

Feeding Program For Breeding Crossbred Hostein Friesian

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INTRODUCTION

Milk production and mature live weight are closely related. Ensminger (1993) reported that if live weight of heifer increased 45.5 kg, milk yield would increase 354.12 kg per year. Each 1 kg increase of live weight attained before the heifer calves equates to 7 kg of milk per lactation after calving, and this response is apparent for at least 3 lactation (Moss, 2000). So that, milk yield in good heifer will be better than in bad heifer.

Crossbred Holstein Friesian had progressively higher HF blood so that they should be fed with suitable ration to obtain live weight level of the same pure Holstein Frisian. The objective of this study is to determine the metabolic energy and crude protein in the ration suitable to reach the first mating at 15-16 months of age with 300 – 325 kg of live weight and age of first calving at 25-26 months with 400-425 kg of live weight.

MATERIALS AND METHODS

An experiment was carried out at Ruminant Research and Training Centre (Binh Duong province) from June 2006 to December 2008. A total of 36 crossbred Holstein Friesian calves (3/4, 7/8 and 15/16 HF, 28kg of live weight) were used in a 2 x 2 factorial arrangement (the amount of milk and level of crude protein (CP) in concentrate). Calves were weaned at 12 weeks of age. They were divided into 3 groups to feed with 90%, 98% and 105% of ME and CP requirement according to NRC (1989) for the first, second and third group, respectively.

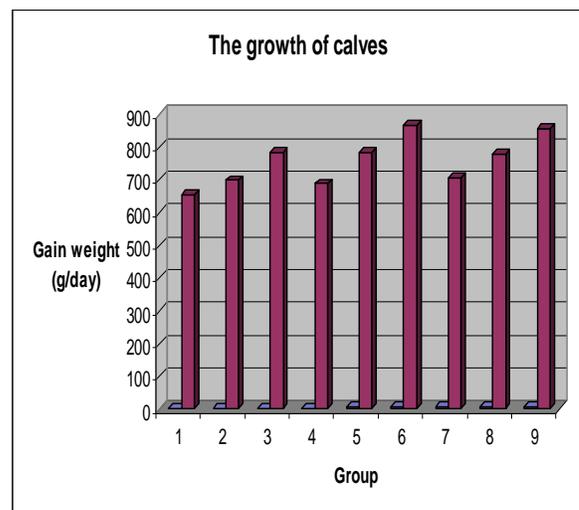


RESULTS

From birth to weaning

The weaning weight at 12 weeks fluctuated from 85.40 kg to 104.20 kg. Average daily gain fluctuated from 655.06 g to 865.48g.

The average daily gain from birth to weaning was significant improved as the amount of milk increased ($P<0.05$), meanwhile crude protein in concentrate had no effect.



From weaning to the first mating

The average daily weight gain was 505.36-540.54g with decreasing tendency along with the age of heifer. The diet level had an influence but there was not significant difference.

Age of first heat (10.93-11.57month) and age at the first mating (16.09-16.55 months) had not been significant affected by diet.

The mating weight was above 300kg (301.00-305.80kg) for all 3 groups with non-significant difference.

From first mating to first calving

Ages at first calving had been shorter from the first group to third group with 25.34, 25.20, and 24.89 months of age for the first, second, and third group, respectively. Weight at calving increased from first group to third group (407.00, 426.50, 429.75 kg, respectively), but it was not significant ($P>0.05$).

From calving to the third month of lactation

Daily milk production is an important factor of dairy cow. In this study, daily milk production increased from first month to second month and decreased in third month. Average of daily milk production in 3 month was 15.04 – 16.94 kg. It increased from first group to third group and was significant between second month and third month.

Following are the main composition of milk: dry matter 13.32 – 13.60%, fat 4.11- 4.31%, and protein 3.41 – 3.58%.



CONCLUSIONS

Feeding with 280kg of milk plus concentrate feed of 18% CP and weaning at 12 weeks of age was an optimal regimen for raising crossed-HP calves to gain the weaning weight of 96.45kg and daily gain of 785g.

Feeding the ration with energy density 2.34 meal/kg and 13.14% CP, the crossbred HF calve came into the mating age of 16.55 months with 301.00kg of body weight.

Mated heifer fed with the ration of 2.10 Mcal ME/kg dry matter and 11.00% crude protein could be calved at 25.20 months of age with 426.50 kg of body weight.

The crossbred Holstein Frisian cows fed with the ration of 2.33 Mcal ME/kg dry matter and 15.63% crude protein produced a daily milk average of 16.94kg in the first 3 months.



REFERENCES

- Ensminger M. E., 1993. *Dairy cattle science*. 3rd edition, Interstate Publishers, USA.
- Moss, Richard. 2000. *Heifer Rearing*. Queensland Dept. Primary Industries, Brisbane. Information Series QI01086.