

Replacement Heifer rearing



Target Weights during rearing CRUCIAL

| AGE | Holstein Friesians |
|-----------------------|---------------------------|
| At Birth | 40kg |
| At weaning (12 weeks) | 100kg |
| At 12 months | 280kg |
| At Breeding | 350kg |
| At Calving | 570kg |
| | |



2 year old calving!

- Less costs in rearing,
- Less number of livestock units on the farm,
- Less land tied up with replacement units,
- Higher lactation yields

Why not 3 year old calving

- Poor management of heifers on farm,
- Treated as 2nd class (grazing on poor pastures, not been pushed on to meet target weights etc treated as an inconvenience)
- Poor live weight gains at grass 1st & 2nd year,
- Higher costs and poorer performance.

1st season at grass



- Early turnout to grass,
- Meal feeding for 1st 3-4 weeks for rumen development and weight gain.
- Calves are selective grazers and will eat leafy grass mainly.
- Graze as leaders in a leader follower system (calves graze paddock 1st and followed by breeding heifers).
- Very susceptible to internal parasites(stomach + lung worms)

- Target stocking rate in April is 6-9 calves per acre down to 4 by housing,
- Meal feeding (1-2kg/calf) may be necessary in grass scarcity periods before housing.

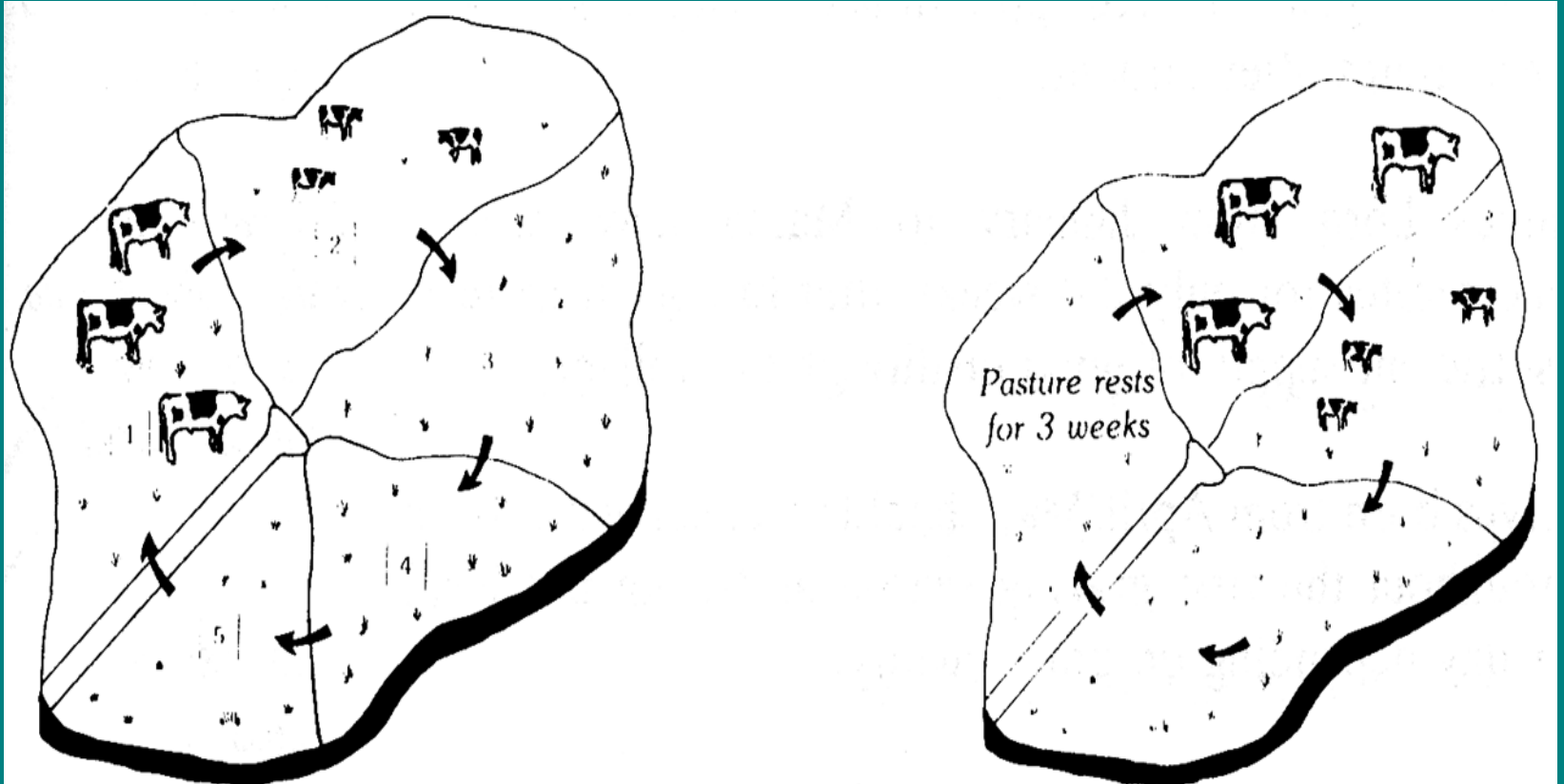


Why leader follower:



- An increased 25kgs extra liveweight per calf.
- Calves less exposed to parasites,
- Good grass utilisation,
- Reduced time herding,
- Leader/follower grazing management would be expected to be advantage to the leaders (calves), but to disadvantage the followers (yearlings).
- This is because the leaders always have an abundance of grass supply and have the opportunity to select the highest quality grass.
- The followers may occasionally be exposed to insufficient quantity and quality grass.

Leader/Follower system.



Heifer's 1st winter:



- Keep weanlings at grass as long as possible.
