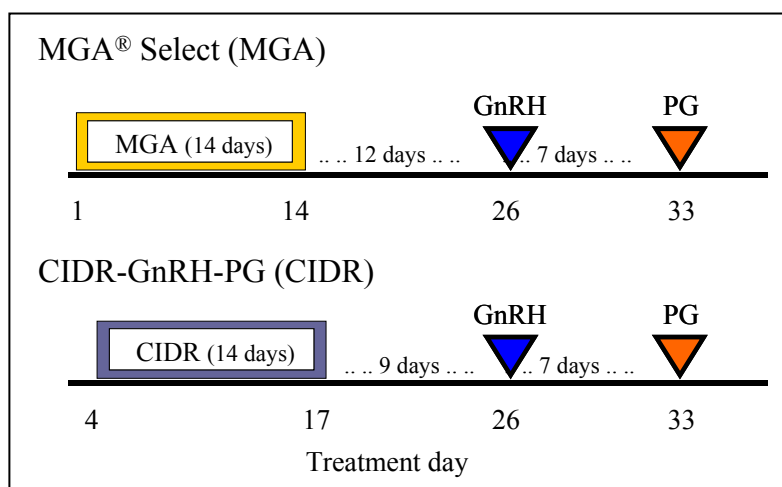


## HOW DO MGA- AND CIDR-BASED PROTOCOLS COMPARE IN SYNCHRONIZING ESTRUS IN REPLACEMENT BEEF HEIFERS?

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We recently designed a study to compare estrous response, timing of AI and pregnancy rate resulting from AI among beef heifers that were presynchronized with MGA or CIDR inserts prior to GnRH and PG (Kojima et al., 2004; Figure 1). Heifers ( $n = 353$ ) at three locations (location 1,  $n = 154$ ; 2,  $n = 113$ ; and 3,  $n = 85$ ) were randomly assigned to one of two treatments by age and weight. The MGA Select-treated heifers (MGA;  $n = 175$ ) were fed MGA (0.5 mg/head/day) for 14 days, GnRH (100  $\mu\text{g}$  i.m. Cystorelin) was injected 12 days after MGA withdrawal, and PG (25 mg i.m. Lutalyse) was administered 7 d after GnRH. CIDRs (CIDR;  $n = 177$ ) were inserted in heifers for 14 days, GnRH was injected 9 days after CIDR removal, and PG was administered 7 days after GnRH. CIDR-treated heifers received carrier without MGA on days that coincided with MGA feeding.



**Figure 1.** Substituting CIDR inserts for MGA in the MGA Select protocol in beef heifers. From Kojima et al. (2004).

Heifers were monitored for signs of behavioral estrus beginning the day PG was administered. AI was performed 12 hours after onset of estrus and recorded as day of AI (Day 0 = PG). Pregnancy rate to AI was determined by ultrasonography 40 days after AI. Estrous response did not differ ( $P > 0.10$ ) between treatments. Peak AI occurred on day 3 for heifers in both treatments (CIDR 122/177, 69%; MGA 93/175, 53%), and distribution of AI was more highly synchronized ( $P < 0.05$ ) among CIDR- than MGA-treated heifers. Pregnancy rate to AI was greater ( $P < 0.01$ ) in CIDR- (112/177, 63%) than MGA-treated heifers (83/175, 47%), however, final pregnancy rate did not differ ( $P > 0.10$ ) between treatments (Table 1). In summary, replacing feeding of MGA with CIDR inserts improved synchrony of estrus and pregnancy rate resulting from AI in replacement beef heifers (Kojima et al., 2004).

**Table 1.** Estrous response, AI pregnancy, and final pregnancy rates.

	Estrous response	AI pregnancy rate	Final pregnancy rate
CIDR	154/177 (87 %)	112/177 (63 %) <sup>a</sup>	164/177 (93 %)
MGA	147/175 (84 %)	83/175 (47 %) <sup>b</sup>	159/175 (91 %)
Total	301/352 (86 %)	195/352 (55 %)	323/352 (92 %)
Difference	+ 3 %	<sup>a,b</sup> P = 0.01 + 16 %	+ 2 %

From Kojima et al. (2004).

We have continued to collect data using this protocol in field demonstrations across Missouri. Results from the field demonstrations are included in Table 2. These data indicate that the 14-day CIDR protocol followed with the administration of GnRH on day 23 and prostaglandin on day 30 is a viable alternative for use in synchronizing estrus effectively in beef heifers.

**Table 2.** 14 day CIDR Results

Herd	No. Preg.	Total No.	Percentage
1	27	42	64
2	50	79	63
3	35	56	63
4	26	48	54
5	49	79	62
6	31	46	67
7	24	44	55
8 <sup>+</sup>	71	117	61
9	29	41	71
10 <sup>+</sup>	44	67	66
11	42	81	52
12* <sup>+</sup>	20	30	67
Total	486	730	67%

\*MU Greenley Farm

<sup>+</sup>Heifers at these locations were inseminated at 72 hours after PG with GnRH at AI. No heat detection was performed.