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Taking care of Jersey Calves

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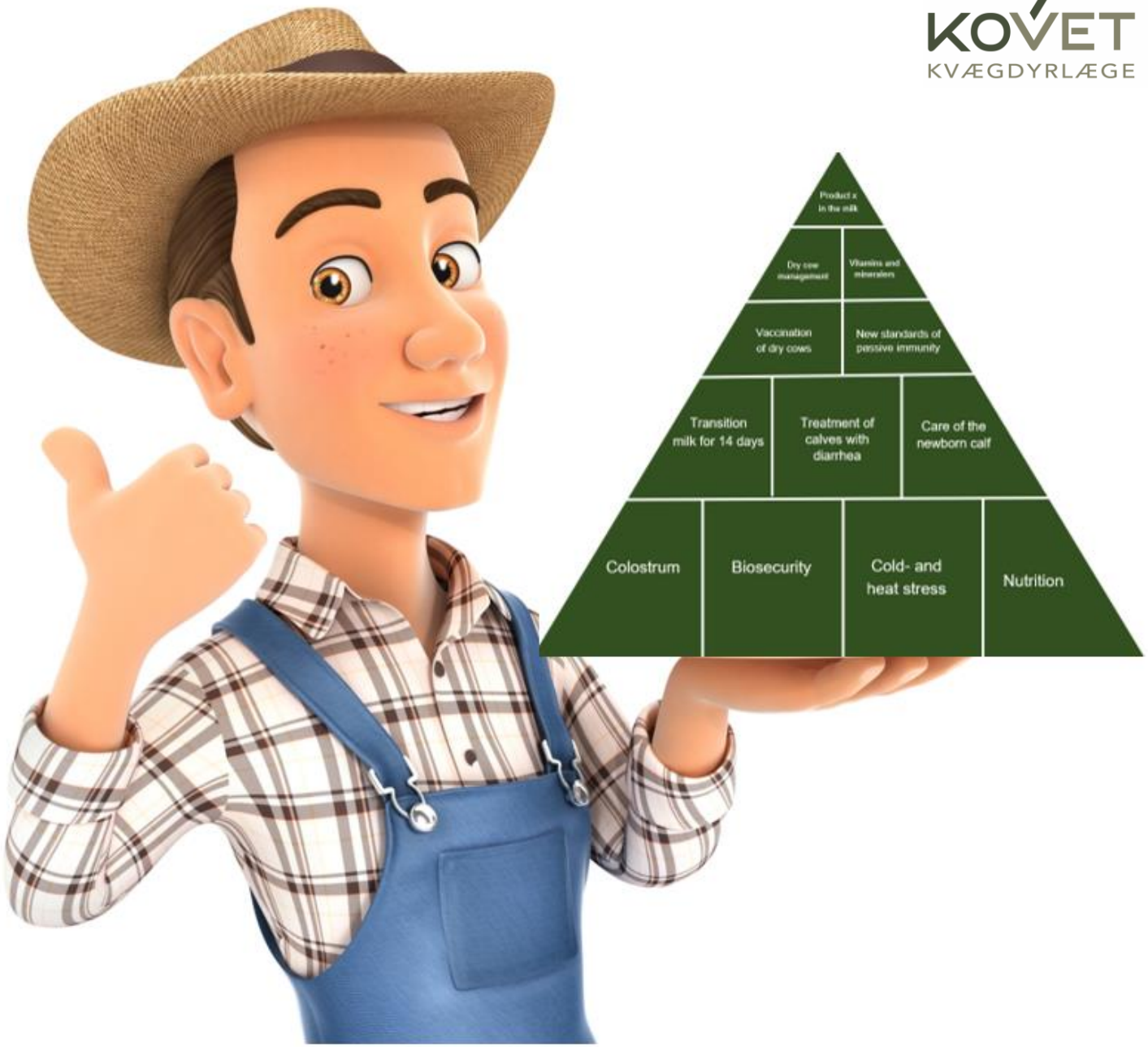
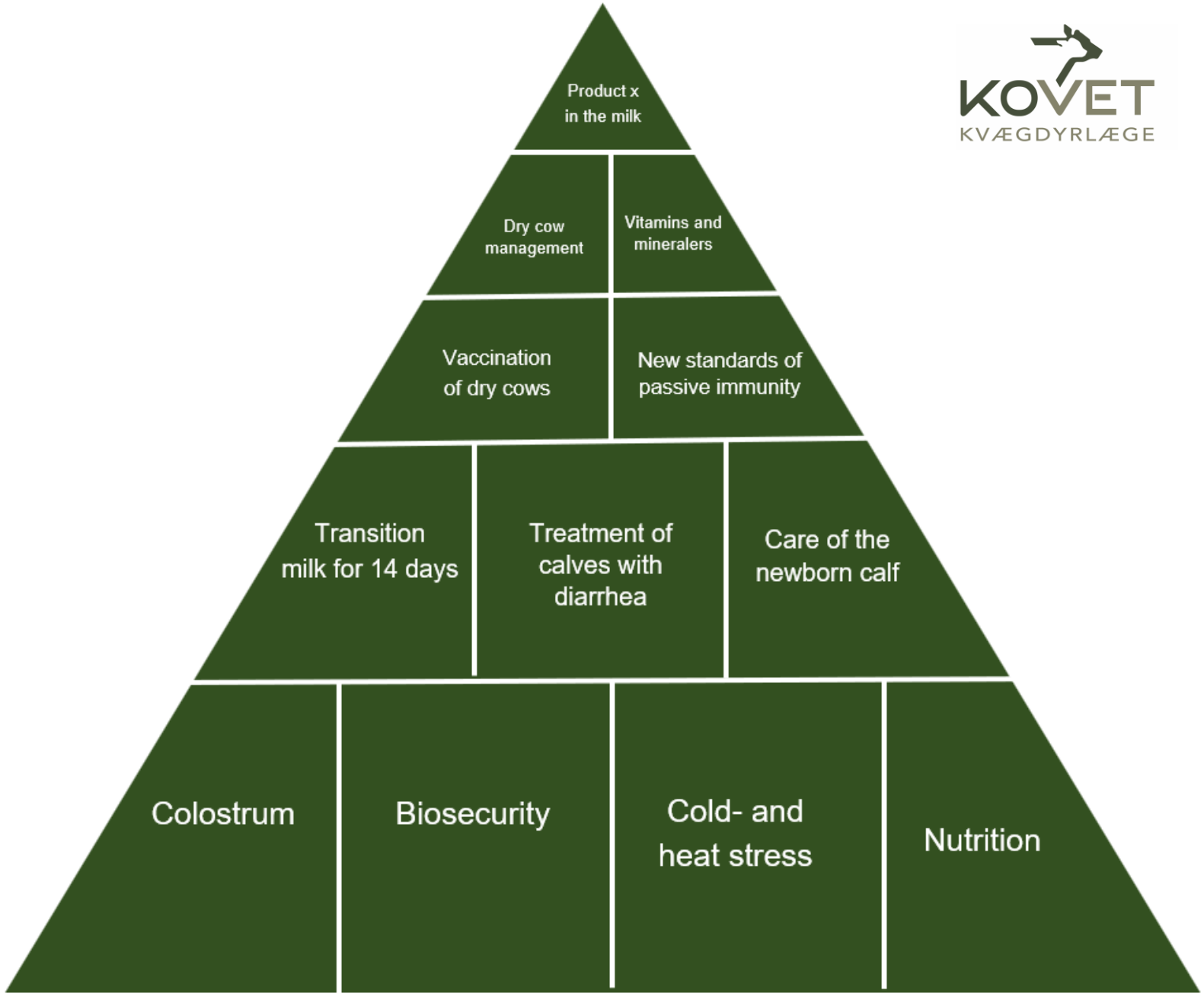
The calf caretaker

Makes the difference!



Healthy calves depend upon



Calves are important

- Securing the genetic progress in the herd
- Cows, that had a high gain when milk fed as a calf, produce more milk
- Employer satisfaction
- Calving age at 21-22 months (Jersey) decreases cost of heifer production

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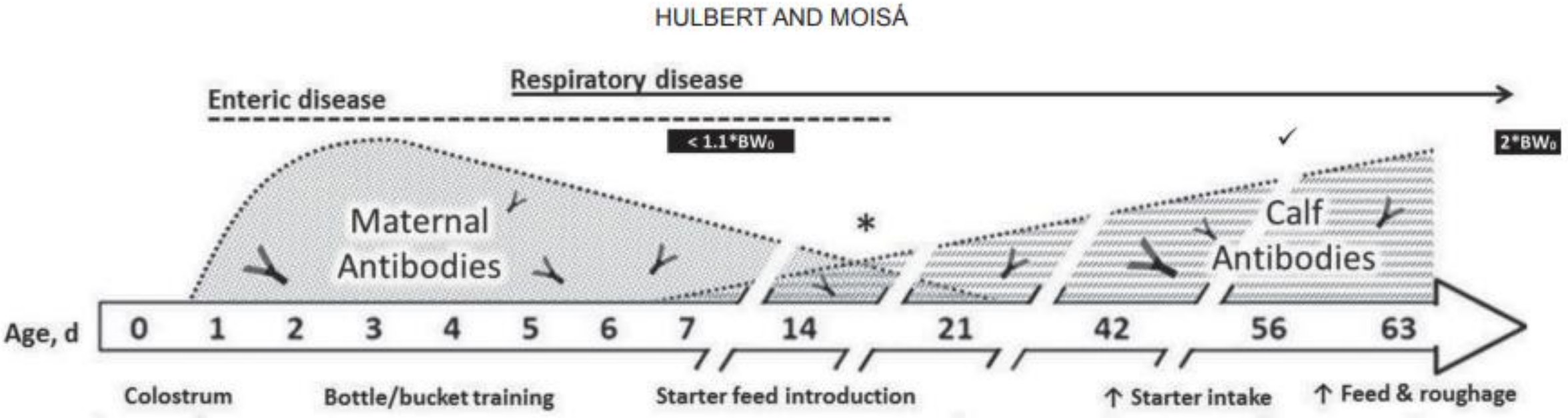
Colostrum



