

BODY WEIGHTS AND GAINS OF CALVES FROM PUREBRED AND CROSSBRED SHORTHORN COWS

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ABSTRACT

Body weights and average daily gains of 187 calves obtained by mating Angus \times Shorthorn, Charolais \times Shorthorn, Hereford \times Shorthorn and Shorthorn cows with Shorthorn bulls were compared to evaluate the performance of the crossbred cows. Birth weights of calves from Hereford- and Charolais-sired crossbred cows (34.7 and 34.4 kg, respectively) were significantly heavier than those from the Angus cross (31.9 kg) or purebred Shorthorns (31.8 kg). The calves with Charolais ancestry weighed 209 kg at

weaning and were 16, 18 and 32 kg ($P < 0.05$) heavier than those with Angus, Hereford or pure Shorthorn ancestry, respectively. They were also superior ($P < 0.05$) to the other three groups in preweaning average daily gains at three intervals. Breed group, sex, and parity were significant sources of variation in most of the traits studied. Phenotypic correlations between weights and gains were positive and highly significant. The highest estimate (0.89) was found between weights at 120 and 180 days of age.

RESUME

On a comparé les poids et les gains quotidiens de 187 veaux issus de vaches Angus \times Shorthorn, Charolais \times Shorthorn, Hereford \times Shorthorn et Shorthorn de race, saillies par des taureaux Shorthorn, afin d'évaluer le rendement de ces vaches croisées. Les veaux issus des vaches croisées Hereford et Charolaises ont été significativement plus pesants à la naissance (34.7 et 34.4 kg, respectivement) que ceux issus des vaches croisées Angus (31.9 kg) ou Shorthorn de race (31.8 kg). Les veaux avec du sang Charolais ont pesé 209 kg au sevrage et furent de 16, 18 et 32 kg ($P < 0.01$) plus pesants que les descendants des Angus, Hereford ou Short-

horn de race, respectivement. Le gain quotidien de la naissance au sevrage des veaux Charolais croisés a été supérieur ($P < 0.05$) à ceux des trois autres groupes. Les veaux croisés Charolais et Angus ont démontré une supériorité marquée en tous points sur les Shorthorn de race. Le croisement, le sexe, le numéro d'ordre de vêlage ont été des sources de variation significatives dans la plupart des critères étudiés. Les corrélations phénotypiques entre les sept critères étudiés ont été positives et hautement significatives. L'estimé le plus élevé (0.89) a été entre les poids de 120 et 180 jours.

INTRODUCTION

Crossbreeding and utilizing hybrid vigor in the beef cattle industry is gaining popularity rapidly, as it did in swine and poultry. Many reports have established the clear-cut superiority of crossbreds in economic traits associated with the growth rate of the market animal (6, 18). Another benefit from crossing is the utilization of the crossbred females as brood cows to produce three-breed-cross calves, or to backcross or grade to a breed which is superior in specific traits. Unfortunately, knowledge in this regard is limited and does not cover all possible combinations of beef breeds raised on this continent. However, it is agreed in general that the performance of crossbred beef cows is superior to that of purebreds raised under similar conditions. Lush *et al.* (16) reported that calves produced by backcrossing Hereford bulls on Brahman \times Hereford dams were heavier than the F_1 calves at weaning. Rhoad and Black (19) showed that when Angus bulls were used on Brahman \times Angus cows, the calves produced were lighter than the F_1 at birth but heavier at 180 days of age. Godley *et al.* (7) mated a Shorthorn bull to Hereford \times Angus, Brahman \times Angus, Brahman \times Hereford and purebred Angus cows. They found that calves out of Hereford \times Angus cows were significantly heavier at birth than those out of the other groups. They also found that the cows that