Theme 6: Calving, Young Stock Management

YOUNG STOCK REARING INFO & KEY PERFORMANCE INDICATORS (Level 3)

Topic	Training & information Content
6.1	Selection of bulls, use of sexed semen, feeding management of dry cows
6.2.1	The calving process
6.2.2	Use of equipment around calving
6.2.3	Care of cow and calf after calving
6.2.4	Colostrum management
6.3	Milk (replacer) feeding schedule
6.4	From birth to weaning
6.5	From weaning to pregnancy
6.6	Disease and health management
6.7	Handling of calves after difficult birth
6.8	Young stock rearing info and Key Performance Indicators

1. You will learn about (learning objectives):

- ❑ The importance of personal (farmer) responsibilities
- ❑ Importance of developing and using Key Performance Indicators (KPIs)
- ❑ Successful young stock management
- ❑ Alternative feed additives for young calves
- ❑ Dehorning

2. Background

- During the time from calf to cow many things can go wrong.
- Calf rearing is one of the most expensive activities in a dairy farm, better do it in the right way.
- In some environments, it is not always easy to get everything organized in the right way. Being aware of various alternative skills and activities is therefore important.

3. Disinfect the navel

Demonstration case:

Dr. Sheila McGuirk from the University of Wisconsin School of Veterinary Medicine, assisted by Mindy Wesely, demonstrates how to disinfect a navel on a young dairy calf. See Progressive Dairyman's Calf & Heifer Raising section for more information.

Watch video:
https://www.youtube.com/watch?v=MszMistZvU8

Disinfect the navel
immediately after the calf is born!