Hulbert and Moisá, 2016

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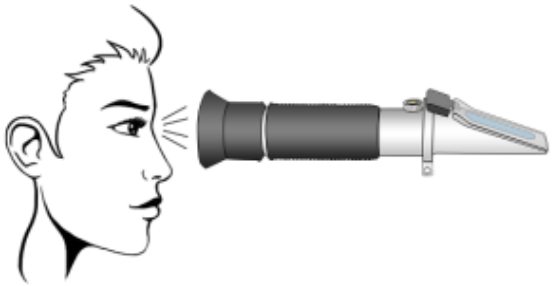
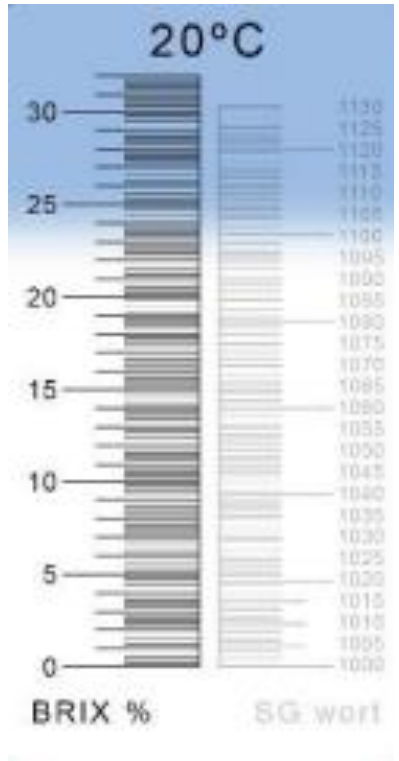
Colostrum

- First milk after calving
  - Milked within 5 hours of calving
- Colostrum with brix% > 22
- 10 % of birth weight within 4 hours of birth
  - 3 L pr calf
- 2. feeding of colostrum with brix% > 22 within 6-8 hours after birth
  - 1-2 L
- Always help the calf





Colostrum with brix % > 22 has more than 50 g/L of IgG

Succesfull colostrum management

- It has to be easy!
  - Use a system to handle colostrum
- Everybody on the farm must know how to give colostrum
- Implement routines;
  - Check for newborn calves before starting to milk in the morning

Uptake of antibodies from colostrum in Jersey calves

.. might be better than Holsteins..

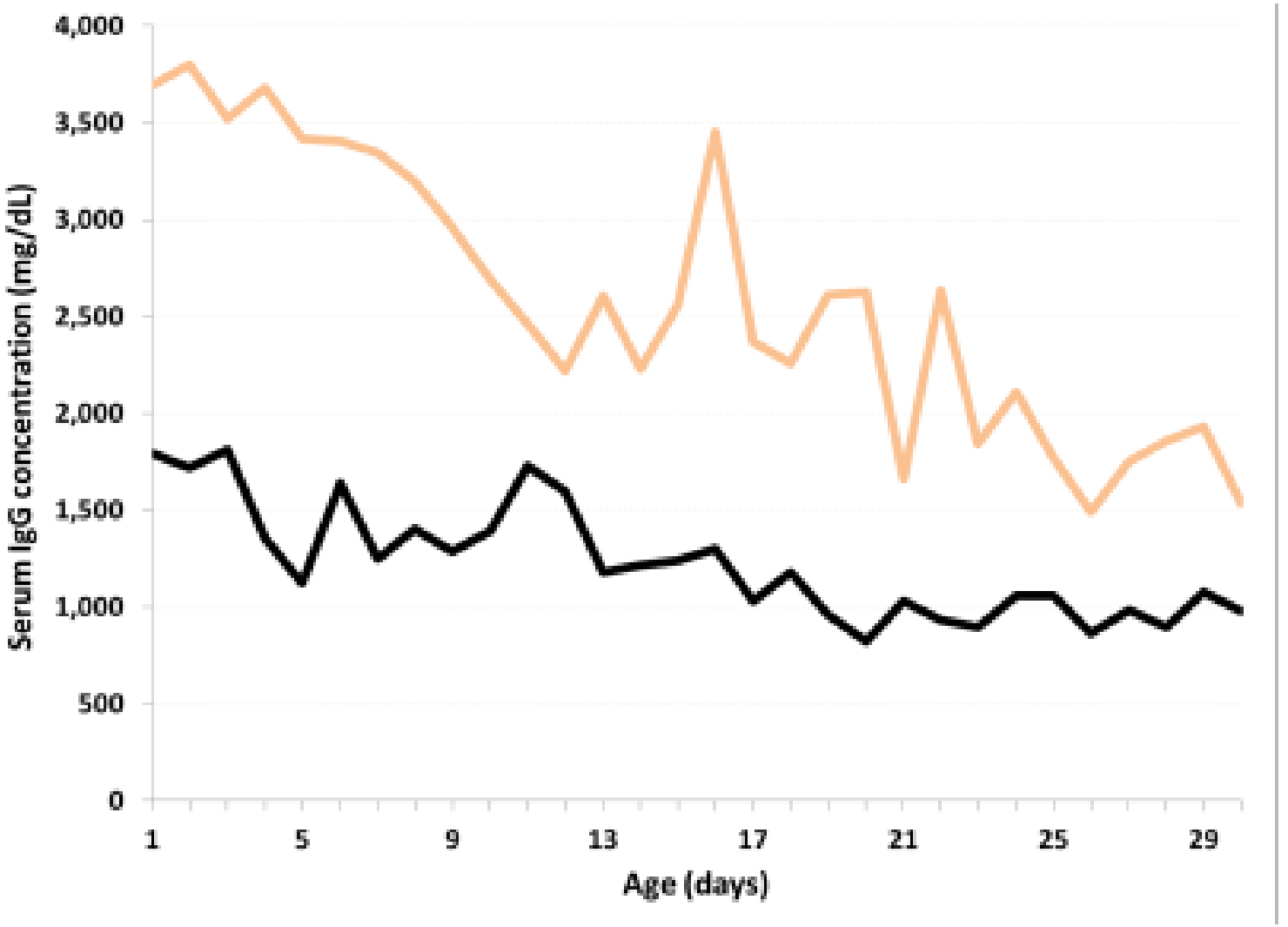
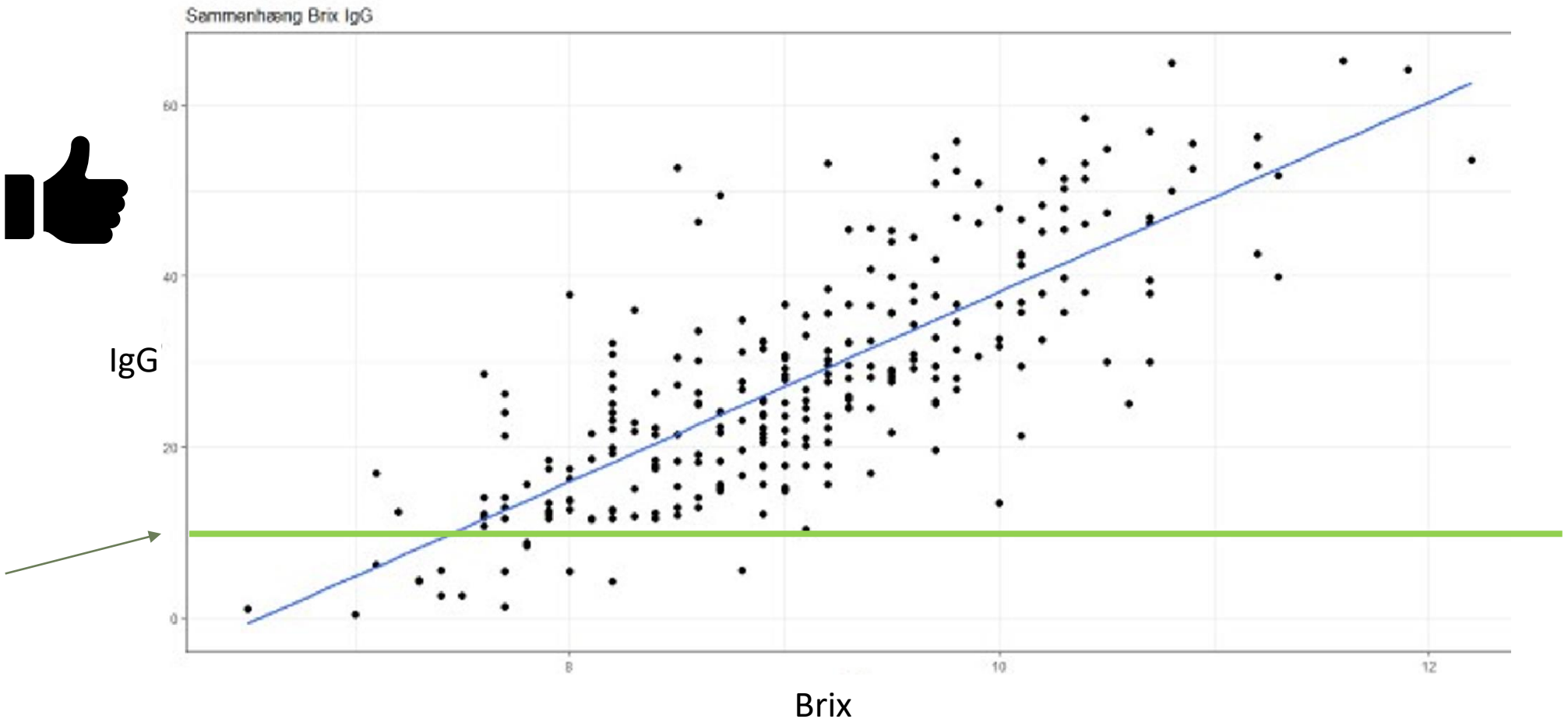


Figure 2: Distribution of serum IgG concentration by agein411Jersey (grey line) and 262 Holstein (black line) calves between 1 and 30 days of age.

