



DAIRY CATTLE REPRODUCTION COUNCIL

"Helping farmers optimize fertility in dairy cattle."

Reproductive Management Strategies for Dairy Cows

Detection of estrus followed by timed A.I.

For herds with efficient and accurate estrus-detection systems

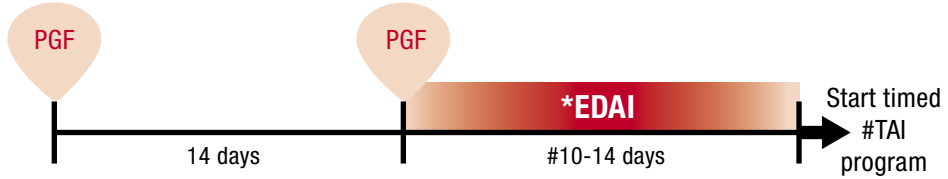


Definitions and comments:
 EDAI = Estrus detection followed by A.I.
 *Start and stop dates for EDAI depend on voluntary waiting period (VWP) and the reproductive goals of each herd.

Presynchronization methods used before TAI

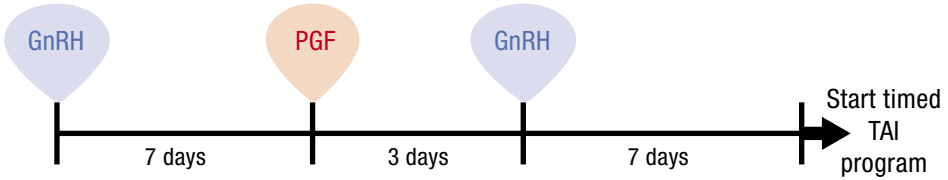
Used with TAI programs below to increase pregnancy per AI (P/AI). Can be used with or without EDAI.

A. "PreSynch" (2xPGF - TAI)

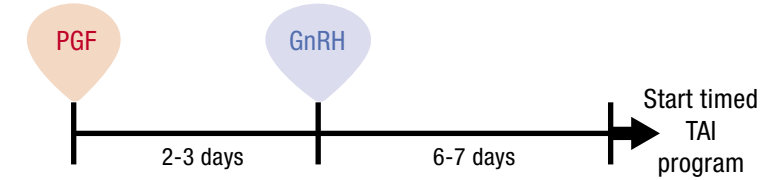


Definitions and comments:
 PGF = Prostaglandin F_{2a}
 GnRH = Gonadotropin-releasing hormone
 *Intensity of color in EDAI denotes period (2-7 days) to expect most cows in estrus; #TAI program starting 10-12 days after PGF results in higher fertility

B. "Double OvSynch" (GnRH-PGF-GnRH - TAI)



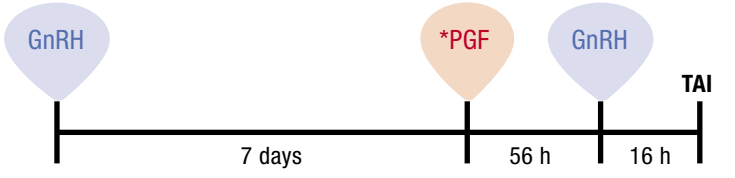
C. "G-6-G" (PGF-GnRH - TAI)



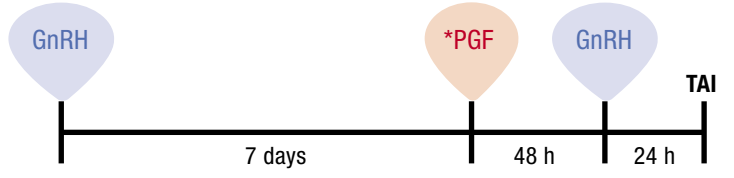
Synchronization methods for TAI

Can be used alone or with presynchronization (see above), and with or without EDAI detection. Presynchronization increases fertility. The use of the CIDR benefits fertility of cows with no CL starting TAI.

