Theme 5: Fertility and Breeding

FERTILITY MANAGEMENT AND COWS WITH ABNORMAL DISCHARGE (Level 3)

Topic	Training & information Content
5.1	Dairy Cattle Breeds and Breeding
5.2	Breeding program for a dairy farm (medium & large)
5.3	Conformation, Type classification and judging
5.4	Cow handling
5.5	Milk production recording
5.6	Heat Detection
5.7	Artificial Insemination
5.8	Pregnancy Diagnosis
5.9	Fertility Management
5.10	Cows with abnormal discharge
5.11	Fertility disease recording
5.12	Calving recording
5.13	Use of Key Performance Indicators

1. You will learn about (learning objectives):

- ❑ Placenta – expulsion and retention
- ❑ Vaginal discharge
- ❑ Optimizing fertility
- ❑ Fertility management

2. Introduction

- The most profitable cow is one who gives birth to a healthy calf every year.
- The challenge for every farmer to emphasize on the calving interval (CI), if possible to keep this CI level below 400 days.

In Heat

< 30 days

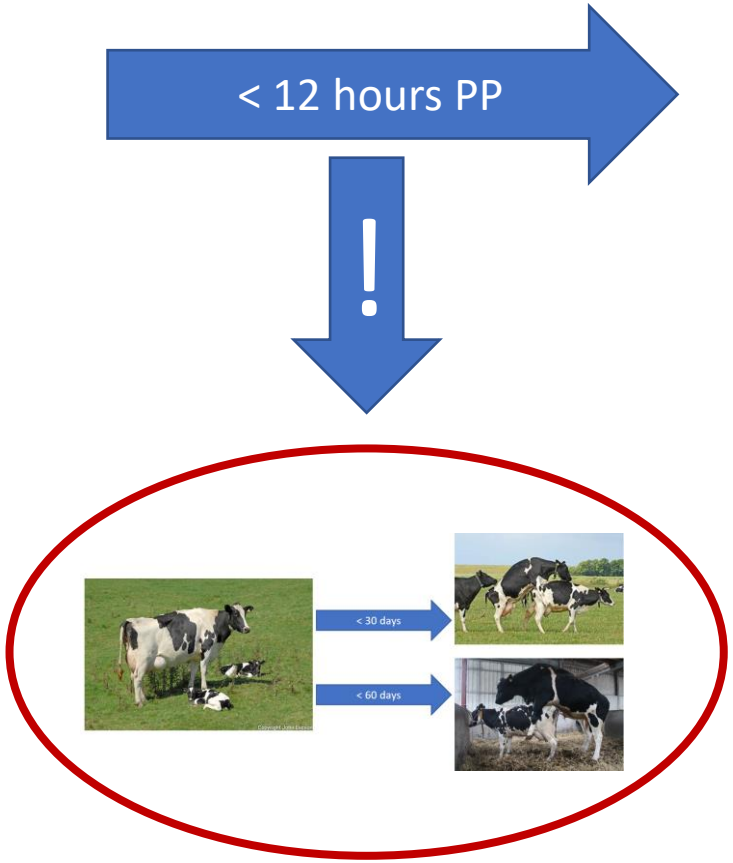
Insemination

< 60 days

A fertile cow could show heat signs early enough after calving and be inseminated early (<60 days)

3. Expulsion of placenta

The most important condition for a fertile cow is that the placenta is ejected within 12 hours PP (post partum)

