

and 79.9% for B x A and B x C matings and 89.4% and 84.1% for F₁ BA and BC cows. Brahman cows were the highest of the straightbreds. However, F₁ BA cows were highest and F₁ BC were next in order of all matings.

The advantage in units for crossbred matings over the average of straightbred parents was 3.3% for B x A, 1.2% for B x C, 15.0% for F₁ BA cows, and 5.4% for F₁ BC cows. Heterosis estimates for weaning rates were 20.2% for F₁ BA cows and 6.9% for BC cows.

Production Traits

Means for condition score, 205 day weight, weaning weight, and annual production per cow are presented in Table 2.

Condition score. — Condition score is a subjective evaluation of the degree of fatness and is the result of both genotype and environment and their interaction. The genotype of a calf is a combination of the genotype of both sire and dam and for full expression is dependent upon optimum environment. The pre-weaning environment of a calf is furnished primarily by the cow, expressed as mothering ability, and largely determines the condition score. However, a calf with a high growth potential could have a comparatively low condition score even though the cow is a high producer, because it utilizes the available nutrients for growth rather than for fattening.

Condition scores at weaning were 9.2 for the Angus and Charolais calves and 8.8 for Brahman calves, lowest of the straightbred. The 9.6 for F₁ BA calves nursing Angus cows compared to 9.2 for straightbred Angus calves indicates genetic adaptability of the hybrid calf to the environment. The low condition score for F₁ BC (7.4) calves indicates a high growth rate in the calf with the cow's milk production not sufficient to compensate for the calf's growth potential.

The F₁ BA cows produced calves averaging 10.6 in condition score. This shows the superior mothering ability in this cross as well as the genetic adaptability of the calf to its environment and heterosis for condition score. The 9.7 condition score of calves from F₁ BC cows showed milk production to be sufficient for growth in the calf but not sufficient to permit expression of the high growth potential in the calf and still have an energy surplus to allow the calf to deposit much fat. Percent advantage of crossbred calves over straightbreds for condition score was 6.7 for B x A, -17.8 for B x C, 17.8 for BA cows, and 7.8 for BC cows.