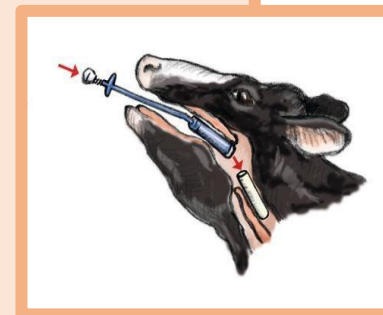


DISEASE AND HEALTH MANAGEMENT

(Level 3)

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



1. You will learn about (learning objectives):

- ❑ All the health characteristics in calves:
 - How to recognize, check, measure, interpretate and act in case of disease
 - How to prevent your calves against management related diseases



2. Background

- It is obvious that the youngest animals in the farm are the most sensitive animals
- It is therefore important that farmers are aware of how to recognize, and more importantly how to prevent their calves against all kind of management related problems
- Treating calves for management diseases is a matter of skills and knowledge. Knowing all the signs in advance to help prevent calves against further/future problems remains one of the biggest challenges for farmers. You might lose your calves if you think this is the task of a veterinarian.



3. Getting the calf ready for life

- Once the calf is delivered it should:
 - i. Take its first breath within 30 seconds
 - ii. Lift its head in 1-2 minutes
 - iii. Roll onto its chest in 2 minutes
 - iv. Attempt to stand within 15 minutes
 - v. Begin shivering in 30 minutes
 - vi. Be standing in 1 hour
 - vii. Be suckling in 2 hours



3.1 Getting the calf ready for life Cont'd...

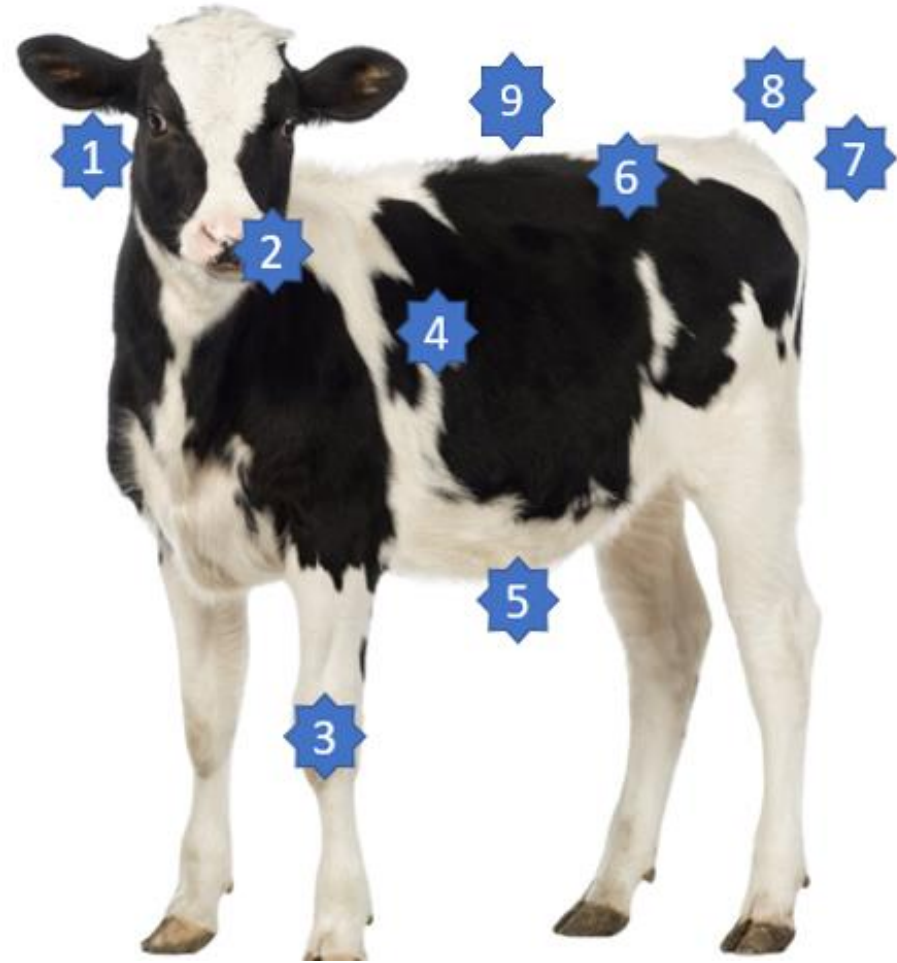
The calf should also have:

- a) A rectal temperature of 38.8-39.4°C after birth and stabilizing to 38.3-38.8°C within one hour
- b) A Pulse rate of 100-150 beats per minute, regular rhythm, strong pulse
- c) 50-75 breaths per minute
- d) No swelling or discoloration of the head, limbs or tongue
- e) Pink and moist mucous membranes

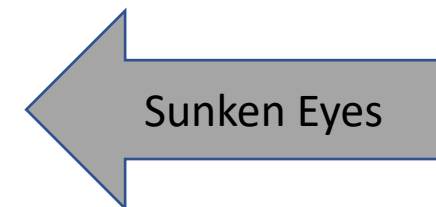
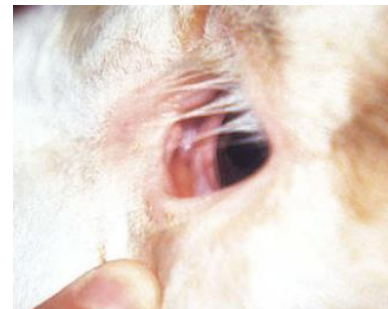
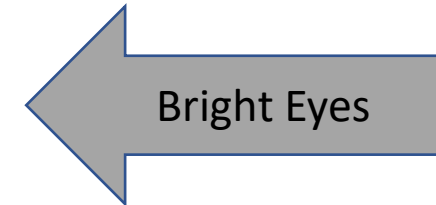
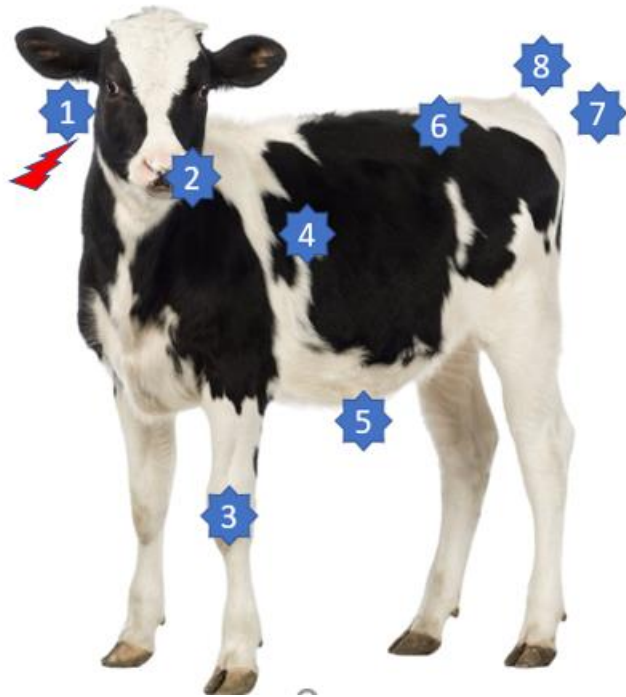


