



Prime Health Vets

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Newsletter



REPLACEMENT HEIFER REARING – SETTING TARGETS

Introduction

As the future of every dairy herd, replacement heifers need to reach their full potential. According to Teagasc, the average cost of rearing a replacement heifer is €1,533 per head. The way a replacement heifer is raised has a direct impact on how that animal grows and future performance of that animal through fertility and future lactation. By setting targets and regularly monitoring these targets, problems can be identified early and solutions put into place both to solve and prevent future difficulties and make savings both in costs and in labour.

A typical Holstein Friesian calf is born at or around 38kgs live body weight. This calf will be expected to reach 550kgs by 24 months of age, or the age of first calving. To do this, the calf must grow by on average 710g per day over this 24 month period. This important time can often be neglected with one study revealing that only 2% of UK farmers regularly weigh their replacement heifers.

Age	% mature live weight	Holstein Friesian	New Zealand / British Friesian	Jersey x Holstein Fr.
Birth		38	36	34
6 weeks		63	60	56
3 months		90	85	80
6 months	30	155	148	138
12 months		280	267	250
15 months	60	330	315	295
21 months		490	470	437
24 months (pre-calving)	90	550	525	490

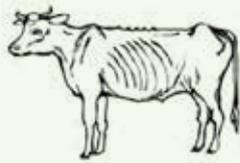


Weighing of replacement heifers can be done with weighing scales/bridge in a crush. Due to costs, these scales can be shared amongst neighbours but this carries a large biosecurity risk unless thoroughly washed and disinfected after use. Weigh-bands (girth tapes) are a more cost effective option. Measure calves at birth and again when handled e.g. when vaccinated, wormed or insemination.

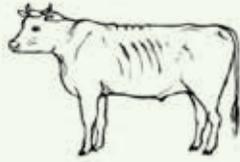
Targets, why and how to achieve them

Young animals are best able to convert feed to live weight gain. To cost effectively achieve target breeding weight, growth should be maximized during this milk fed period. This can be done with access to whole milk volumes of at least 13% body weight or the equivalent in a high protein milk replacer, early access to concentrates (within the first few days of life for healthy rumen development) and access to quality housing and husbandry including colostrum management, vaccination, bedding, water and fibre availability and stocking density etc. This can all be gone into much further detail in discussion with your vet.

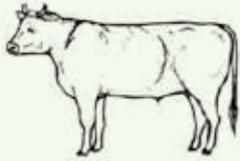
To achieve the 24 month old calving, heifers must be in calf by 14-15 months. Fertility increases up to the 3rd cycle after puberty, so puberty must be reached at least 6-9 weeks before expected first service dates. Puberty is expected at 40% of mature body weight, breeding should occur at 55-60% of mature body weight with calving at 85-90% of mature body weight.



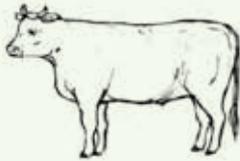
Condition score 1
 Backbone prominent
 Hips and shoulder bones prominent
 Ribs clearly visible
 Tail-head area recessed
 Skeletal body outline



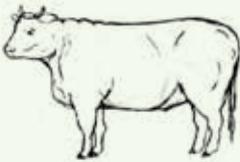
Condition score 2
 Backbone visible
 Hips and shoulder bones visible
 Ribs visible faintly
 Tail-head area slightly recessed
 Body outline bony



Condition score 3
 Hip bones visible faintly
 Ribs generally not visible
 Tail-head area not recessed
 Body outline almost smooth



Condition score 4
 Hip bones not visible
 Ribs well covered
 Tail-head area slightly lumpy
 Body outline rounded



Condition score 5
 Hip bones showing fat deposit
 Ribs very well covered
 Tail-head area very lumpy
 Body outline bulging due to fat

In fact, body weight and body condition score are far more important than the heifer's age with regards to mating. It is for example, possible to mate Holstein Friesian heifers at 13 months of age, once they have achieved 330kgs and a body condition score of 3.25.

Care at the same time should be taken not to over-condition replacement heifers. As pre-pubertal heifers grow, their mammary or udder tissue grows at a faster rate than the rest of the body. If the overfed heifer lays down more fat cells than normal, this can have a negative lifelong impact on the amount of milk producing cells grown in the udder and the heifers lifelong capacity to produce milk. It is therefore recommended not to exceed growth of greater than 800g per day in heifers between 3 to 10 months of age.

