CATTLE FERTILITY- TRAINING EXTENSION WORKERS

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VETBIZ LIVESTOCK DEVELOPMENT

Why Extension workers?

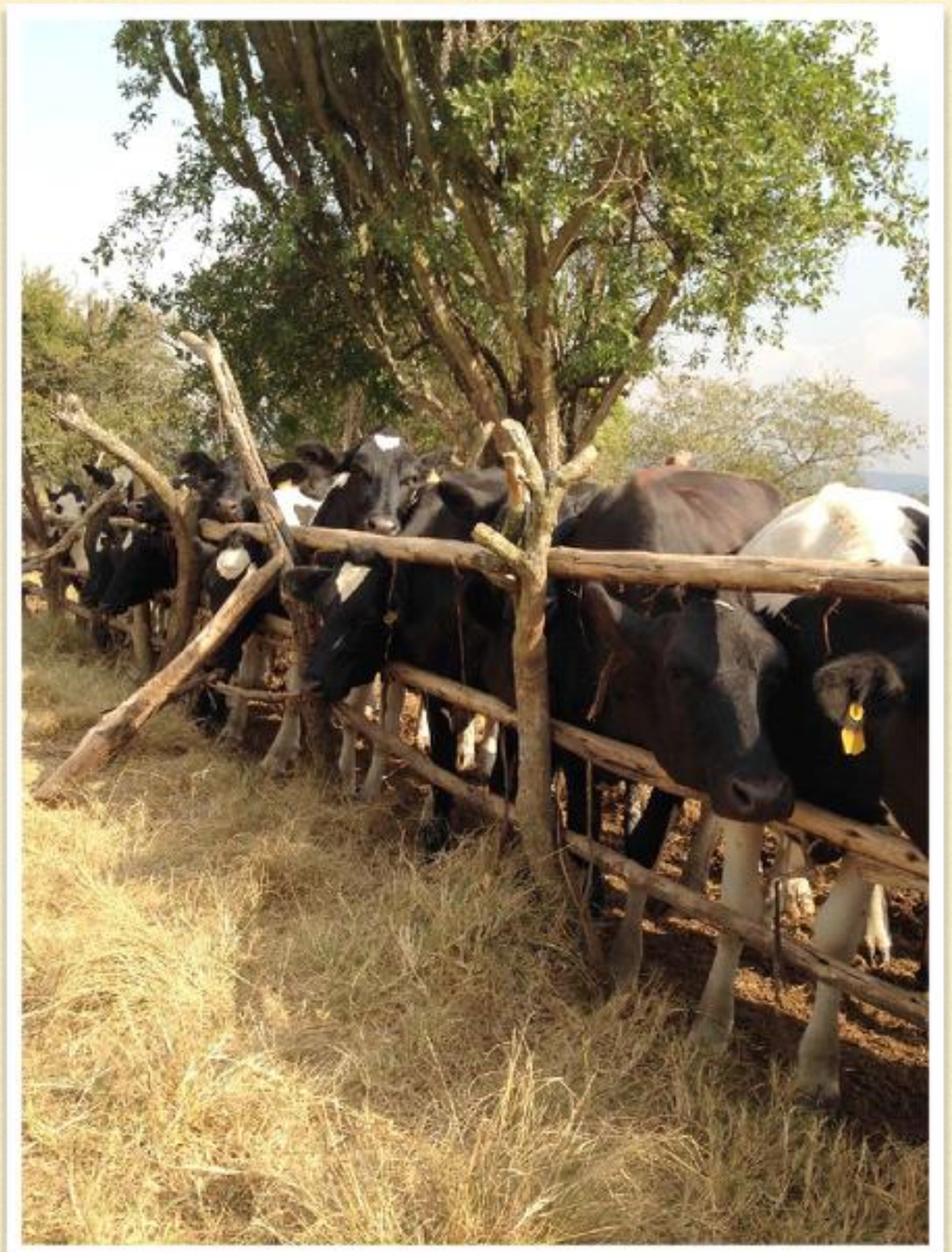
Who do we mean?
Animal Health Service providers/Advisor :
These would include Artificial Insemination (AI) technicians, NGO and Government advisors, Dairy inputs field staff, veterinary para professionals

Part of vet or AI team

Supervised by a vet- (One hour per week)

Data collection and analysis as part of the service

www.livestockdevelopment.co.uk/resources



AIMS- DO MORE PD

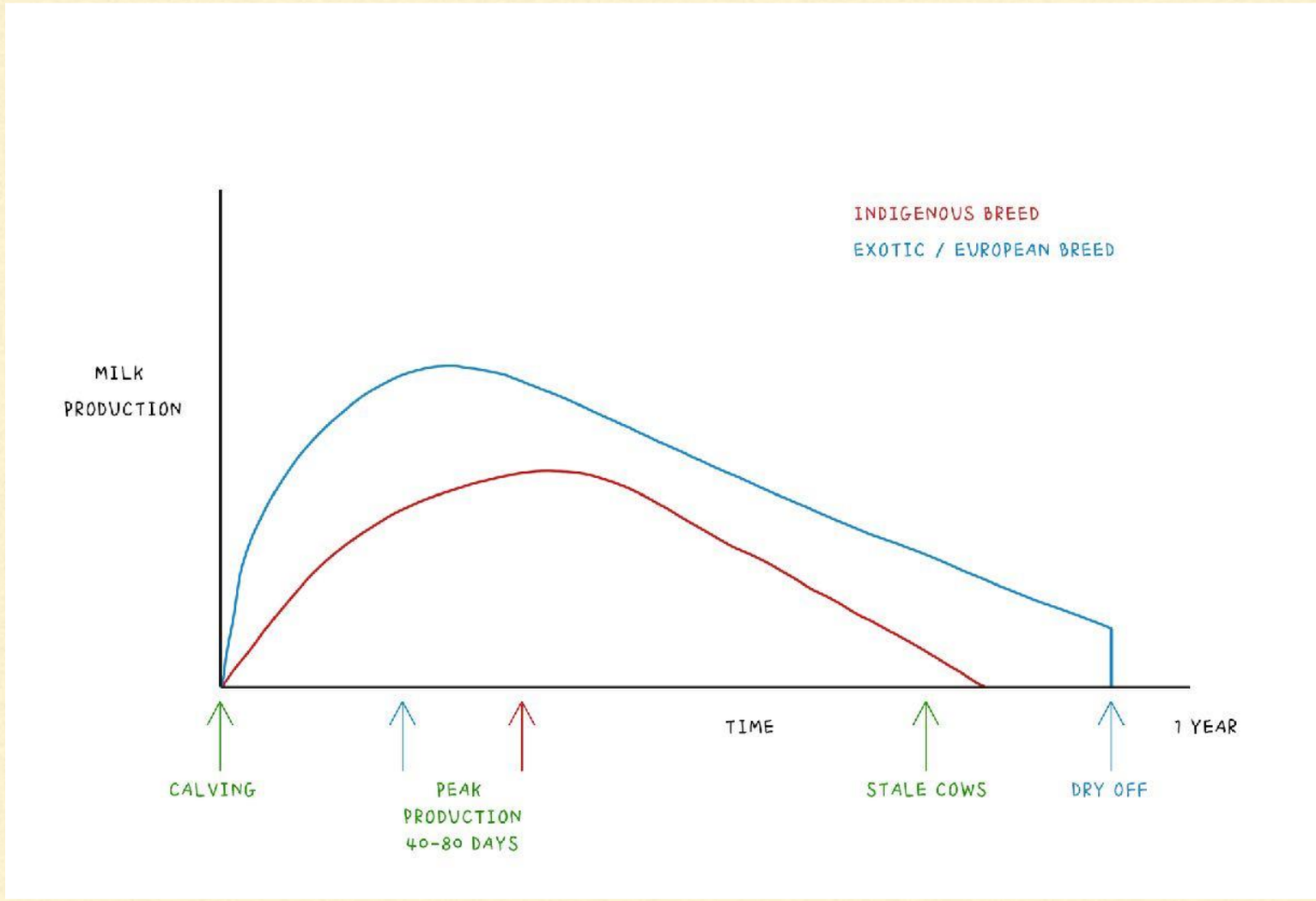
- Importance of cattle fertility
- Pharmaceutical Interventions
- Oestrus detection
- Transition Cow Management
- Using data to guide decision making

