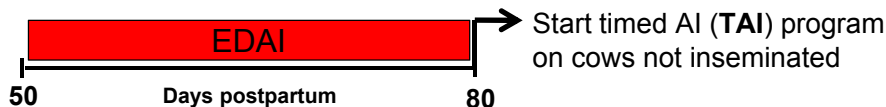# Dairy Cow Synchronization Protocols - 2011

Timed AI after detection of estrus

For herds with efficient and accurate estrus-detection systems in place.

EDAI

50   **Days postpartum**   **80**

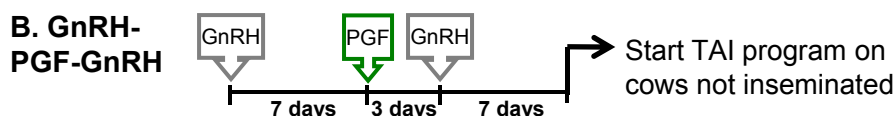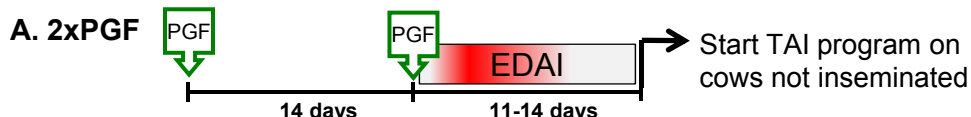Start timed AI (**TAI**) program on cows not inseminated

Definitions and comments:
EDAI = estrous detection and AI after detection of estrus.
Start and stop dates for EDAI depend on the voluntary waiting period (VWP) and the reproductive goals of the individual herd.

Presynch methods used before Ovsynch

*Used with Ovsynch programs (listed below) to increase pregnancies per AI (**P/AI**). Programs can be used with or without estrous detection and AI (**EDAI**).*

A. 2xPGF

PGF   PGF   EDAI

14 days   **11-14 days**

Start TAI program on cows not inseminated

B. GnRH-PGF-GnRH

GnRH   PGF   GnRH

7 days   **3 days**   **7 days**

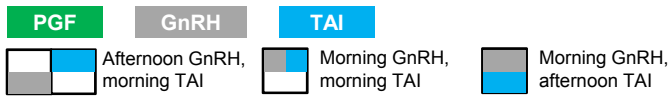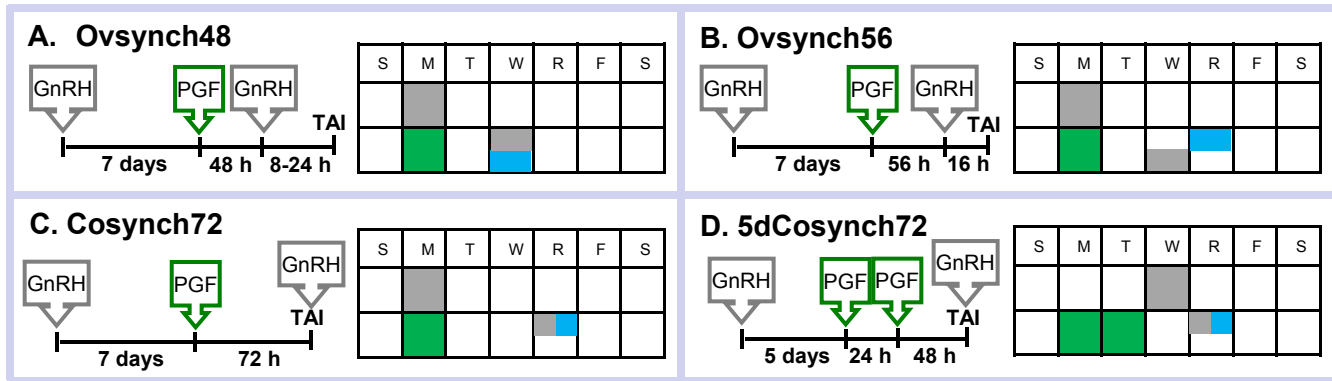Start TAI program on cows not inseminated