Villarroel et al., 2013

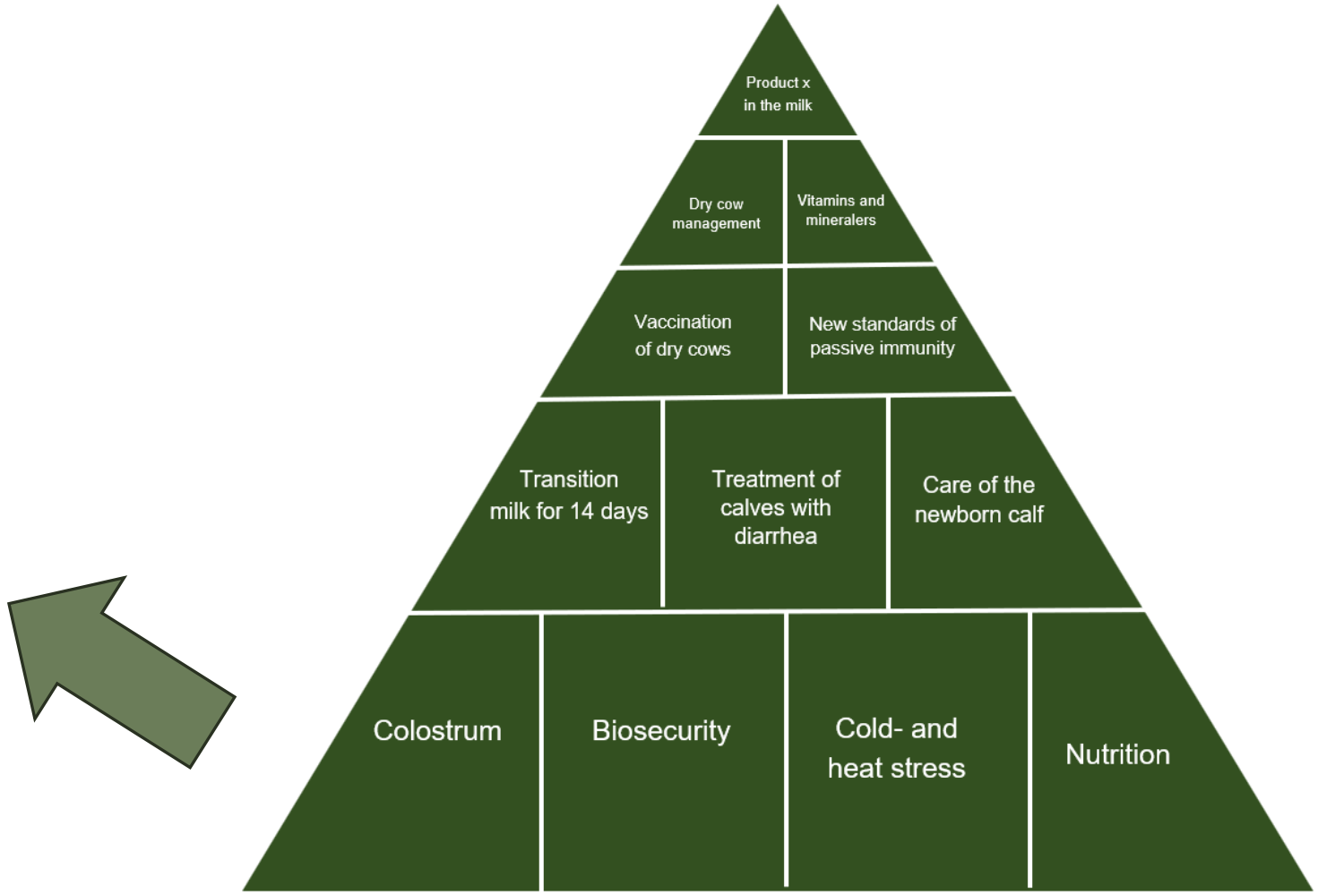
Antibody uptake in Jersey calves in Denmark

Goal:
More than 10 g/L of IgG/L serum



450 Jersey and Jersey x belgian blue calves

Nutrition


Product x in the milk
Dry cow management
Vitamins and mineralers
Vaccination of dry cows
New standards of passive immunity
Transition milk for 14 days
Treatment of calves with diarrhea
Care of the newborn calf
Colostrum
Biosecurity
Cold- and heat stress
Nutrition

Should Jersey calves be fed the same amount of milk as Holsteins (relative to bodyweight)?

No!

Jersey calves need more milk than Holsteins

The first three weeks of life:

Only milk!

– and very little starter

(but they still need starter and hay)

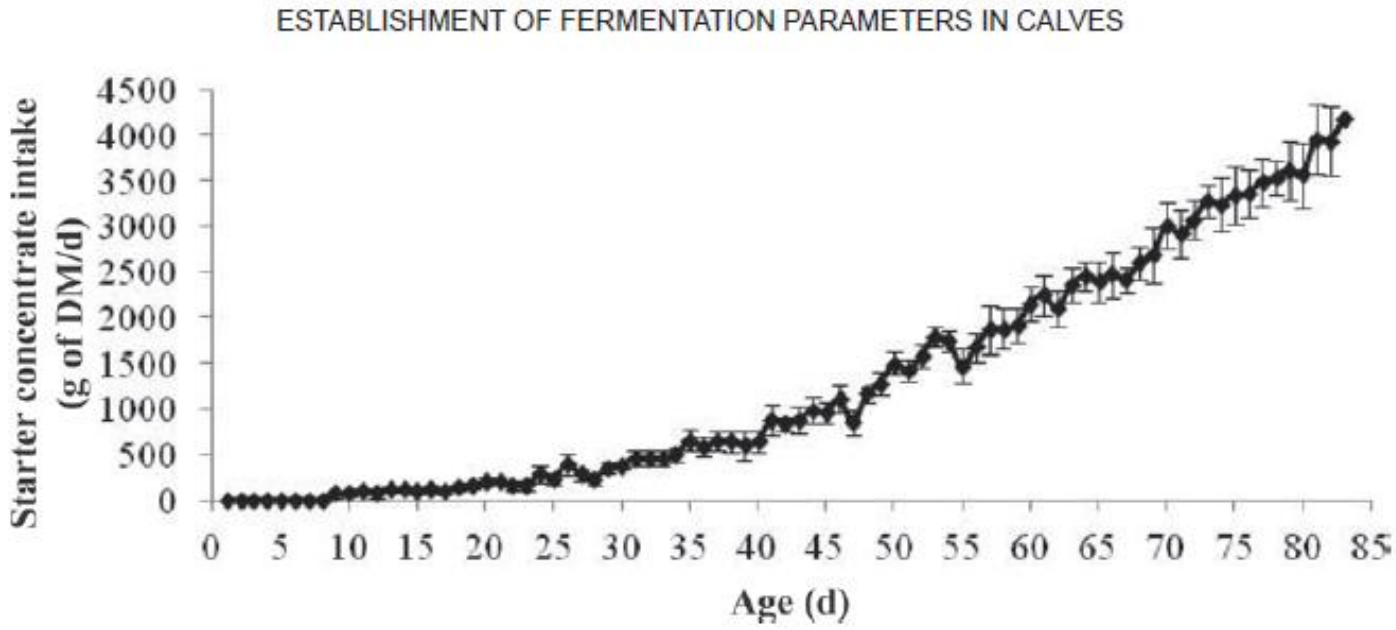


Figure 1. Kinetics of starter concentrates intake (g of DM/d) of preweaned calves. Vertical bars show standard errors.

(Rey et al., 2012)

Voluntary milk ingestion, Jersey < 21 days old

7,5 L/day

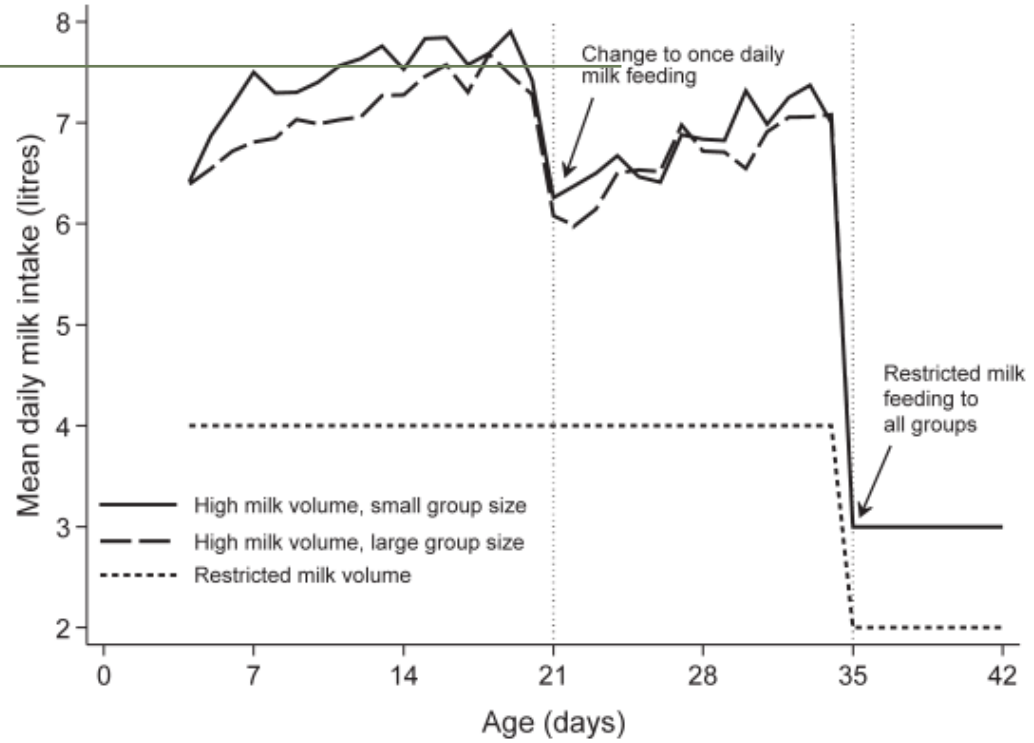


Fig. 1: **Mean daily milk intakes of Jersey heifer calves receiving high and restricted milk volumes.**

- 0-14 days: Jersey milk
- 14-wean: Milk replacer

(Uys et al., 2011)

Jersey almost same growth as Holsteins (ad libitum milk feeding)

Average daily gain from 0-42: 710 – 750 g/day
(Uys et al., 2011)

Average daily gain from 0-60: 733 - 807 g/dag
(Moallem et al., 2010)

How much milk to feed a Jersey calf?