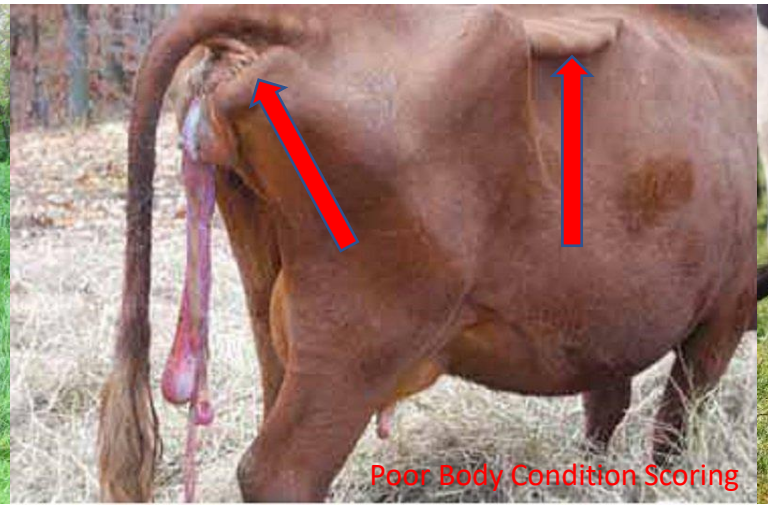


fertile cow

If the placenta doesn't come off within 12 hours, some serious fertility problems may occur in the coming days/weeks.

4. Retained placenta

- In case of retained placenta (> 12 hours), treatments are needed to avoid further problems like uterus inflammation, endometritis, poor appetite. Ketosis, displaced abomasum etc etc.
- Always check the temperature of these cows to catch up ‘fever’ in the most earliest stage. When fever is recorded, antibiotic treatment is needed to prevent cow for severe issues.



Twin Births, poor BCS, Dystocia are all risky situations!

> 12

> 12

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4.1 Retained placenta Cont'd…

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Tem	38.5	38.7	38.6	38.8	38.6	39.0	39.3	39.1	39.6	39.3	39.0	38.8	38.7	38.7

In case of retained placenta;

- Take temperature post partum (PP) the first 14 days.
- When temp rises above 39.5° C, start treating immediately IV.

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Tem	38.5	38.7	38.6	38.8	38.6	39.0	39.3	39.1	39.6	39.9	40.6	40.1	39.6	39.2

- The longer you wait, the more time it will take for the cow to recover. **TIME IS MONEY!**

4.2 Retained placenta Cont’d…

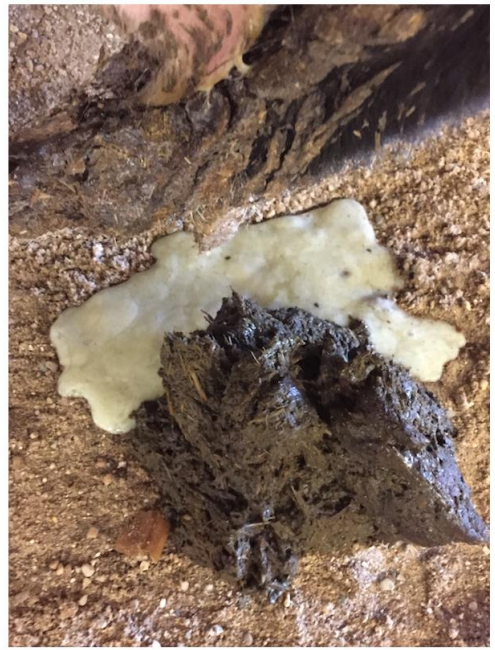
In case of retained placenta, avoid manual pulling. It may cause internal bleedings and permanent damage of uterus wall.

Knotting of the placenta is allowed, this means that the "natural" weight causes expulsion.