4. Weigh the calf

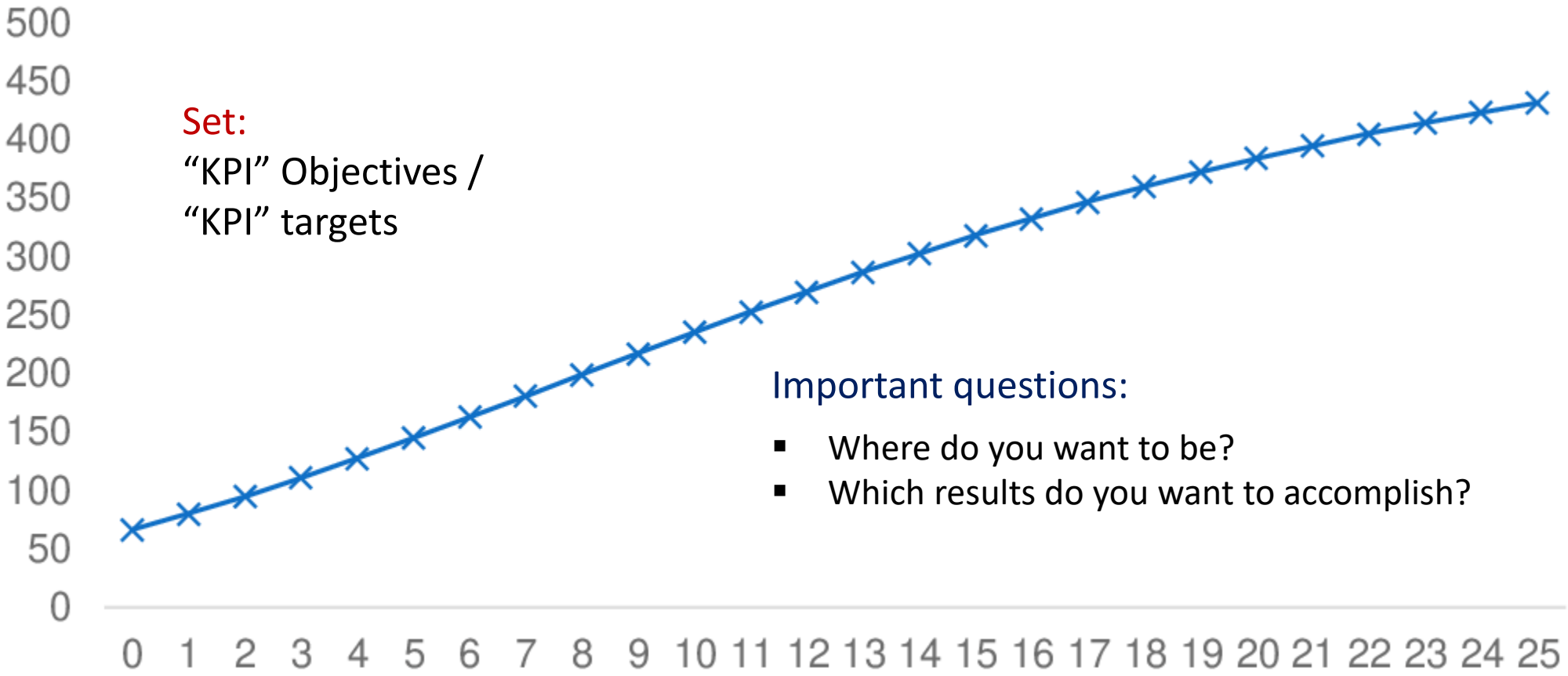
Weighing calf using a weighing scale

Weigh your calf to monitor growth.

_____ kgs

Estimating calf weight using weighing band

5. Set KPI objectives/targets



Set:
“KPI” Objectives /
“KPI” targets

Important questions:

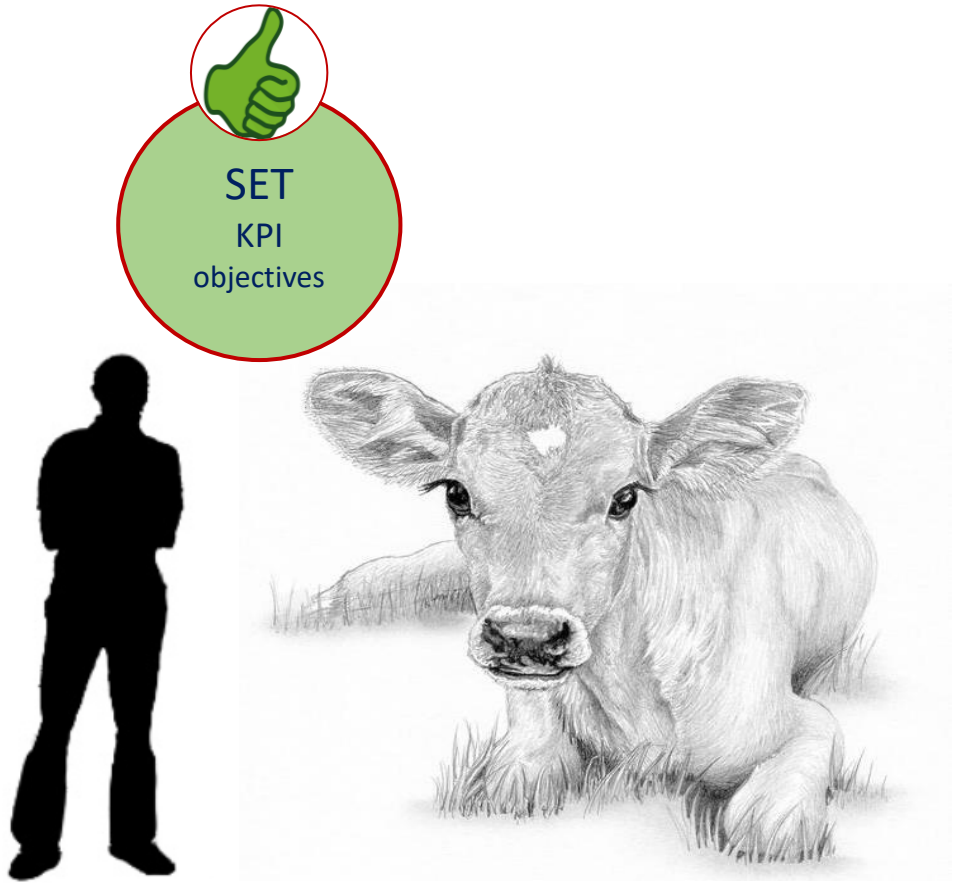
- Where do you want to be?
- Which results do you want to accomplish?

*KPIs – Key Performance Indicators

5.1 Set KPI objectives/targets Cont'd…

- Each individual farmer is responsible for his own objectives and KPI's.

- NOT every farm is able to work with the same objectives, every farm has its own principles:
  i. because of different animals/breeds etc,
  ii. because of different production levels,
  iii. because of different breeding strategies,
  iv. because of different feeding strategies.



6. Colostrum

Feed Colostrum
as soon as possible!