A BIT ABOUT ME

- Dairy vet in one of the main milk production areas in England
- Technical livestock constant for Elanco
- 10 years in Livestock development for LIMC
- Developing micro training courses for extension workers-
- www.livestockdevelopment.co.uk/resources

WHY IS FERTILITY IMPORTANT?

- Decrease milk prodn 10%/month (UK)
- Peak prodn 40-80 days
- Stale cows low prodn

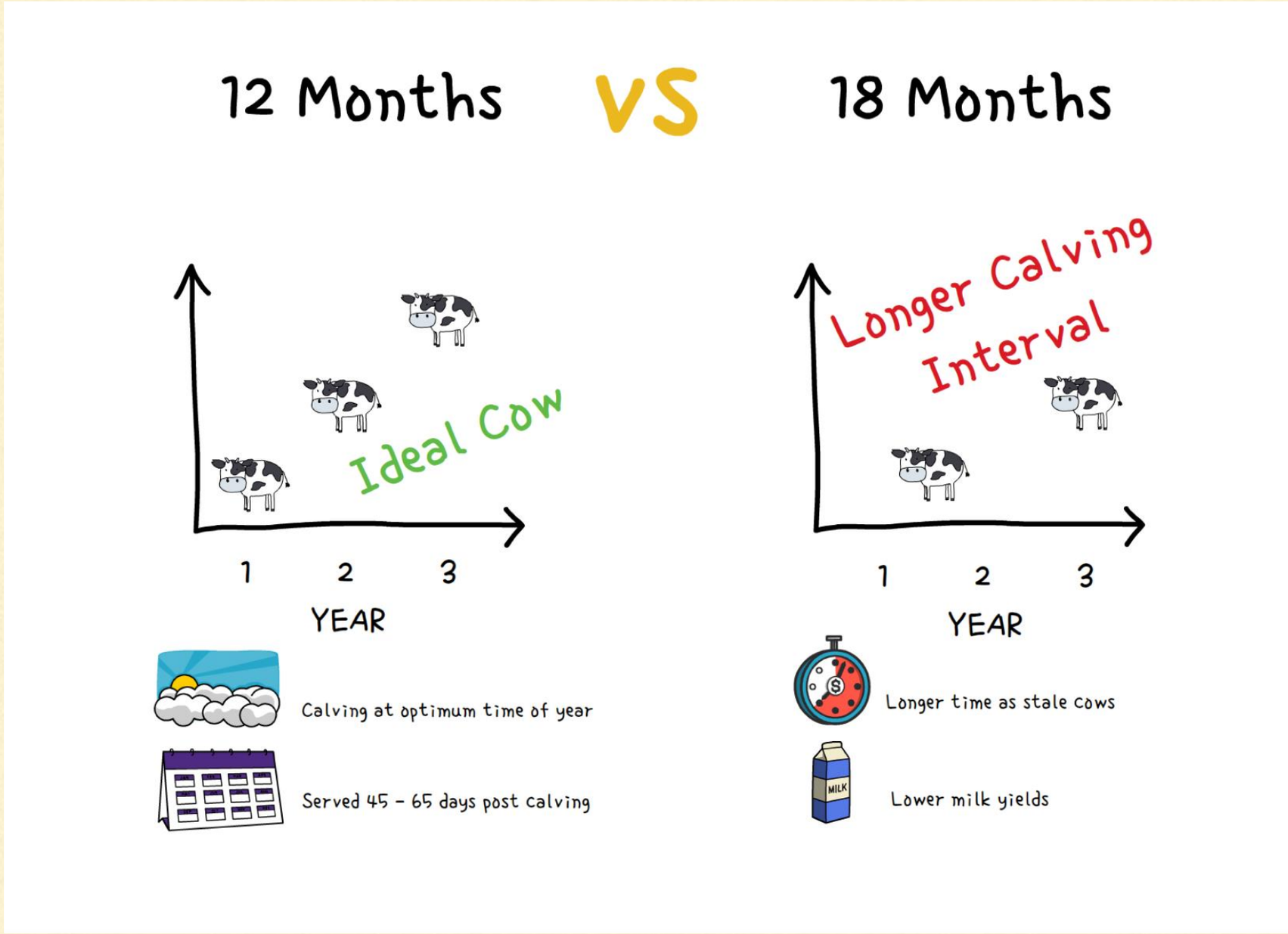


Target is Calving Index of 365 days

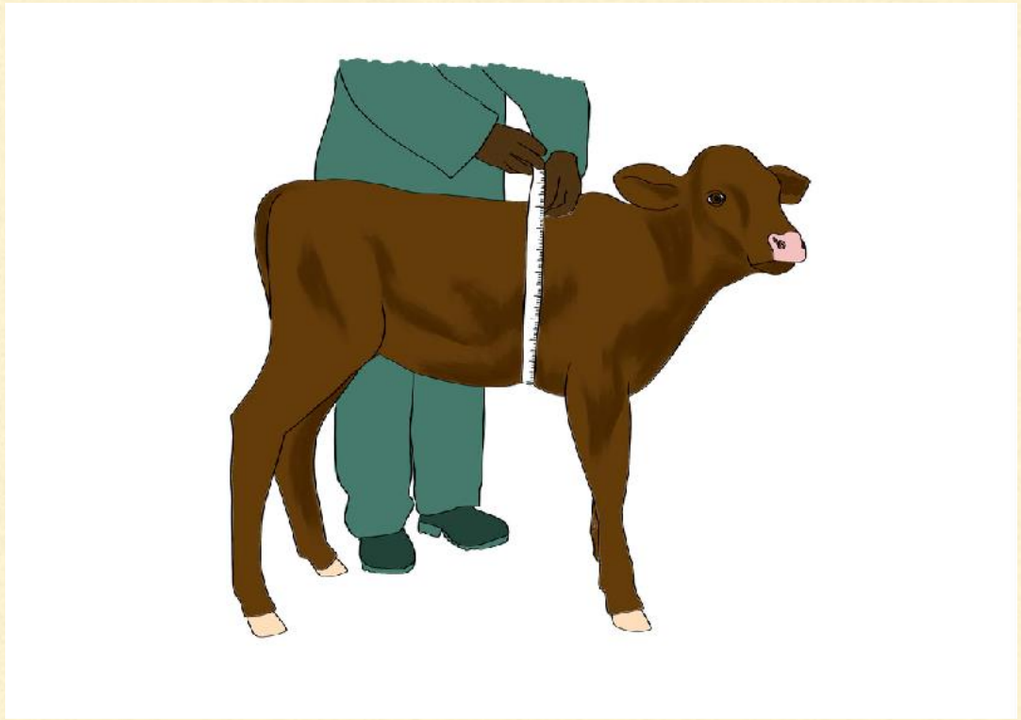
Calving Index - average time between calvings

Important as a measure of fertility

Only valid over a number of cows



Heifer Management