- 6 L Jersey milk per day
- 6 L Jerseymilk ~

7,5 L milk replacer (140 g/L) ~

1050 g milk replacer

- Or more..

Feeding whole milk

- Make it easy (buy a milk taxi)
- Avoid buckets

- Jersey milk in the first month of life provides most energy
- Hygenic milking
  - Don’t leave the milk in buckets in the milking parlor
- Careful heating
- Don’t use milk with antibiotic residues
- Use the milk just after milking – or keep it cooled
- Make sure the milk doesn’t settle during feeding
  - Mix the milk gentle during feeding
  - Check with a refractometer
- Pasteurization decreases bacteria count
  - But doesn’t transform bad milk to good milk

Milk replacer

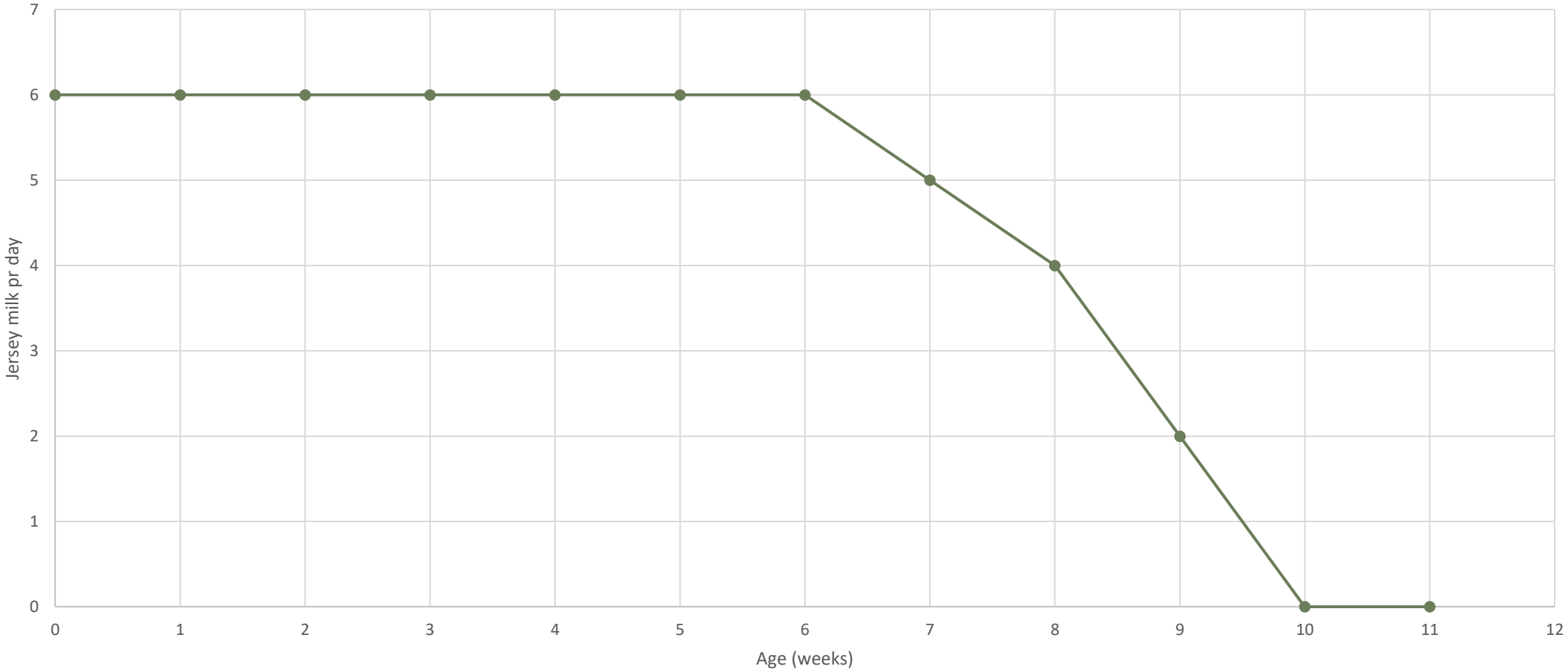
- Use a spray dried product
- No more than 8 % ash
- 100 % milk protein
  - No vegetable protein to calves under 1 month
- Sugar, starch and maltodextrins are not wanted
- MAXIMUM 15 % dry matter (preferably 13-14 %)
  - 150 g milk replacer and add water until the solution is 1 L
- ROUTINES
- Appropriate temperature
- Careful mixing
  - Fat molecules can be disrupted
- Quality matters

