

# **WEANING BEEF CALVES AT A LATER AGE TO INCREASE PRODUCTION**

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## **INTRODUCTION**

The usual age at which calves are weaned in the United States is 7 to 8 months. However, Florida's warmer temperatures throughout the year and good rainfall during the summer and early fall create a relatively long forage grazing season which could lend itself to a longer calf nursing period. Research conducted at the Everglades Research and Education Center at Belle Glade showed that calves from Brahman-cross cows gained around 1.5 pounds per day between 7 and 9 months of age when left with the cow for an extended nursing period (Crockett, 1977).

The environment and information on cattle breeds (Crockett, 1977) indicate that under fall calving systems in Florida, producers could wean calves later than commonly recommended with a sizable weight advantage. The effect of an extended nursing period on the long-term production of a cow herd, particularly reproduction, is unknown. To answer this question, a five-year research study was conducted at the Everglades Research and Education Center to compare the production of Brahman-cross cows from which calves were weaned at 10.5 months of age versus 8.5 months.

## THE EXPERIMENTAL STUDY

An experimental herd of 124 Brangus-type cows located at Belle Glade was studied during 1977-1983. One-half of the cows were designated to have their calves weaned at about 8.5 months old on July 15, and the remainder at about 10.5 months old on September 15. Cows were randomly assigned to the respective treatments at the start of the study such that average cow ages were the same. Cows were continuously grazed on Rose lawn St. Augustinegrass pasture on organic (muck) soils. Cows were exposed to bulls for 70 days beginning on January 1, and calves were born between October 5 and December 15. A mineral mixture (20% NaCl, 13% Ca, 8% P, 0.8% Cu, 0.6% Fe and 0.03% Co.) was offered free-choice. Open and unsound cows were culled and replaced with good quality 2-year-old heifers.

To measure the effects of calf weaning age, all cows were weighed when calves were weaned at 8.5 and at 10.5 months of age, and at the beginning and end of the breeding season. A body condition score ranging from 1 (very thin) to 9 (very fat) was placed on cows at each weighing. The date and weight of each calf was recorded at birth, and all calves were weighed when the 8.5-month-old calves were weaned on July 15. Calves that were weaned late were weighed on September 15.

## RESEARCH RESULTS

An important reason for weaning calves early is to allow the cow to build body reserves for the winter. Cows nursing calves that were weaned late gained 66 pounds between July 15 and September 15 (Table 1), but their gain was 31 pounds less than that of cows from which calves were already weaned. During other periods of the year, cows that weaned the 10.5-month-old calves lost less or gained more weight than cows that weaned 8.5-month-old calves; thus, overall weight change was similar.

Cow body condition scores reflected changes in body weight. There were no large differences in condition scores of cows in the two weaning age treatments at any time during the year. It is important to note that cows in both weaning age treatments were in good condition (average score 7.2-7.3) going into the winter and were not in extremely poor condition (average score 4.6-4.7) at the end of the winter breeding season.

<b>Table 1. Effects of calf weaning age on weight changes, condition, pregnancy rate, and calving date of cows (5 years).</b>		
	Weaning Age of Calf, Months	
Item	8.5	10.5
Number of observations	291	291

Cow weight on Sept. 15, lb(a)	1042	1024
Weight change, lb		
Sept. 15 to Dec. 15	-22	-15
Dec. 15 to March 10	-85	-84
March 10 to July 15	60	70
July 15 to Sept 15(b)	97	66
Annual change	48	37
Condition score(c)		
Sept. 15	7.3	7.2
Dec. 15	7.2	7.0
March 10	4.7	4.6
July 15	6.7	6.7
Conception rate(d)	88.0	89.0
Avg. calving date	Oct. 31	Nov. 3
(a) To convert lb to kg, multiply by 0.454.		
(b) Period when calves weaned at 10.5 months were still nursing cow and 8.5-month-old calves were already weaned.		
(c) Condition score 1 to 9, with 1=very thin, 5=average, and 9=very fat.		
(d) Calculated as (number of cows palpated as bred/number of cows exposed to bull) x 100.		