Calving at 24 months will give cows of better fertility and better milk production

BUT they must be well grown and reach their target weights

Target weights vary by breed and need to be set locally

AGE (MONTHS)	FRIESIAN LIVE WEIGHT (KG)	JERSEY LIVE WEIGHT (KG)
2-3 (weaning)	90-110	65-85
12	250-270	200-230
15 (mating)	300-350	250-275
24 (pre-calving)	500-520	380-410

ILRI Recommended target weights

Confirmation of pregnancy

You only know if cows are pregnant if they are confirmed pregnant.
Especially in small holder farms where expression of estrus with other cows is limited.

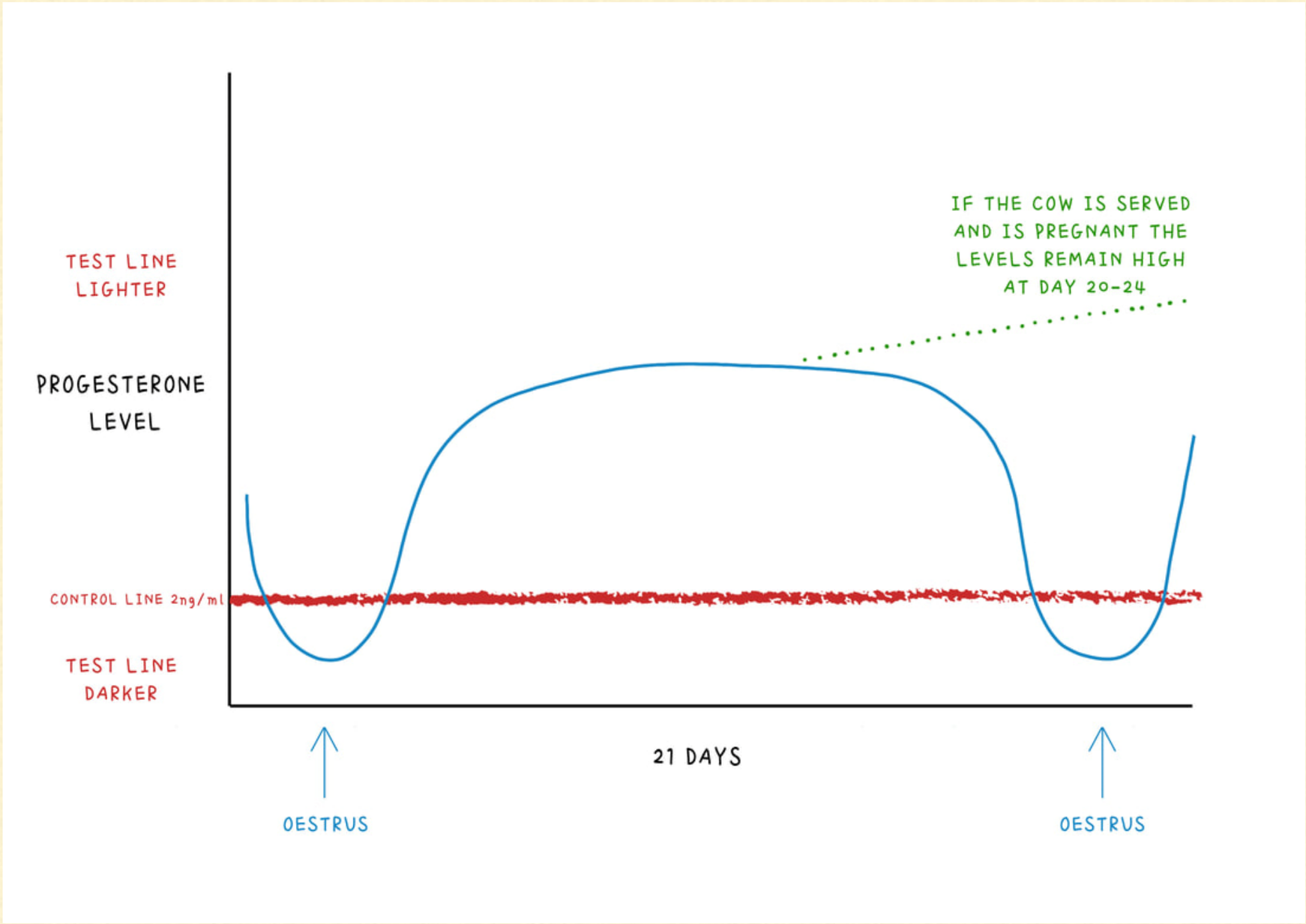
Confirmation by rectal examination is a task that can be easily learnt.