4. Health Check Points in a calf

1. Eyes
2. Nose
3. Skin & joints
4. Respiration
5. Navel
6. Body Condition
7. Temperature
8. Manure
9. Stretching

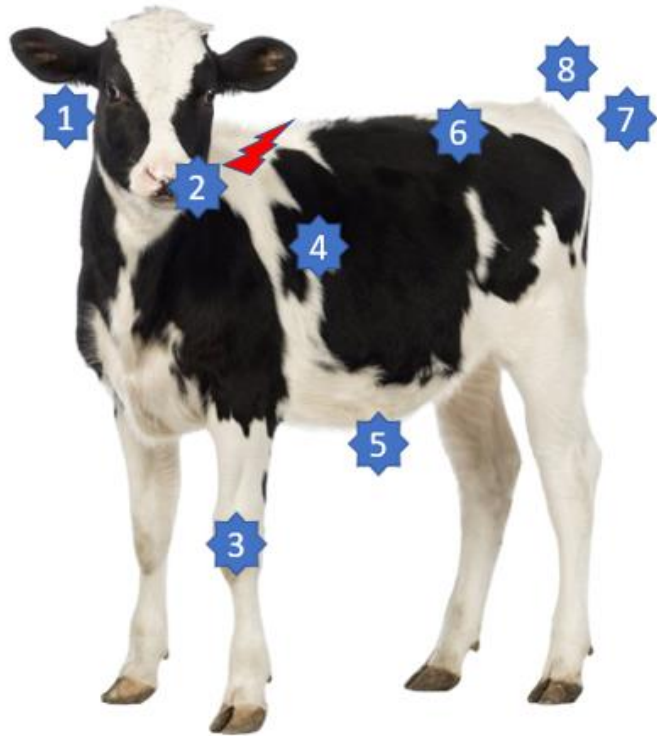


4.1 Health Check Points in a calf: 1 - Eyes



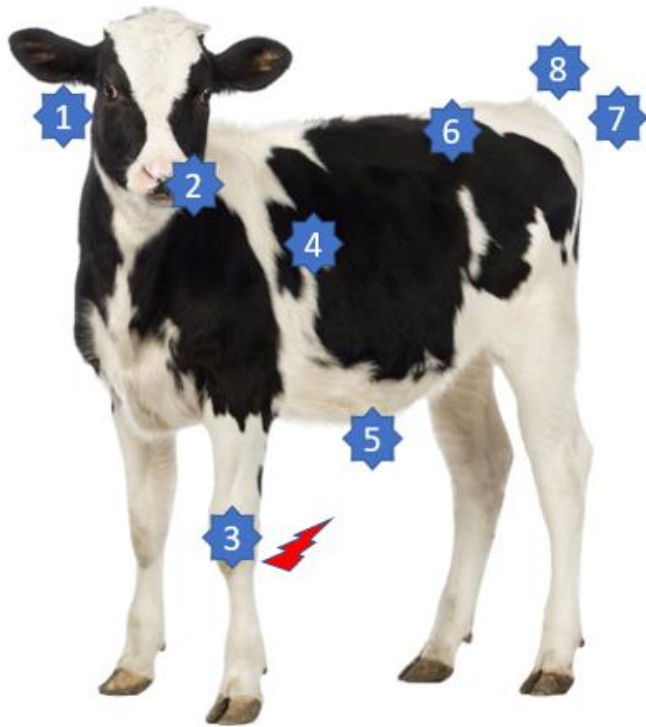
- The alertness of the young calf is a very reliable health sign, the bright eyes are especially crucial
- Sunken eyes will also inform you about the level of dehydration

4.2 Health Check Points in a calf: 2 - Nose(rhinarium)

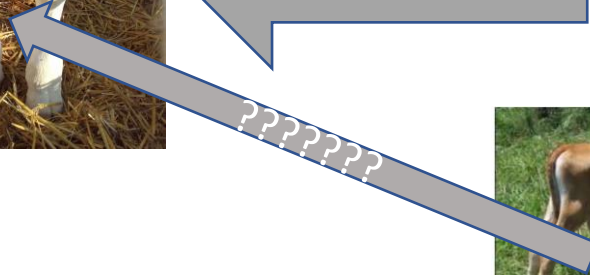


- The nose of the calf will help to estimate the level of fever. A healthy calf has a wet rhinarium, when it gets dry (in combination with cold ears, cold tail), the body temperature is expected to be (too) high

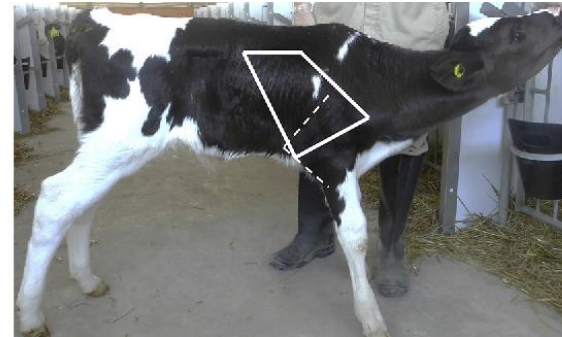
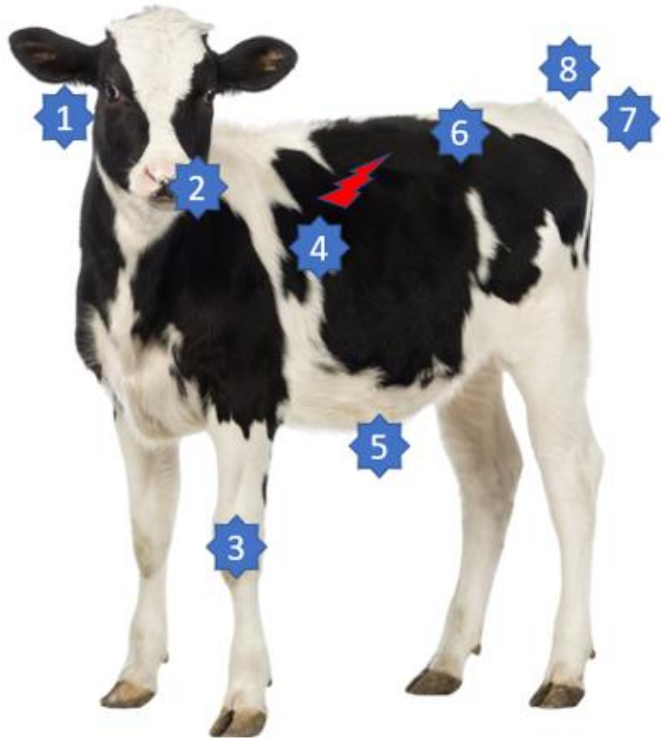
4.3 Health Check Points in a calf: 3 - Skin and joints



- A healthy calf's skin and hair are short and shiny. Joint inflammations can be caused by navel infection. Keeping hygiene around calving will help to avoid it.