Definitions and comments:
PGF = prostaglandin $F_{2\alpha}$. Trade names for suitable products include: Lutalyse®, Estrumate®, Prostamate®, In-Synch®, and estroPLAN®.
GnRH = gonadotropin-releasing hormone. Trade names for suitable products include: Cystorelin®, Factrel®, Fertagyl®, and OvaCyst®.
Intensity of red color within EDAI denotes periods to expect most cows in estrus. Most cows come into estrus 2 to 7 d after PGF.
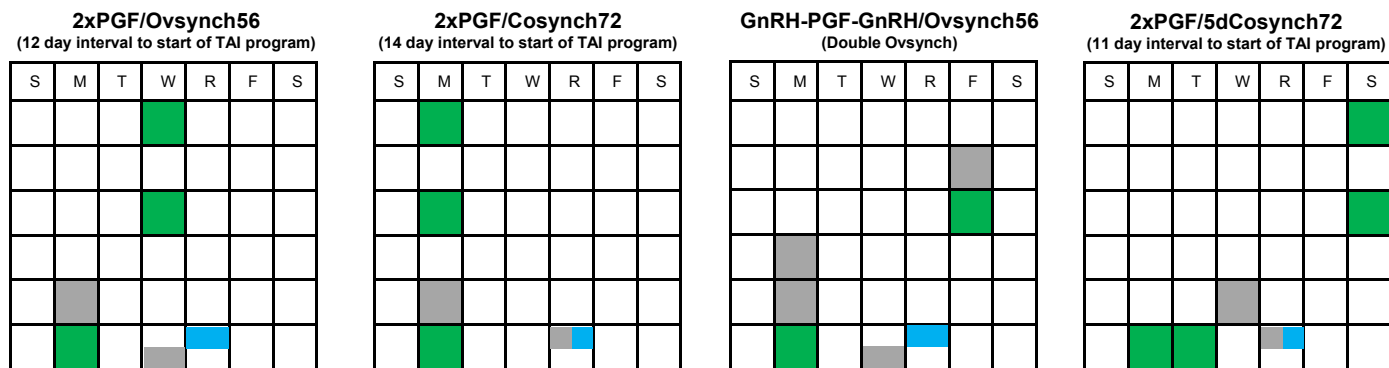
Ovsynch methods used for TAI

Can be used alone or with presynch methods (see above). Programs can be used with or without EDAI.

A. Ovsynch48

GnRH   PGF GnRH   TAI

7 days   **48 h**   **8-24 h**

B. Ovsynch56

GnRH   PGF GnRH   TAI

7 days   **56 h**   **16 h**

C. Cosynch72

GnRH   PGF   GnRH TAI

7 days   **72 h**

D. 5dCosynch72

GnRH   PGF PGF   GnRH TAI

5 days   **24 h**   **48 h**

PGF   **GnRH**   **TAI**

Afternoon GnRH, morning TAI
Morning GnRH, morning TAI
Morning GnRH, afternoon TAI

A CIDR can be used with any of these programs (CIDR_Ovsynch). The CIDR is inserted at first GnRH and removed at PGF. An example would be CIDR_Ovsynch56.

Presynch-Ovsynch Calendars

Calendars are examples of presynch-ovsynch combinations that are used for insemination. Any presynch program can be combined with any Ovsynch program. Any cow observed in estrus after the VWP can be inseminated. Cows will often show estrus 2 to 7 d after PGF .

2xPGF/Ovsynch56
(12 day interval to start of TAI program)

2xPGF/Cosynch72
(14 day interval to start of TAI program)

GnRH-PGF-GnRH/Ovsynch56
(Double Ovsynch)

2xPGF/5dCosynch72
(11 day interval to start of TAI program)

The synchronization efficiency dairy fertility may differ among the listed programs. Specific research data should be evaluated to determine the program that is optimal for use on a particular dairy.

January 2011

Dairy Cow Synchronization Protocols - 2011

Resynch methods

Any cow that is diagnosed open at pregnancy diagnosis (**PD**) can be resynchronized.
Methods can be used with or without estrous detection and AI after observed estrus (**EDAI**).