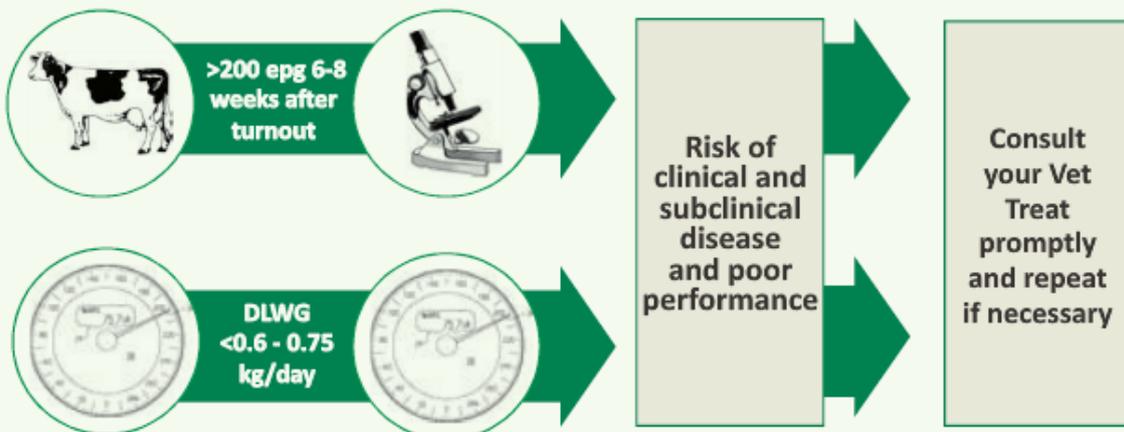
Delayed puberty through poor weight gain and growth rates will delay age of first service and age at first calving, further increasing costs of production of the replacement.

Over wintered calves fed a diet of a typical 70% DMD silage only diet typically attain growth rates of 300g/day making concentrate supplementation a requirement to reach targeted growth rates. Concentrates fed should be high in energy and have a crude protein content of 15-16%. Testing forages can better allow planning ahead to reach targets.

This summer

Replacement heifers not reaching target weight gains must be investigated. This may be due to worm burden, food availability/quality, disease or other stressors.

Regular faecal testing for worm and fluke egg counts and regular weighing are the gold standard for monitoring worm and fluke burdens. This involves taking fresh samples from 10 to 15 calves at 8 weeks post turnout, once these calves have been grazing "clean" grassland, or pastures that have not been grazed by cattle in the previous 12 months. If worm egg counts are too high, treat replacements for worms and move to a clean pasture 48 hours later. By doing this, farmers can reduce incidence of wormer resistance in worm populations. If clean pastures are not available, it is advisable to blanket treat all replacements with a wormer. Consult your vet for choice of your wormer based on effectiveness (type of and percentage of worms killed and known resistance levels), method (pour-on, injectable, oral) and frequency of treatment (long acting or repeat dose needed).



Coccidiosis and lungworm infestation are less obvious through weight monitoring alone. Usually “hoose” is first noticed as a clinical disease of increased breath rate followed by a cough made worse by exercise. Watching heifers closely for early signs, usually seen after warm and wet conditions, can if caught early, help prevent full blown pneumonia if the disease worsens. Consult your vet on what methods to use to prevent and to treat lungworm in your replacement heifers.

Second season grazing heifers will have acquired a partial immunity to gut worms compared to calves. Keeping a close eye on weight targets will help identify waning immunity to worms met the previous year and will reduce the pressure of worm numbers on younger heifers.

Fertility Update

The breeding season is well underway at present with submission rates in the 90s being achieved on many farms. Most farmers have either finished calving or are down to single figures at this stage (late May). It is worth putting in an extra effort in early June to maximise 6 week pregnancy rate (80% target) and maximise the number of cows in calf to AI. The following pointers will help achieve these aims:

- 1. The number of cows on heat per day will be reducing as the first cycle finishes. This will make heat detection more difficult so it is especially important to observe cows a minimum of 3 times daily (7am, 5pm, 10pm), to top up tail paint or scratch cards regularly and to introduce a vasectomised bull if available.*
- 2. Proper recording of all serves will help when observing for repeats, irregular cycles and with pregnancy diagnosis later on. Proper recording of other fertility issues such as cows with metritis, hard calving, twins, retained placenta will allow these problems to be quickly addressed*
- 3. An Ultrasound scan at this time of year has many benefits. Cows served >30 days can be scanned for viable pregnancy and for twins. Those found not to be in calf can usually be given hormonal treatment to bring on heat and allow AI. Cows not yet served can be examined and treated as necessary. Late calvers can be synchronised from 30 days post calving to receive fixed time AI.*
- 4. Ensure your bull is ready for service – He should be fit but not fat, have good feet and mobility, be up-to-date with vaccination status and have undergone a bull fertility soundness examination.*
- 5. Ensure your cows are in the correct Body Condition Score (2.75-3.0) at serving. Cows should not lose more than 0.5 BCS from calving to serving. Energy intake should be adjusted to balance the milk production and BCS of the cow and once a day milking can be a useful tool in this equation.*
- 6. Watch out for seasonal health problems such as lameness, subacute ruminal acidosis and stomach and lungworms - First calvers often benefit from a worm dose at this time of year and there are pour-on products with no milk withdrawal readily available.*
- 7. Ensure your herd health and vaccination status is up date to control infectious diseases such as BVD, Leptospirosis, IBR, Salmonella. Your vet can design a programme specific to your herd.*



Figure 1. Ultrasound scanning is a useful fertility improvement tool



Figure 2. A selection of heat detection aids