4.4 Health Check Points in a calf: 4 - Respiration

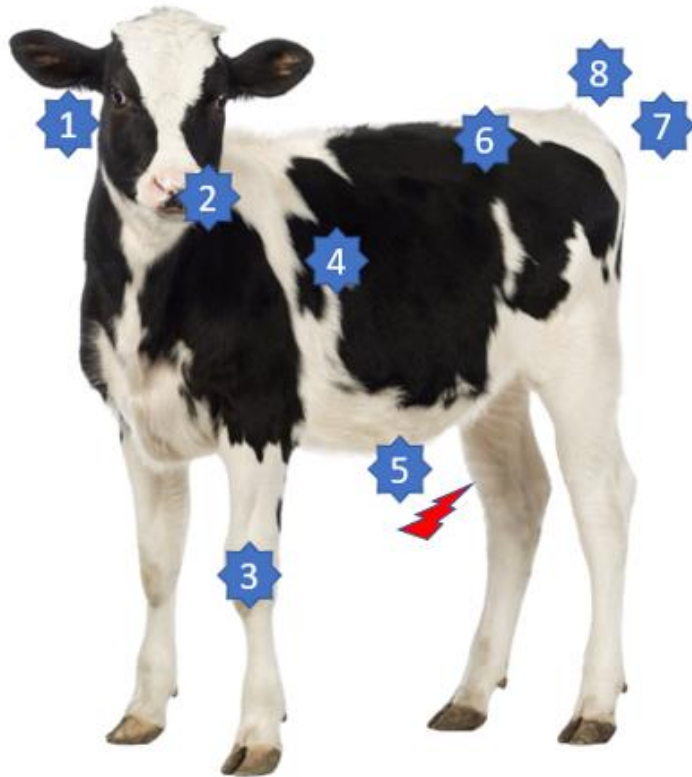


Normal values;

- 4 days 56/minute
- 14 days 50/minute
- 5 weeks 37/minute
- 6 months 30/minute
- 1 year 27/minute
- Adults 12-16 /minute

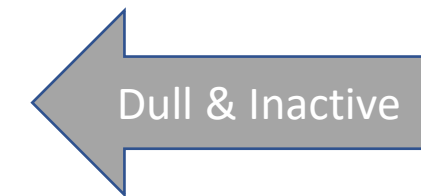
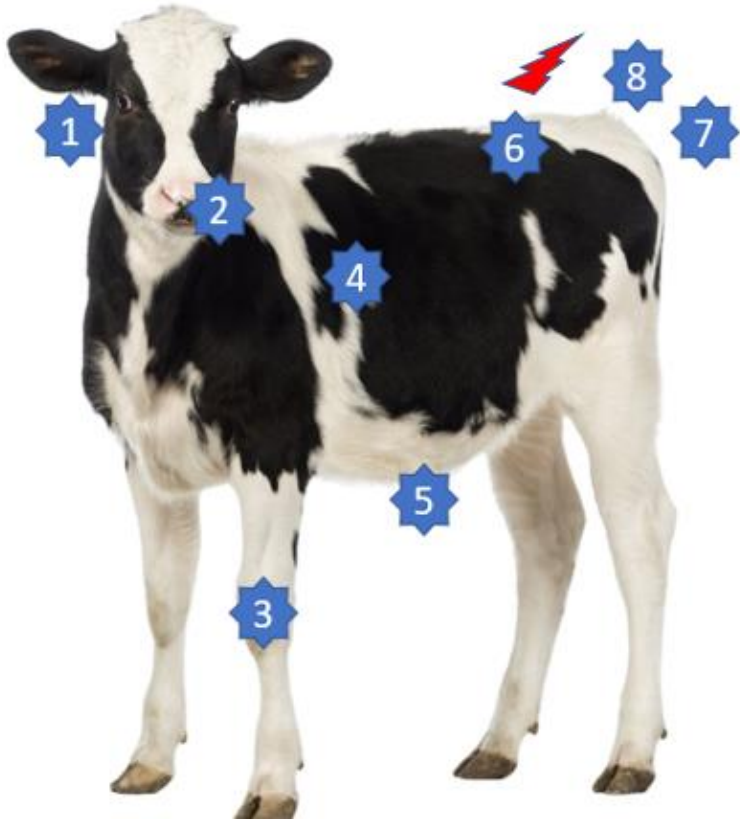
Very important to be aware of calf's respiration, ideal rates are changing when animal gets older.

4.5 Health Check Points in a calf: 5 - Navel



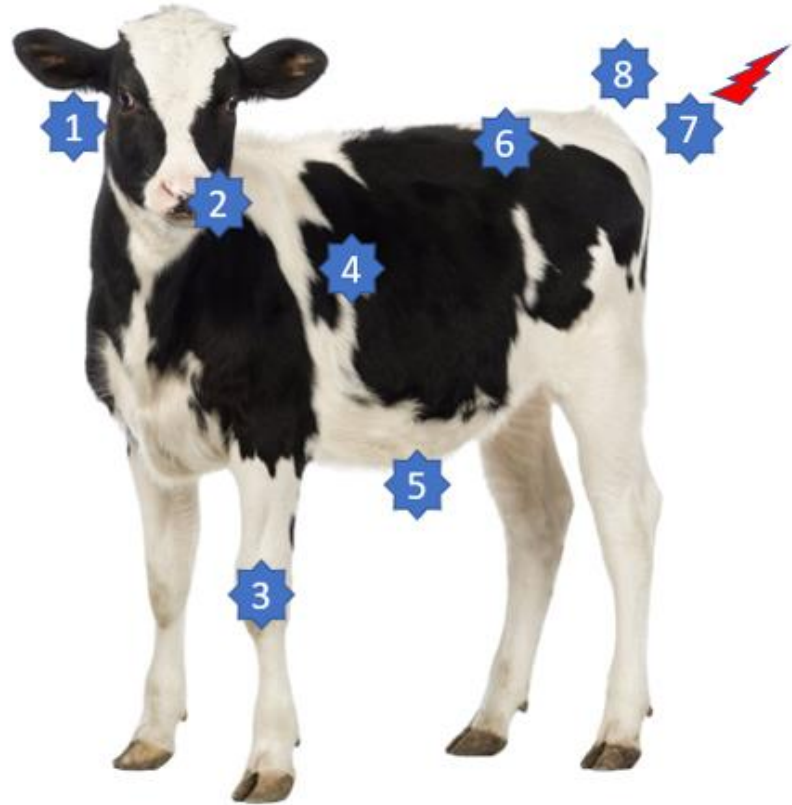
- Navel infection (disinfection) is heavily underestimated. It's one of the most important "indirect" reasons for high mortality rates in young calves. Inflammations need to be treated by surgery (not without risks!).

4.6 Health Check Points in a calf: 6 - Body condition

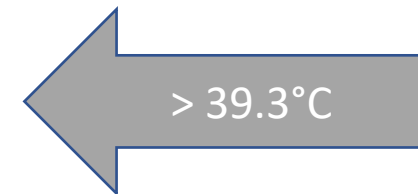
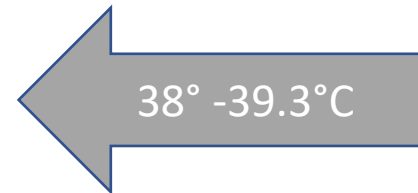
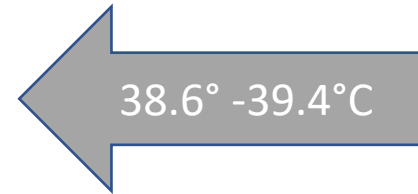


- Body condition and fitness in order means good health. Non-playing calf is a sign of sickness.

