



**Leaving Cert Agricultural
Science**

Free Notes

Beef Production



Beef Production: Gestation Period & Oestrous Cycle:

- + Cows which are not commercially milked but instead allow calves to suckle for a long period of time! = **Suckler Herd**
- + Recommended age of mating= 15 months
- + Recommended body weight – mating = 300 –320kg
- + Gestation 283 days
- + Oestrous Cycle 21 days
- + Duration = 18 hours
- + Put in calf no later than 2.5 months after calving.
- + Spring calving system
- + At least 1 calf per year

Target Weights:

- + At Birth = 40Kg
- + At Turnout 1st Summer = 90-100Kg
- + At Housing 1st Winter = 200Kg= Weanling
- + At Turnout 2nd Summer = 275-300Kg Yearling
- + At Housing 2nd Winter = 470-500 Kg
- + At finishing= 550 – 750Kg
- + Depends on Breed & Sex

Principles of Beef production:

- 1) **Compensatory Growth:**
 - + The growth which occurs when an animal is fed well after a period of restricted feeding.
 - + The animal experiences a higher growth rate than those on a continuous high plane of nutrition.

- 2) **Conformation**
 - + **Refers to the shape of the animal & to the distribution of muscle on the body.**
 - + Good conformation = where the muscle is concentrated on parts of the carcass which has most value
 - + **EUROP= Conformation E= BEST P WORST**
 - + Body Conditioning Score (BCS) = 12345 scale, 1 = leanest 5=Fattest

Factors affecting Conformation:

- + **Sex-** bull (more muscle – Chewy undesirable), steer (more suitable), cow (most suitable due to no testosterone present)
- + **Breed** – Ayreshire (not much meaty muscle) Vs Limousin (much more lean muscle/meat)
- + **Continental breeds** = best
- + **British- Dual purpose- Dairy**= worst

Q) List the factors necessary to reduce calf mortality on a farm

- + Have an experienced person on hand during calving- observation

- + Feed colostrum within 6 hours of birth (otherwise animal WILL DIE)
- + Call a vet if necessary
- + Adequately feed the correct ration as calf grows older
- + Adequate clean housing is necessary (free from disease)
- + Adequate clean water supply (keep rehydrated)

Q) Highlight the main differences between *bull-beef production* and *heifer-beef production* (24 marks)

Bull beef:

- + This is where there are male animals only.
- + They are reared without castration to about 16 months.
- + This ensures better growth rates of muscle on bone and because of the high levels of testosterone they will require a much higher quality feed (barley beef).
- + There is only a small market here as the meat will be strong. European markets don't prefer this.
- + They put on 1-1.25kg Daily live weight gain per day after weaning.
- + The bulls are very dangerous due to high levels of testosterone.
- + The bulls can breed with heifers and doesn't require AI on farm.

For Heifer beef:

- + There is a preference by consumer as meat is often more tender due to the absence of testosterone
- + Heifers are quiet smaller obviously due to absence of testosterone
- + Don't kill out as well as male i.e. don't yield a high amount of consumable cut for humans Due to lack of male hormones they take longer to mature although heifer calves are cheaper than bull calves
- + They put on 0.6-0.7kg daily live weight gain per day

Beef Cow during Pregnancy (feeding):

- + Should be fed on an increasing plane of nutrition about 2 months prior to calving as the size of the womb increases rapidly , the calf is developing quickly
- + Calf fed well 6-7 months of the year
- + Good foetal development
- + Strong healthy calves
- + Good milk production for 5-6 months
- + Good grass sufficient
- + Concentrates fed prior to & after calving

Q) Describe the principle practices of a two year calf to beef system

- + In a beef herd calves are allowed suckle the cow until about 8 months.
- + **Colostrum** must be consumed within 6 hours of birth as this is when the ability to absorb antibodies is at its highest. If weak hand feed

- ✚ Should be fed for 3-4 days as it is high in nutrients & very digestible
- ✚ Animals that do not get colostrum will have very little resistance to disease

Feeding through First Spring/Summer:

- ✚ A calf's rumen is not fully developed; hay & silage gradually introduced
- ✚ Turnout on grass date depends on weather, soil conditions and availability of Grazing (adequate grass growth – Leafy)
- ✚ Calves are selective grazers- only eat the leafy palatable part of the grass- leader-follower system should apply
- ✚ Creep feeding and rotational grazing access to both cow & fresh grass & Concentrates.
- ✚ When grass is scarce should be fed concentrates again.
- ✚ Small weak calves should be separated & fed better to achieve target weight

Parasite control: Leader follower system

- ✚ Calves first out onto grass followed by weanlings followed by yearlings, etc
- ✚ Calves are more susceptible to picking up diseases than older cattle so calves are introduced first to avoid stomach worms etc

Weanlings - Housing during First Winter (November Onwards)

- ✚ Ventilation gives a good supply of fresh air.
- ✚ Dry bed and Dung Removal (remove waste and build up of disease) and Silage reserve
- ✚ Place in a Slatted unit or cubicle.

Disease Control:

- ✚ Dose and look for lice, etc and Isolate sick animals

Feeding during first winter:

- ✚ Weaned off milk and fed good quality Silage $\frac{3}{4}$ tones, giving 0.5g/day weight gain
- ✚ Concentrates are fed if poor quality silage is there
- ✚ Should be grouped according to size for ease of feeding.

Feeding during second summer:

- ✚ Same as before as they are now yearlings and ruminant chambers are fully developed.
- ✚ Their Daily Live Weight Gain (DLWG) is 0.8Kg/day

Disease control:

- ✚ Less susceptible to disease than younger animals

- ✚ Keep using Rotational grazing and Keep dosing for Liverfluke and Stomach worms
- ✚ Herd Tested for TB & Brucellosis (eradication programme). Ok in recent years

Housing and feeding during second winter:

- ✚ 1m² floor space and 10m³ air space
- ✚ Silage and concentrates as before
- ✚ Disease & pest control as before
- ✚ Following second winter they are ready for slaughter

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