- Meal feeding depends on grass supply and weight.
- Target weight at housing = 220-240kgs.
- Train heifers to cubicles (6x3'3") = heifer.
- Meal feeding depends on silage quality and liveweight.

- Requirement:

- Crude protein = 14 – 16%

| Grass silage 70%DMD | Meals KG/Day |
|---------------------|--------------|
| 72% + | 0-1 |
| 68% | 1KG |
| <68 | 1-2kgs |

- Weanlings have a conversion weight of 8:1,
- Fattening cattle a conversion weight of 16:1.
- High meal feeding decrease's compensatory growth and increase's fatty tissue in the udder (Alveoli cells) and decrease's lifetime yield.
- Parasite control necessary for lice and mange and type II ostertagia and fluke.

2nd season at grass:



- Early turn-out → good weight gain and increased fertility.
- Target turn-out weight = 275kgs.
- Target A.D.G (Average Daily Gain) over 1st winter = 0.6kgs/day.
 - Day 0 = 40kgs
 - Day 730 = 570kgs
 - (530kgs over 730 days = 0.72kgs/day)
- Graze as followers in leader-follower system.

BREEDING MANAGEMENT OF HEIFERS



- Maiden heifers are usually the animals with the highest breeding value on the farm.
- Heifers produced from maiden heifers outperform heifers from older cows.
- Breed to replacement Sire with **average** calving ease.
- Breed 7-10 days before cow breeding season(you will have more time to spend with the heifers if they are calving before the cows start calving).
- Target weight at service is 325-350kgs **crucial**.
- Generally high conception rates to 1st service.
- Can use synchronisation to decrease heat detection and increase compactness of calving.
- Use of a teaser bull or vasectomised bull can make detection easier.(Teaser bull is a bull calf vasectomised at 5months approx, Friesians are best they have more libido. Fit a chin ball marker, the bull mounts and marks the heifer in heat very effective. At end of season bull is castrated and fattened.)