5. Vaginal discharge

Examples of vaginal discharge from a cow with metritis

Cow infected with metritis

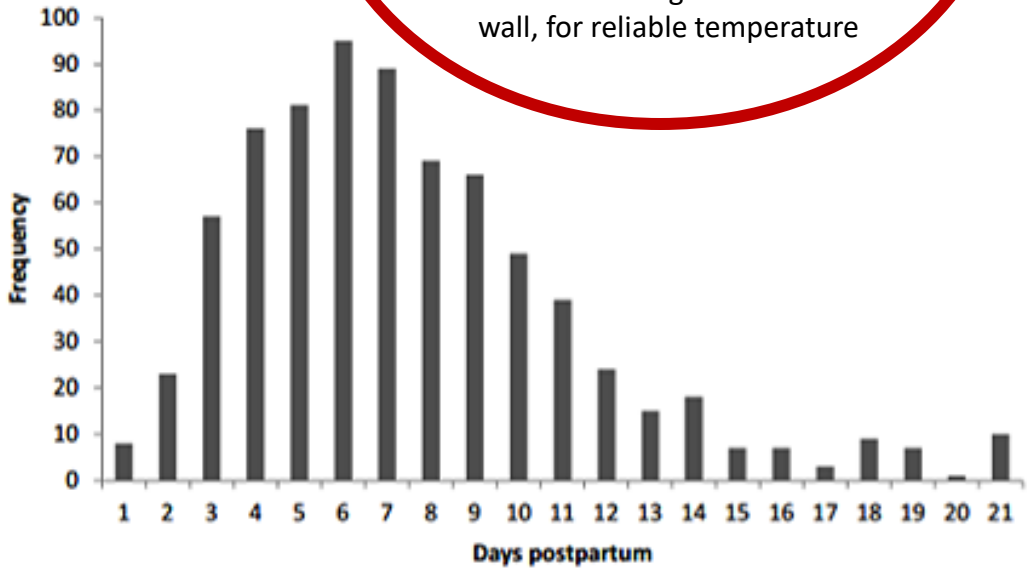


Few days after calving → Few weeks after calving

5.1 Vaginal discharge Cont'd…

- The majority of metritis cases occur within the first 14 days after calving with a peak frequency around day 5 – 7.
- In case of retained placenta it is heavily recommended to measure the cow's temperature every day.
- High temperature (39.5°C) usually in combination with bad smell because of rotting process.
- Antibiotics are advised to avoid further problems.

Make sure to push the thermometer against intestine wall, for reliable temperature



6. Cleaning the uterus

- In case of doubt i.e. ‘if not sure about the status of the cleaning process of the uterus,’ then it is time to do rectal palpation.

6.1 Cleaning the uterus Cont'd…

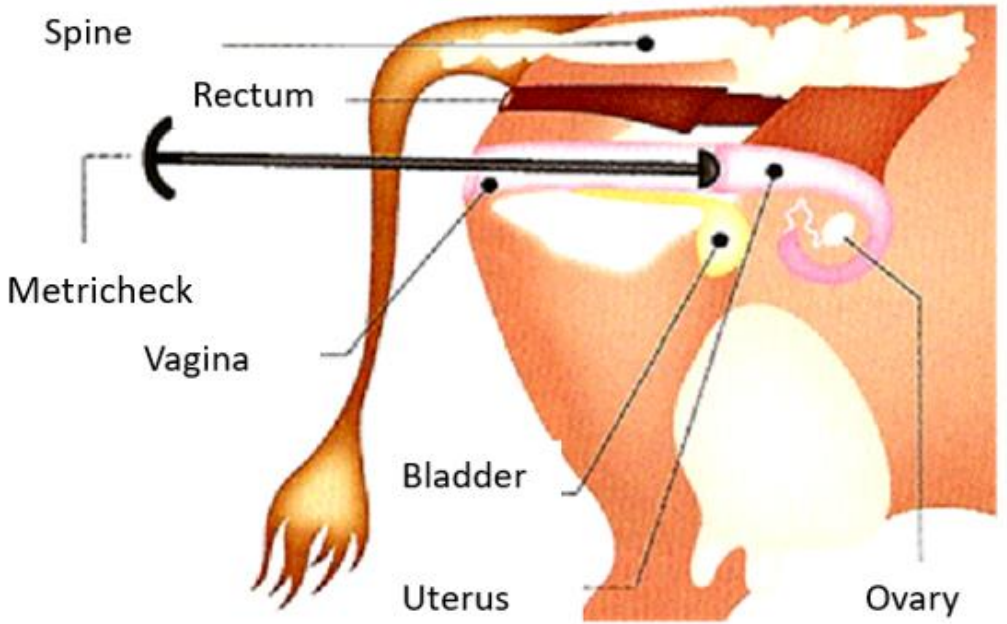
- Below is a pictorial of how a healthy "self cleaning" uterus should feel/look like, if different, then it is time for treatment to prevent future problems.