More milk makes weaning more difficult

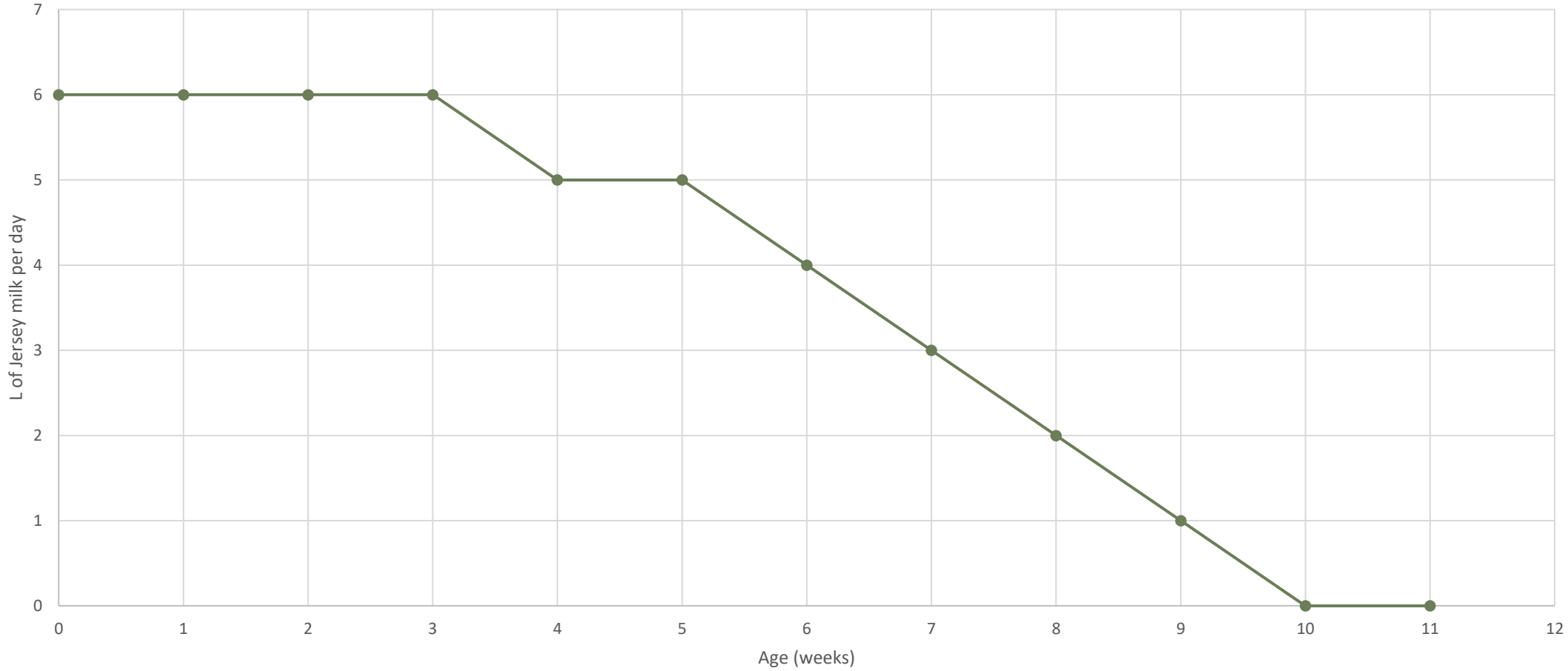
More milk decrease starter intake

Do weaning properly

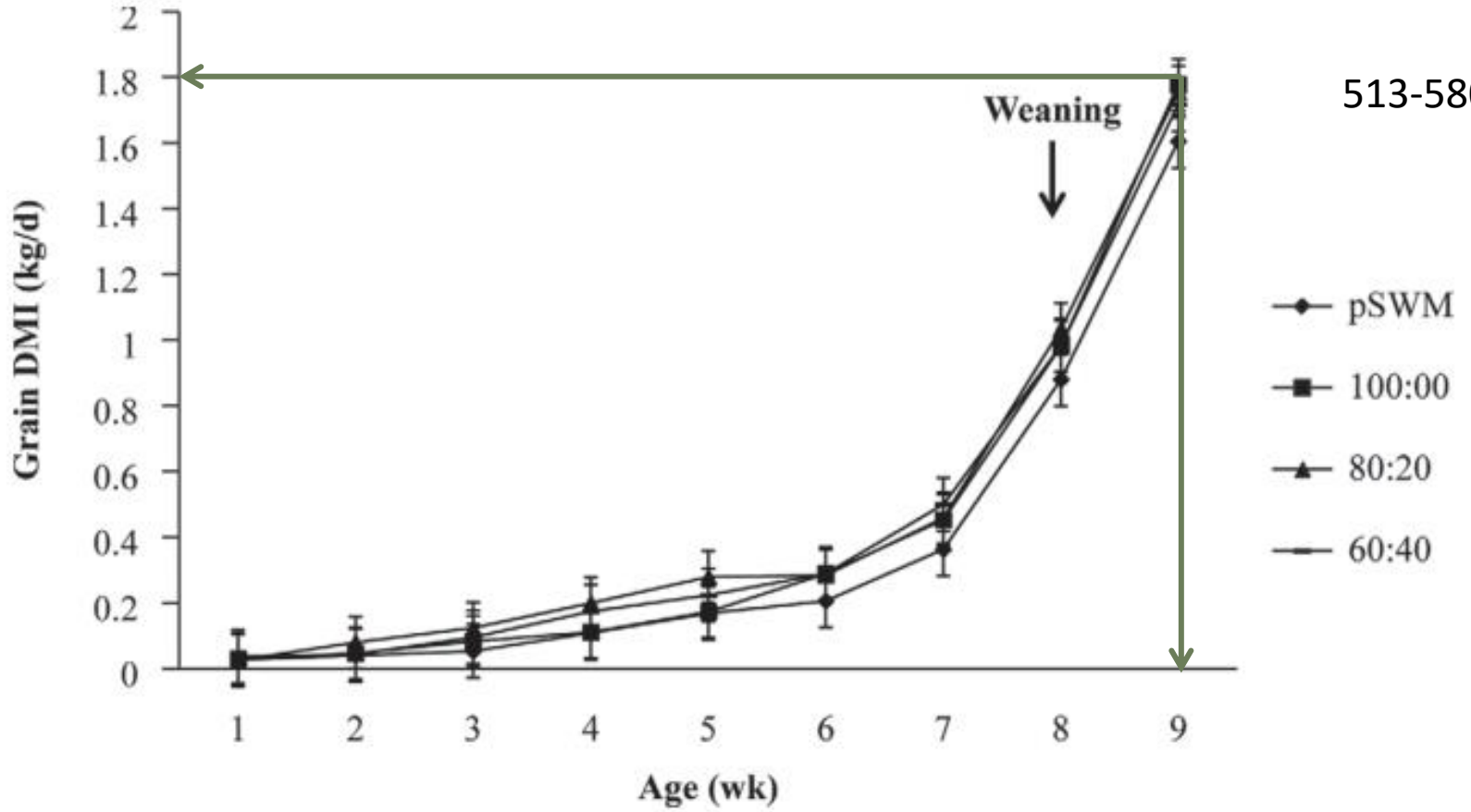
Milk feeding of Jersey calves



Milk feeding of Jersey calves – on a budget



ALTERING FATTY ACID PROFILE OF CALF MILK REPLACER



513-580 g milk replacer/day

Figure 2. Grain DMI for calves fed pasteurized saleable whole milk (pSWM) or 1 of 3 milk replacers varying in FA profile (lard:coconut oil = 100:00, 80:20, and 60:40).

Bowen Yoho et al. 2013

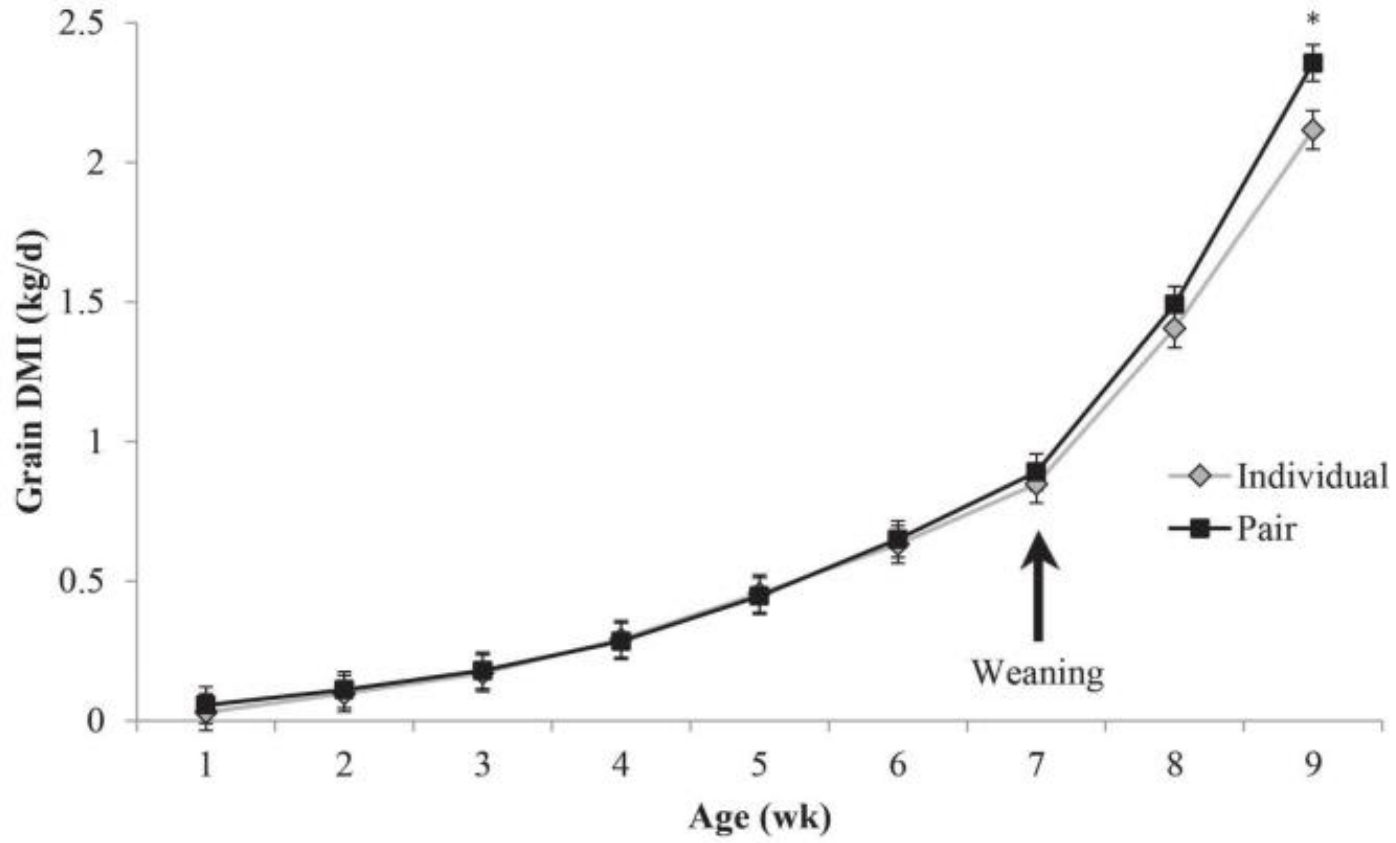


Figure 2. Grain DMI (± SEM) for calves housed in pairs (n = 20 calves) or individually (n = 20 calves) during the milk feeding and weaning periods. *Means within housing treatment were different ($P < 0.05$).

680 g milk replacer/day

Pempek et al., 2016

Weaning

- Start decreasing milk when calves are 7-8 weeks old
- End milk feeding when calves are 70 days old (10 weeks)
- Decline the amount of milk with 1 L at a time
- Monitor starter intake
  - Continue milk feeding if calves stop eating starter
- Calves should be eating 1,5-2 kg of starter pr day when milk is withheld
- Limit stressors while weaning
  - Dehorning
  - Moving
  - Mixing groups
  - New starter feed

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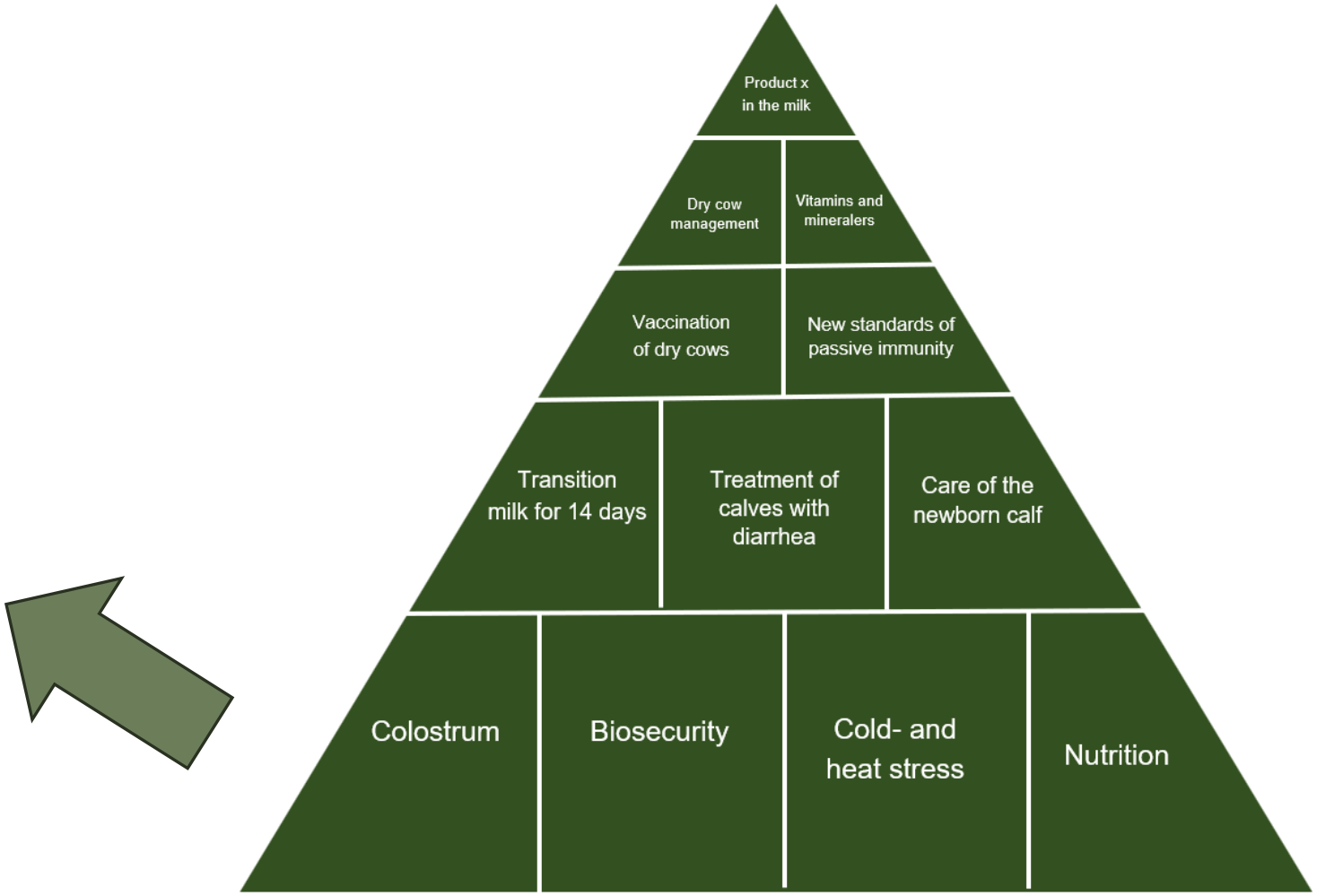
Cold stress



