Life Stage Solutions

Nutritional health for all stages of life.

Calves & Heifers: The Future of our Dairies

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Diamond V
The Trusted Experts in Nutrition & Health

Raising them right, from the start

- Preventative Medicine- Feeding animals the right way
- When a calf is born, she has 100% genetic potential

Today's objectives:

- 1) Why do we care so much about raising our calves well?
- 2) Tools for identifying bottlenecks & tips for implementing change

- Not re-inventing the wheel, goal is to share & steal ideas
- There is no "correct" way of raising calves

- Listen to your calves, they don't lie!
- Listen to your employees (although sometimes they do lie ;)
- PLEASE ask questions!

What's the difference between these calves?

What's the value of investing in the milk fed calf?

- **Increased nutrient intake prior to 56 days of life** resulted in **increased milk yield during the first lactation** that ranged from 1,000 to 3,000 additional pounds compared to more restricted fed calves during the same period
- **Average of 1500 pound 1st lactation advantage** across studies

(Van Amburgh, 2014; Foldager and Krohn, 1994; Bar-Peled et al, 1997; Foldager et al, 1997; Everett and Schmitz. 1994; Van Amburgh et al., 1997)

Increased first lactation milk

Table 1. Milk production differences among treatments where calves were allowed to consume approximately 50% more nutrients than the standard feeding rate prior to weaning from liquid feed.

Study	Milk yield, lb
Foldager and Krohn, 1991	3,092
Bar-Peled et al., 1998	998
Foldager et al., 1997	1,143
Ballard et al., 2005 (@ 200 DIM)	1,543
Shamay et al., 2005 (post-weaning protein)	2,162
Rincker et al., 2006 (proj. 305@ 150 DIM)	1,100
Drackley et al., 2007	1,841
Raith-Knight et al., 2009	1,582
Terre et al., 2009	1,375
Morrison et al., 2009 (no diff. calf growth)	0
Moallem et al., 2010	1,600
Soberon et al., 2011	1,217

1500 lbs

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- **6000 lb milk advantage on cows after 3 lactations**
- **Growth Goals: double birth weight by 56 days of age**
- **90 lb baby, weaned at 180 lb = 1.6 lbs ADG**

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- **Increased nutrient i… to 56 days of life** resulted in **incre… during the first lactation** that … additional pounds com… calves during the same pe…
- **Average of … advantage** across studies
- **6000 lb milk … 3 lactations**
- **Growth Goals: … by 56 days of age**
- **90 lb baby, weaned … = 1.6 lbs ADG**

Do you have goals for your calves?

Are you measuring growth to know if you are meeting your goals?

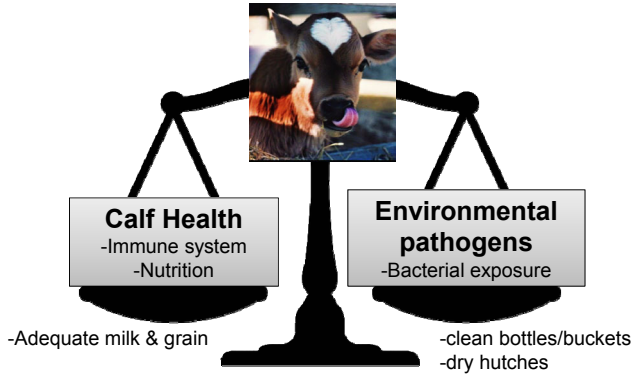
(Van Amburgh, 2014; Foldager and Krohn, 1994; Bar-Peled et al, 1997; Foldager et al, 1997; Everett and Schmitz. 1994; Van Amburgh et al., 1997)

What about health effects on performance?

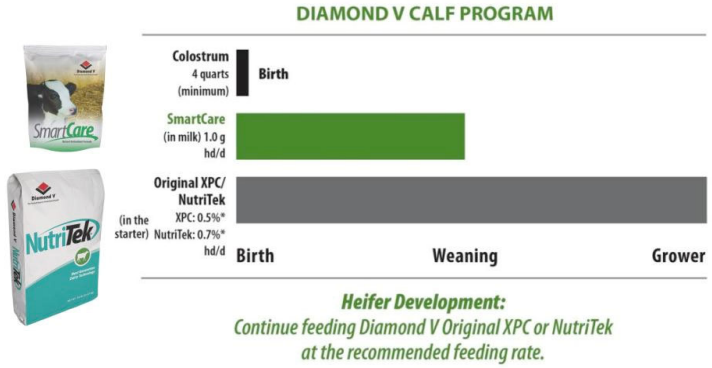
- Antibiotic treatment had a significant effect on Test Day Model residual milk and **calves that were treated with antibiotics produced 1,086 lb less milk in the first lactation** (P >0.01) than calves with no record of being treated.

(Soberon, 2012)

Goal: *Find the Right Balance*



Diamond V Calf Program



What is a calf audit?

