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COMPARISON OF SELECT SYNCH® AND PROSTAGLANDIN IN ESTROUS SYNCHRONIZATION OF BRAHMAN FEMALES

S. R. Tatman, D. A. Neuendorff, and R. D. Randel

Background: Estrous synchronization allows females to be bred at a predetermined time, thereby decreasing time and labor requirements. There are numerous products and methods of estrous synchronization currently on the market, with new products and protocols added yearly offering producers numerous options. The prostaglandin $F_{2\alpha}$ (PGF) synchronization protocol was one of the earliest methods for synchronization developed, and continues to be used today, making it an industry standard. The Select Synch® protocol is relatively new. It uses a GnRH injection on day 0 followed by PGF injection on day 7. This trial evaluated estrous synchronization and conception rates comparing the Select Synch protocol to the 1 or 2 shot PGF system. Multiparous Brahman cows (n=60) were equally assigned to either PGF or Select Synch treatment. PGF females received an injection of PGF (25 mg i.m. Lutalyse®, Upjohn, USA) on day 0 while Select Synch received an injection of GnRH (100 µg i.m. Cystorelin®, Merial LTD) on day 0. Females were observed for estrus following the first injection, although the Select Synch protocol recommends heat checking to begin on day 5. Insemination occurred 12 hours after standing estrus. On day 8, any PGF females which had not shown estrus and all Select Synch females were given a second PGF injection. The second injection occurred on day 8, not day 7 as both the Select Synch and 2 shot PGF system recommend as both were designed for *Bos taurus* cattle and Brahman cattle are more responsive to PGF on day 8. The trial concluded after a 5-day synchronization period ending on day 13.

Research Findings: The Select Synch protocol resulted in estrous synchronization of a similar number of females to the one shot PGF system (50% versus 46%, respectively). However, synchronization rates were significantly lower for Select Synch versus the 1 or 2 shot PGF synchronization method (50% versus 73%). Although only 50% of the Select Synch females showed estrus during the intended synchronization time period, approximately 10% of the females showed estrus prior to the proposed AI period while 28% showed estrus afterwards. First service conception rates were clearly higher in both PGF groups (approximately 70%) when compared to the Select Synch treatment. Conception rates were also higher within the Select Synch treatment for those females which showed estrus outside of the proposed synchronization period (68.2%) when compared to those which showed estrus during the proposed time period (40%).

Table 1. Synchronization and conception rates.

	Synchronization Rate	Conception Rate
Select Synch (SS)	50.0% ^a	40.0% ^c
PGF 1X	46.6% ^a	71.4% ^d
PGF 2X	73.3% ^b	68.2% ^d

Columns with ab superscripts differ ($P < 0.07$)

Columns with cd superscripts differ ($P < 0.09$)

Table 2. Select Synch conception rates.

	Pregnant (n)	Percent Pregnant
Before SS	2	66% ^a
During SS	6	40% ^a
After SS	6	75% ^a
Before and after SS	8	72.7% ^b

Values in columns with different superscripts differ ($P < 0.10$)

Application: In this trial, Select Synch did not increase synchronization rates over the one injection PGF method of synchronization. Additionally, much higher synchronization rates occurred when a second injection of PGF was given to females which had not yet responded, without a decrease in conception rates. The Select Synch protocol for estrous synchronization tended to decrease first service conception rates in Brahman females. Therefore, from an economic and biological standpoint, the PGF method of synchronization clearly outperforms Select Synch.