Local regulations may apply but teaching to extension workers and para vets is cost effective.

www.livestockdevelopment.co.uk/fertility

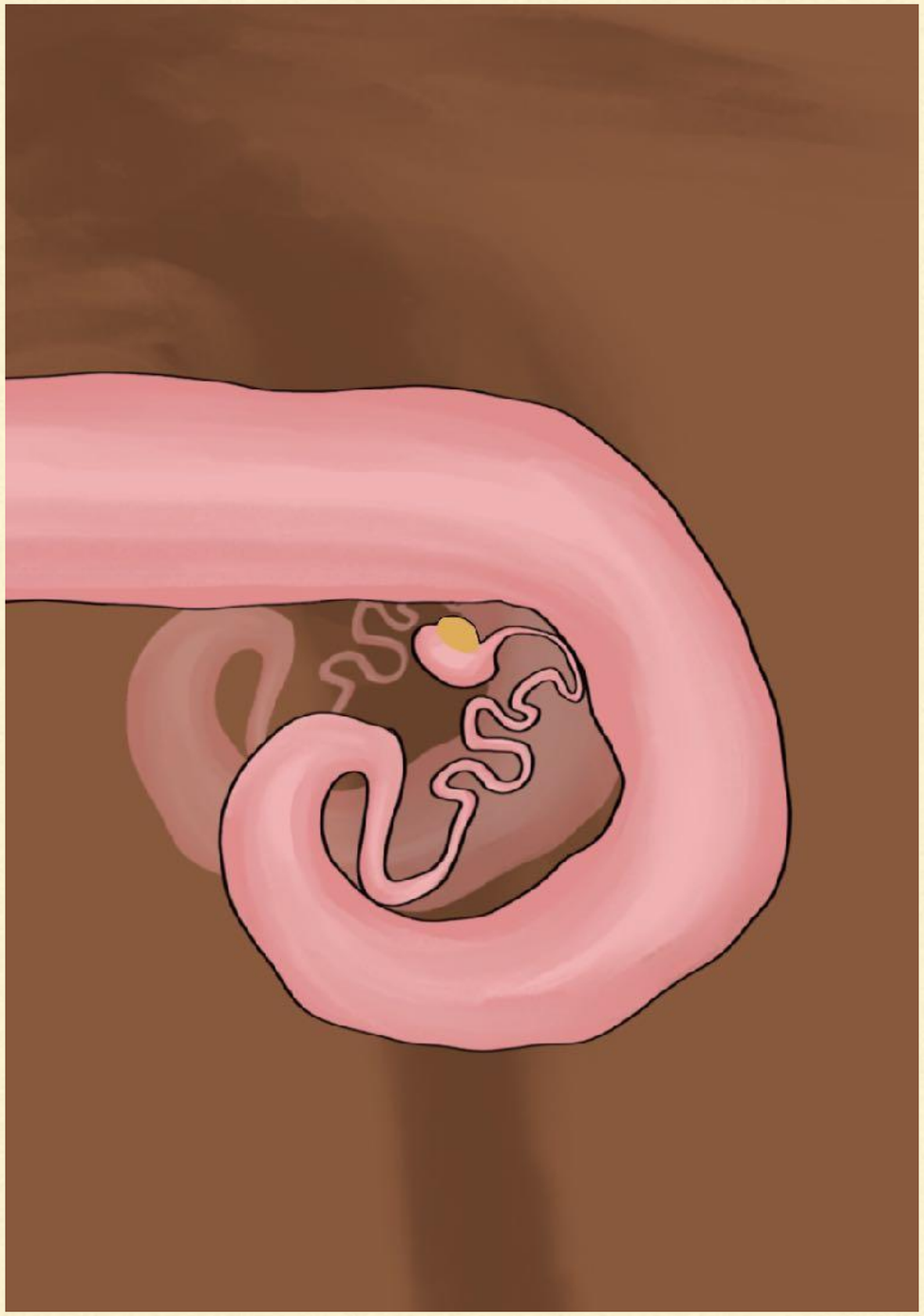
PHARMACEUTICAL INTERVENTIONS

- Cow cycle

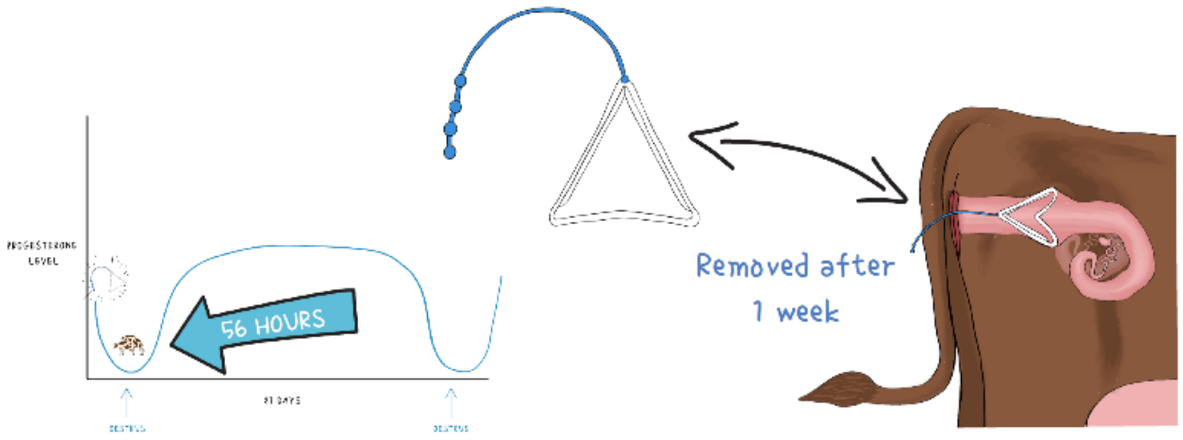


Cow Cycle

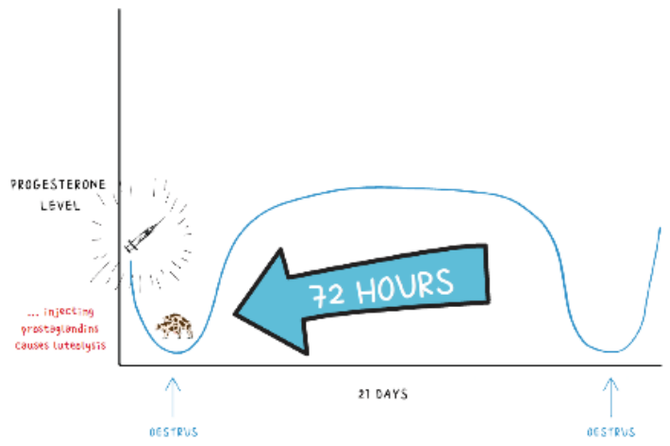
1. Corpus Luteum undergoes luteolysis
2. Progesterone levels fall
3. Egg follicle develops
4. Oestrus occurs and ovulation
5. New corpus luteum forms
6. New wave of follicles develops
7. Corpus luteum undergoes lueolysis