6.1 Where there is no colostrum

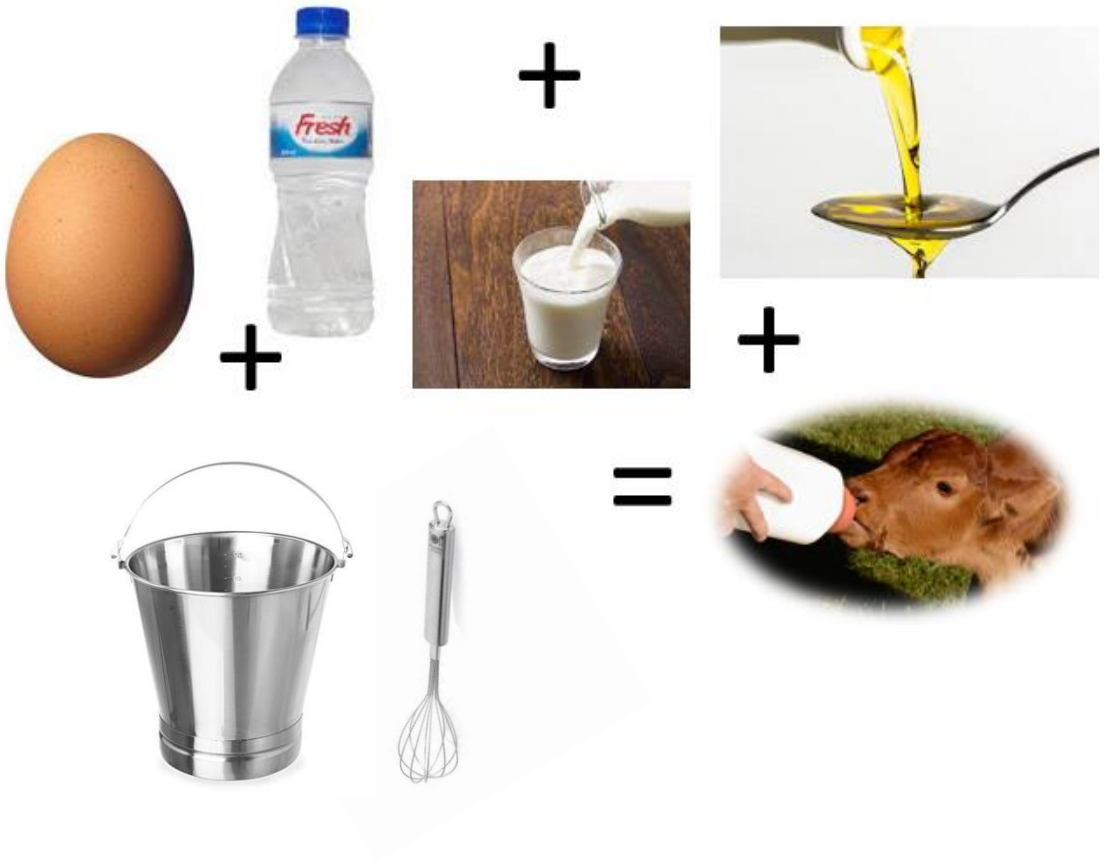
No colostrum available? Possible scenarios

a. When there's no production at all, sometimes in first calving heifers.
b. When mother cow dies during parturition.
c. No reserves in the freezer.

6.2 Make your own colostrum

Make colostrum in the farm

- 1 egg (protein source)
- 0.3 litres fresh warm water
- 0.5 litres whole milk (source of lactose and milk protein)
- 0.5 teaspoon cooking oil (energy)



7. Ear tag

Ear tag
at day 2.

7.1 Ear tag Cont'd…

- Setting KPI objectives/target without inclusion of ear tagging is impossible!

Note: Ear tags with some data is helpful. It's easy to analyse a calf and decide immediately.

Possible data:

- Ear tags with farm number – paper administration.
- Ear tags with farm number and birthdate.
- Ear tags with birthdate and pedigree information.

8. Successful start to calf rearing

THE BUILDING BLOCKS FOR A SUCCESSFUL START

1. ENOUGH MILK;

2. AD LIB WATER

3. CONCENTRATE

4. FRESH ROUGHAGE.

9. Fresh water

Water.

Fresh always, fresh 24/7.

9.1 Fresh water Cont'd…

Important note!