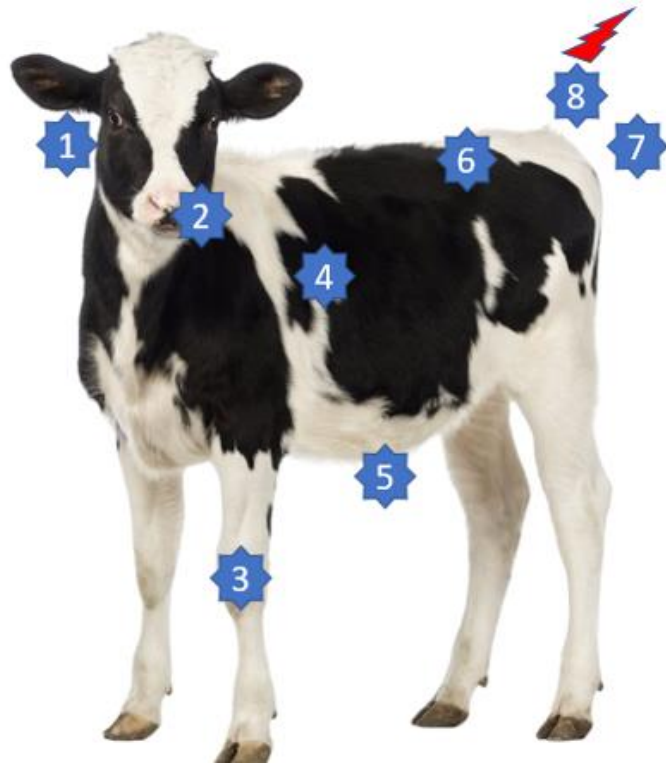
4.7 Health Check Points in a calf: 7 - Temperature



- As in any other living creature, the body temperature is an easy instrument to assess the animal's health status. Temperature changes with age!

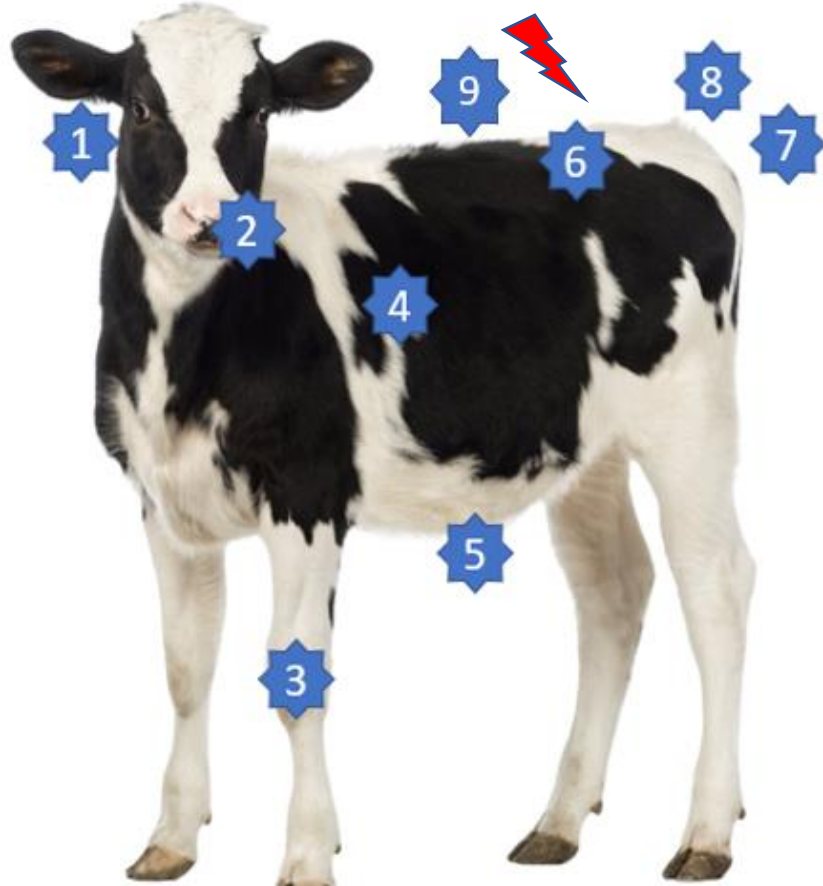


4.8 Health Check Points in a calf: 8 - Manure



- Knowledge about the different types of calf dung will help to estimate the cause of a problem. The consistency is not always problematic. Food quality and quantity may cause diarrhea. Scours (see picture) is mostly caused by viruses/bacteria often in combination with high temperatures.





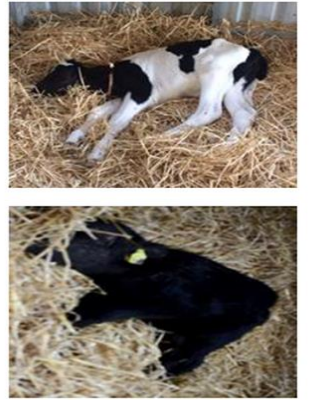
4.9 Health Check Points in a calf: 9 - Stretching



- A healthy calf will take time to wake/rise up after a 'long' period of rest. It will stretch its back for about 5-10 seconds. This stretching event is sign of good health.
- No stretching after a period of rest might be the very first sign of upcoming problem/disease.






BE ALERT!

5. How to score Calf's health status

Score	0 Clinically Normal	1 Mild	2 Moderate	3 Severe	4 Grave
					
Demeanour	Bright, alert, responsive	Dull, fairly responsive	Dull, depressed, less responsive	Dull, markedly depressed, unresponsive	Unresponsive to any stimulation
Ears	Alert and mobile	Slightly drooped	Drooped	Drooped and limp	Markedly drooped and limp
Mobility	Actively mobile and able to stand by itself	Standing up and walking independently after encouragement	Capable of standing and walking after lifting	Sternal recumbency (Lying down but unable to stand)	Lateral recumbency (Lying down on side and not able to stand)
Interest in surroundings	Interactive when approached	Interactive when approached	Slow to respond when approached	Uninterested when approached	Unresponsive when approached
Suckle Reflex	Strong suckle reflex	Diminished suckle reflex	Weak suckle reflex	Chewing movements	Absent
Feed intake	Feeding well	Slow to drink and may not finish what is offered	Reduction in feed intake (not finishing what is offered)	No feed intake (not taking any of what is offered)	Absent
Enophthalmos/ Dehydration	Clear bright eyes	Eyes slightly sunken	Eyes moderately sunken	Eyes sunken	Eyes markedly sunken

