

Body Condition Score and Beef Cow Productivity

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Good nutrition in beef cow production, as with any animal production system, is paramount. Animal health and production problems, more often than not, simply have nutrition as a basis. Beef cows have the advantage of requiring high levels of nutrition for only a specific period of the year. They have the disadvantage, however, that if the nutritional requirement is not met over that critical period, not only poor production will result but large losses can occur. Body condition scoring has been used as an aid for feeding and management of the herd at critical periods of the yearly production cycle. Condition scoring provides a measure of the level of body reserves which is independent of liveweight, and a more reliable description of its condition than liveweight alone. The condition score technique is easily learned, requires no equipment and, although it is subjective has been shown to give reliable results when related to subcutaneous fat cover.

Farmers, veterinarians and extension workers have used a mixture of the 1-10 scale system or a 0-5 system. The 1-10 scale is based on the dairy system while the 0-5 scale is adapted from the Scottish 6 point scale (0 = thinnest, 5 = fattest) according to the system of Lowman et al. (1976). There are few published reports quoting condition scores of beef bred cows in the New Zealand literature, and of these there is a mixture of the 1-10 and 0-5 scales. There is a lack of objective information that relates condition score to cow and calf production traits.

The aim of the study reported here therefore is to investigate the relationship between condition score (using the 0-5 scale) and production (calf growth rates, and cow reproduction) in a herd of mixed aged Hereford x Friesian beef cows. Cow liveweights were also taken in an attempt to develop relationships between cow liveweight changes and condition score at various times of the year.

The study commenced in November 2000 and will continue through to calving in 2003 producing data from three pregnancies and two calving intervals. The mating period in 2000 was from 20 November to 11 January 2001 (52 days). The cows were condition scored by an experienced operator in mid winter (June), pre-calving (August), mating (November) and weaning (March). Cow liveweights (maximum of 3 hours off-pasture) were taken at the same time as condition scores. Calf liveweights were taken at birth, day 60 of lactation and at weaning (mean age 177 days).

Of the 219 cows mated in 2000 and present at calving in 2001, 209 cows calved and 201 successfully reared a calf to weaning (weaning % = 92%). Average calf birth, day 60 and weaning liveweights were 39.9 ± 0.4 , 111.9 ± 1.5 , 240.4 ± 2.3 kg, respectively. Preliminary analyses of cow liveweight and condition scores at the various stages of the production cycle are shown in Table 1. The days to calving interval (an EBV used by BreedPlan which is defined as the interval in days from the date the bull went in to the herd to the date a cow calved) for the herd was 303 days with a 7 day difference between cows with a condition score of 2 or less and those with a score greater than 3.5.

Table 1. Average cow liveweight (kg) and condition scores at various times of the production cycle for Hereford x Friesian cows (mean \pm SE).

Stage	Number	Liveweight	CS(1-5)
Mating 2000	219	495 ± 4	2.59 ± 0.03 (1.5 – 4.0) ¹
Weaning 2001	219	503 ± 3	2.79 ± 0.03 (2.0 – 4.0)
Mid-winter 2001	219	450 ± 3	2.19 ± 0.03 (1.5 - 3.5)
Pre-calving 2001	219	471 ± 3	2.05 ± 0.02 (1.5 - 3.5)
Mating 2001	201	515 ± 4	2.70 ± 0.05 (1.0 - 4.5)
Weaning 2002	201	543 ± 4	2.75 ± 0.10 (1.0 - 4.5)
Mid Winter 2002	201	539 ± 4	2.67 ± 0.03 (2.0 – 4.0)

¹(Range of condition scores)