EXPERIMENTAL METHODS

Records were available on calves of Angus, Brahman, Devon, Brahman-Angus, and Brahman-Devon breeding. The study covered the 10-year period from 1950 through 1959. The cattle were maintained on Roselawn St. Augustinegrass pastures with some supplemental feed during the winter months. Little selection was practiced except for the choice of sires used, and very little culling was done except for age and successive reproductive failures. Practically all heifers were kept in the herd for replacements. Complete records were kept on this herd and included breeding, reproduction, monthly weight changes, birth dates, and birth and weaning weights of offspring.

Records of 933 calves were involved in the analysis. The weaning weights were adjusted to 205 days of age for all calves. The data were classified by sex, age of dam, month of birth, year of birth, breed group, and lactation status of dam. Lactation status of dam refers to the lactation record of the dam the previous year. For example, if a dam weaned a calf the previous year, she was classified as lactating, while if she did not, she was classified as non-lactating.

The significance of main effects and estimates of the magnitudes of the various factors were determined by the method of least squares. All first-order interactions were tested for significance with an approximate method given by Hazel (5)[3].

EXPERIMENTAL RESULTS

The analysis of variance, summarized in Table 1, indicated that variation in weaning weight is influenced by several factors. The environmental factors of year, age of dam, sex, and month of birth exert a highly significant influence, as does the genetic effect contributed by the different breed groups. Four of the 15 possible first-order interactions were significant. All of these significant interactions were involved with year.

Estimates of the magnitudes of these factors which influenced production in the Everglades Experiment Station beef cattle herd are given in Table 2. The deviations from the mean are deviations from the over-all mean of 372.3 pounds at 205 days of age.

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[3] Figures in parentheses refer to Literature Cited.