Conception rate of cows was not affected by weaning calves at 10.5 months. In fact, cows from which 10.5-month-old calves were weaned had a slightly higher conception rate (89% versus 88%) than cows from which calves were weaned at 8.5 months. Cows from which 10.5-month-old calves were weaned averaged calving three days later than cows that weaned calves earlier, suggesting that they rebred later in the breeding season. However, there was not a trend toward an increasingly later calving date by cows weaning 10.5-month-old calves over the five years the study was conducted.

Calves in both weaning age groups had a similar birth weight (62-63 pounds) and calf death loss to weaning (7.2%) (Table 2). When all calves were weighed on July 15, those from cows that had previously weaned calves at 10.5 months were 11 pounds lighter than calves from cows that weaned calves at 8.5 months. Approximately 5 pounds of the lighter weight was due to the later birth (three days) of calves in the 10.5-month weaning age group. Calves left with cows the additional two months gained 82 pounds and had a 71-pound heavier average weaning weight on September 15 than calves weaned on July 15 at 8.5 months of age. This is a sizable weaning weight advantage, indicating that this management practice would be economically advantageous to producers who sell calves at weaning, because input costs would be low.

<b>Table 2. Effects of calf weaning age on birth weight, weaning weight, death loss, and weaning rate of calves (5 years).</b>		
	Weaning Age of Calf, Months(a)	
Item	8.5	10.5
Number of calves	257	259
Birth weight, lb(b)	63	62
Weight at 8.5 months of age, lb	490	479
Weight at 10.5 months of age, lb	--	561
Calf death loss, %	7.2	7.2
Weaning rate, %(c)	80.8	81.8
(a) Weaning dates were July 15 and Sept. 15, respectively.		
(b) To convert lb to kg, multiply by 0.454.		
(c) Calculated as (number of calves weaned/number of cows exposed to bull) x 100		

Research at other locations supports the concept of extending the nursing period of fall-born calves when adequate forage is available. In Oklahoma, fall-born calves left with the cow to 9.5 months of age were 199 pounds heavier at weaning than calves weaned at 7 months (Handcock et al., 1985). During four years this management practice did not affect cow reproduction. In Gainesville, creep-fed calves weaned at 9 months were 138 pounds heavier than calves weaned at 7 months, but the long-term effects of late weaning on cow reproduction were not measured (Van Dijk et al., 1985).

## CONCLUSIONS

Experimentation showed that fall calving cows can nurse calves for up to two months beyond a standard weaning age of 7 to 8 months and significantly increase calf weaning weight without affecting cow reproduction. The use of an extended calf nursing period and its length would depend upon the following situations and conditions.

1. To qualify for an extended calf nursing period, fall or early winter calving must be practiced and calves usually would be weaned in middle to late summer.
2. The quantity and quality of pasture forages is important when an extended calf nursing period is attempted. Quantity of grass is particularly important because a portion of the grass grown in the summer and fall needs to be stockpiled for winter grazing. The quality of pastures during this period is usually adequate in a normal fertilization program.
3. The brood cow herd should be in good condition when an extended nursing period is considered. An average condition score of above 5 in a range of 1 to 9 is required.
4. Weaning calves at a later age should not be attempted when pastures are overstocked and little grass is available going into late summer or fall, and/or the average condition score of the cow herd is less than 5.
5. The calf nursing period would be extended during late summer and early fall when feeder calf prices are predicted to be steady or increase. Weaning calves at a later age is particularly useful when calf prices are high. Reproduction problems, if any, from late weaning would be two years away because the following year's calf crop would have been conceived. It should be recognized that the price per pound of heavier calves is less than that of lighter calves; however, the total amount received for the heavier calf would be much greater. Extending the nursing period off all-born calves is not a standard production practice but a management tool which offers Florida cow/calf producers flexibility in utilizing resources and marketing feeder calves.

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