Healthy 'self cleaning' uterus

7. Diagnosing vaginal discharge: Use of Metricheck

- A Metricheck can help to diagnose the presence of unwanted (not always visible) discharge in a cow's vagina.

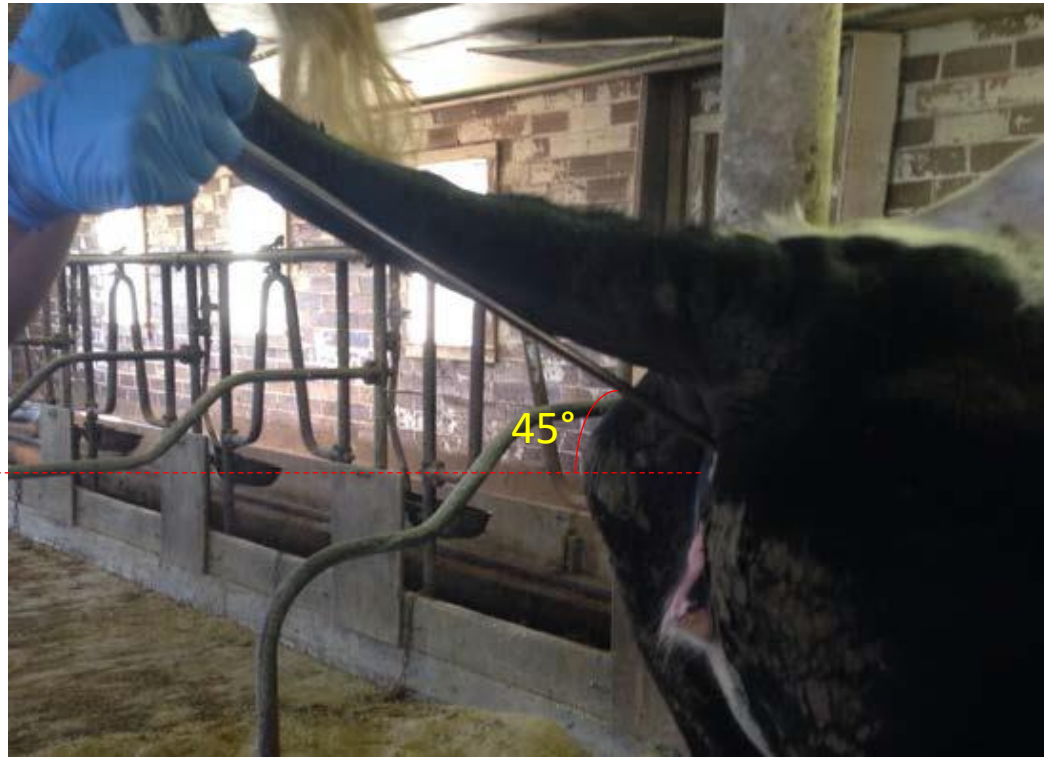
A Metricheck



A Metricheck in use

7.1 Withdrawal of the Metricheck

- Withdrawal of the Metricheck device at an upward 45-degree angle will push it to the cervix.