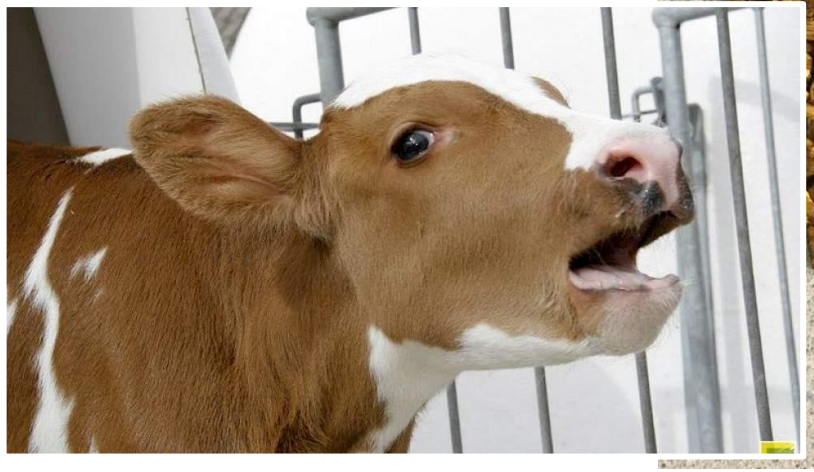
Heavily underestimated is the importance of water for the new-born calves.

i. Water must be available from the very first day. Milk alone is NOT enough.
ii. Water needs to be refreshed/replaced four times (4x) a day.
iii. Water will stimulate the calf to start eating.
iv. Water will help to prevent dehydration.
v. Water is the cheapest medicine to help the calf remain active and eager.

Clean fresh water, always.

10. Feed

Teach the calf to Eat
at day 2.

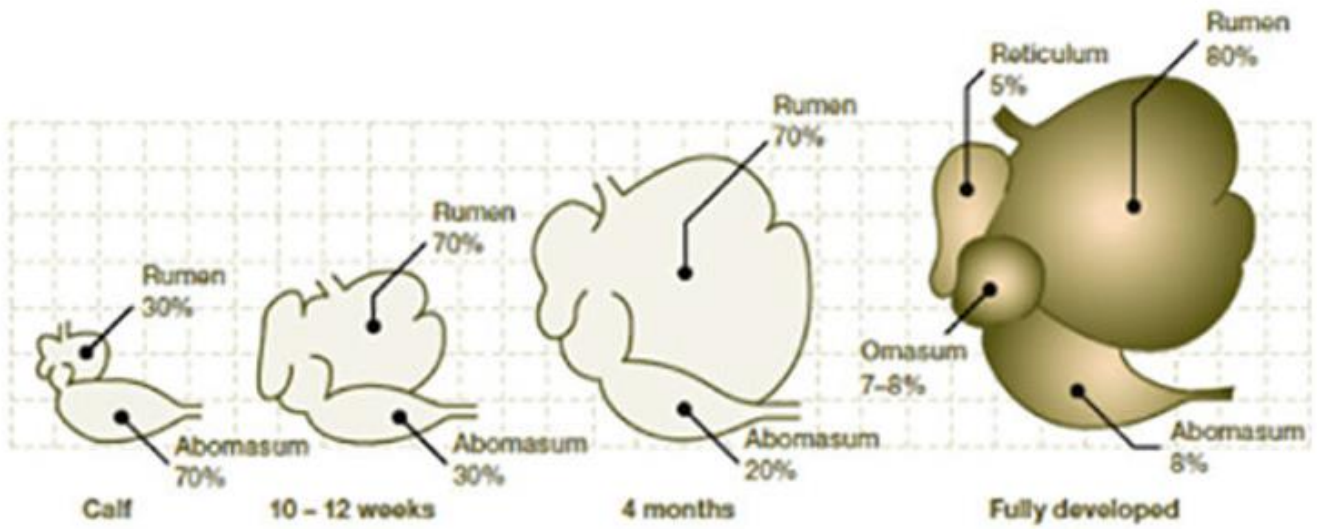


Important: When calf starter is available start feeding it in small portions as soon as possible. When there is visible intake, increase the portions.

10.1 Feed Cont'd…

Feed helps in rumen development

i. Well developed rumen papillae are necessary for optimal digestion of feedstuffs at adult stage.
ii. Rumen papillae can be developed until 12 weeks of age.



Rumen development stages in calves that are being fed with concentrates and roughages .

10.2 Feed Cont'd…

iii. Rearing method with only milk will not develop the rumen papillae.
iv. Rearing method with just hay and milk will give a big rumen and poor developed papillae.
v. Milk and concentrate (starters) gives the longest and strongest papillae.
vi. Quick (within 12 weeks of age) rumen development is important for future milk production.

Rumen papillae development with different rearing methods.

