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## **Does Percentage of Brahman Breeding Affect Fertility in a Winter Breeding Season?**

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Reports out of Florida and Texas indicate that Brahman cattle show seasonal breeding variations. Compared to English-bred counterparts, Brahman cattle have been reported to have decreased sexual activity and a lower ovulation rate in the winter than in the spring and summer. Many Florida cattle producers start their breeding season in December, a time when the day length is the shortest. Short day length is apparently the primary factor responsible for the observed reductions in sexual activity of straight-bred Brahman females. Research at the Ona Station was begun in 1991 to determine the economic differences between a winter (mid December to mid-February) vs. a spring (March to May) breeding season. One of the research objectives was to determine if percentage of Brahman breeding affected the number of cows cycling before the start of breeding.

A total of 68 cows were used which included 20 cows with no Brahman (0 percent), 8 cows with 1/16th to 3/16th Brahman (25 percent), 18 cows with 1/4 to less than 1/2 Brahman (50 percent), 15 cows with 1/2 to less than 3/4 Brahman (75 percent) and 7 cows with 3/4 to straight-bred Brahman (100 percent) breeding. Blood samples were collected weekly from August 28 through December 12 to determine serum progesterone concentrations. Progesterone is a hormone produced by the corpus luteum which develops on the ovary after ovulation. Surprisingly, we found that as the percentage Brahman increased, so did serum progesterone concentrations (15 ng/ml in 0 percent Brahman vs. 26 ng/ml in 100 percent Brahman). In addition, progesterone concentrations increased with decreasing day length (14 ng/ml in August vs. 28 ng/ml in December). There was no difference in pregnancy rate during the 60-day winter breeding season among the percentage Brahman groups. These results are in marked contrast to those reported in the scientific literature.

An explanation for the discrepancy between published reports and results at the Ona Station is not readily apparent. Texas researchers have shown that much of the apparent reduction in fertility of Brahman cattle during the winter could be overcome by increasing the level of energy intake. The majority of cows used in our study were not exposed to bulls during the spring breeding season in order to establish the winter breeding herd. As such, it is quite likely that our cows were on an increasing plane of nutrition after calves were weaned in August. It is possible that weight gain and increasing body condition resulted in an increase in progesterone levels, thereby masking any negative effects of decreasing day length. Work is continuing at the Ona Station to define the impact of nutrition and breed type on production efficiency in winter and spring breeding cows.