Reproductive Management Strategies for Dairy Cows

Detection of estrus followed by timed AI

*For herds with efficient and accurate estrus-detection systems*

**Definitions and comments:**
- EDAI = Estrous detection followed by AI
- *Start and stop dates for EDAI depend on voluntary waiting period (VWP) and the reproductive goals of the 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)**

- PGF
- PGF
- *EDAI*
- 14 days
- 10-14 days
- Start timed TAI program

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

- GnRH
- PGF
- GnRH
- 7 days
- 3 days
- 7 days
- Start timed TAI program

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

- PGF
- GnRH
- 2-3 days
- 6-7 days
- Start timed TAI program

**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”**

- GnRH
- *PGF
- GnRH
- TAI
- 7 days
- 56 h
- 16 h

**B. “OvSynch 48”**

- GnRH
- *PGF
- GnRH
- TAI
- 7 days
- 48 h
- 24 h

**C. “CoSynch 72”**

- GnRH
- *PGF
- TAI
- EDAI
- 7 days
- 72 h

**D. “5-day CoSynch”**

- GnRH
- PGF
- PGF
- TAI
- 5 days
- 24 h
- 48 h

**Definitions and comments:**
- PGF = Prostaglandin F
- 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

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

*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”

<table>
<thead>
<tr>
<th>MON</th>
<th>TUE</th>
<th>WED</th>
<th>THU</th>
<th>FRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>PGF</td>
<td>PGF</td>
<td>PGF</td>
<td>GnRH</td>
<td>TAI</td>
</tr>
</tbody>
</table>

#### B. “Double-OvSynch”

<table>
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<tr>
<th>MON</th>
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<th>FRI</th>
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</thead>
<tbody>
<tr>
<td>GnRH</td>
<td>PGF</td>
<td>GnRH</td>
<td>PGF</td>
<td>TAI</td>
</tr>
</tbody>
</table>

#### C. “G-6-G-OvSynch”

<table>
<thead>
<tr>
<th>MON</th>
<th>TUE</th>
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<th>THU</th>
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<tbody>
<tr>
<td>PGF</td>
<td>GnRH</td>
<td>GnRH</td>
<td>GnRH</td>
<td>TAI</td>
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</tbody>
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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.

### 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

- **EDAI**: Start TAI program on cows diagnosed open at PD
- **AI**: PGF is given to cows diagnosed open.
- **PD**: Pregnant cows are not treated.

#### B. Start TAI program before PD

- **EDAI**: Start TAI program on cows diagnosed open at PD
- **AI**: PGF is given to cows diagnosed open.
- **PD**: Pregnant cows are not treated.

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

- **PGF**: Start TAI program on cows not re-inseminated
- **7-14 days**: EDAI indicates intensity of estrus. Open cows could be in estrus 18-25 days after AI.
- **PGF**: Cows come in estrus 2-7 days after AI.

### 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.

<table>
<thead>
<tr>
<th>Compliance</th>
<th>3 treatments program</th>
<th>7 treatments program</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>95%</td>
<td>86%</td>
<td>70%</td>
</tr>
<tr>
<td>90%</td>
<td>73%</td>
<td>48%</td>
</tr>
</tbody>
</table>

### 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.