

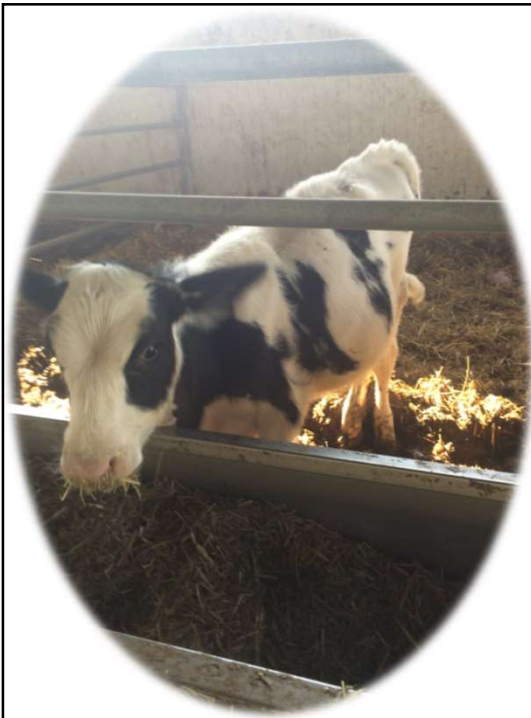


The healthy dairy calf

Anna Catharina Berge
DVM, MPVM, PhD
Berge Veterinary Consulting



1



The Calf's health and growth has long-term effects on dairy profitability and sustainability

- Sub-optimal growth affects milk production, heifer reproductive performance and productivity.
- Heifer disease and death has huge financial impacts.



2

Estimated losses due to diseases

- Diarrhoea - 50% of calf mortality
- Pneumonia - 30% of calf mortality
- Calf diseases - increase age at calving/inseminations
- Diarrhoea - reduce weight gain & future milk production
- Pneumonia - lower milk production & longevity in herd
- Calf diseases - Increased early culling
- +++++ Calf diseases reduces working joy!




3

The first 24 hours will have huge impact on a heifer's lifetime performance.

-
- There is only one chance to do things right.
 - Otherwise, the heifer and the dairy suffer the consequences the rest of her life.




4



Colostrum



- First source of nutrients
- First source of liquid
- Immunoglobulins
- Leucocytes
- Bioactive and growth-promoting compounds



5

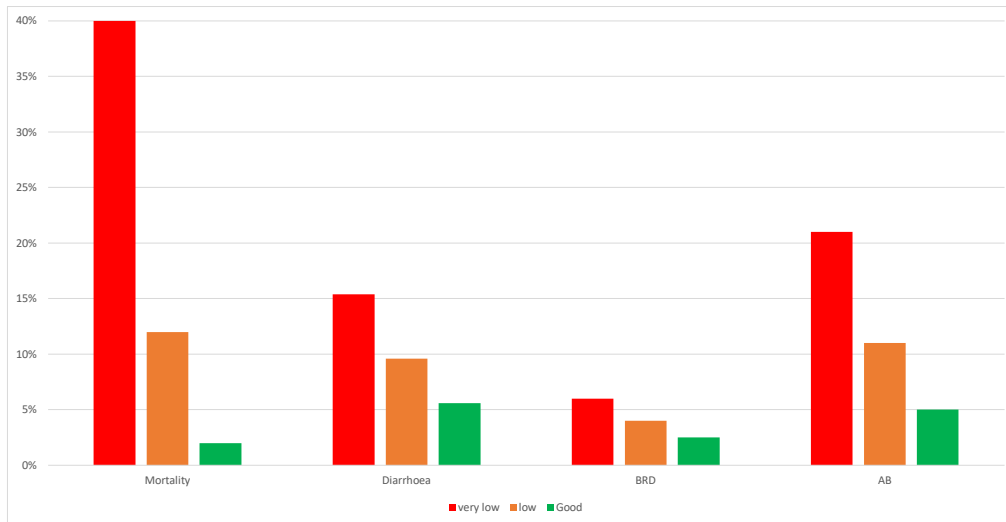
Colostrum Feeding

- Immediately, at least within 4 hours
- **4 liters** (10% body weight)
- + 3-4 liters 8-10 hours later
- Super clean!
- High Immunoglobulin levels
- Have an **Oesophageal sond/tube** for feeding- either regularly or when needed

6

Colostrum ≠ death, disease and treatments



(Berge, Lindeque et al. 2005)



7

Transition Milk

- Best feed after colostrum.
- Encourage the use of transition milk for 3-5 days.
- Higher in protein and fat than milk replacer.
- Colostral antibodies.



8

More milk to calves will result in that they produce more milk

- For every 100 grams extra daily gain pre-weaning.
- The heifer can give 150-155kg more milk in first lactation.

