

RESULTS AND DISCUSSION

Reproduction

Means for birth rate, survival and weaning rate, and the advantage of crossbreds over straightbreds in units and percentage increase are given in Table 1.

Birth rate.—Birth rates for the straightbred Angus (A), Brahman (B), and Charolais (C) were 75.3%, 89.9% and 79.7%, respectively. The B x A and B x C matings resulted in pregnancy rates of 92.4 and 82.5%, respectively. The advantage for the crossbred matings was 17.1 for Brahman bulls on Angus cows over the straightbred Angus matings and 2.8 for Brahman bulls on Charolais cows over the straightbred Charolais.

Average pregnancy rates for the BA and BC F₁ cows were 92.9% and 93.0%, respectively. The advantage for F₁ cows over the average of their parental breeds was 10.3 for BA cows and 8.2 for BC cows.

Survival rate.—Calving rate and survival are the two factors which determine net reproductive performance. Calf survival incorporates genotype of the calf, which partially determines its vigor, as well as the cow's ability to give birth normally and raise a calf. Calf survival rates of the straightbred were 89.2%, 90.8%, and 95.0%, respectively, for the Angus, Brahman and Charolais. Survival rate of B x A calves was 84.1% compared to 96.8% for B x C calves. The relatively low survival rate of straightbred Brahman calves (90.8%) may indicate a slight lack of vigor, while the low survival rate of F₁ Brahman x Angus calves was due possibly to heterosis in size of calf. Montana research (12) showed survival rate of calves to be influenced by size or birth weight of calves relative to cow size.

Survival rate of calves produced by F₁ BA cows was 96.2%, which was an increase of 6.2% units over the straightbred average, or a heterosis level of 6.9%. The low 90.5% calf survival rate of F₁ BC cows cannot be explained. Peacock *et al.* (15) reported a 96.0% survival rate of straightbred Brahman calves compared to 95.0% for Shorthorn calves. Calf survival rates of reciprocal crosses of the Brahman and Shorthorn as well as survival rate of calves of F₁ BS cows were similar to the average of the straightbreds.

Weaning rate.—Weaning rates for straightbreds were 67.2, 81.6, and 75.7%, respectively, for the Angus, Brahman, and Charolais. For the crossbred matings, weaning rates were 77.7%