Calf Rearing at Rakaia Island

- <http://www.youtube.com/watch?v=ZgsmtfcdkOY>

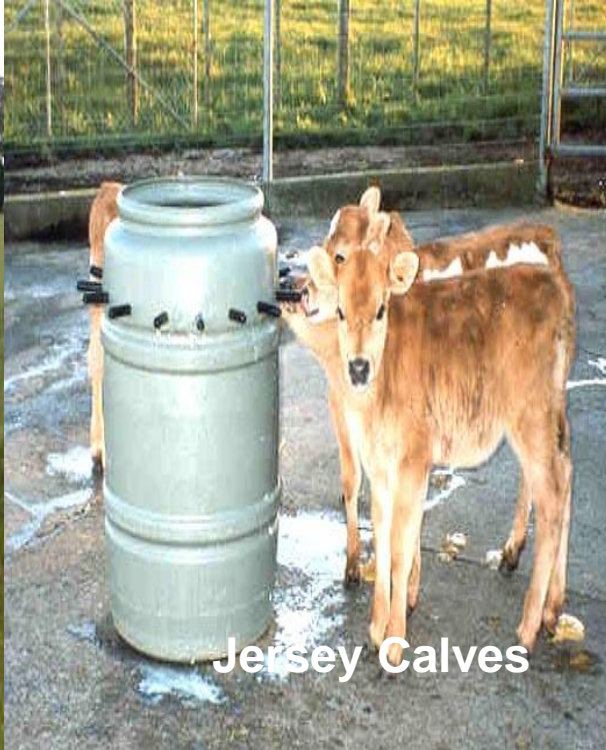
2nd winter

- Target weight at housing is **450 – 470kgs.**
- Good quality silage (70% DMD) only required.
- Underweight heifers require **2kgs** per head per day short term up to **6 weeks** before calving.
- Dry cow mineral feeding 100-**150grms/hd/day** for last 4-6 weeks pre calving on average.

- Parasite control:
 - Lice & mange control,
 - Ostertagia type II, internal worms parasite taken in from grass.
 - Liverfluke control → depends on farm history and the type of year i.e. weather. Extra wet/rainfall year higher occurrence of liverfluke.

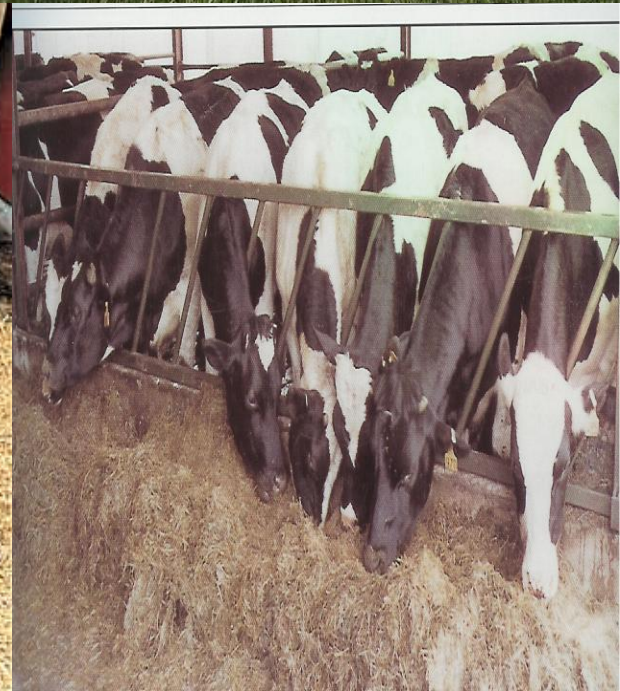
Care at calving time is vital as only 50% of heifers calf without assistance.