Only milk; Milk & concentrates Milk &Roughage

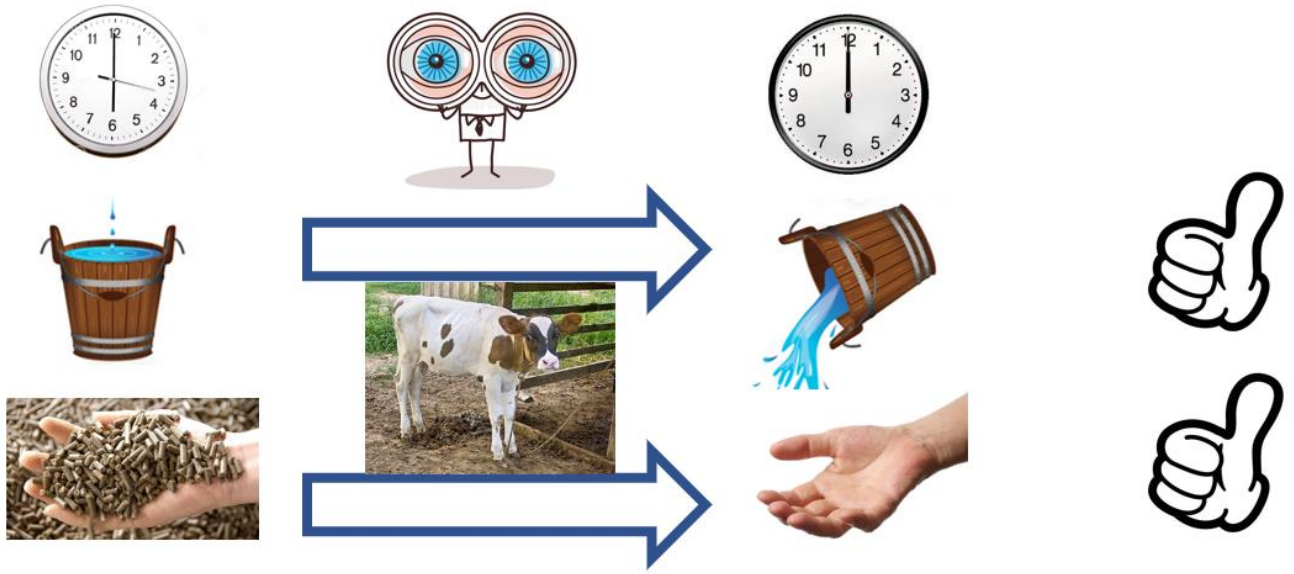
11. Young stock management is more than feeding

- Young stock management is not only a matter of feeding. You also need to:
  - know what you are feeding.
  - know what your calf is eating.
  - practice individual ‘calf management.’
  - emphasize on hygiene.
  - always provide everything fresh.

Calf

observation

is the key word!



12. How feeding influences growth of the calf

Well developed skeletal parts: The calf has grown in height and length. This kind of growth is because of relatively high levels of crude protein (>18%).

Growth in this calf has been accomplished because of a relatively long milk period in combination with roughages only. The big belly (hay belly) and the rough haircoat are typical signs of low crude protein levels (<13%).

13. Calf scours

- Calf scours is a disease that occurs due to unhygienic management.
- It is characterized by diarrhoea, the calf appears dull and refuses to drink or eat.

Signs of Scours

The dung of the calf is;

- liquid,
- white(-sh) in colour,
- has strong smell.

13.1 Calf scours Cont'd…

Prevention

i. Feed sufficient colostrum
ii. Keep calf pen clean at all times
iii. Use clean utensils
iv. Wash your hands regularly
v. Give clean and fresh water daily

Treatment

- Keep feeding milk in small portions.
  - E.g. 4 x 0.5 litre instead 2 litres at a time
- In addition, start electrolyte treatment.

It is important to keep feeding milk, otherwise the calf for sure will lose a lot of weight. Electrolyte doesn't contain energy and protein which are necessary for growth and maintenance.

13.2 Making an electrolyte at home/on-farm

- Powder mixtures can be prepared in advance.

We need;

1.	Salt (NaCL)	50 grams.
2.	Sodium Bicarbonate ($NaHCO_3$)	25 grams
3.	Glucose	500 grams
	Total;	575 grams

Tips:
- For every 1 litre of water, add 57.5 grams of (home made) powder.
- Therefore 575 grams will be enough for 10 litres of electrolyte mix.

