Do you have the land base to feed more heifers?
• Do you have the facilities to accommodate more heifers?
• Do you have the labor to care for more heifers?

Must fit your operation…
• May suit a biosecurity target.
• May fit an expansion plan.
• May allow for genetic improvement
  – Genomics
  – Pedigrees
  – Records

The End