Jersey calves loose more heat from the surface

- Jersey calves weigh about 25 kilos at birth
- Holstein calves weigh about 42 kilos at birth
- Jersey has a larger surface area compared to body weight

Thermoneutral zone Jersey vs. Holstein

Calves under the age of 3 weeks

- Holstein: 15 - 25 °C
- Jersey: 18 – 25 °C

Low body fat deposition

Jersey: 2,8 % of bodyweight

(Bascom et al., 2007)

Holsteins: 3,7 % of bodyweight

(Bartlett et al., 2006)

Help calves keep warm

Heat lamps
Lots of straw (every day)
Blankets

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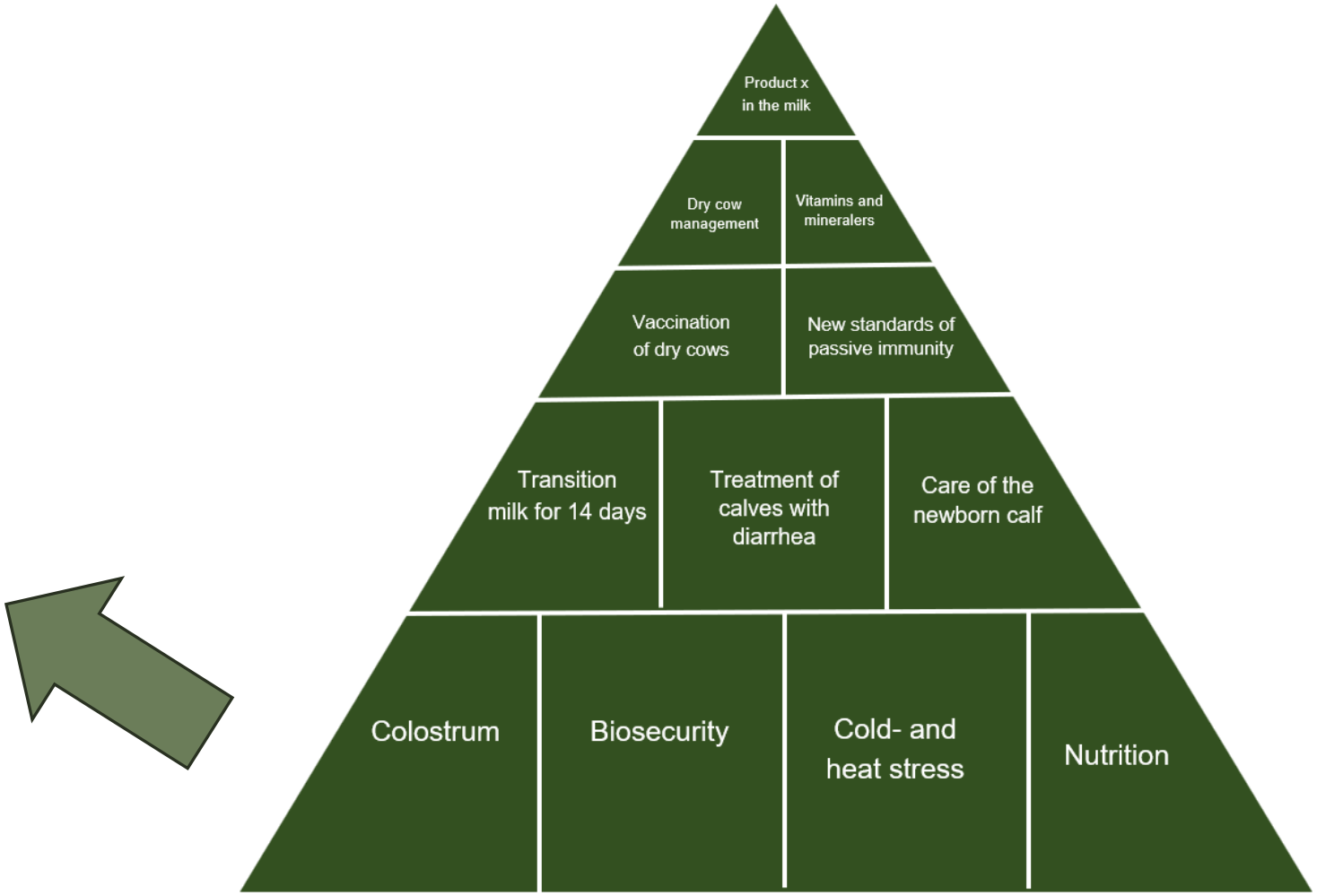
Biosecurity



Biosecurity

What causes diarrhea?

- Cryptosporidium
- Rotavirus
- E. coli F5/F/41/CS31A
- Coccidiosis (older calves)
- And the rest..

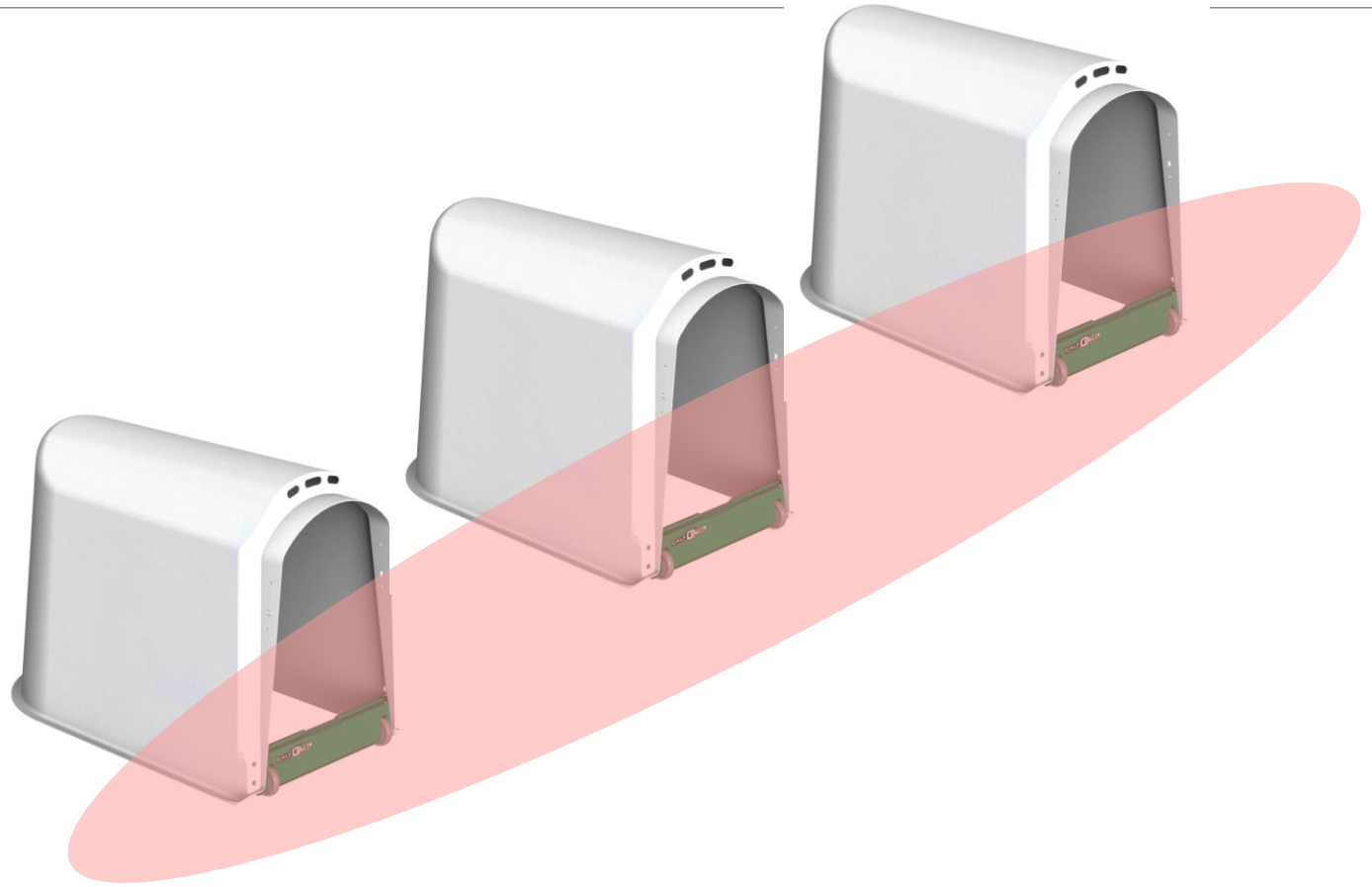
Cryptosporidium parvum

- Parasite
- Zoonotic (can infect humans)
- Causes diarrhea because of damage to intestinal cells

- Very low infection dose: 17 eggs
- Autoinfection
- Incubation time: 3-7 days
- Excretion of 10.000.000 eggs per day

- Waterborne
- Immunity develops after first infection

Keep surroundings dry



Don’t place young calves next to older calves

Relevant age difference: 3-5 days

Key factors of good biosecurity

- Make sure fluids are drained from surfaces/bedding
- Keep dry around the calves
  - Floors
  - Bedding
- Always a new, clean pen available to each new calf
- 1 pen pr calf or 1 pen pr 2 calves in the first 14-21 days
  - Never more than 3-4 days in age difference between a pair
    - Otherwise pair when calves are older than 14-21 days
- Don’t mix different groups of calves
- Don’t place young calves next to older calves

Good biosecurity

- ✓ Is easy
- ✓ Takes no effort
- ✓ Is based on the design of the calf housing
- ✓ Is well established routines
- ✓ Is also implemented in the weekends

And just a few ”Don’t’s”

- Don’t collect buckets (unless they are thoroughly cleaned with soap inside and outside)
- Don’t mix calves when you are cleaning the pens
- Don’t use a filthy wheicle to transport the calves
- Don’t use the same tube or other equipment for newborn and sick calves
- Don’t go from helping sick calves to helping newborn calves drik their milk