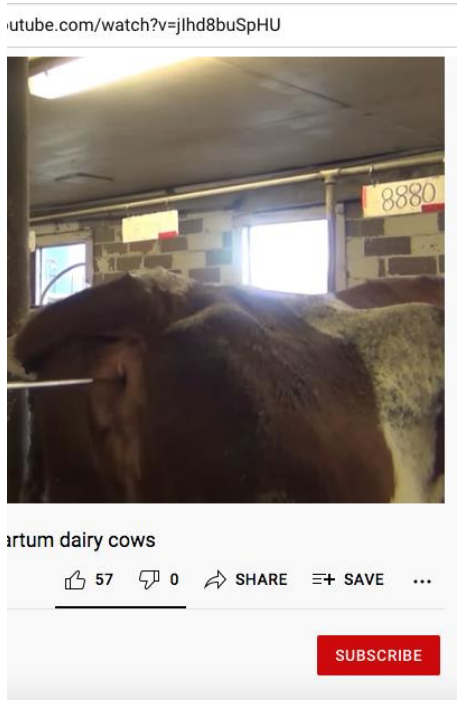


Withdrawal of a Metricheck at 45-degree angle

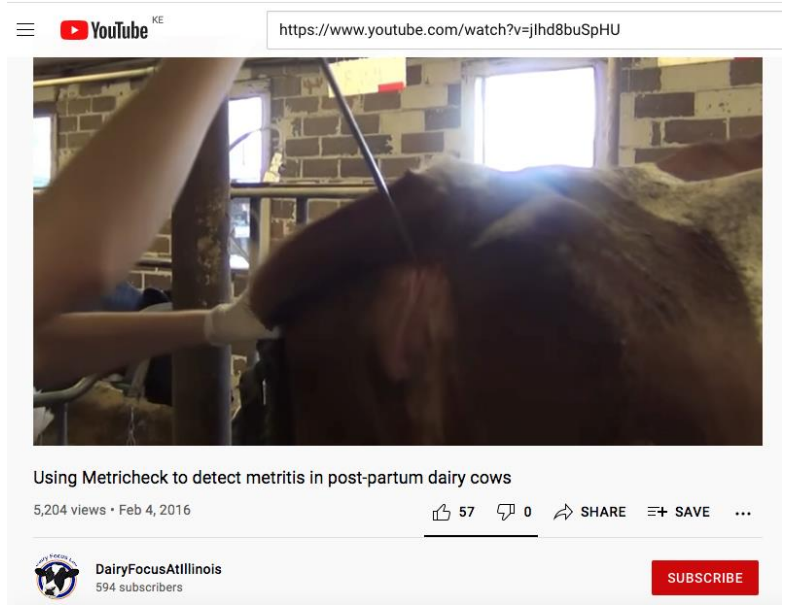
7.2 How to use the Metricheck device

Watch video
https://www.youtube.com/watch?v=jIhd8buSpHU

Clean first



Metricheck device in

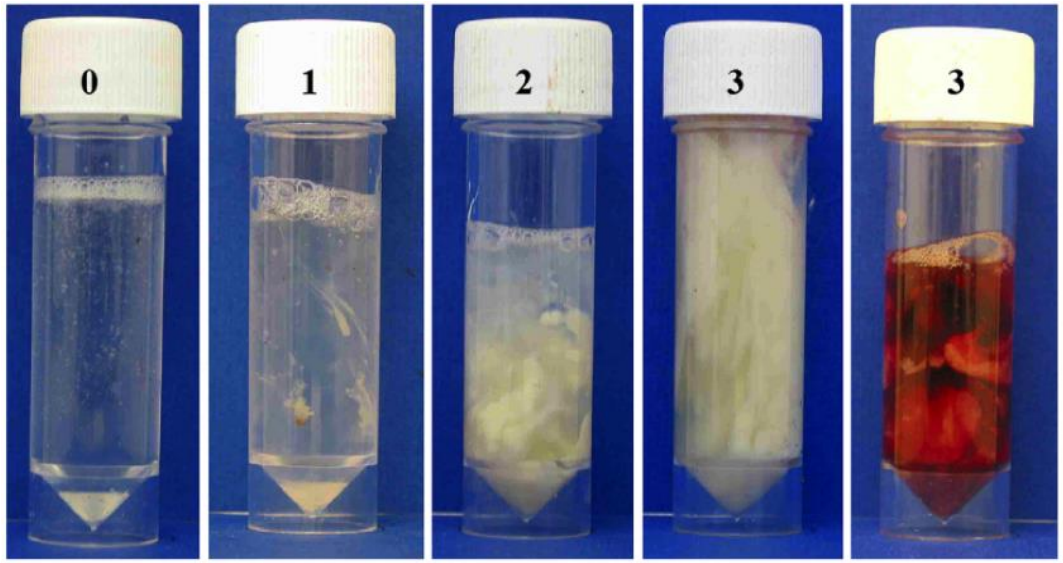


Withdraw the Metricheck device at 45-degree angle

8. Vaginal discharge scoring

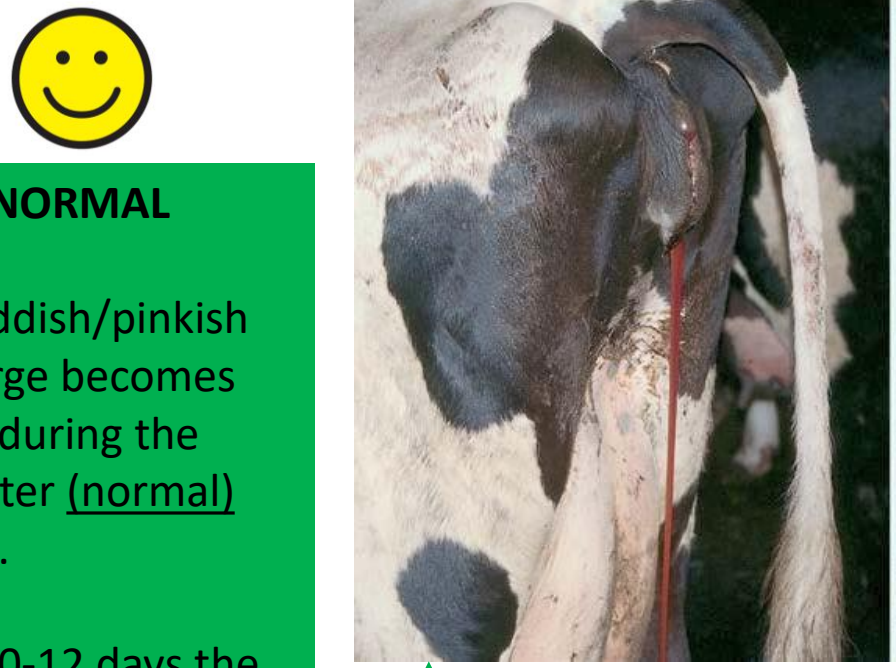
- Using this score system, the mucus can described as:

  i. Score 0 = clear or translucent mucus;
  ii. Score 1 = mucus containing flecks of white or off-white pus;
  iii. Score 2 = discharge containing ≤ 50% white or off-white mucopurulent material;
  iv. Score 3 = discharge containing ≥ 50% purulent material, usually white or sanguineous.



Vaginal discharge scoring for Metricheck (Sheldon et al, 2005)

9. Vaginal discharge: Normal vs Abnormal



NORMAL

The reddish/pinkish discharge becomes visible during the days after (normal) calving.

After 10-12 days the discharge must turn into clear.