Jersey Calves

Calves at grass



Calves been fed meals at grass

Freshly calved cow



Montbeliard calves



Normande cow



Norwegian red cow



Jersey cross Friesian



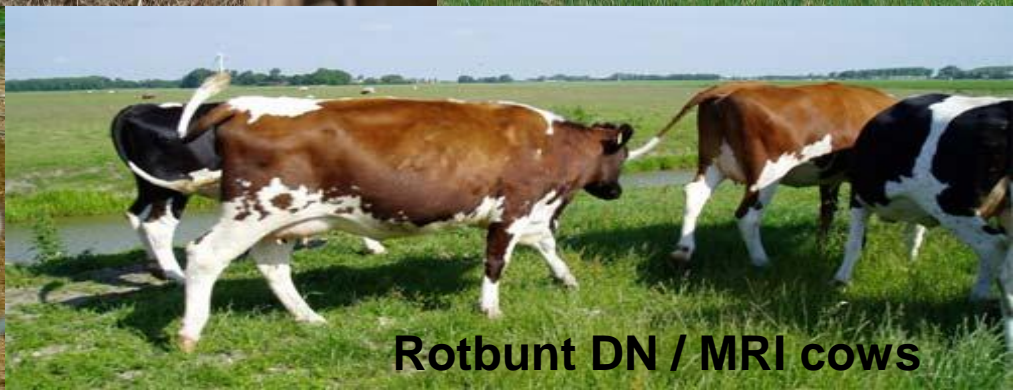
Dairy shorthorn calf



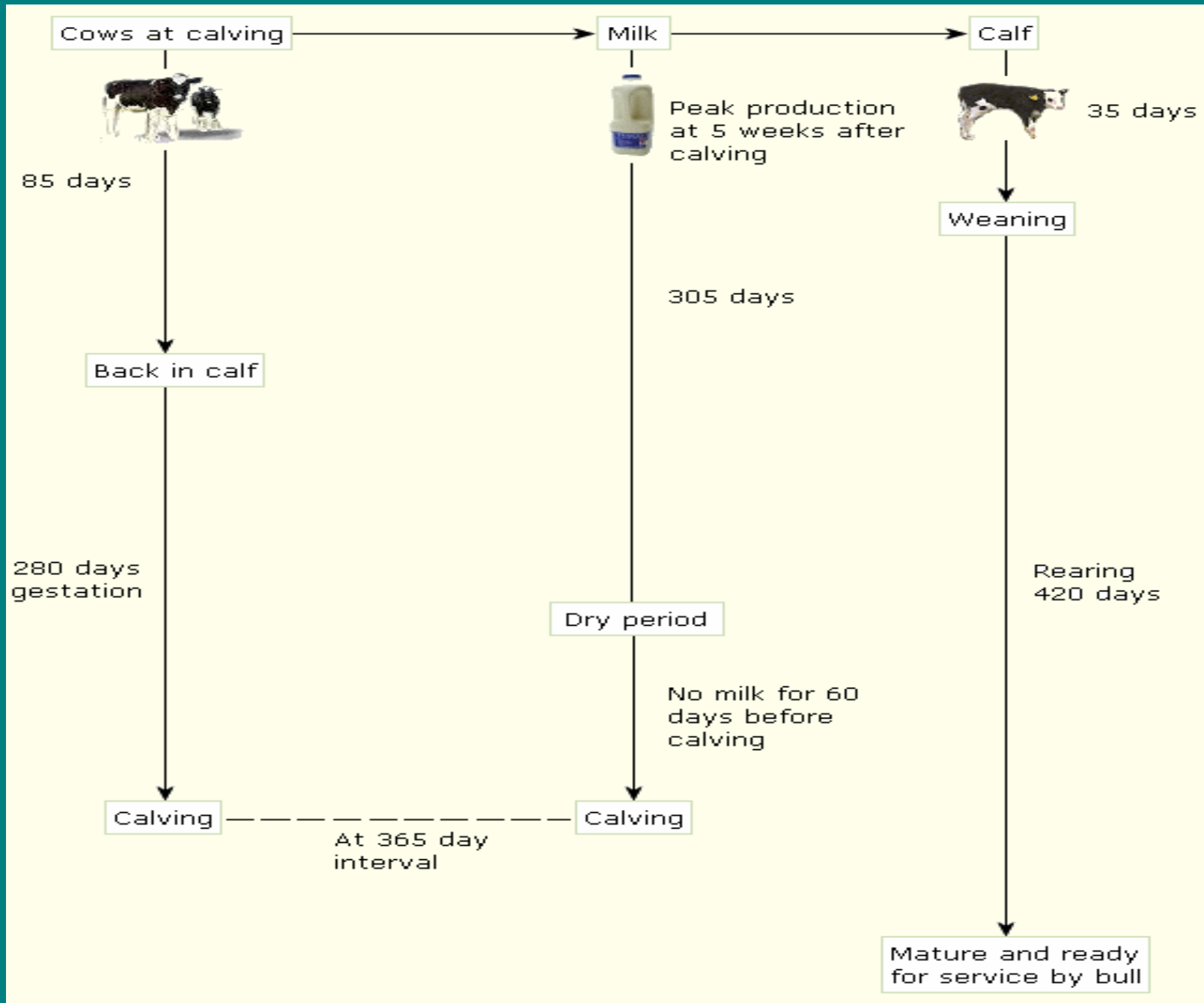
Ayrshire heifers



Brown Swiss calf



Rotbunt DN / MRI cows



Moulton Youngstock Program.