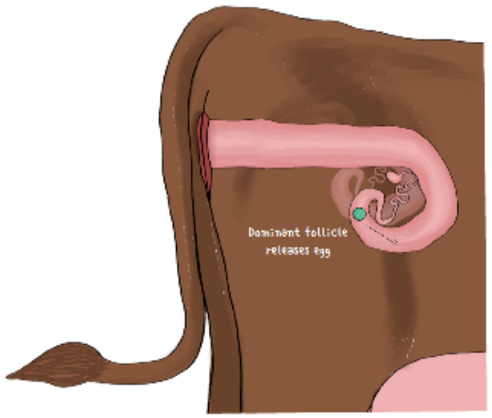
Progesterone Releasing Intra-Vaginal Devices



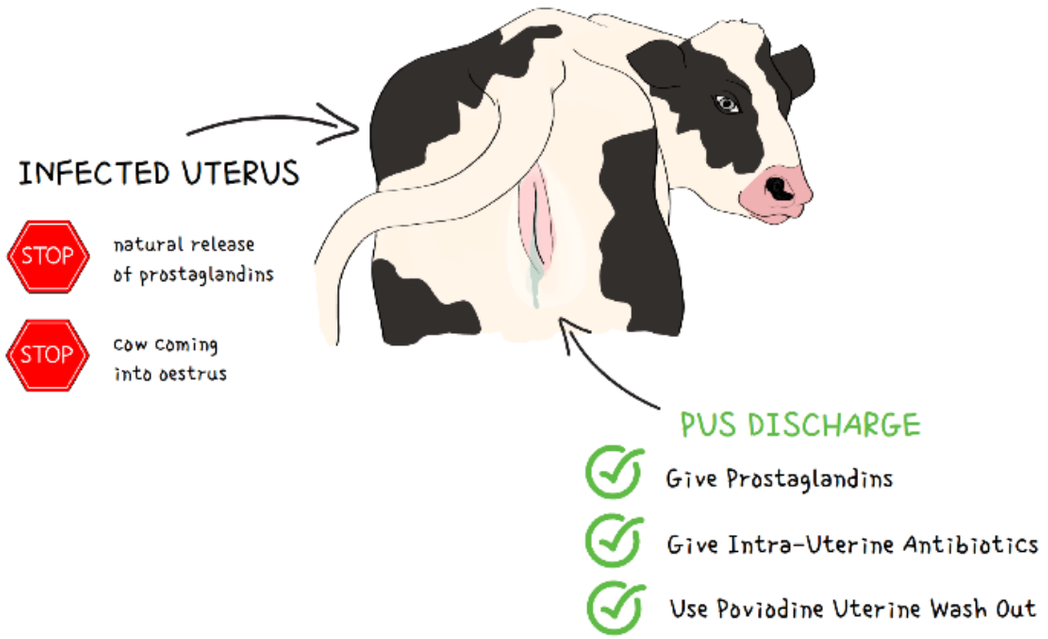
Prostaglandins (PG)



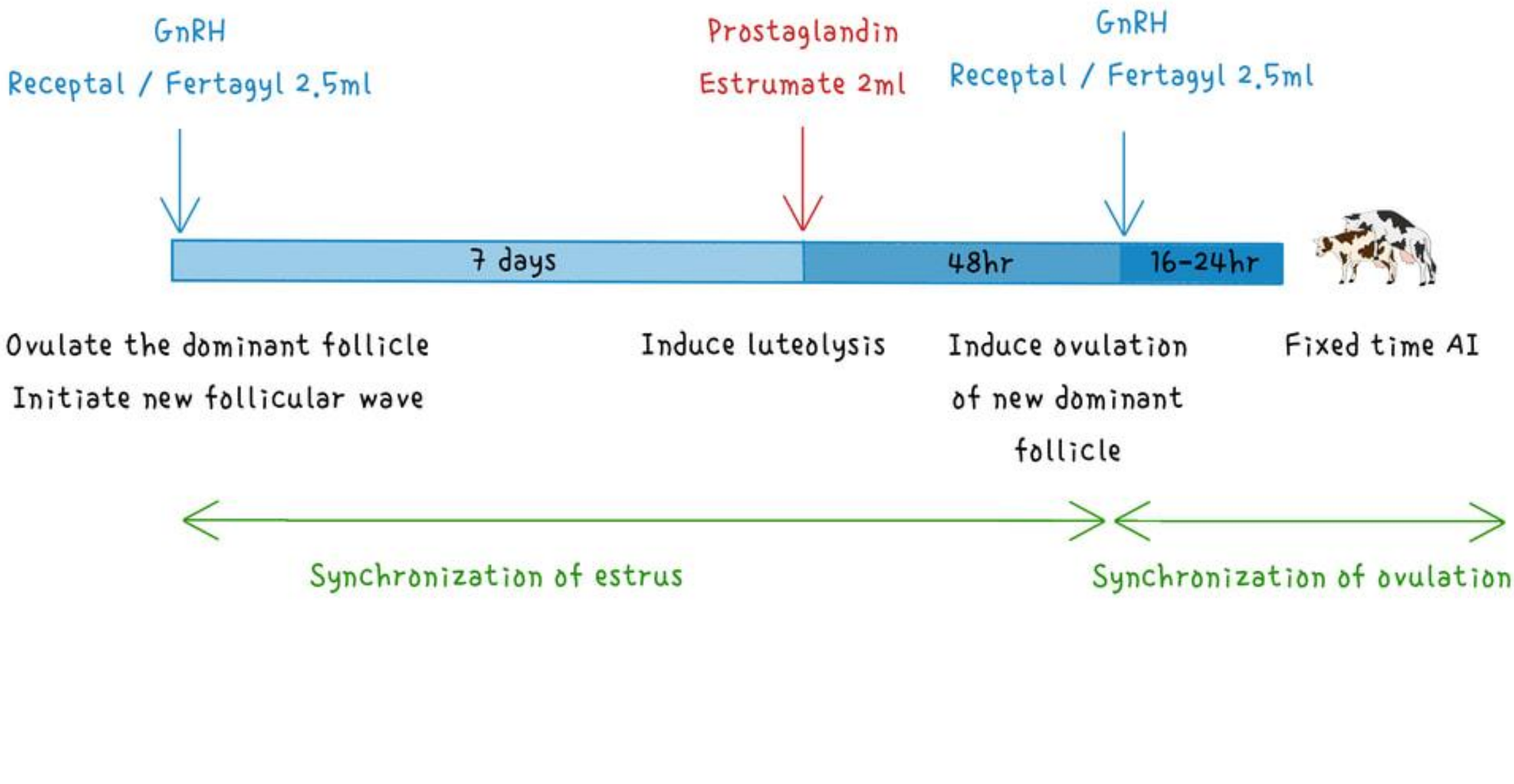
Gonadotrophin Releasing Hormone (GnRH)