A. Start Ovsynch method <u>after PD</u>.

EDAI → Start TAI program on cows not re-inseminated

AI — Days after AI — PD
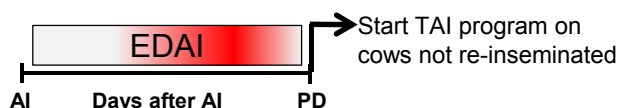
Example: Ovsynch56 Starting after PD

| | | PGF | GnRH | | TAI | | PD |

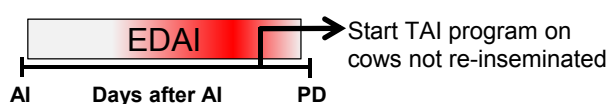| S	M	T	W	R	F	S

The <u>black rectangle</u> denotes PD. PGF is administered to cows diagnosed open (not pregnant). Pregnant cows are not treated. <u>A CIDR</u> can be used in a resynch program according to the instructions on page 1.

<u>Intensity of red color within EDAI</u> denotes periods to expect most cows in estrus during EDAI. Open cows are typically observed in estrus on days 20 to 25 after AI. <u>Nomenclature</u>: The interval in days from first AI to the start of the resynch program (first GnRH) is denoted in front of the program (d32Ovsynch56, etc.).

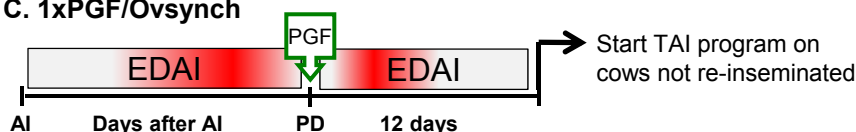### B. Start Ovsynch method <u>before PD</u>.

EDAI → Start TAI program on cows not re-inseminated

AI — Days after AI — PD

Example: Ovsynch56 Starting before PD

S	M	T	W	R	F	S

Example: 5dCosynch72 Starting before PD

S	M	T	W	R	F	S

PGF is given to open cows (not pregnant). Pregnant cows are not treated after PD.

C. 1xPGF/Ovsynch

PGF

EDAI ——— **EDAI** → Start TAI program on cows not re-inseminated

AI — Days after AI — PD — 12 days

PGF is administered to cows that have not been inseminated and are diagnosed open at PD (32 +/- 3 d after AI).

<u>The intensity of red color within EDAI</u> denotes periods to expect most cows in estrus during EDAI. Open cows are typically observed in estrus on days 20 to 25 after AI or 2 to 7 d after PGF.

Example: 1XPGF/Ovsynch56

S	M	T	W	R	F	S

The 1XPGF/Ovsynch program can be used with any Ovsynch method.

D. GnRH/Ovsynch

GnRH

EDAI → Start TAI program on cows not re-inseminated and diagnosed not pregnant

AI — Days after AI — 7 days — PD

GnRH is administered to cows that have not been re-inseminated at 32 +/- 3 d after previous AI. Cows do not usually come into estrus within one week after a GnRH injection.
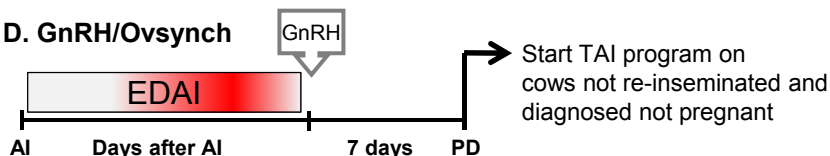
Example: GnRH/Ovsynch56

S	M	T	W	R	F	S

The GnRH/Ovsynch program can be used with any Ovsynch method.

Sample Calendars for Resynch Programs

Calendars are examples of resynch programs. Any resynch program can be used after an initial AI. Any cow observed in estrus before or during the resynch can be inseminated.

Example: d32 Ovsynch56 Starting after PD

	S	M	T	W	R	F	S
Initial AI							
Resynch and AI							

Example: d32 Ovsynch56 Starting before PD

	S	M	T	W	R	F	S

The synchronization efficiency and fertility may differ among the listed programs. Specific research data should be evaluated to determine the program that is optimal for use on a particular dairy.

Compliance table

The following table is provided for reference. It shows the percentage of cows that receive all injections (yellow boxes) as a function of compliance at an individual injection. As an example, if 95 out of 100 cows receive their injection on any given day then the herd has 95% compliance. The greatest P/AI are achieved with 100% compliance so that all cows receive every injection. Farms should have a method to monitor compliance before they start a program.

Compliance	3 injection program	5 injection program
100%	100%	100%
95%	86%	77%
90%	73%	59%