Moulton Youngstock Program.

| 0-8 weeks | Program |
|------------------|---|
| Birth | Placed in straw pens and fed adequate colostrum. |
| 4 days | Introduced to coarse mix(meal). |
| 2 weeks | Receive their 1 st Bovipast. |
| 4 weeks | Introduced to rearing pencils/hay/straw. |
| 5 weeks | Disbudding takes place, all calves receive an anaesthetic . |
| 6 weeks | 2 nd Bovipast booster. |
| 6-7 weeks | weaned |
| 8 weeks | Heifer rearing pencil/straw. |

Turnout animals >6 months prior to 1st grazing.

| | | |
|---------------------------------------|---|-----------------------------------|
| <p>6 weeks before turnout.</p> | <p>1st Huskvac(Lungworm injection)/ BVD/ Lepto vaccine</p> | <p>Mid/End Feb.</p> |
| <p>2 weeks before turnout.</p> | <p>2nd Huskvac/ BVD/ Lepto vaccine</p> | <p>Late March/Early April.</p> |
| <p>Turnout</p> | <p>Sort animals according to size and weight and feed meal 1.5kg/hd/day to animals under the required weight. 21% protein pencil.</p> | <p>During the grazing period.</p> |
| | <ul style="list-style-type: none"> ➤ Blackleg vaccine ➤ Wormer bolus | <p>Early/Mid April.</p> |

Housing.



➤ Avermectin
Pour on

Late Sept

➤ 1st Bvd/ Lepto
to all
unvaccinated
older animals


Late Sept

➤ Sort groups
according to
size.

Late Sept

➤ Introduce
3kg of pencil
ration at 21%
protein.

Late Sept

| | | |
|--------------------------------|--|---|
| 4-6 weeks post housing. | |  |
| | 2 nd BVD/Lepto all unvaccinated older cattle | |
| Service. | Takes Place all year round. Target weight is 370kg approx. Cattle weighed every 2 weeks. | All year round. |
| Repeats | AI repeat. | All year round. |
| PD | 42 days post 1 st service. | All year. |
| PD Negative | Reserve | All year round |
| PD Positive | Record on Interherd system | |



**Turnout 2nd
year.**

Lepto/BVD
booster for all
previously
vaccinated
cattle.

**4 weeks pre
calving.**

Return to main
dairy for
transition diet.

Calving

Target 24-27
month calving.

Calf Feeders

- <http://www.youtube.com/watch?v=30tLF89iSUI>

Starter

- In groups of 4 draw a diagram of the dairy cow's production cycle.
- Explain and discuss the various stages of the dairy cow's production cycle.
- Use flip chart provided.

UK milk supply!

- UK is all year round milk supply. Farmer receives penalties for seasonal supply.
- Farmers get paid on volume of milk and milk quality (milk fat and milk protein %)

| Composition of milk | % |
|---------------------|------|
| Water | 87.8 |
| Lactose | 4.7 |
| Protein | 3.2 |
| Minerals | 0.8 |
| Butterfat | 3.5 |



- A cow's milk supply peaks at the 4th lactation.
- The average Holstein Friesian cow is producing 4540 litres per year (15litres per day)
- A dairy cow calves every 400-365 days, depending on the system.
- A highly intensive system where cows are yielding above average than a 400 day calving cycle is more realistic.
- On a more extensive grassland based diet cows are targeted to calve down every 365days.

A dairy cow's production cycle!

- A cow is pregnant for 9 months or 283days.
- When the cow calves it takes 6 weeks before the cows system is ready to come back into oestrous cycle again. (42days)
- The farmer allows the cow to come into heat at least once before breeding the cow again.
- Oestrous cycle occurs every 3 weeks or 18-24 days.