(Soberon and Van Amburgh 2013)(Gelsinger, Heinrichs et al. 2016)



9

Nutrient Composition (on dry matter basis)

	Whole milk	Milk replacer
Protein	26%	20-23%
Fat	30%	18-20%
Lactose	37%	55%
Ash	6%	5%
Energy	5,3 Mcal/kg	4,8 Mcal/kg



10

How much milk to feed daily so that preweaning calf growth can achieve 800 grams/day

	MR	MR	Milk	Milk
Temp °C	< 3 weeks	> 3 weeks	< 3 weeks	> 3 weeks
20	8	6	7	5
10	9	6	7	5
0	10	7	8	6
-10	11	8	9	6
-20	12	9	10	7



11

Recommended daily liters of milk or milk replacer to be fed per week

Week	Liters
1	5-7
2-5	7-10
6	6-7
7	5-6
8-12	4-5
Weaning	2-3



12

12

Pasteurization of milk

- Recommended for all dairies that use waste milk for calves
- Necessary for dairies where tuberculosis/brucellosis may be present
- Batch pasteurizer best for small farms.
- 30-60minutes at 60°C.
- Temperatures > 80°C reduce calf health and performance.
- (Bach, Aris et al. 2017)



13



Group housing or Pair housing is beneficial preweaning

Housing calves in pairs can improve:

- Grain intake
- Weaning weight
- Welfare
- Post-weaning performance
- If single pens/hutches are used, then group housing is good after 16 days of age



14

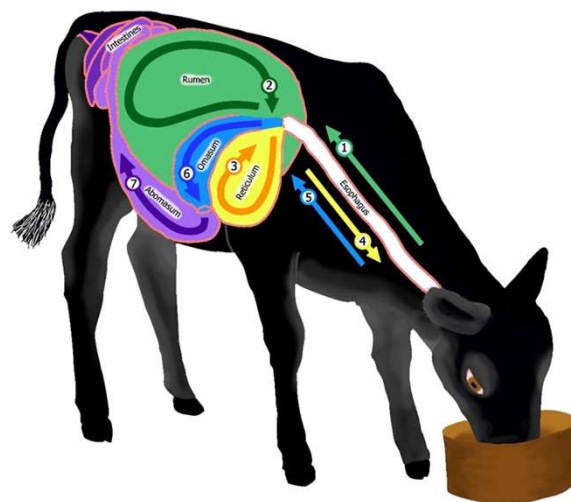
Group milk feeding

- Transitioning the calves to group prior to weaning can enable a more gradual weaning



15

The calf starter grain- necessary for early weaning of calves



BVC

16

Rumen papillae develops through grain feed



Grain-based starters promote VFA, such as butyrate

Courtesy Jud Heinrichs, Penn State, USA

17



Calf starter

- ❖ Palatable- textured
- ❖ Little fines
- ❖ Whole grains & pellets
- ❖ 5 percent molasses
- ❖ Fresh
- ❖ **Min. 18% protein**
- ❖ 3.1 MCal/kg DM



18

Grain and Water from first day of life

A day-old calf drinking water



A little bit of starter grain from day 1



19

Weaning

- Healthy calf
- 8-12 weeks
- Grain consumption prior weaning
 - 1 -1.5 kg/d
- Gradual weaning (at least 1 week)
 - For 3 days replace evening feed with electrolytes
 - For 3 days replace morning feed with electrolytes



20

Weaning is stressful

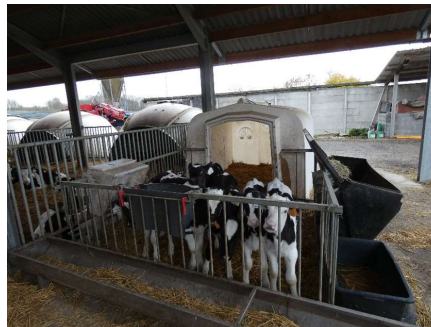
- Do not make other management changes during weaning
- Do not move calf
- **SAME GRAIN**
- **SAME PLACE**
- **SAME FEEDING TIMES**
- **SAME GROUP**



21

Post-weaning period

- Leave in same place for 2 weeks
- Gradually increase group size
- Start with 3-5 calves
- Straw bedding better for hooves
- Monitor calves closely & individually
- Protect from winds



22

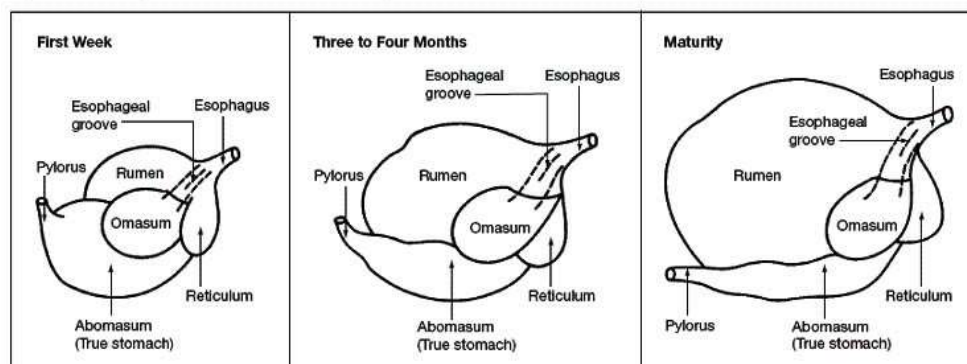
From weaning
to 6 month –
concentrate /
hay or haylage



23

Rumen development

Figure 1. Development of bovine stomach compartments from birth to maturity.