Keeping calves in pairs is not a limitation to biosecurity

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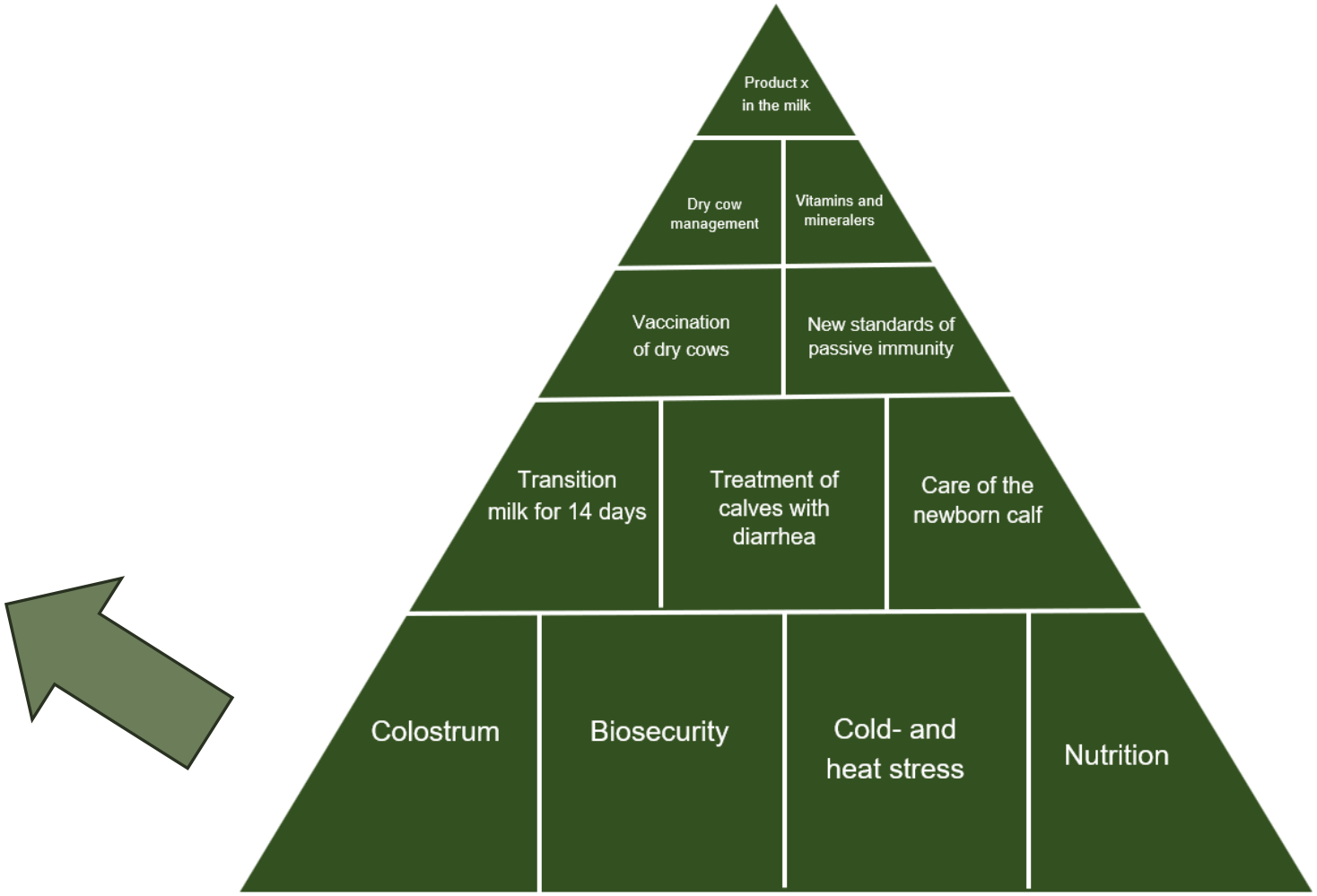
Pair housing improves animal welfare

- No more than 3-4 days in age difference between a pair
  - Otherwise wait until the calves are 14 days old
- Single pen the 1 week
  - Until the calf is able to drink by itself
  - Remove a divider to make af pair pen
- Enough room to keep the bedding clean
- Prevent abnormal sucking behavior
  - Use a nipple
  - Leave the nipple between feedings
  - Give a proper amount of milk (at least 6 L Jerseymilk/day)
  - Proper weaning

Treatment of calves with diarrhea



If it isn’t working, you are not doing it correctly

TREATMENT GOAL = IMPROVEMENT OF THE GENERAL APPEARANCE OF THE CALF WITHIN THE DAY

Consequences of diarrhea

- Drop in blood pH
- Dehydration
- Low blood sugar
- Energy depletion
- Can not keep warm
- Slow emptying of the abomasum
- Ruminal drinking because of lack of stimulation of the reticular groove

Treatment of calves with diarrhea

Have a specific treatment protocol

- Electrolytes
- Pain killers (NSAID)
  - Meloxicam: 0,7 ml pr jersey calf
- Heat
  - Heatlamp in the winter
- Continue milk feeding – but always with a nipple
- Antibiotics are rarely necessary

- Treat calves at first signs of deteroriating health

Fluid therapy

Electrolytes

- The formula needs to correct the acid base disturbances in the blood
  - Buffer
  - High Strong ion difference
- Use the right dosage
  - 50 g/L
- 1 L at a time to sick calves
  - Can be repeated every 2 hours

Electrolytes in water or in milk?

Water is best!

Low dose mixed in milk can be easier

- But only to mildly affected calves

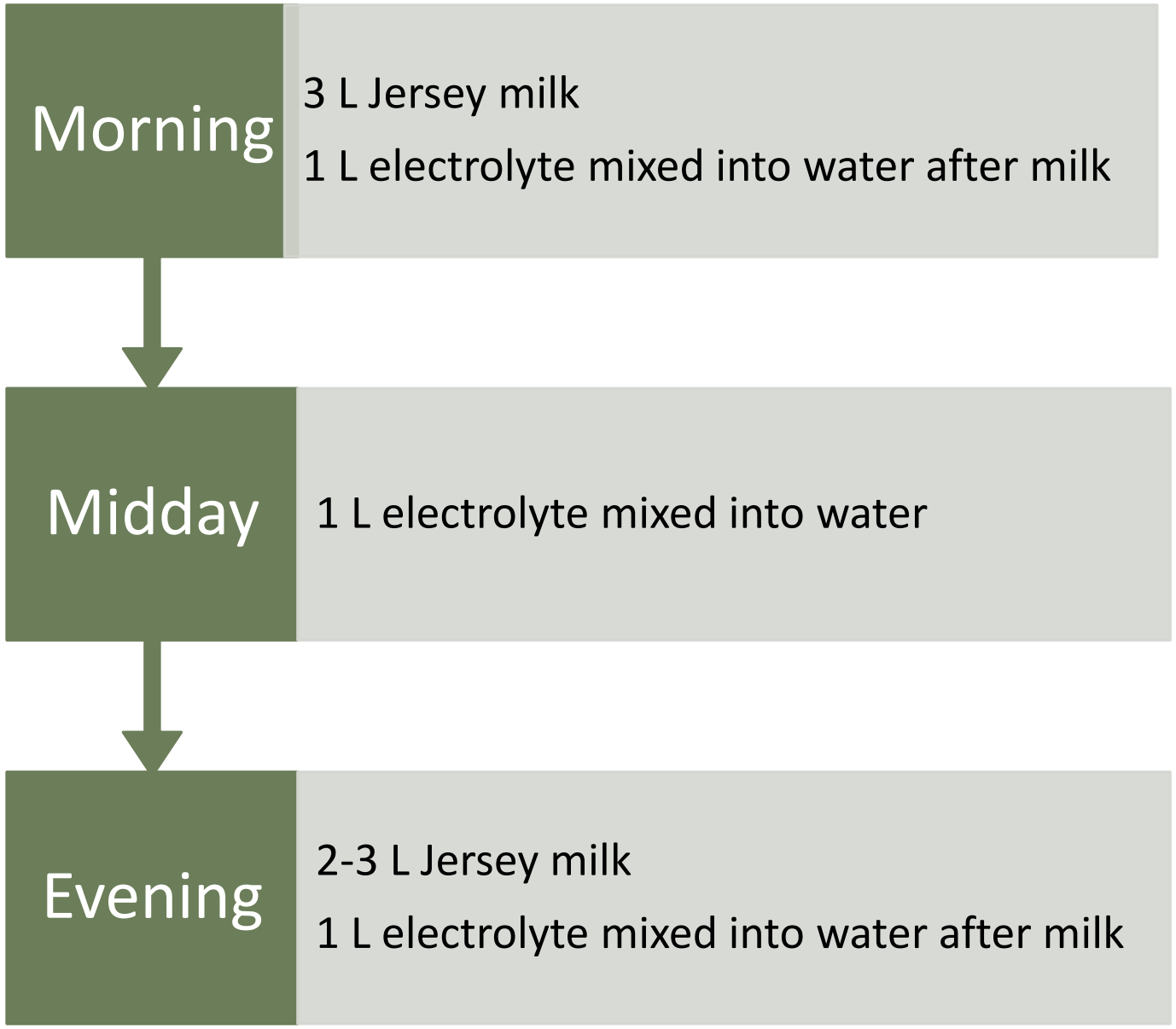
Example

Treatment of 7 day old calf with diarrhea

General apperance allright (but didn’t drik all the milk)

