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Management of replacement heifers

8% calf mortality at birth
15% of live born heifers never reaching their first lactation
20% only calving once

Ill health and poor growth rates will contribute to reduced heifer fertility and delayed age at first calving.

Goals

To breed at 13 months of age
To calve in at 23-24 months of age

Prepubertal phase is when the structural growth is at its highest. Timing of puberty is greatly influenced by weight so producers should aim to grow heifers to approximately 40% of mature body weight by 9 months.

Post pubertal targets of 55% to 60% mature weight at breeding
85% mature weight at calving.

NB need to be careful using weight alone as this may not be indicative of frame size but may find that animals are just too fat. Should also consider withers height (WH) of heifers as well

12 months withers height of 124 cms
Breeding height of 129 cms
Calving height of 140 cms

Colostrum Management

10 % of calf's body weight in first 24 hours with half that quantity in the first 6 hours....This is dependent on the quality of colostrums being fed.

To try and achieve good levels of passive transfer of immunoglobulins we need to ensure that the calf gets 200gms of IgG in the first 2-4 hours of life.

The odds of Failure of Passive Transfer (FPT) were 2.4 times higher in calves fed pooled colostrums and 2.7 times higher in calves fed more than 4 hours after birth. The same study (Beam et al 2009) also demonstrated a positive relationship between calves nursing from their mothers and FPT.

Calves fed with tube or bottle are 3 times more likely to achieve good levels of immune-transfer than calves left alone to suckle. With the latter it was found that calves will ingest more environmental bacteria which will interfere with absorption of IgGs etc. and also the conformation of the udder will have a significant bearing in the calf ability to suck successfully.

Pre weaning

Good growth rates are essential during this time. Calves that grow well between 12 and 65 days are more likely to survive to second lactation.

Recommended weight targets for 2 month old calves are 76kgs for Holstein heifers and 72 kgs or FR. Calves must be eating at least 0.75-1 kg of concentrates for 3 successive days before weaning is considered.

While some may question increased milk consumption at an early age due to perceived negative effects on rumen development (a calf fed 4 litres twice daily has a fibre digestibility of 20% whereas a calf fed 2 litres twice daily has a fibre digestion of 34%) , Khan et al (2007) discovered a step down approach to weaning ensured a heavier and more metabolically developed fore-stomach compared to limit fed calves. This method also produced calves that consumed more solid food both before and after calving

Recommended growth rate of 0.8-1.0kgs per day up to puberty

Recommended growth rate of 0.8 kgs per day post puberty if want to reach a target of 545-565kgs at calving.

Heifers need to have achieved good skeletal growth by this stage and should not be too fat. If they calve in too small then still need energy for growth so production figures are poor.

Although it has been reported that accelerated growth in dairy calves will result in too much mammary fat deposition and hence reduce milk output this has since been found to be false in more than one study.

Conclusions

Need to identify critical targets for heifer growth

Aim for 90 % of heifers to calve for first time at 23-25 months of age at 85% of mature body weight

Tools

Weigh band/ scales

Withers height scale

Condition scoring heifers at times to ensure good frame growth and not fat deposition

Synchronisation of heifers for breeding purposes

If heifers have achieved their growth targets by 13/14 months but not seen bulling then they should be synchronised at routine visit and served blind.

WH 129 cms

Weight of 370-400 Kgs

Day 0 Manually examined at routine visit and CIDR inserted

Day 7 Given an injection of PG

Day 8 CIDR is removed

Day 11 (56 hours after Cidr removal) heifer is inseminated.

NB Heifers should not be moved into different groups for at least 3 weeks prior to service and again until confirmed in calf.

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