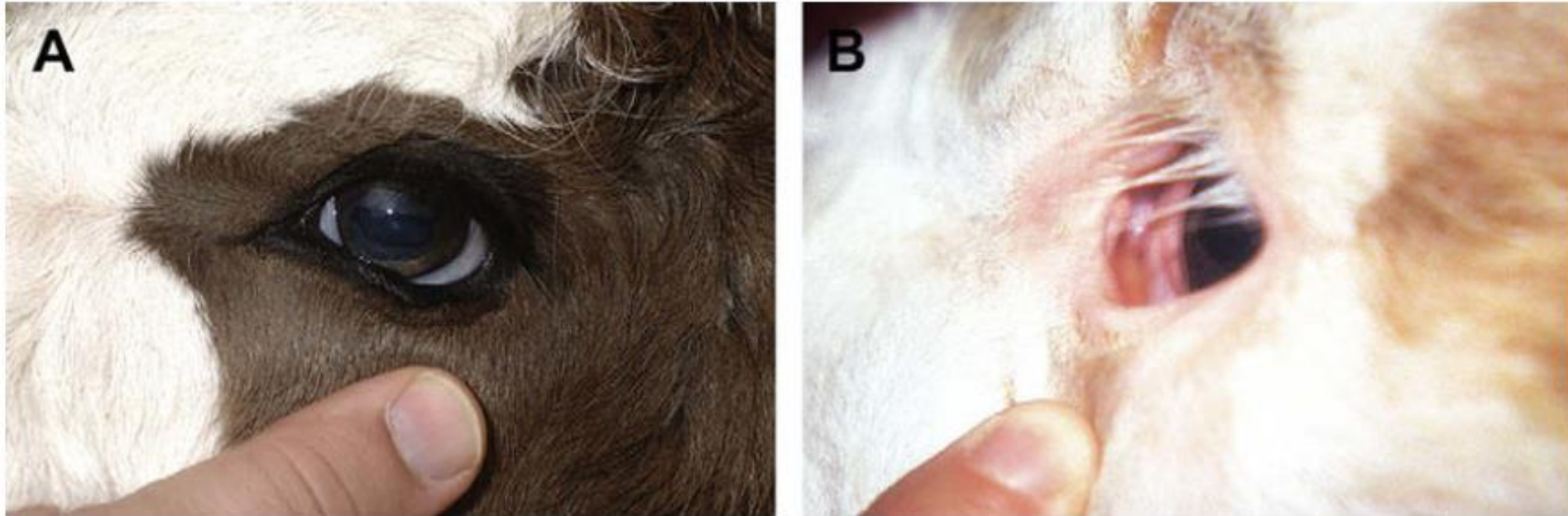
6. Scoring your calf's health status

- Based on the scores in the past illustration, try to score the health status of your calf

Score	0 Clinically normal	1 Mild	2 Moderate	3 Severe	4 Grave
Your Calf's score.					
Demeanour					
Ears					
Mobility					
Interested in surrounding					
Suckle reflex					
Feed Intake					
Dehydration					

7. Loss of body water: Dehydration

- Dehydration is an underestimated cause of calf mortality. Continuous checks of dehydration level is important and saves calf's life



Calf on the left (A) has a normal hydration status. There is no space between the eyelid and the eyeball. The calf on the right (B) is severely dehydrated. The eye is sunken at least 7 to 8 mm into the orbit. (Courtesy of Peter Constable, BVSc, MS, PhD, MRCVS, West Lafayette, IN.)

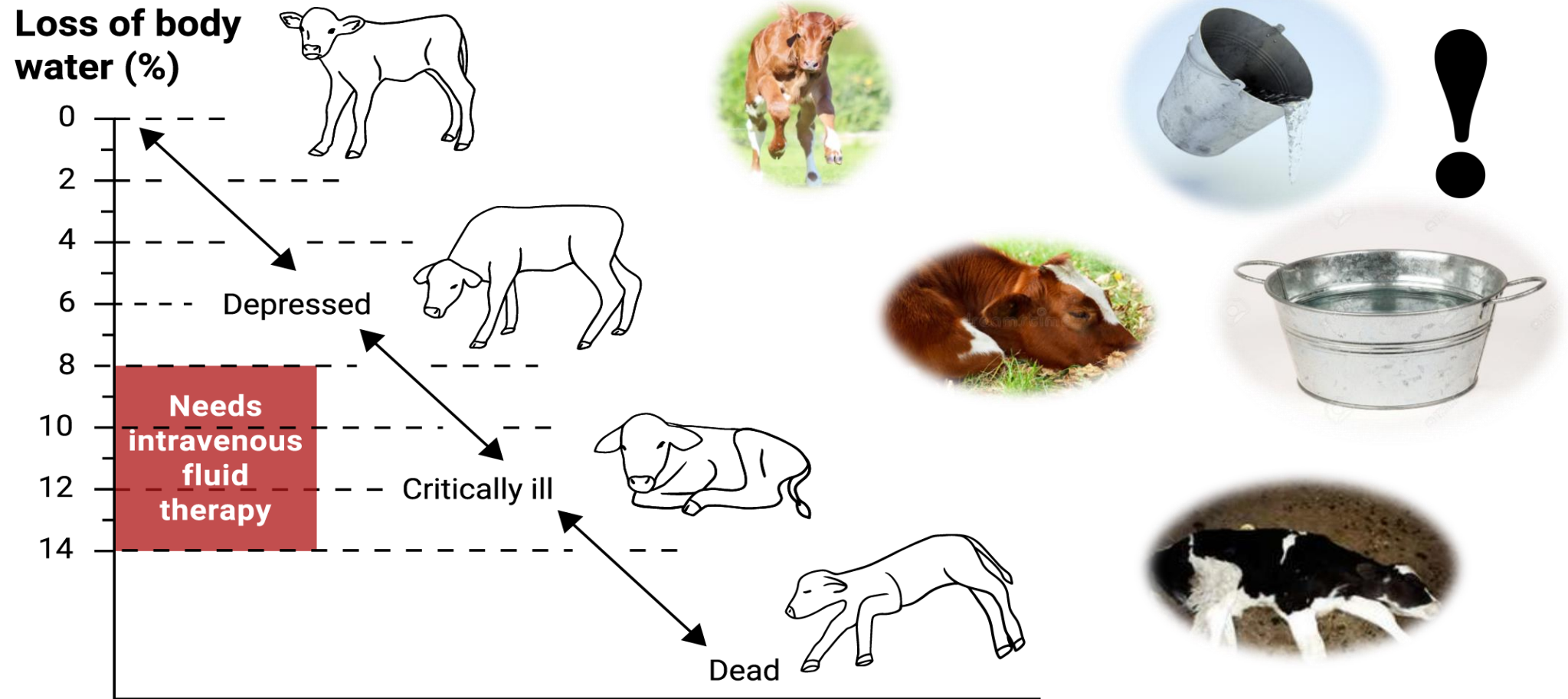
7.1 Loss of body water: Dehydration Cont'd...