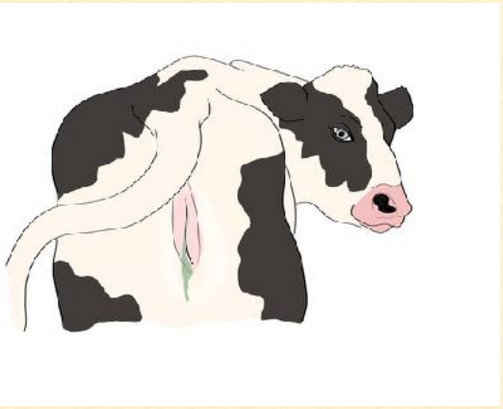
- ✔ Cystic ovaries
- ✔ Cows with small ovaries, not cycling
- ✔ Cows not getting pregnant, repeat breeders

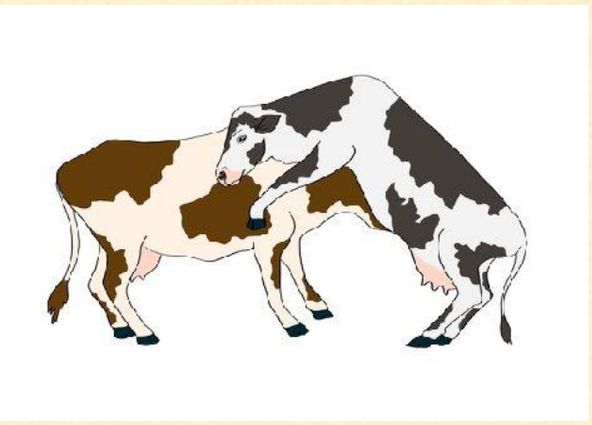


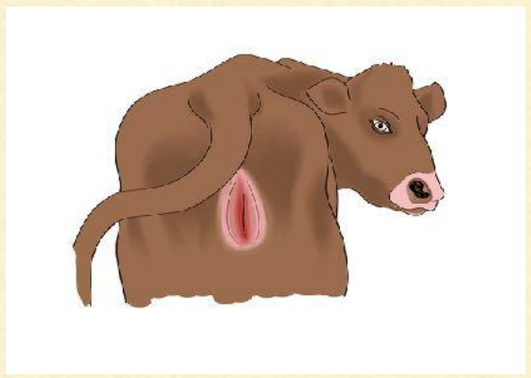
Ov Synch Programme



SIGNS OF OESTRUS

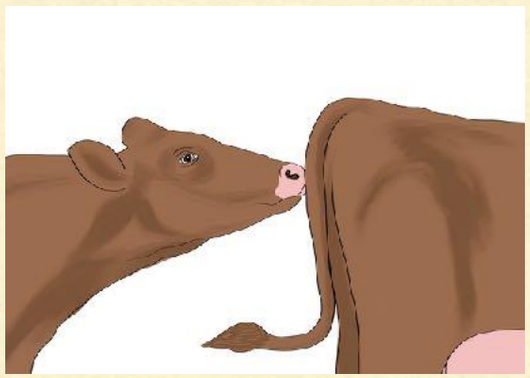


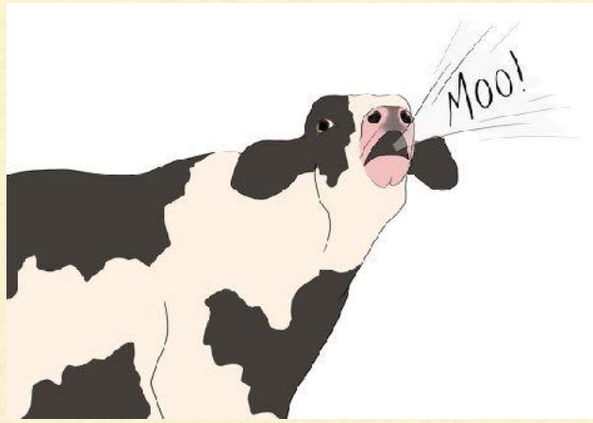


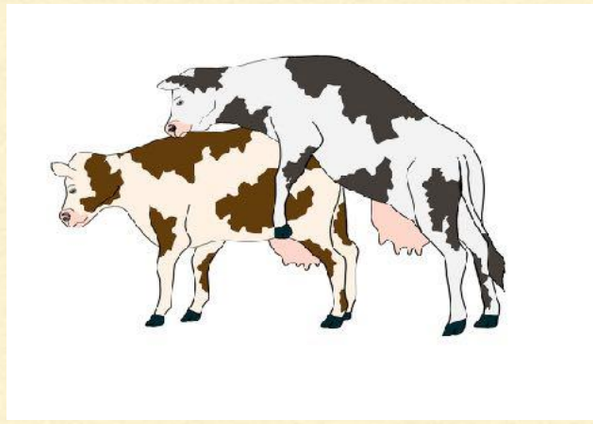


Bellowing
Drop in appetite
Clear vulval discharge
Chin resting
Head mounting
Red swollen vulva
Sniffing vulva
Mounting other cows