A. "OvSynch 56"

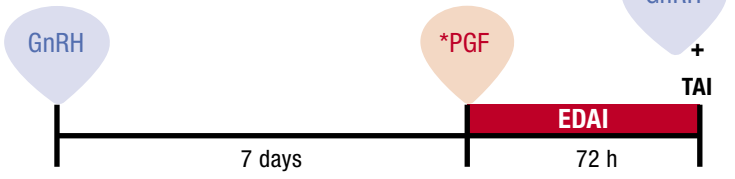


B. "OvSynch 48"

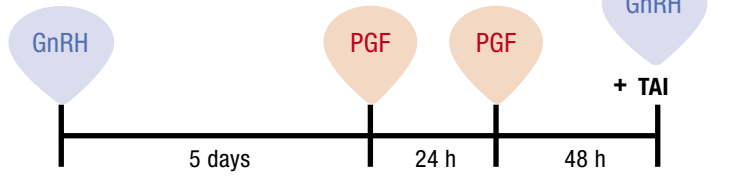


CIDR can be used in any program being inserted at 1st GnRH and removed at PGF.

C. "CoSynch 72"



D. "5-day CoSynch"



*A second PGF 24 h after the first PGF improves luteolysis and fertility.

Presynchronization-Synchronization Calendars

Calendars are examples of presynchronization-synchronization combinations that are used for insemination. Any presynchronization can be used with a synchronization program. Any cow showing estrus after VWP can be inseminated.

A. "PreSynch-OvSynch"

MON	TUE	WED	THU	FRI
		PGF (AM)		
				GnRH (AM)
				PGF (AM)
				GnRH (AM)
				GnRH (AM)
GnRH (AM)				PGF (AM)
				GnRH (PM) TAI
PGF (AM)				GnRH (PM) TAI

B. "Double-OvSynch"

MON	TUE	WED	THU	FRI
				GnRH (AM)
				PGF (AM)
				GnRH (AM)
				GnRH (AM)
GnRH (AM)				PGF (AM)
				GnRH (PM) TAI
				GnRH (PM) TAI

C. "G-6-G-OvSynch"

MON	TUE	WED	THU	FRI
				GnRH (AM)
				PGF (AM)
				GnRH (AM)
				GnRH (AM)
GnRH (AM)				PGF (AM)
				GnRH (PM) TAI
				GnRH (PM) TAI

The reproductive efficiency may differ between the programs listed above. Specific research data should be considered to determine the program that is optimal for use on a particular dairy farm.

Reproductive Management Strategies for Dairy Cows

Resynchronization programs

Any cow that is diagnosed open at pregnancy diagnosis (PD) can be resynchronized. Methods can be used with or without estrous detection and after the observed estrus (EDAI). Presence or absence of corpus luteum is a criterion to be considered with your veterinarian or reproductive specialist when selecting a program to be used.

A. Start TAI program after PD

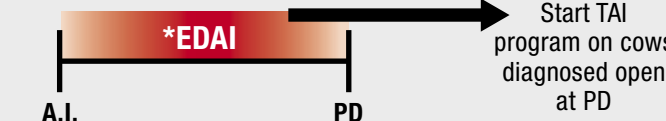


Example: OvSynch 56 starting after PD

MON	TUE	WED	THU	FRI
PD + GnRH (AM)				
PGF (AM)		GnRH (AM)		TAI

*Intensity of color within EDAI indicates intensity of estrus. Open cows could be in estrus 18-25 days after AI. PGF is given to cows diagnosed open. Pregnant cows are not treated. CIDR can be used in Resynch program as described in page 1.

B. Start TAI program before PD

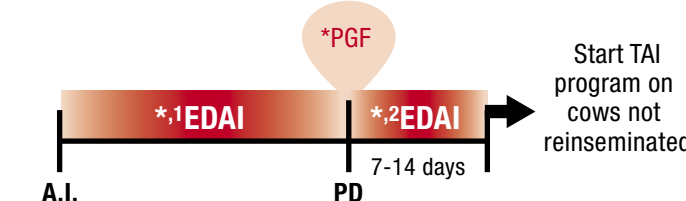


Example: OvSynch 56 starting before PD

MON	TUE	WED	THU	FRI
GnRH (AM)				
PD + PGF (AM)		GnRH (AM)		TAI

PGF is given to cows diagnosed open. Pregnant cows are not treated.

C. EDAI, PGF at PD followed by EDAI & TAI for cows not re-inseminated



Example: PGF followed EDAI & OvSynch 56

MON	TUE	WED	THU	FRI
PD + GnRH (AM)				
GnRH (AM)				
PGF (AM)		GnRH (PM)		TAI

Intensity of color indicates intensity of estrus. ¹Open cows could be in estrus 18-25 days after A.I. ²Cows come in estrus 2-7 days.

Compliance Table: The following table shows the percentage of cows receiving all treatments as a function of compliance at an individual treatment. For example, if 95 of 100 cows receive their treatment on any given day, the herd has 95% compliance. To achieve the greatest P/AI, herds have to strive for 100% compliance.