- This cow has painful expression as well as sunken eyes caused by dehydration



7.2 Loss of body water: Dehydration Cont'd...

- Loss of body water can cause depression, critical illness or even death



7.3 Checking Skin elasticity for dehydration

- Skin elasticity is a practical tool to estimate level of dehydration and easy to carry out



Dehydration %	Demeanor	Sunken Eyes (in millimetres)	Skin Elasticity (in seconds)	Treatment
< 5%	Normal	None	< 1 sec	None
6-8%	Slight depression	2-4 mm	1-2 sec	Oral
8-10%	Depressed	4-6 mm	4-6 sec	IV Fluids
10-12%	Unable to stand	6-8 mm	5-10 sec	IV Fluids
> 12 %	Unresponsive or comatose	8-12 mm	> 10 sec	IV Fluids

7.4 Preventing dehydration

- In case of slight dehydration (6-8%) the oesophageal tube is an excellent tool to give the calf some extra fluids to prevent further dehydration



Save the calves' life

8. Pneumonia

- Pneumonia can be caused by different infectious pathogens such as bacteria, viruses or combination of both
- In calves it is mostly caused by decreased disease resistance resulting to diarrhea

Watch:

<https://www.youtube.com/watch?v=wf4T7N8S2iM>



8.1 Treatment of pneumonia

- Use anti-inflammatory drugs on the first day and antibiotics for at least one week
- Also check level of dehydration, if yes, follow protocol (in 7.4)



8.2 Examples calves suffering from Pneumonia



Typical examples of calves suffering from Pneumonia

Watch: <https://www.youtube.com/watch?v=-6uCRaI6BqI>

“Tommie the Vet explains about pneumonia”

8.3 Examples cow suffering from Pneumonia

- This cow is undergoing pain associated with chronic pneumonia. There is poor rumen fill caused by reduced appetite, the cow/calf has an arched back and the head is lowered



9. Economic effects of Unhealthy Calf



125€ the costs for every animal when retreatments are required

350€ yield loss over 2 lactations when a calf suffers more than one episode pre weaning

50-100€ the costs for a single infected animal

92€ million, the cost annually to the industry

4% less milk in first lactation if it has suffered from pneumonia

8% less milk in second lactation if it has suffered from pneumonia



10. Navel Ill (Omphalitis)

- This is the inflammation of navel due to infection by bacteria
- Clinical signs include:
 - swelling of navel
 - pain reaction
 - Fever
 - pus discharge



Excellent source for future navel infections

10.1 Navel Ill (Omphalitis) Cont'd...

Treatment;

- Injection with antibiotics, anti-inflammatory and wound spray
- Eventually surgery will be necessary

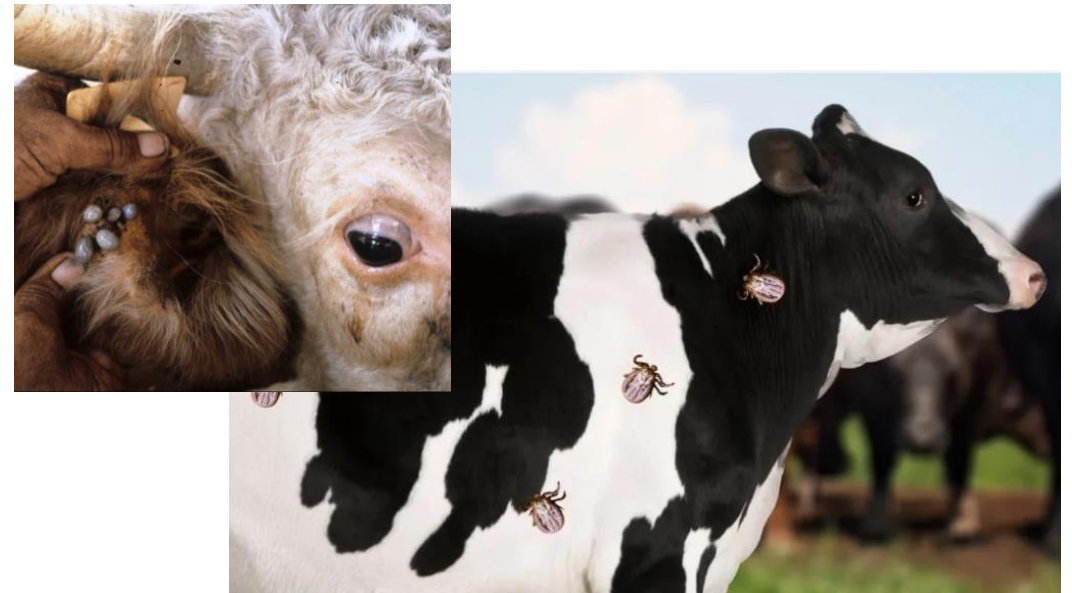


11. External parasites: Ticks



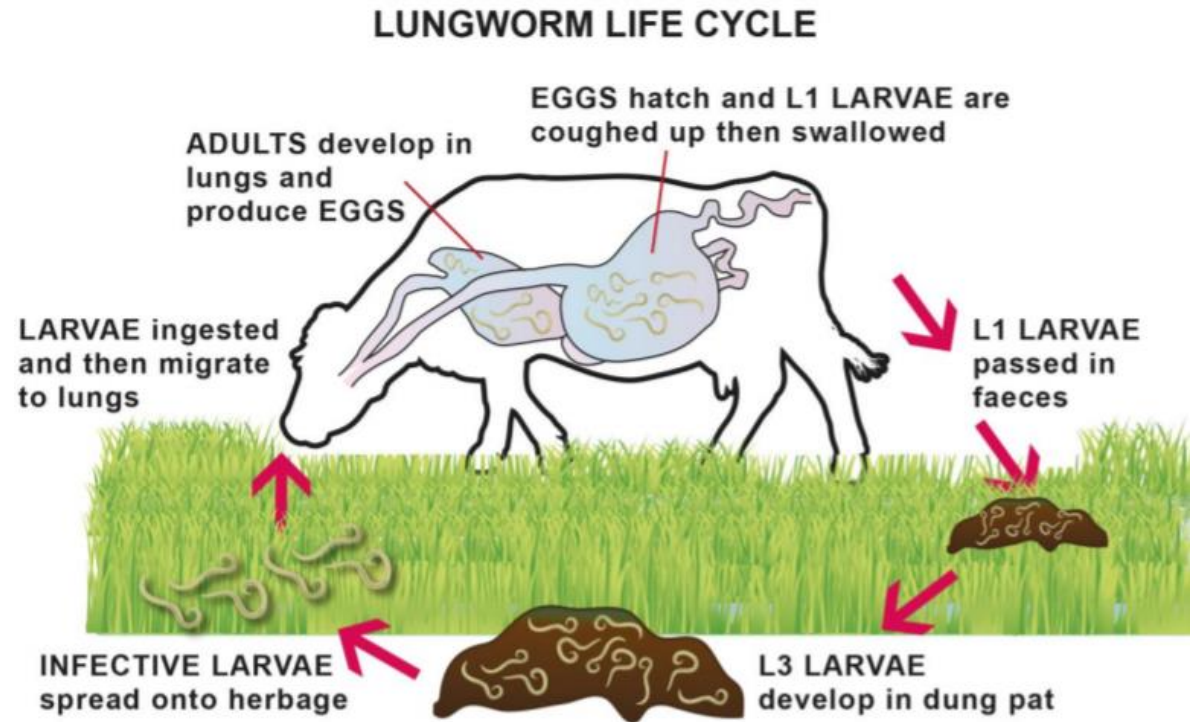
- Ticks cause Tick-borne diseases (TBD)
- Immediate treatments for Tick borne diseases is advised