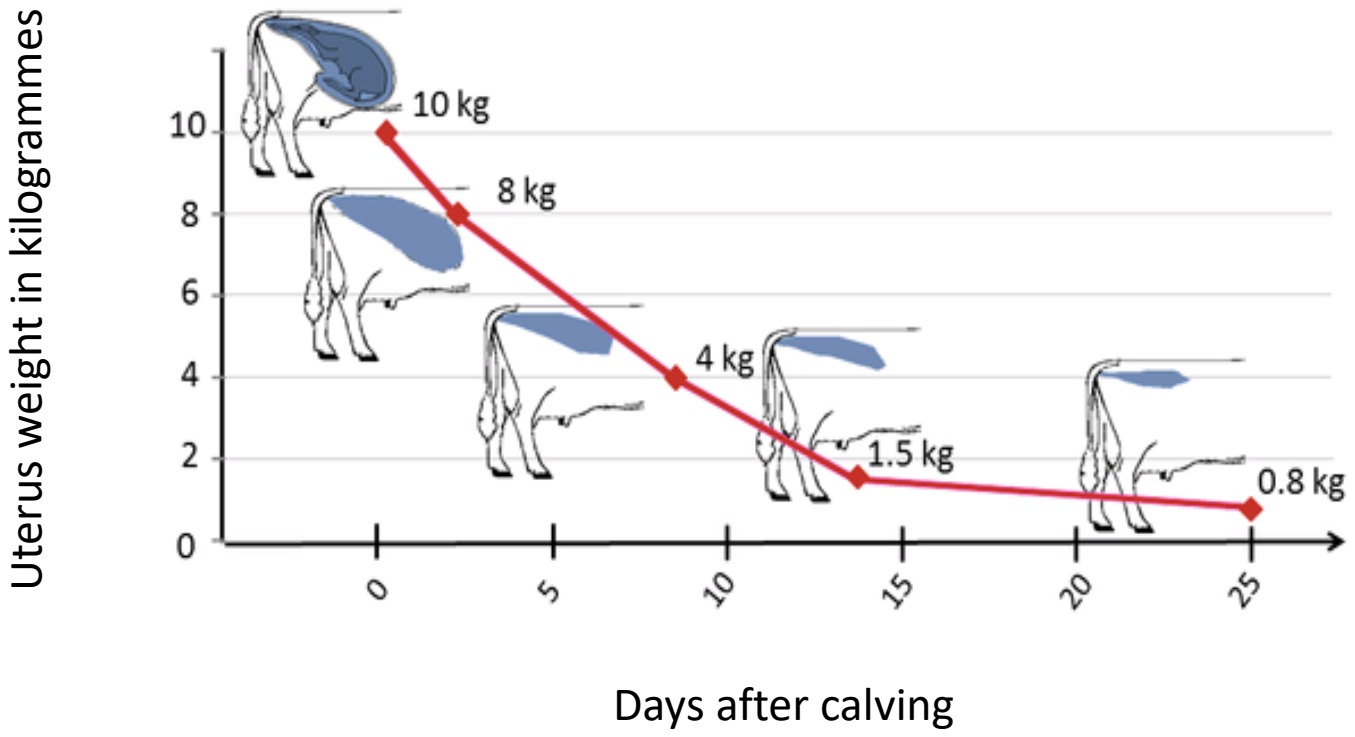
ABNORMAL

When white discharge is seen, it (always)must be categorized as abnormal.

Rectal palpation (massage) will help to make it more visible and determine its severity.

10. Recovery of the uterus

The recovery process in view of a healthy fast shrinking uterus



Towards more profit

- Better feed intake
- No retained placenta
- Early 1st heat
- Early pregnancy
- More milk.

More Profits!

11. Optimizing fertility

- To optimize fertility status, it is important to observe cows every day.
- When you observe discharge that doesn't fit to the cow's lactation status it is time to act.

- No insemination for this cow!
- Check the severity by rectal palpation.
- Decide whether treatment is needed.
- Doing nothing is no option.

11.1 Optimizing fertility Cont'd…

- Every healthy cow who has been heat should show a bloody discharge 1-2 days after being in heat/being inseminated.
- Bloody discharge is a sign that the cows uterus is clean, and the cow has been in good heat.

- 1-2 days after the cow was in (strong) heat!
- In virgin heifers this is more visible.
- No need to get worried.
- Has no negative impact on fertility.

12. Vaginal discharge and what the colours mean

- All types of vaginal discharge has a meaning normal/abnormal.

What does it mean, the things we observe ?