Salt

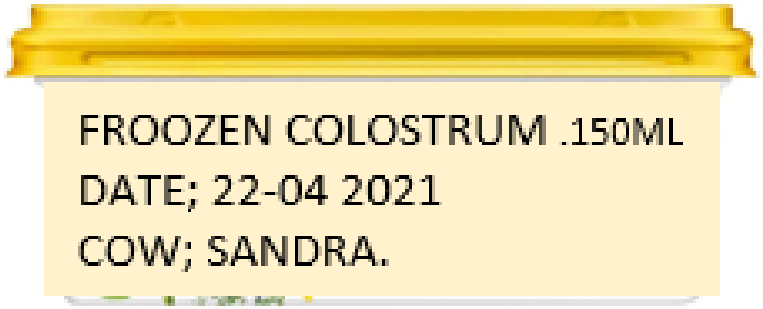
Sodium bicarbonate

Glucose

13.3 Storing colostrum

Practical tip

- In case you have colostrum available because the calf unfortunately died during parturition.
- Store the colostrum in small portions (150 ml) in a freezer.
- When one of your older calves shows some light signs of diarrhoea, you must take a frozen colostrum portion and add it to the regular milk for a few days.
- The colostrum will help to fight the pathogens in calf's intestine and the calf will be prevented for further more severe diarrhoea.



14. Dehorning/Disbudding

- Dehorning/Disbudding is the removal of a cow or calf's horn in order to reduce incidences of bruising and potential injuries to animals or people.
- When carried out the procedure on calves under 2 months of age before the horns have attached to the skull, the procedure is termed as 'disbudding'.

Methods of Dehorning/disbudding

i. Caustic paste disbudding
ii. Hot-iron disbudding

Cattle with horns

Disbudded/polled cattle

14.1 Dehorning/Disbudding Cont'd…

Importance of:

- Horns: Important for determining ranking in the herd.
- Disbudded/polled cattle: Gives much more rest and less injuries.

Disadvantages of horns

- A mixed herd with long, medium, short and polled cattle need a lot of space with possibly many flight routes.
- Highly dominant cattle will most probably cause a big variety in growth, feed intake and milk production.

15. Caustic paste disbudding

- The combination of caustic substances and dehorning paste cauterizes tissue and prevents horn growth. Dehorning paste is applied to the horn buds of calves eight weeks of age or younger.

Advantages:

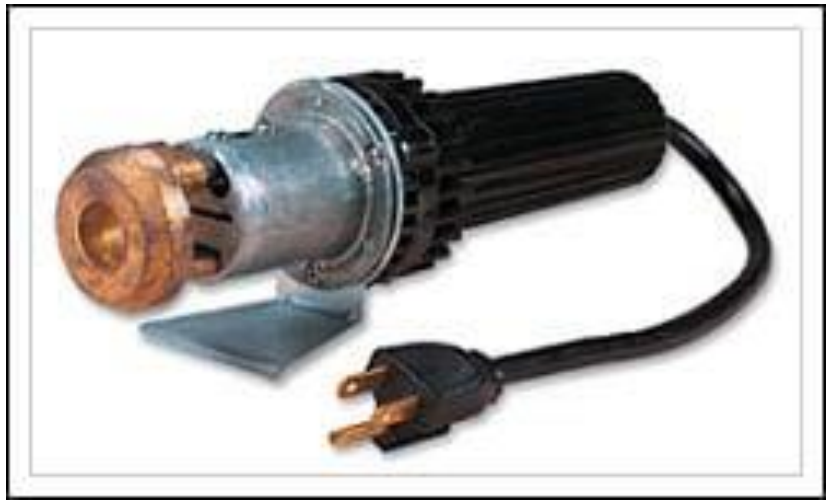
- Bloodless,
- non-invasive,
- less painful than hot-iron disbudding,
- less risk of injury to the calf handler.

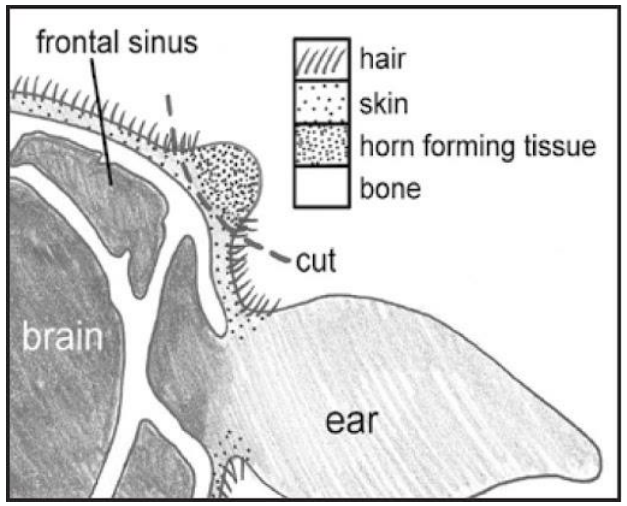
Disadvantages:

- Calf cannot be exposed to rain or allowed near other animals for six hours,
- cannot be used in calves over eight weeks of age.