Tip: Always check the package leaflet of prescribed veterinary drug(s) first to ascertain whether it is wise to start treating young calves with the product



12. Internal parasites: Lung worms

- Clinical signs include;
 - Wide spread coughing
 - Loss of condition, getting skinny
 - Increased respiration rate
 - Difficulty in breathing
- High risk conditions include;;
 - i. Wet periods(summers)
 - ii. High stocking density
 - iii. Lack of immunity due to low exposure of infective larvae



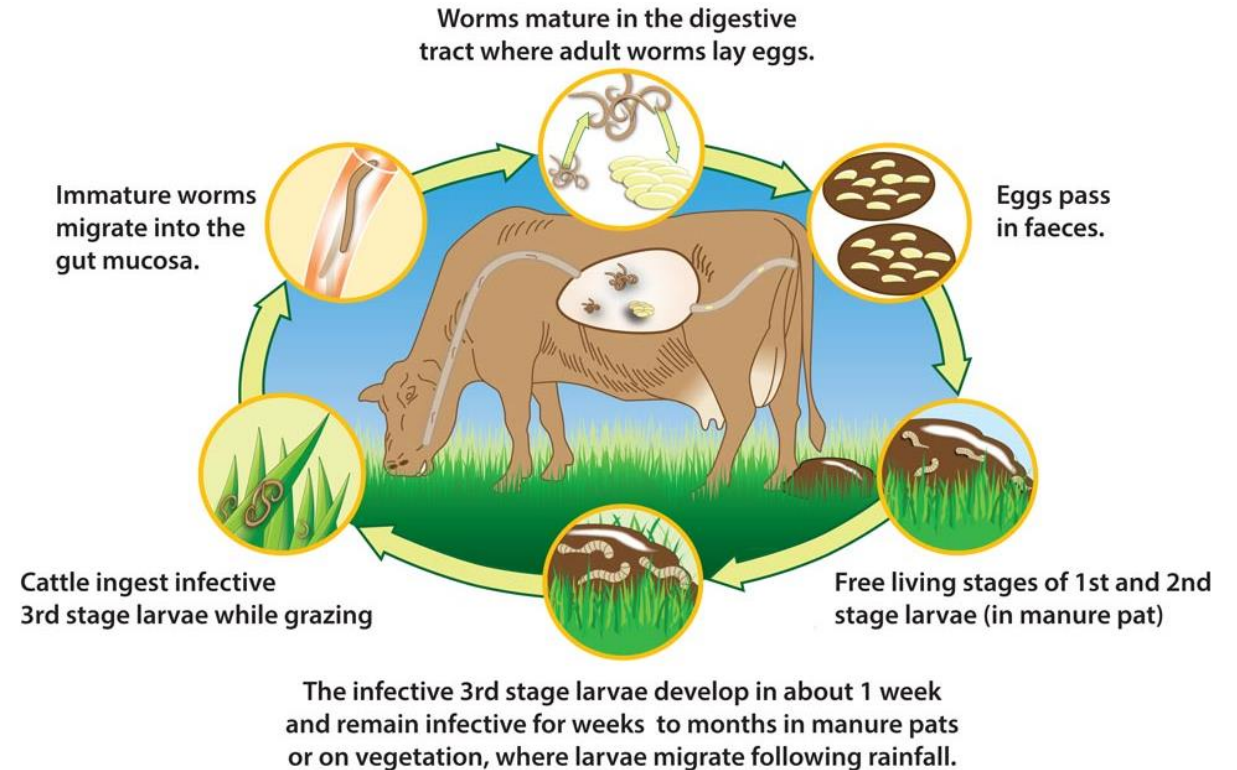
Further reading: <https://www.cattleparasites.org.uk/app/uploads/2018/04/Control-of-lungworm-in-cattle.pdf>

13. Internal parasites: Stomach worms

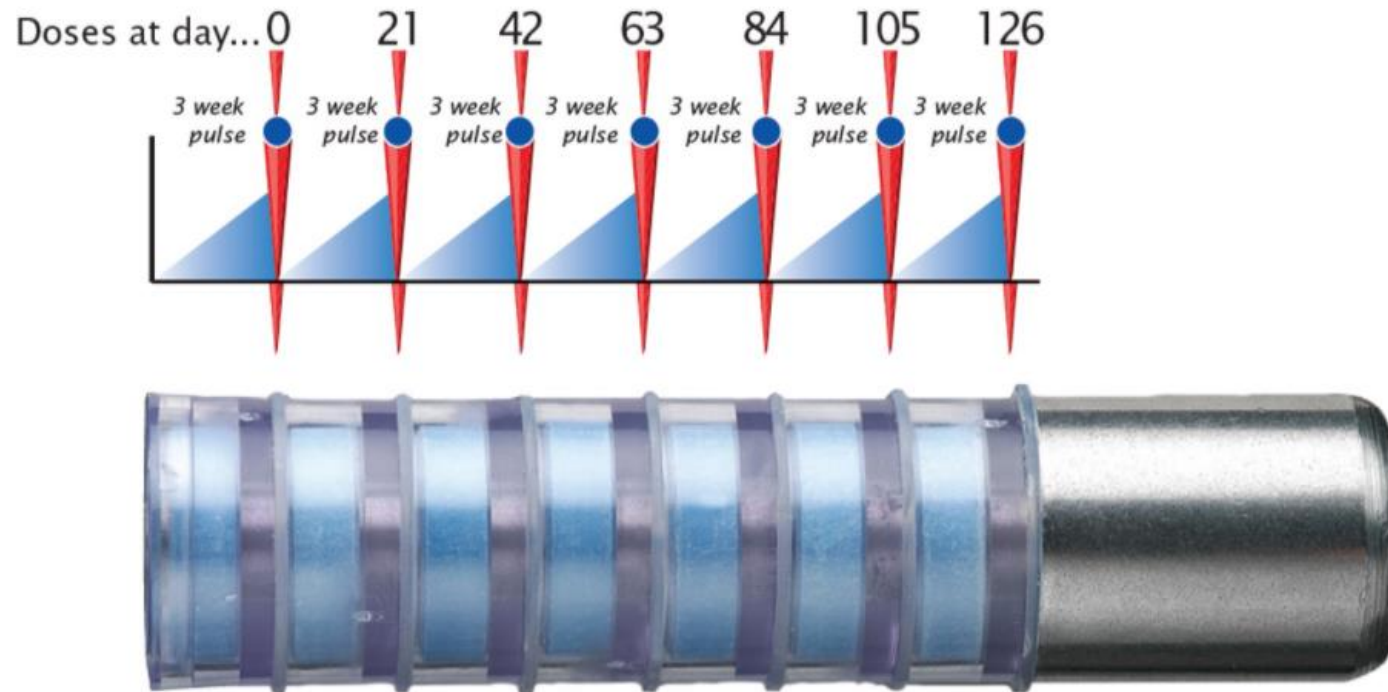
Clinical signs:

- Animal loses weight rapidly
- Scouring becomes profuse, watery and bright green
- Fluid swelling under the chin (oedema)

Stomach Worm Life Cycle



13.1 Internal parasites: Stomach worms Cont'd...



Watch:

