



Dairy Cow Synchronization Protocols

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Brief descriptions of protocols with calendar timelines will allow you to determine the number of times cows must be handled and if heat detection is required to best fit your farm's routine. Larger herds usually start a new group of cows every week whereas smaller herds may start a new group every other week.

Three components of a total program consist of:

- PreSynch - synchronization of cycles prior to synchronization for A.I.
- Synchronization for A.I.
- ReSynch - Either at or prior to pregnancy determination for quick re-insemination

PreSynch - Objective is to have cows at a similar stage of the estrous cycle at initiation of the synchronization protocol prior to A.I.

- Two injections of PGF_{2α} 14 days apart
- Second PGF_{2α} injection is 14 days prior to OvSynch or CoSynch if desire is for injections to occur the same day of the week
- Second PGF_{2α} injection 11 or 12 days prior to OvSynch or CoSynch if objective is to maximize conception rates

OvSynch - Original "Timed A.I. (TAI)" protocol eliminating heat detection

- Timed A.I. should occur approximately 8 to 18 hours after second GnRH injection
- Interval between PGF_{2α} and second GnRH is usually 48 hours, but 56 hour interval may provide higher conception

CoSynch - Similar to OvSynch but one less handling of cows

- Timed A.I. at time of last injection of GnRH
- One less handling of cows saves labor and may improve compliance
- Estrous detection required from PGF_{2α} to GnRH to optimize success

OPTION 1 - PreSynch (14/14) + OvSynch

S	PGF _{2α}	M	T	W	Th	F	S
S		M	T	W	Th	F	S
S	PGF _{2α}	M	T	W	Th	F	S
S		M	T	W	Th	F	S
S	GnRH	M	T	W	Th	F	S
S	PGF _{2α} (pm)	M	T	GnRH (pm)	TAI (am)	F	S

OPTION 2 - PreSynch (14/14) + CoSynch72

S	PGF _{2α}	M	T	W	Th	F	S
S		M	T	W	Th	F	S
S	PGF _{2α}	M	T	W	Th	F	S
S		M	T	W	Th	F	S
S	GnRH	M	T	W	Th	F	S
S	PGF _{2α}	M	T	W	GnRH + TAI	F	S

OPTION 3 - PreSynch (14/11) + OvSynch56

S		M	T	W	PGF _{2α}	Th	F	S
S		M	T	W		Th	F	S
S		M	T	W	PGF _{2α}	Th	F	S
S		M	T	W		Th	F	S
S	GnRH	M	T	W		Th	F	S
S	PGF _{2α} (am)	M	T	GnRH (pm)	TAI (am)	F	S	



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▼ DAIRY COW SYNCHRONIZATION PROTOCOLS

PGF_{2α} + CIDR® Synch - Uses a series of PGF_{2α} injections combined with heat detection to A.I. most cows at estrus. Cows not inseminated at estrus receive a CIDR® insert + OvSynch protocol for Timed A.I.

- One week after last PGF_{2α} cows not previously inseminated receive a CIDR® + OvSynch started
- OvSynch protocol can be either OvSynch, CoSynch72, or OvSynch56
- Allows for A.I. of cycling cows prior to OvSynch
- Uses a CIDR® in cows that likely need supplemental progesterone prior to A.I.

OPTION 4 -PGF_{2α} + CIDR® Synch

S	PGF _{2α}	M	T	W	Th	F	S
			Tail Stripe (chalk/paint) and A.I.				
S		M	T	W	Th	F	S
S	PGF _{2α}	M	T	W	Th	F	S
			Tail Stripe (chalk/paint) and A.I.				
S		M	T	W	Th	F	S
S	PGF _{2α}	M	T	W	Th	F	S
			Tail Stripe (chalk/paint) and A.I.				
S	CIDR®	M	T	W	Th	F	S
		+ GnRH					
S	CIDR®	M	T	GnRH	W	TAI	S
		out + PGF _{2α}		(pm)	(am)		

ReSynch - Cows receive Timed A.I. following “open” diagnosis

- Herds with excellent heat detection may choose to initiate ReSynch at pregnancy exam. (*recommended for tail stripe herds*)
- Seven days prior to pregnancy exams inject all cows with GnRH.
- Pregnant cows receive no further injections.
- At “open” diagnosis cows are injected with PGF_{2α}, GnRH at 48 hours, and A.I. approximately 8 to 18 hours later.

Voluntary Waiting Period (VWP) - Prevention of excessive mobilization of body fat in the first six weeks of lactation is of primary importance for subsequent fertility. Cows will tolerate a loss of approximately one (1) body condition scoring unit in the first six weeks after calving; more extreme condition loss will predispose her to lower conception rates at first service. Body condition and cyclicity (target 75 percent) should be used as guides to determine when to set the VWP especially when using Timed A.I. protocols. Because every cow will be inseminated within a one week interval post calving, the VWP can comfortably be set at 70 to 80 days in milk.

Compliance for a synchronization protocol is defined as the administration of hormones to the correct cows at the

correct time intervals. The more complicated a protocol, the greater the chances are for procedural failure. Protocol compliance is critical for success. For example, the standard Presynch + Ovsynch protocol requires that each cow receive five hormone injections at appropriate days in milk and in the correct sequence. Failure to administer any one of these five hormones or administration in an incorrect sequence will result in a failure of the protocol to deliver an ovulated ova following insemination. If at each step a 95 percent compliance is achieved, the cumulative compliance becomes 77.4 percent which should not be acceptable. When selecting a synchronization protocol two factors determine the success of any program - cycling cows in excellent body condition and compliance to the prescribed protocol.

WHICH PROTOCOL IS BEST?

It is still possible to maintain good reproductive performance in dairy herds without synchronization and Timed A.I., but it requires an effective heat detection program. Unfortunately, maintaining an efficient heat detection program and quality heat detection personnel can be a never-ending challenge in today's expanding herds. As the accuracy and efficiency of estrous detection declines, the value of incorporating synchronization and Timed A.I. into the reproductive management program increases proportionately. By grouping cows that calve within a one or two week window, cows can be systematically synchronized to allow for maximum pregnancy rates and minimal labor inputs. It is easy to get confused by the variety of protocol available; however, this variety provides flexibility in developing a tailor-made reproductive management program. Work with you veterinarian and Select Reproductive Solutions™ Specialist to design a tailor-made program for your dairy.

GnRH - Cystorelin®, Factrel®, Fertagyl®, and OvaCyst®

PGF_{2α} - estroPLAN™, Estrumate®, In-Synch®, Lutalyse®, and ProstaMate®

CIDR® - Progesterone releasing device

Times listed for Timed A.I. should be considered as the approximate average time of insemination. This should be based on the number of cows to inseminate, labor, and facilities.

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