

CALF SHAPE AND PELVIC DIMENSIONS  
AFFECTING DYSTOCIA IN BEEF HEIFERS

by

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## INTRODUCTION

Increased costs of production have forced the stockman to be concerned with efficiency of beef production. The cowman today is using performance data as the basis for his selection decisions. As we use rapid growth rates to select for maximum production efficiency, we increase calf birth weight and mature cow size (Dickerson et al., 1974). Heavier birth weight is positively correlated with dystocia and there are positive correlations of the growth traits (weaning weight, average daily gain and yearling weight) with percent calving difficulty and percent calf mortality (Burfening et al., 1978). There is also the economic loss from decreased rate of gain, lowered feed efficiency and permanently stunted animals that will never reach their potential level of performance.

Improving reproductive efficiency is also vital for rapid genetic progress in all performance traits. To make the most rapid genetic progress the livestock producer must strive to exert the largest possible selection differential on important performance traits while maintaining herd size. The immediate effect would be an increase in saleable livestock, with a long range effect of accelerating progress toward genetic superiority.

The increase in birth weight of calves could be minimized by selecting for smaller birth weight in conjunction with larger yearling weight. We need to develop the right combination for the largest manageable birth weight while minimizing the costly effects of dystocia and resultant calf loss.

In order to accomplish this, more information is needed on various factors that cause calving problems. This study was designed to study calving difficulty and specifically to determine the affect of a calf shape and pelvic dimensions on dystocia.

## LITERATURE REVIEWED

Percent calf crop is an important measure of beef cow efficiency. Cunha and Warnick (1965) define calf crop as the number of calves weaned divided by the number of cows exposed to the bull in a given twelve month period, expressed as a percent. Several workers have shown a marked difference in average calf crop throughout the United States and the world. There also is as large or larger a variation in the figures from year to year.

Reproductive failures constitute the greatest reduction in potential calf crop weaned. Wiltbank et al. (1961) showed the largest losses are due to the 1- small percent of cows in estrus and bred in the first 21 days of the breeding season, 2- small numbers of cows conceiving at first service and 3- calf deaths at or near birth. Dearborn et al. (1973) claimed 31% of the heifers exposed to breeding failed to wean a calf. Two thirds represented a failure to conceive or an early embryonic loss. He also showed 18% of the second calf or older cows failed to wean a calf. Approximately 50% were not diagnosed pregnant. Nelson and Beavers (1982) showed condition score entering breeding pasture had an influence on pregnancy rate.

The important effect of perinatal calf mortality (losses occurring at or near the time of birth) has been stressed by several workers. Koger et al. (1967) reported calves which failed to survive from 3,408 calvings, 6.2% were aborted, 50.8% died within 24 hours of birth, 12.0% died between 24 and 72 hours of birth and the remaining 30.8% died after the first 3 days. Rice (1969) reported a 9% perinatal calf mortality rate in an Angus herd. Rasbech (1963)