<u>Standing to be mounted</u>







Transition cow management- 3 weeks prior to
4 weeks post calving

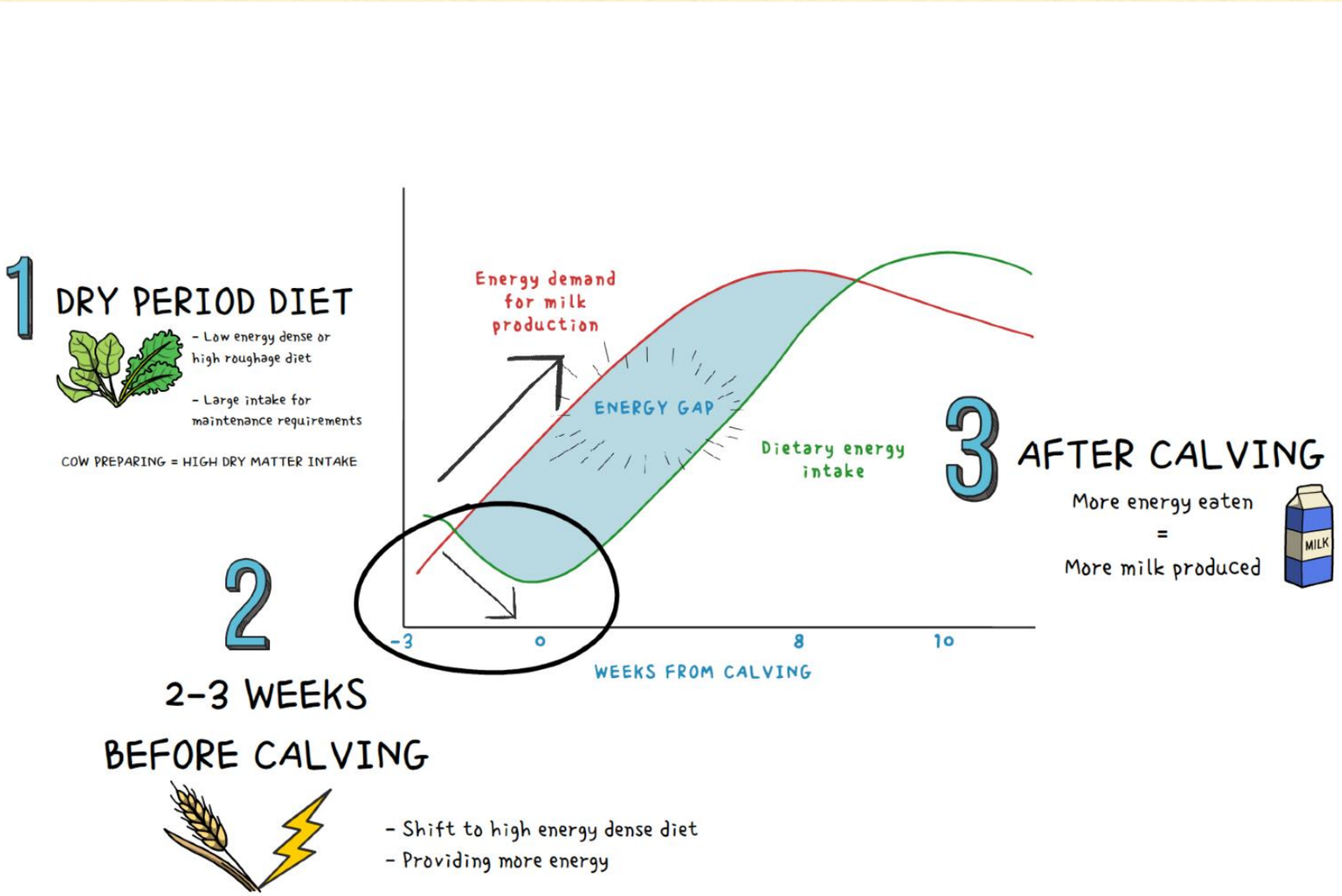
HUGE effect on fertility

Reduce stress

Maximise feed intake

Fat cows have problems

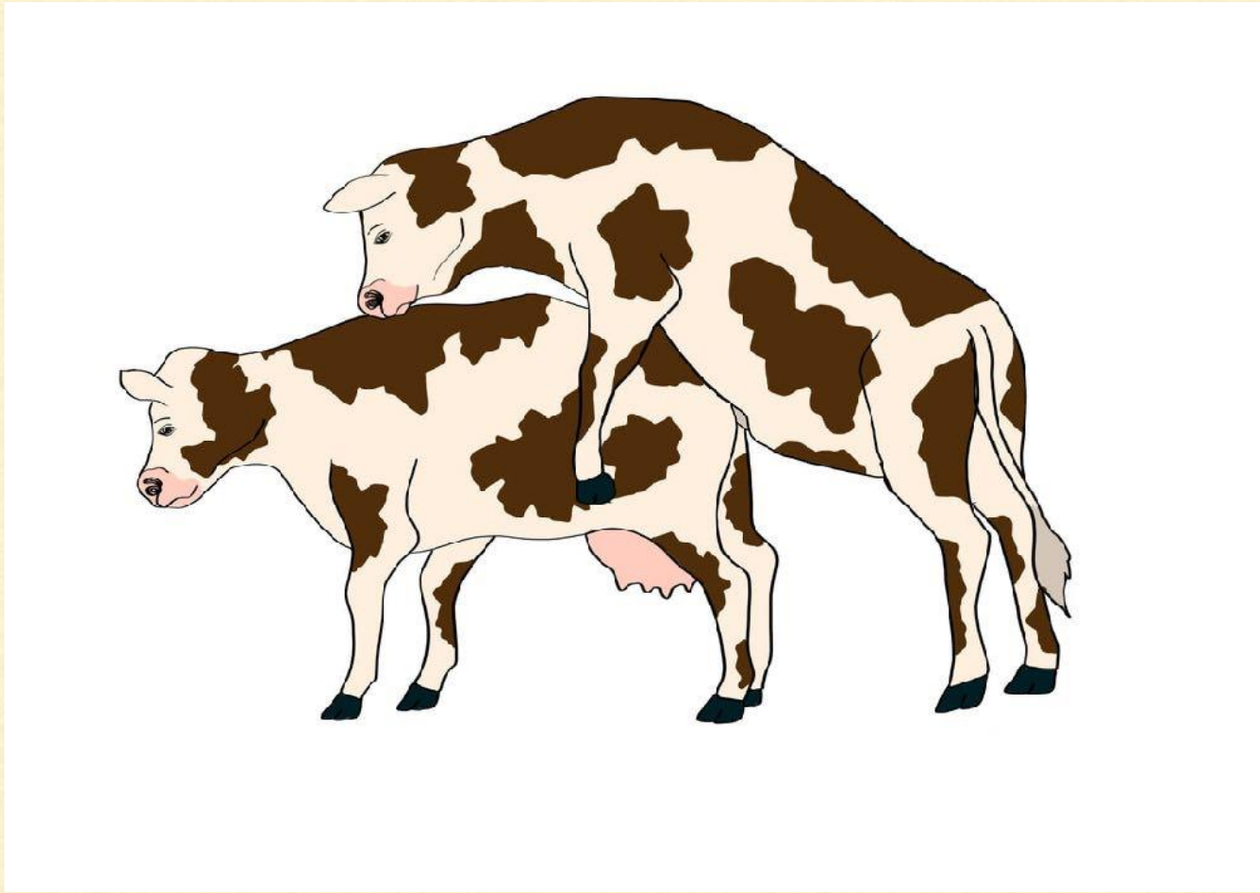
Likely to not get in calf, be stale for longer and be over fat again



Using data to guide decisions

Why is my cow not pregnant?
Fertility is variable-so data needs to be analysed in groups
By village or vet practices, by bull or AI technician, or geographies or selling groups with similar situations and practices.

The key drivers for fertility and therefore milk production and number of calves born are the age at first calving of heifers and the calving interval.



Data Collection

Data analysis- who drives it? Pays for it?

As part of a service- AISP or Extension.

If very few cows are getting pregnant, and all returning with normal cycles the most likely problem is with the bull or the quality of the semen.