- **Red discharge; *normal* between 1-5 days after calving;**
- **Pink discharge; *normal* between 5 –10 days after calving.**
- **Red /brownish discharge *abnormal under all circumstances*.**
  - *Cow is sick, fever !!, caused by an inflammation inside treatment is necessary.*
  - *Cow is not sick, no fever, flushing, treatment is advisable.*
- **White discharge *abnormal under all circumstances*, it will indicate endometritis, or any other inflammation inside.**
- **White /clear discharge, cow *might* be in heat but the uterus is *not clean yet.***
  - *Flushing might be necessary.*
- **Clear discharge, cow is, or will come in heat.**
- **Grey/thick discharge, in a few days time cow will come in heat (if no insemination date is available).**
- **Grey/thick discharge, cow is pregnant (if insemination date is known).**
- **Bloody discharge, cow has been in heat 1-2 days ago.**

13. Discharge registration at the farm

- Is a registration chart where farm workers administrate all their observations during the day.

- Farm managers may use it as a tool to analyse the fertility status of the herd.

From the sample chart alongside;

- Cows to be treated (12,55 ,87)
- Cows that have been in heat (97)
- Cows that might be pregnant (77)
- Cows probably close to heat (19,22)

Discharge Registration Chart;

Date;...../...../20.....

Placenta off within 6 hours.	**18**											
Delayed placenta 6-24 hours.	**208**											
Retained placenta > 24 hours.	**145**											
Red discharge.	**243**	**321**										
Pink discharge	**56**	**87**										
Red/brownish discharge.	**76**											
White discharge.	**12**	**55**	**87**									
White/clear discharge.	**63**											
Clear discharge.	**19**	**22**										
Grey/thick discharge.	**77**											
Bloody discharge.	**97**											

13.1 Discharge registration at the farm Cont'd…

Sample chart in the farm

Sample of discharge registration chart

Cow no.	216	23									
Calving date	1/3	3/3									
Calving details. Easy/Normal Dystocia/Still born	N	D									
Placenta off within 6 hours.											
Delayed placenta 6-24 hours.	X										
Retained placenta > 24 hours.		X									
Red discharge.	3/3										
Pink discharge	8/3										
Red/brownish discharge.	10/3										
White discharge.	21/3	28/3									
	29/3	23/4									
	10/4										
White/clear discharge.	18/4	13/6									
	10/5										
Clear discharge.	31/5	20/8									
	20/6										
Grey/thick discharge.	18/6	18/8									
	13/8										
Bloody discharge.	21/6	13/9									

14. Fertility management

- The definition of Fertility Management is not just one single objective.
- To assist farmers improving the fertility status of their herd, a lot of questions have to be answered.
- It is always a big challenge to find out where and what the problem is, and what has to change so that there is improvement.
- It is also crucial to have enough data/observations to assist farmers.

14.1 Fertility management Cont'd…

Answers/remarks are a good starting point to optimize fertility and foretelling/informing farmer on tips and tops to improve.

Example of questions and answers				
Dystocia	No			
Retained Placentas			Yes	
Endometritis			Yes	
In heat < 30 DIM				90 days
Insemination < 80 DIM				150 days
Bloody Discharge			No	
Clear discharge when in heat			Didn't see	
Discharge in 1st week post partum (PP)				
Regular veterinarian checks		Every 3 months		
Use of fertility hormones				Poor results
Pregnancy checks				No qualified technician

15. Take home messages

Example of questions and answers.				
Dystocia	no			
Retained Placentas			yes	
Endometritis			yes	
in heat < 30 DIM				90 days
insemination < 80 DIM				150 days
Bloody Discharge			No	
Clear discharge when in heat			don't see.	
Discharge in 1st week PP				
Regular Veterinarian checks		every 3 months		
Use of fertility hormones				poor results
Pregnancy checks				no qualified technician

Answers/remarks are a good starting point to optimize fertility and foreseeing farmer of tips and tops to improve.

Fertility, the ultimate goal within a realistic time.

Advise to the farmer

1. An animal nutrition specialist must take a look at the availability of minerals and vitamins in the daily ration. Several minerals and trace elements are directly linked to fertility.
2. Staff members need to be trained on heat detection and recognition of the different types of discharge.
3. More regular vet visits to determine the status of each cow.
4. Organize a meeting for the nutritionist and veterinarian to agree on future action plans to optimize, and agree about the zero-setting.

-END-