Read more: http://www.dehorning.com/dehorning-methods/caustic-paste-disbudding

16. Hot-iron disbudding





- An iron is heated to red hot, then held firmly to the horn bud for about 20 seconds, destroying the horn-producing cells and preventing further growth.
- It is strongly advised to anaesthetize the calves before disbudding with hot iron.

Advantages: Bloodless, can be used in calves up to four months of age.

Disadvantages: More painful for the calf than caustic paste; iron may fail to get back up to heat between calves resulting in ineffective disbudding; requires more physical restraint of animal than paste disbudding; poses a risk of injury to the handler.

17. How to breed animals without horns

- Exploit the possibilities to reduce the number of horned calves through artificial insemination (AI).
- There are AI bulls available which give polled calves.
- Bulls with 100 % polled offspring is PP.
  - *PP – polled is dominant, linked to one single (homozyogous) gene.
  - *Pp – polled is linked to heterozygous genes.
  - *pp – polled is recessive, linked to one single (homozyogous) gene.

Examples:

Parma PP (100% polled)
Homozygote

Nymoen Pp (50% polled)
Heterozygote

Seaver pp (100 % horns)
Homozygote

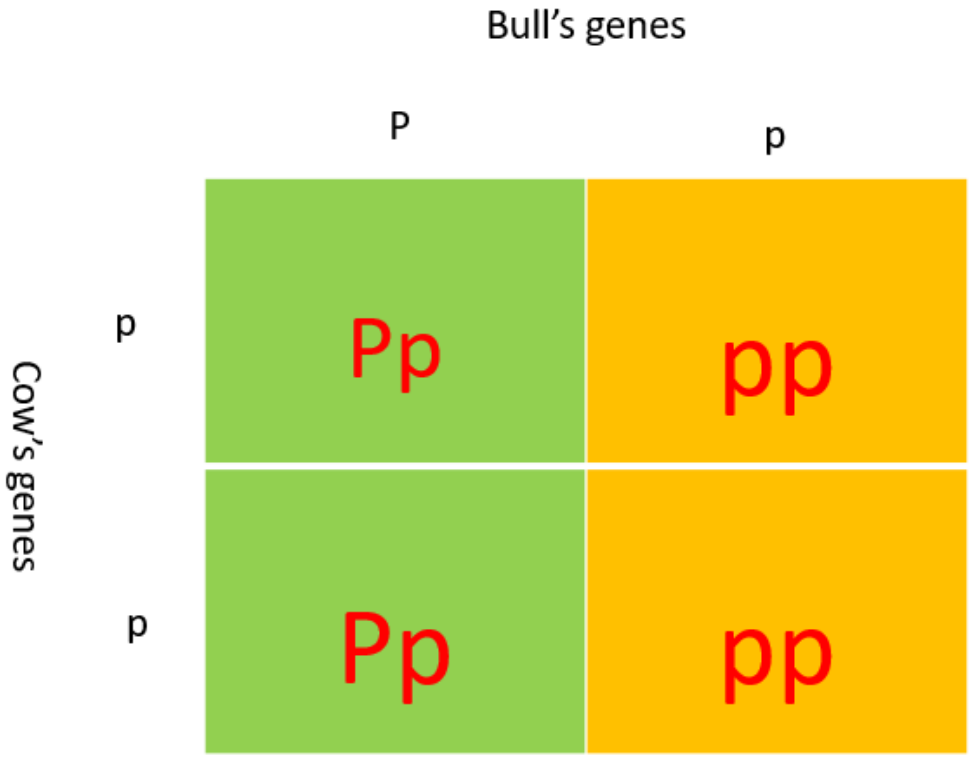
17.1 How to breed animals without horns Cont'd…

Questions that have to be answered before any form of bull analysis/evaluation:

- Who is she (mother cow)?
- What's her pedigree?
- What's her (health & nutritional) anamneses?
- How old is she?
- What were her previous weights?
- What are the farm objectives/KPIs?
- Which bull is to be selected?