- The dairy cow milks for approx 10 months and receives 2 months rest period before calving again.
- The dry period is the rest period and this is when the calf grows the most in the final 8 weeks.
- The cow isn't producing milk but has to be fed in preparation for the birth of the new calf and for the new lactation cycle ahead.



Dairy cow's life!



- A dairy cow is usually milked twice daily.
- When the cow calfs down she spends anywhere from 3hrs to 3 days with her calf depending on the farm.
- The first milk from the cow is called colostrum or biestings.
- A fresh calved cow's milk does not usually enter the bulk tank for at least 6 milking's after calving. This is to ensure that there is no antibiotic residue from the dry cow.

- When the cow is fully separated from her calf she joins the main herd.
- The cow's at the college are fed a TMR diet (Total Mixed ration).
- This ration is formulated to meet the cows needs in regards to energy for the production of milk, for general requirements to stay alive and pregnancy.
- A cow reaches peak milk production somewhere between week 6-10 after calving.
- Condition score's of cow's is very important!

- We condition score our cow's to ensure they are in the correct condition at calving.
- This is vital because all cow's loose a condition score after calving.
- To avoid excessive weight loss after calving cow's need to be fit not fat and at a condition score of 3.5. at calving down.
- This allows the cows to loose 1 full condition score after calving and to put 0.25 of a score on before rebreeding takes place.



BCS : 2.0



BCS : 2.5



BCS : 3.0



BCS
3.0



BCS : 4.0



BCS : 4.0

- A cow milk's twice a day for approx 10 months or 2 months prior to calving.
- At the drying off period the cow is dried off using an antibiotic. On the college farm we use a product called orbenin.
- Do not use orbenin within 4 weeks (28 days) of calving. Treated animals must not be slaughtered for food purposes within 4 weeks (28 days) of treatment.





Moulton college milking routine.



Milking Routine

- In pairs write down and describe the Moulton College milking routine.



Milking routine



1. Cows enter the parlour and they are all teat dipped with Deosan Harmony an iodine based disinfectant for preparation of teats before milking.
2. All cows are then individually cleaned with paper wipes in prep for milking.
3. Cows are all stripped out too, this is the Foremilk, and this is an aid to early detection for mastitis.



4. Clusters are put on all the cows.
5. They are automatic cluster removers.
6. All cows are sprayed with iodine before leaving the parlour.
7. Cows fit only 3 teats are fitted with colour branded straps on the side the teat is blind.
Yellow band for front teat. Green band for back teat.
8. **Red band fitted on both legs if milk is contaminated and can't enter bulk tank.**



What is the average day
production from a Friesian dairy
cow. Litres per day?

- 10litres per day
- 15 litres per day
- 25 litres per day
- 35 litres per day

Answer

- 15 litres per day.

A dairy cow calves every?

- 260-300 days
- 560-600 days
- 160-200 days
- 360-400 days

Answer

- **360-400 days**

A cow is pregnant for?

- 6 months
- 9 months
- 12 months
- 18 months

Answer

- 9 months

A cow comes back into heat how many weeks after calving?

- 3 weeks later
- 6 weeks later
- 10 weeks later
- 26 weeks later

Answer

- 6 weeks

The heat/oestrous cycle lasts for?

- 7 weeks
- 1 week
- 10 weeks
- 3 weeks

Answer

- **3 weeks**

The rest/dry period for a dairy cow is usually?

- 1 week
- 3 weeks
- 2 months
- 4 months

Answer

- 2 months

What is the name of the first milk from the cow after calving?

- **Yellow milk**
- **Mastitis milk**
- **Colostrum**
- **Soya milk**

Answer

- Colostrum

How many milking is recommended before a fresh calved cow's milk enters the bulk tank.

- **Straight away**
 - 1 milking
 - 6 milking's
 - 10 milking's

Answer

- 6 milking's

What condition score do we aim to calf cows down at?

- 2.5
- 3.0
- 3.5
- 4.0

Answer

- 3.5

What does a red band on the cow's leg mean at the college dairy?

- Missing teat
 - **Lame cow**
- Contaminated milk
 - **Mad cow**

Answer

- **Contaminated milk**