If some cows are returning but at irregular intervals, not at 21 or 42 days then the most likely cause is some form of infection or early embryo loss.

If too many cows are returning at regular intervals (21 and 42 days) then the most likely problem is nutritional or transitional management.

Indicator	Unit	Goal	Limit
For individual cow			
Age at first calving	Month	< 24	> 30
Calving Interval	Month	< 12	> 14
Return to heat after calving (1st heat)	Day	< 40	> 60
No. of insemination per conception	Number	< 1.7	> 2.5
Days of dry period	Day	50 - 60	< 45 or > 70
Days between calving and conception	Day	< 85	> 140
For herd			
Average calving interval	Month	< 12	> 14
Heat after calving	Day	< 40	> 60
Insemination after calving	Day	< 45	> 60
Cows return to heat within 60 days after calving	%	90	< 90
No. of insemination per conception	Number	< 1.7	> 2.5
Rate of heifers get pregnant after 01 service	%	> 65	< 60
Rate of mature cows get pregnant after 01 service	%	> 50	< 40
Rate of mature cows have to do 03 services	%	< 10	> 10
Days of dry period	Day	50 -60	< 45 01 > 70
Interval between calving and next pregnancy	Day	85 110	> 140
Rate of cows with interval between calving and next pregnancy > 120 days	%	< 10	> 45

Poor feeding.
Dairy cows should have food and water in front of them all the time. Cows are fermenters of the fodder and require plenty of water to get good fermentation in the rumen.

Lack of energy or protein in the diet will reduce fertility. Rain fed pasture, range feeding and pastoralist systems will have times of shortage, and low fertility. Fodder conservation to cover seasonal shortages improves fertility.

Cows require to eat:
350-450g of crude protein for maintenance per day plus 80g per litre of milk
55-75MJ of Metabolisable Energy (ME) for maintenance per day plus 5MJ per litre of milk

Back of envelope feed check

- Max Dry Matter Intake fresh cow 2% Bodyweight
- Max Peak DMI - 3% Body weight

feedipedia.org

Gives an approx analysis of most feeds

Guess Dry matter of feeds.

LOOK!! Is food and water available???

UK 5% target ‘wastage’

Concrete diet

Mud diet

Cardboard diet

Examining Bulls

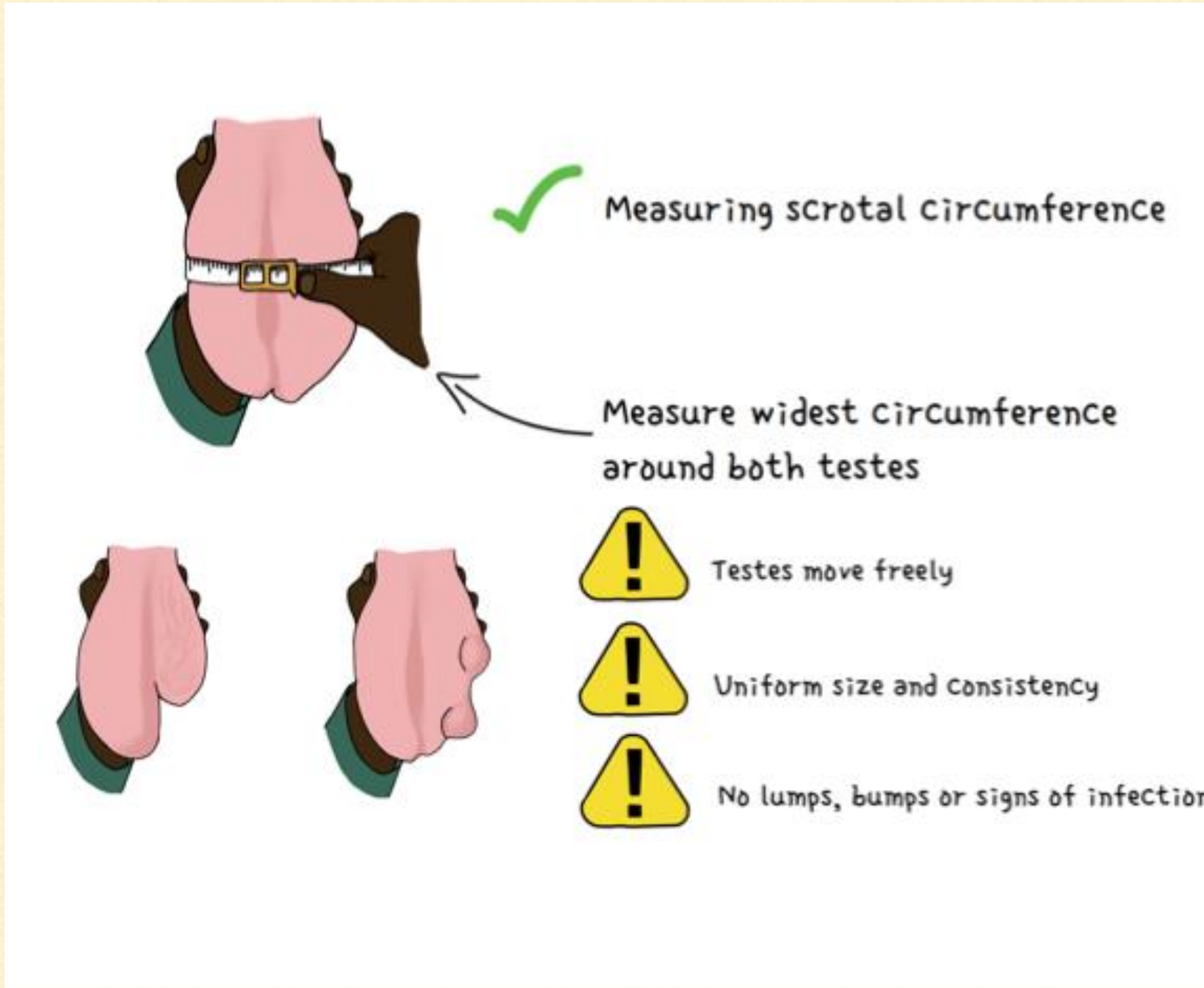
Keeping it simple-
Scrotal Circumference

Lameness

Bulls should be well grown, in good general health, well fed and not be deficient in selenium, copper, cobalt or Iodine.

Any illness will reduce sperm production for up to two months, so any bull that has been ill should be rested for 2 months.

Bulls need a sound footing and space to serve cows.



Conclusion

Main driver for production of calves and milk is fertility

Main drivers for fertility are calving well grown heifers at 24 months and a calving index of 365 days

Fertility is the chance of getting pregnant and is variable so data needs analysed in groups

A calving index of 18 months is equivalent to a 33% loss of calves.

www.livestockdevelopment.co.uk/resources