17.2 How to breed animals without horns Cont'd…

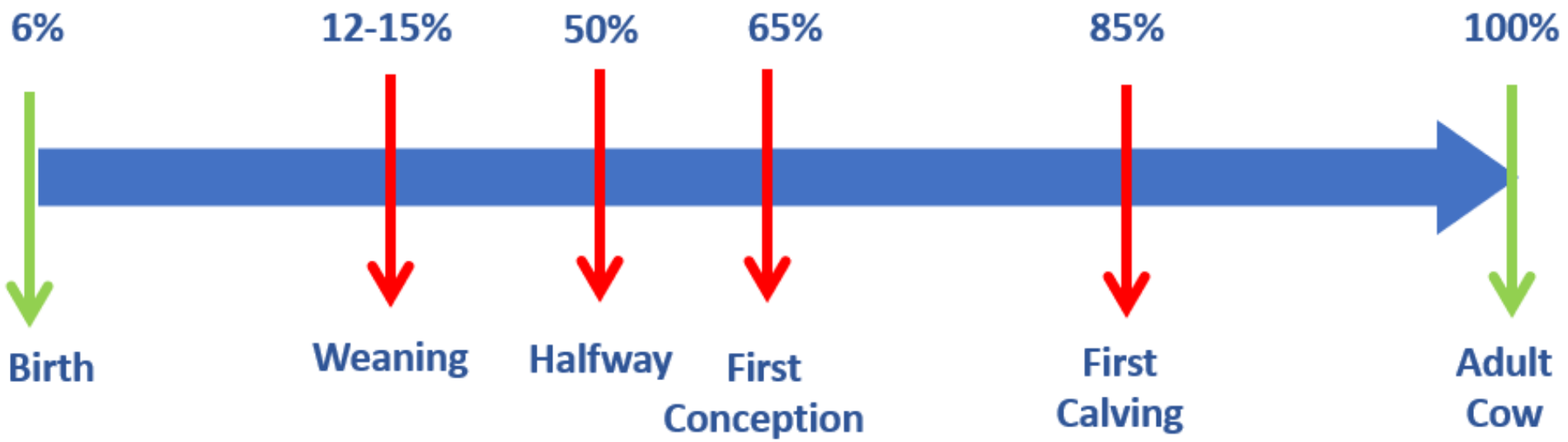
How to tell the expected results depending on the choice of a bull:



Off spring can be;

i. 50 % polled Pp.
ii. 50 % horns pp.

18. Growth from calf to cow



- A bovine is able to give birth for the first time at an age of 24 months (2 years). At that moment the body weight of the animal must be 85% of the adult weight. If management factors do not allow/contribute to this, the first insemination/calving moment must be postponed until the heifer has reached the 85% body weight target.

19. Setting KPIs

Facts/'You knows' about KPIs

- KPIs are figures.
- KPIs are measurable.
- KPIs are objective.
- KPIs tell you how things really go (monitoring).
- KPIs is usually a result of at least two objectives, which makes it more specific.
- One KPI is not enough to analyse young stock results.
- KPIs are recorded and used for a longer period of time in order to continue and compare the results properly.

KPI	GOAL	KPI	GOAL	REMARKS
Birth weight.		Growth rate weaning		
Weight at weaning .		Growth rate at 1st mating		
Weight at six months.		Growth rate at 1st calving		
Weight at 12 months.		Age at weaning		
Weight at 1st mating		Age at 1st mating		
Weight after 1st calving		Age at 1st calving		
BCS at weaning.		Cost till weaning (milk, concentrates, treatments)		
BCS at 1st mating		Costs till 1st calving (+ roughages, treatments, etc)		
BCS after 1st calving.				

Sample KPI chart *(see in next page)*

19.1 Setting KPIs Cont'd…

- Chart showing set KPIs

KPI	GOAL	KPI	GOAL	REMARKS
Birth weight.		Growth rate weaning		
Weight at weaning .		Growth rate at 1st mating		
Weight at six months.		Growth rate at 1st calving		
Weight at 12 months.		Age at weaning		
Weight at 1st mating		Age at 1st mating		
Weight after 1st calving		Age at 1st calving		
BCS at weaning.		Cost till weaning (milk, concentrates, treatments)		
BCS at 1st mating		Costs till 1st calving (+ roughages, treatments, etc)		
BCS after 1st calving.				

20. Summary/Take home: ‘You knows’ about calf rearing

1. No water no growth.
2. Crude protein is necessary to the develop calf’s skeletal parts and important organs like kidney, liver etc.
3. Regular measuring (weight, growth) is advised to optimize results.
4. Without KPIs, young stock management cannot be successful.
5. Feeding temperature of milk must be the same as calf’s body temperature.
6. (Self/home- made) electrolyte mix must always be available in the farm.
7. Disbudding must take place as soon as possible, within 8 weeks.
8. Polled AI bulls are available in every AI organization.

Being number

1

is all that matters.

- END -