- An evaluation of whether or not there are systems in place to assure calves are being raised in such a way to achieve good health and performance
  - What is the compliance to the systems?
  - Are there better ways to do it?
- Goal is to identify the big bottlenecks limiting the overall performance of the system
- Snapshot in time- observations are one day only

Tools Used for Every Evaluation

- Brix Refractometer
- Thermometer
- Luminometer (ATP meter)
  - Hygiena

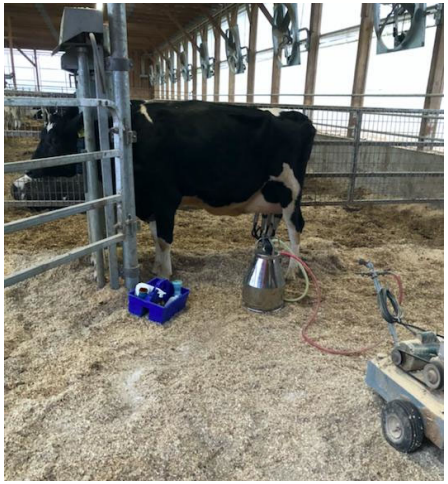

Critical Control Points

- Colostrum management/Maternity
- Cleanliness/sanitation
- Delivery
  - Temperature, solids consistency, volume
- Calories
- Dry beds
- Air Quality & Ventilation

1. Colostrum Management

- Is colostrum harvested collected cleanly?
- Is colostrum cooled quickly to prevent bacterial growth?
- Is quality of colostrum tested?
- Is harvest/storage/feeding equipment clean?
- Is colostrum fed in a timely fashion?

Colostrum Harvest



What not to do!

Colostrum Routine Sampling

Sanitation of Bucket Milkers

Discourage “Opening Up” New Nipples

- The test is to hold the bottle upside down and milk should drip out nipple, but not be a steady stream.

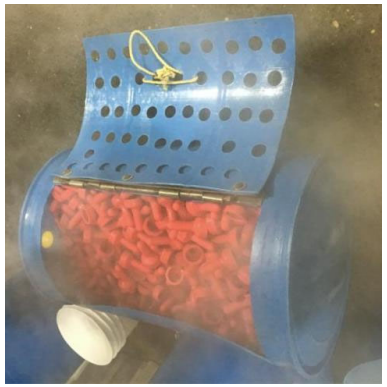
2. Cleanliness/Sanitation

Milk Contact Surface Cleaning Protocol

- Rinse equipment with **lukewarm** water
- Soak with hot water (≥140°F) with a chlorinated alkaline detergent (pH 11-12)
- Vigorously wash calf feeding equipment with a brush 1-2 minutes
- Rinse with cold water
- Rinse a second time with an acidic solution (pH 2-3)
- Allow calf feeding equipment to dry
- Sanitize inside & outside of calf feeding equipment within in 2 hours of use

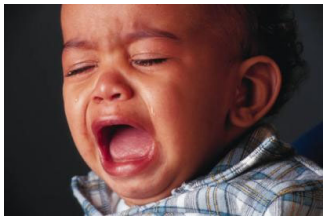
Adapted from Don Sockett

Allow Equipment to Dry or Sanitize Between Uses



3. Delivery

- Solids Consistency
- Temperature
- Volume
- Timing



Same thing,
same time,
every day.

Keep their life boring!

Total Solids

Temperature for Mixing & Delivery

Recommended feeding temp 95-105 F

Ideas for Keeping Milk Warm in Winter

- Adjust mixing temperature seasonally, if needed

Volume

- Make sure bottles/buckets are actually filled to the desired level (foam in bottles)
- Broken buckets/unsecured



Delivery: Sometimes It Takes A Village

- Timeliness, especially for youngest babies is critical. Keep as even a time interval as possible.

4. Calories

- Make sure desired calories are actually getting delivered
- Seasonally re-evaluate environmental stressors and effect on energetic cost of maintenance vs. growth
- Thermoneutral zone for calves is 68-82 degrees F

Consider Hutch Orientation

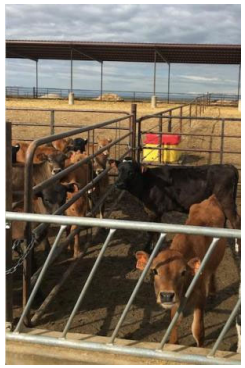
- Shade in summer and sun in winter!

Grain Delivery

- Deliver the amount of starter you expect calves to consume so grain stays fresh



Water Quality & Availability



5. Got Dry Beds? … Year Round?

Bed to allow for nesting in winter

-Use of calf jackets

Drainage Around Hutches

Fly Control- Use Larvacides

6. Air Quality & Ventilation

- Ammonia meter
- Manometer- wind speed
- Bacterial cultures of air are a good indicator of ventilation

Photo courtesy of Geof Smith, DVM

Critical Control Points

- Colostrum management/Maternity
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- Delivery
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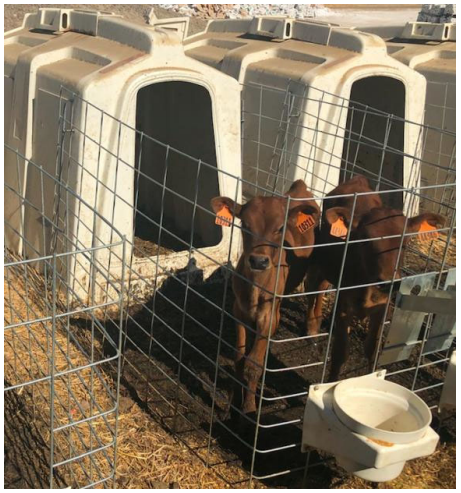
- Air Quality & Ventilation

What key areas are off-balance for your calves?

-Adequate milk & grain

-clean bottles/buckets
-dry hutches

The future?



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