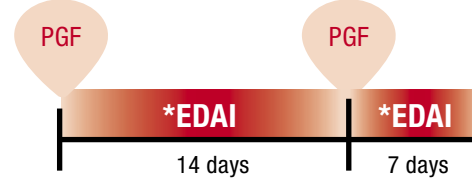
Compliance	3 treatments program	7 treatments program
100%	100%	100%
95%	86%	70%
90%	73%	48%

Note: This reproductive management sheet was assembled by the Dairy Cattle Reproductive Council (DCRC). Programs are intended to promote sustainable food production through sound dairy practices. The DCRC recommends working with a licensed veterinarian for the proper administration of all treatments.

Reproductive Management Strategies for Dairy Heifers

Artificial insemination after detection of estrus

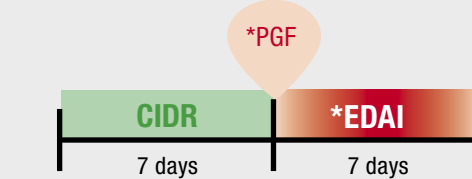
A. Two PGF followed by heat detection



Definitions and comments:

PGF = Prostaglandin F_{2a}. *Intensity of color in EDAI indicates estrus intensity. Most heifers are in estrus 2-7 days after PGF. Approximately 70% of the heifers will be in estrus in the first 14 days after the first PGF. The remaining heifers should be in estrus after the second PGF. Non-responding heifers might be prepubertal. TAI can be used to provide a breeding opportunity of heifers not detected in estrus.

B. CIDR program with PGF at removal



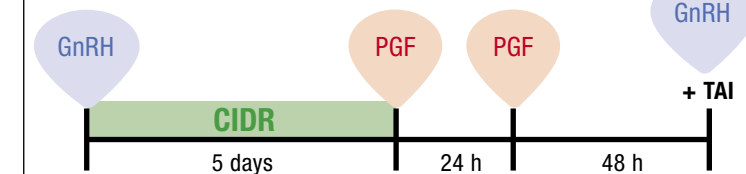
Definitions and comments:

CIDR = Controlled internal drug release. Approximately 70% of heifers should be in estrus during 7 days after the CIDR removal. Non-responding heifers may be prepubertal. CIDR-based programs may induce fertile entries in some prepubertal heifers. *PGF can be given on day 6 instead of 7 (one day before CIDR removal) to increase synchrony of estrus in the program.

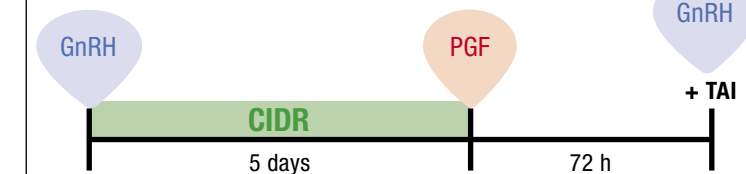
Programs for timed A.I.

GnRH = Gonadotropin-releasing hormone. For the timed AI program presented below, the option A yields greater number of pregnancies per insemination than option B.

A. 5-d CIDR-Synch with GnRH and 2 PGF



B. 5-d CIDR-Synch without GnRH and 1 PGF



Calendar options

A. Two PGF followed by heat detection

SUN	MON	TUE	WED	THU	FRI	SAT
	PGF	EDAI	EDAI	EDAI	EDAI	EDAI
EDAI	EDAI	EDAI	EDAI	EDAI	EDAI	EDAI
EDAI	PGF	EDAI	EDAI	EDAI	EDAI	EDAI
EDAI	EDAI					

B. CIDR program with PGF at removal

SUN	MON	TUE	WED	THU	FRI	SAT
	CIDR	CIDR	CIDR	CIDR	CIDR	CIDR
	CIDR	CIDR	CIDR	CIDR	CIDR	CIDR
	CIDR	PGF	EDAI	EDAI	EDAI	EDAI
	EDAI	EDAI				

C. 5-d CIDR-Synch with GnRH and 2 PGF

SUN	MON	TUE	WED	THU	FRI	SAT

Note: This reproductive management sheet was assembled by the Dairy Cattle Reproductive Council (DCRC). Programs are intended to promote sustainable food production through sound dairy practices. The DCRC recommends working with a licensed veterinarian for the proper administration of all treatments.