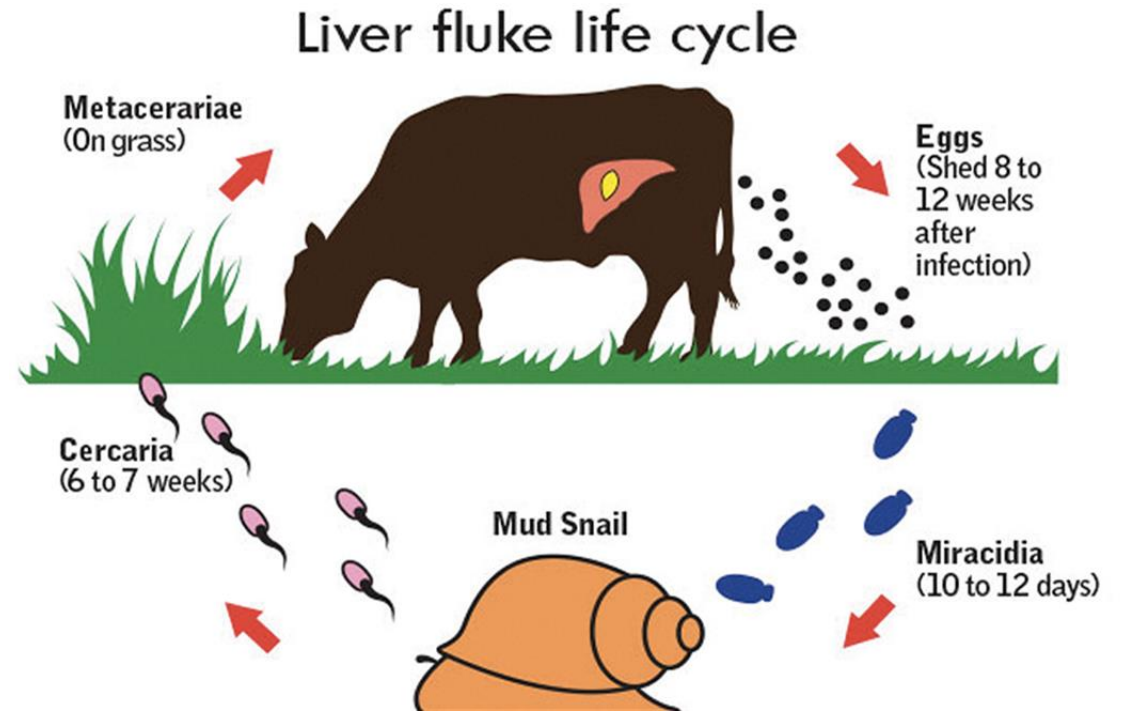
<https://www.moredun.org.uk/research/diseases/parasitic-gut-worms-cattle>

Example of a pulse release worming bolus

14. Internal parasites: Liver flukes

Clinical Signs;

- Clinical signs in cattle may often be more subtle than in sheep. They classically include:
 - Reduced liveweight gains through reduced feed conversion efficiency
 - Reduced milk yields
 - Reduced fertility
 - Anemia manifested as pallor of the mucous membranes (linings of the eyes and mouth)
 - Bottle jaw; a swelling of fluid underneath the jaw – may clinically resemble “Timber Tongue” though the tongue is not affected
 - Diarrhea
- Severe cases can lead to death. Furthermore, the disease can be complicated by Black Disease – a clostridial disease caused by *Clostridium novyi*



14.1 Internal parasites: Liver flukes Cont'd...

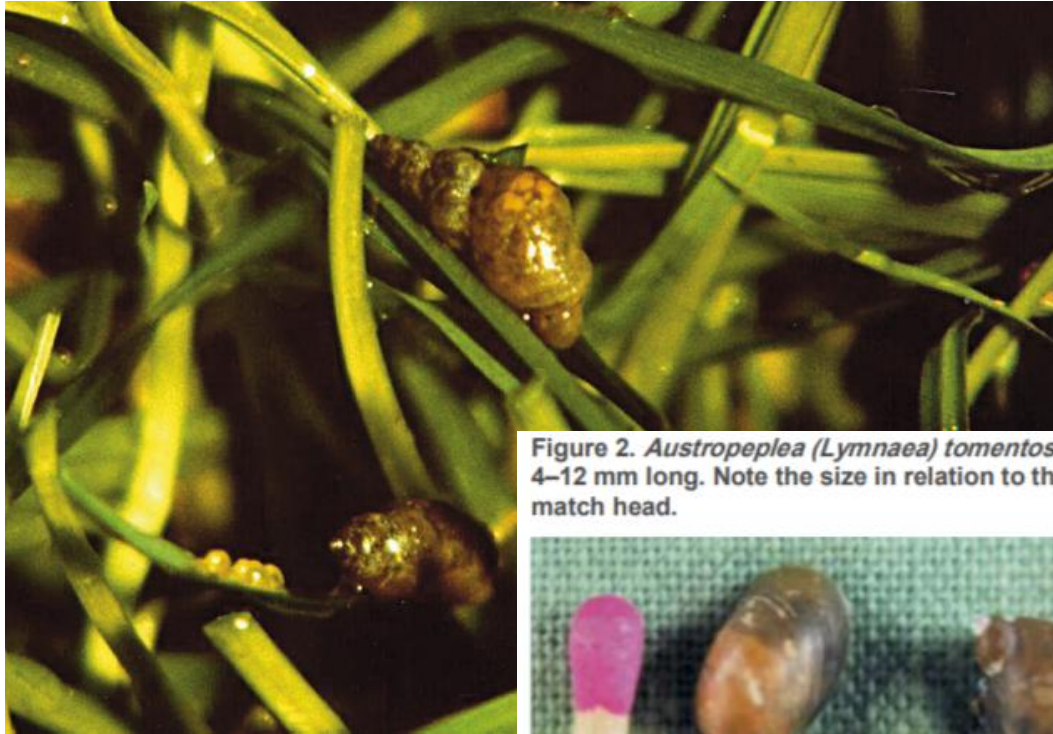


Figure 2. *Austropeplea (Lymnaea) tomentosa* shell 4–12 mm long. Note the size in relation to the match head.



Mud Snail



Affected liver

14.2 Internal parasites: Liver flukes Cont'd...



Environmental conditions where Liver fluke (mud snail) will easily survive (wet and muddy)



Dry and clean environment, no chance for mud snail to survive

15. Summary/Take home messages

1. Round worms, Lung worms and Liver fluke are all examples of internal parasites
2. Clinical signs of Calf infested by Internal parasites include;
 - The calf appears dull, has standing hair and a lusterless coat, is thin with the head looking proportionally big
 - The dung of the calf may have visible parasites
3. Prevention:
 - Keep calf in a clean environment
 - Do not allow calves to graze on contaminated pastures
 - Avoid buying feeds that are contaminated with worm eggs
 - General farm hygiene, do not contaminate feeds with manure
 - Start deworming at an age of 2 months and repeat every 3 months
 - Follow recommended dosage and method (underdosing is killing)
4. Treatment: Deworm all animals in the farm regularly, at least every 3 months, deworm newcomers immediately.



- END -