Treatment goal: The calf continue to drik all the offered milk

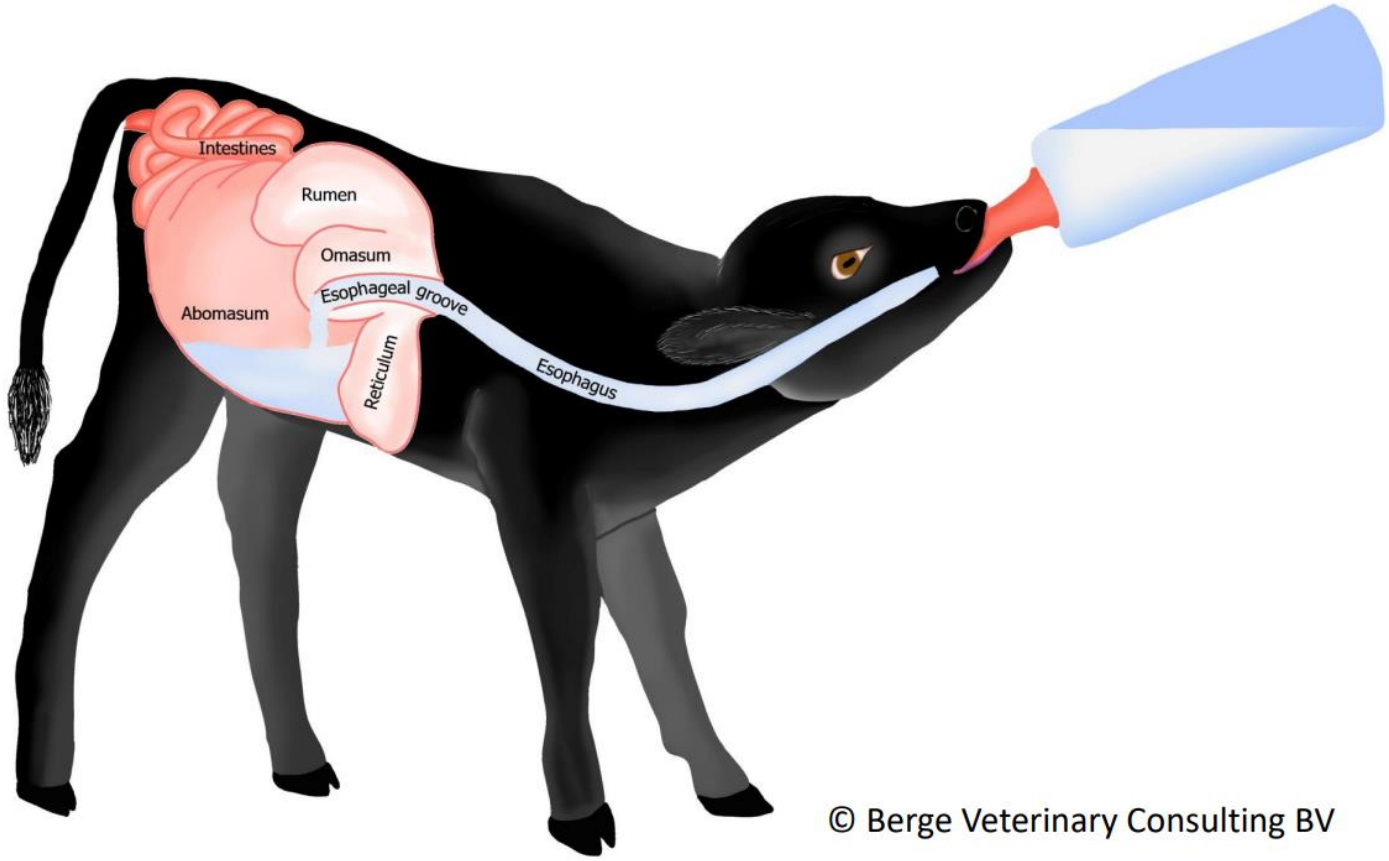
Treatment duration: As long as calf has diarrhea



Continue milk feeding of calves with diarrhea

Never! Give milk with a tube!

Sick calves must drink from a nipple



Use a nipple when milk feeding

- Animal welfare
- The taste of milk stimulates sucking behavior
- Prevents ruminal drinkers
- Prevents cross sucking

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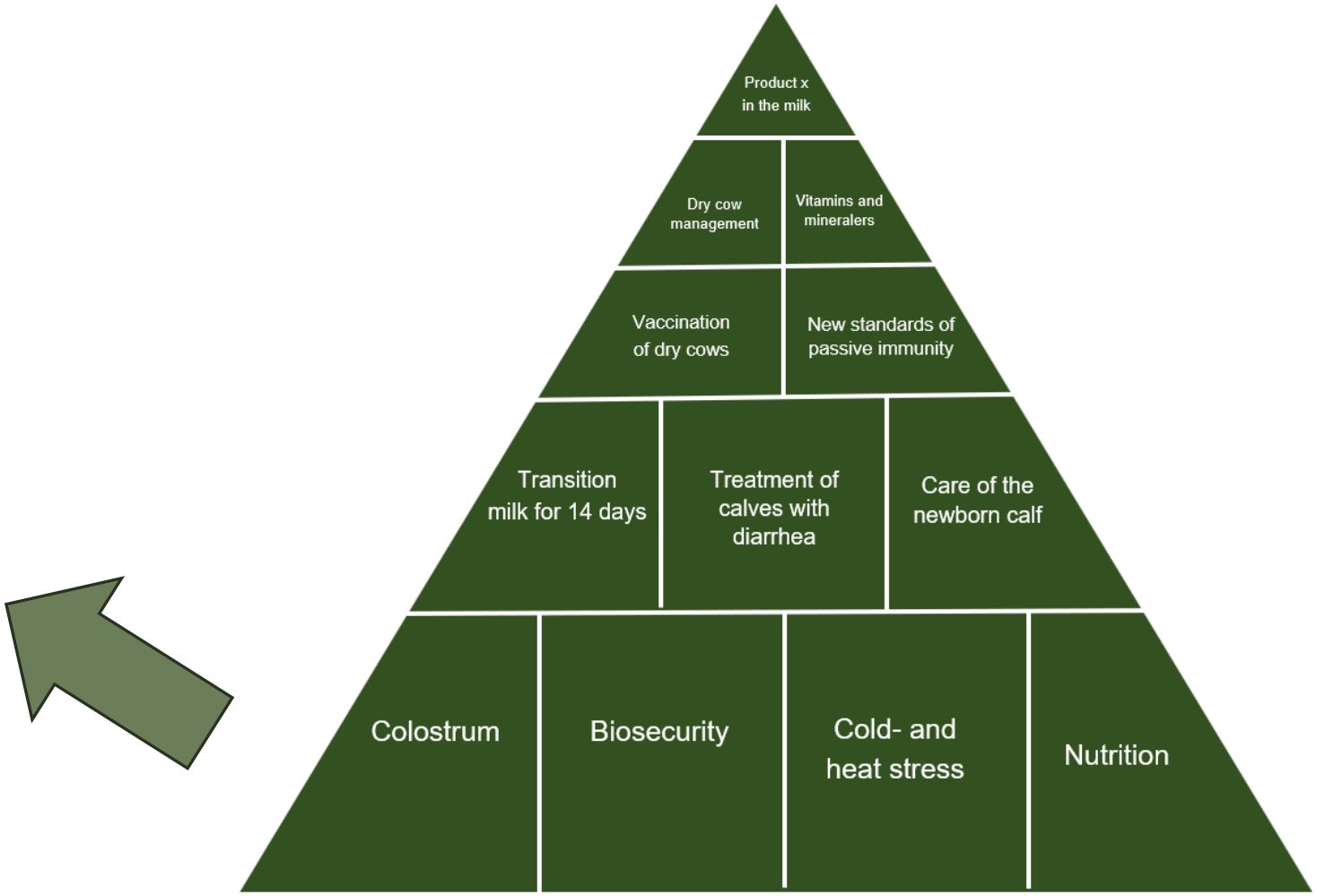
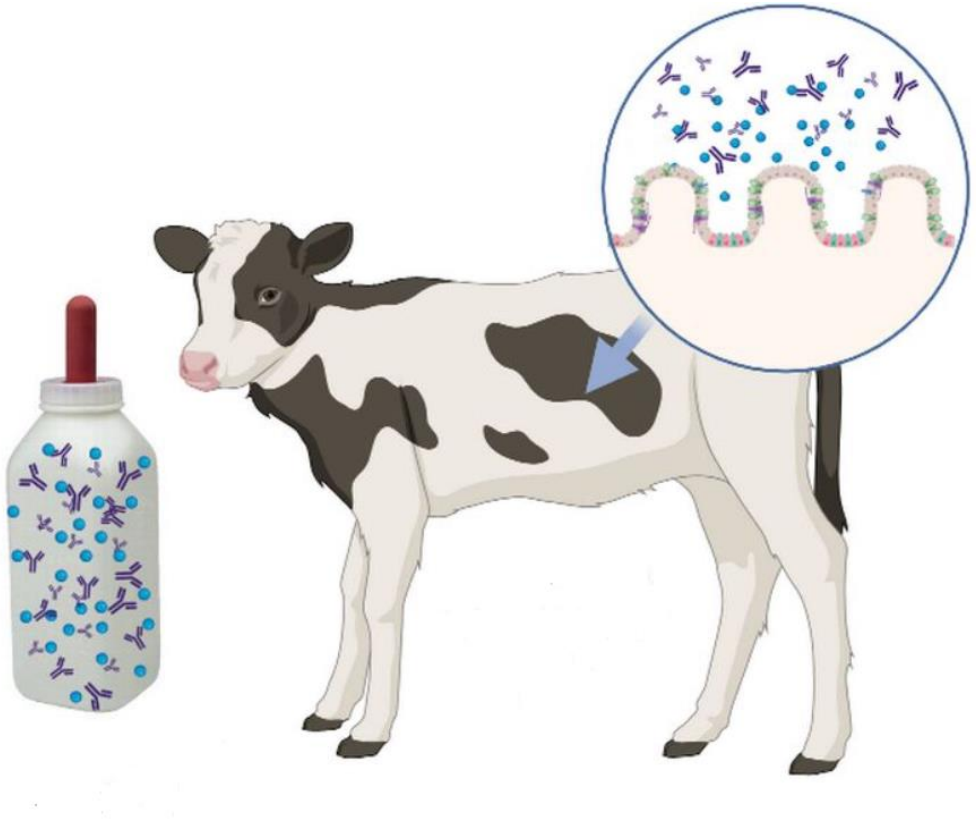
Transition milk for 14 days





Transition milk

Local protection of antibodies in the intestine

Prevents virus or parasites from adhering to the cells

If dry cows are vaccinated, then it is a must

Decreases risk of diarrhea and pneumonia

Increases gain

Picture from https://www.canr.msu.edu/news/should-we-be-feeding-transition-milk-to-dairy-heifer-calves

Transition milk

½ L pr feeding (or more)

2. 3. and 4. milking after calving

Prioritize the youngest calves 0- 14 days old

Thank you for the attention!

Questions?