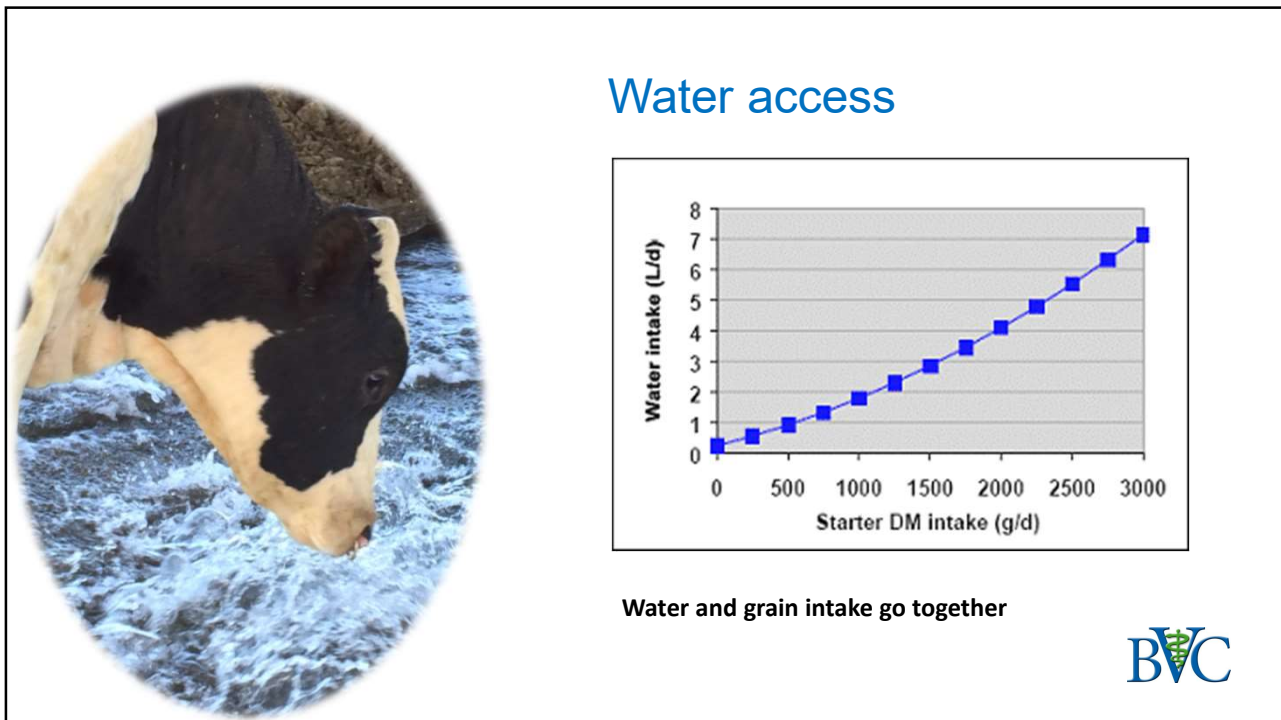


- The calf is transitioning from monogastric to ruminant.
- Keep feeding high quality calf grain and good hay post-weaning.

Courtesy Jud Heinrichs, Penn State, USA



24



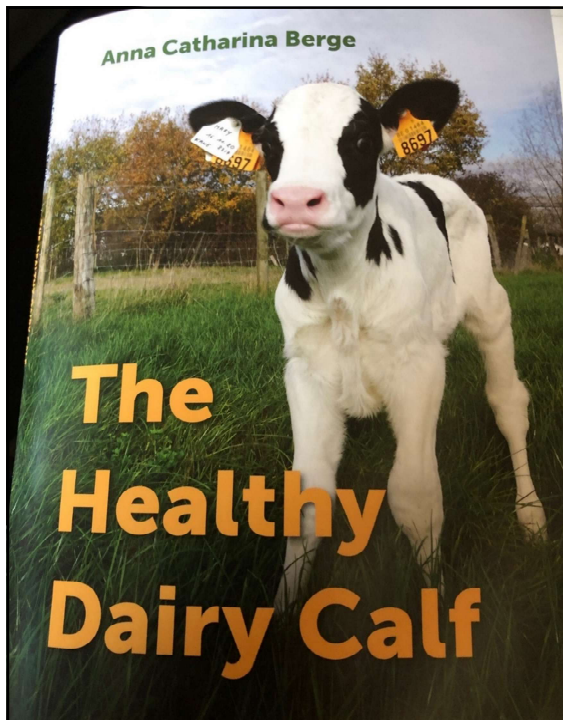
25

In summary



- Colostrum - the best insurance policy
- Give calves sufficient milk or milk replacer to live and grow
- Good quality milk or milk replacer
- Good quality starter grain
- Prevent disease, because disease damage can not be well repaired

26



Book and print-out of
presentation:

cat@bergevetconsulting.com

27



Questions?

Discussions?

Opinions?

Requests?

Cat@bergevetconsulting.com

+32499-703112



28