

## Is Newer Better? The 7 & 7 Synch Protocol

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While AI season is mostly over for early spring calving herds, Sandy Johnson explains the research being conducted on AI synchronization protocols. With AI (Artificial Insemination) becoming more popular, especially in the Southwind District, I strongly encourage producers interested in AI to use these protocols. Personally, I use a couple of these protocols within my herd and am more than happy with the results we have gotten. Read more from Sandy Johnson, Extension Beef Specialist, below.

Twenty plus years ago, when ovulation synchronization protocols first produced industry acceptable pregnancy rates from a single fixed time insemination there was concern if the three handlings needed would still be viewed as too much hassle. The 2017 NAHMS survey shows use of AI trending up compared to earlier surveys, especially in herds sizes of 200 or more and in the Central region. Now after years of good success, would a protocol with an additional handling be worth it? The level of “hassle” for an AI program differs for each operation based on several factors but includes facilities and labor and perhaps attitude towards working cows. This article reviews data from synchronization protocols using 3 or 4 handlings.

Users of artificial insemination are always looking for ways to produce more AI-sired calves for the effort. Variation in response to treatments to synchronize ovulation are partially due to the variation in the stage of the estrous cycle when the treatment begins. The effectiveness of GnRH to induce ovulation or initiate a new wave of follicular growth varies with maturity of the dominant follicle.

Researchers have been studying pre-synchronization for several years as a means to reduce the variation in the stage of the estrous cycle when GnRH is given to initiate a new ovulatory follicle. In the dairy industry where an additional injection is not seen as a barrier, pre-synchronization simply using an injection of prostaglandin (PG) in advance of the ovulation synchronization protocol has been used for some time. A pre-synchronization protocol, PG 6-day CIDR, was added to the beef recommended protocol sheets in 2011, as a heat detection and clean up timed AI protocol for either cows or heifers. The data available at the time (3 herds, 497 hd) indicated pregnancy rates to FTAI higher than the 5-day CO-Synch+ CIDR protocol in cows. Early users of the protocol liked the opportunity to inseminate some cows after the initial PG injection. The protocol was not listed in the fixed-time AI category at that time partially because of fear that 4 handlings would discourage potential users.

Efforts continued by multiple labs to improve pregnancy rates to fixed-time AI generally by adding an additional handling in the process. Recently, work by Jordan Thomas and coworkers at the University of Missouri has received attention in the popular press concerning a protocol known as 7 & 7 Synch. Pregnancy rates to fixed-time AI with conventional semen or sexed semen were higher with 7&7 Synch than with 7-day CO-Synch+CIDR (Anderson et al., 2021). Estrous response after CIDR removal with this protocol has been very good. Additional data collected over multiple states and herds and shared at 2022 national meetings support the improvement in estrous response compared to other protocols. However, pregnancy rate to AI in cows was not different to either the commonly used 7-day CO-Synch + CIDR or another pre-synchronization protocol, PG 6-day+ CIDR in studies reported by Pancini and coworkers or Ketchum and coworkers, respectively.

Mercadante and coworkers compared the 7 & 7 Synch with the 7-day CO-Synch+CIDR protocol in 1552 beef heifers at 8 locations. Pregnancy rate to timed AI was higher with 7 & 7 Synch than the 7-day CO-Synch+CIDR protocol, 54.3 (420/773) and 46.2 (360/779) respectively.

Collectively these data indicate that pre-synchronization improves estrous response and may improve AI pregnancy rate compared to shorter-term protocols with fewer handlings. There is not enough data to conclude one pre-synchronization method is superior to others for use in cows.

The 2023 recommendations from the Beef Reproductive Task Force can be found at [BeefRepro.org](https://www.beefrepro.org) and options for 7 & 7 Synch are listed for both cows and heifers for timed-AI. The value of AI-sired calves and the costs associated with use of estrus synchronization and AI should guide producers in protocol selection when evaluating recommended options.

Thank you again to Sandy Johnson, Extension Beef Specialist, for the information in this article. If you have any additional questions on this topic, please feel free to reach out to Hunter Nickell, Livestock Production Agent, at any Southwind Extension District Office.