Reproductive Management in Dairy Cattle (Estrous Synchronization)

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<u>Estrus Synchronization:</u>

What are the advantages?

1. **Allows an organized and efficient approach for AI**
2. **Synchronizes estrus and thus reduce time required for estrus detection**
3. **Improves record keeping and group cow management**

Advantages of Estrous Synchronization (Cont.)

4. Labor saving tool for utilizing superior genetics, increase longevity and productivity of dairy cows

5. Better management tool for maintaining proper calving interval (12-13 month)

6. Facilitate adoption of artificial insemination

Economic Return and Profitability

Estrous synchronization: a reproductive mgt. tool

- Controls the timing of estrus or ovulation

mechanism:

- Altering the length of the estrous cycle and/or pattern of follicular growth

Key to Success of systematic program

- Incorporation efficient and accurate detection of estrus
- Timely AI relative to time ovulation

Prostaglandin: PGF2α

Regression of the CL and decrease in progesterone synthesis and secretion

- **Lutalyse** - Natural compound 25 mg dose I.M.
- **Estrumate** - Analogue 500 mg dose I.M.
- **Prostomate** - Analogue to Lutalyse

Mode of action for ***PGF2α***

- **Regress active corpus luteum**
- **Regresses Day 5-17 corpus luteum**

Response:

- **estrus (heat): 2-5 days after injection**
- **heifers ~50 hours cows ~72 hours**

~60-65% of herd should respond to injection

Gonadotropin Releasing Hormone (GnRH)

Ovulation and/or luteiniziation of the growing follicle

Cystorelin - GnRH Analogue

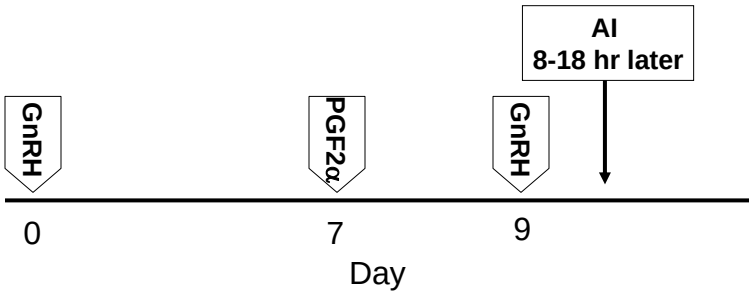
Factral - GnRH Analogue

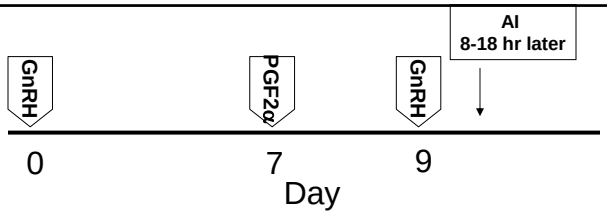
Fertagyl - GnRH Analogue

Control Intra-vaginal Drug Release (CIDR®)

- Known as EZ-Breed ™
- Progesterone release device
- Controlling the estrus cycle by preventing cows coming to estrus.

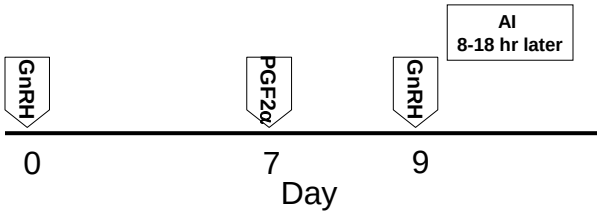
OvSynch® or Timed Artificial Insemination





Advantages:

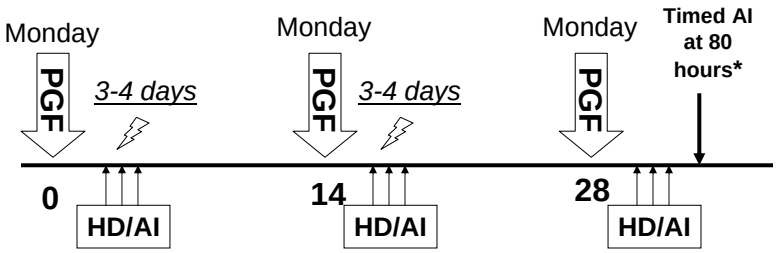
- No need for heat detection
- Increased AI submission rate
  - OvSynch can be beneficial in Hot and humid condition where heat expression is usually low
- A tighter synchrony of ovulation



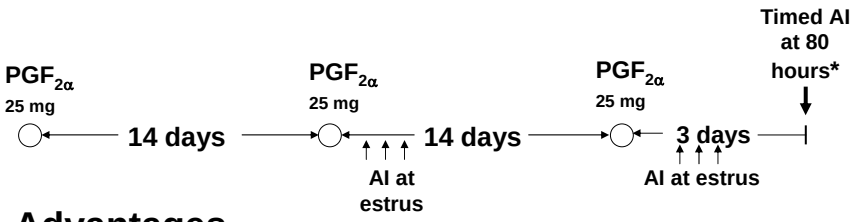
Disadvantages:

- Cost of Drugs
  - a reduced dose of GnRH can be as effective
- Labor cost for animal handling
- Less attention to herd and their estrous behavior**
- Low conception rate compared to other breeding program

Targeted Breeding™ Protocol



*** In the absence of detected estrus, cows are inseminated at a fixed time after the third PGF injection**



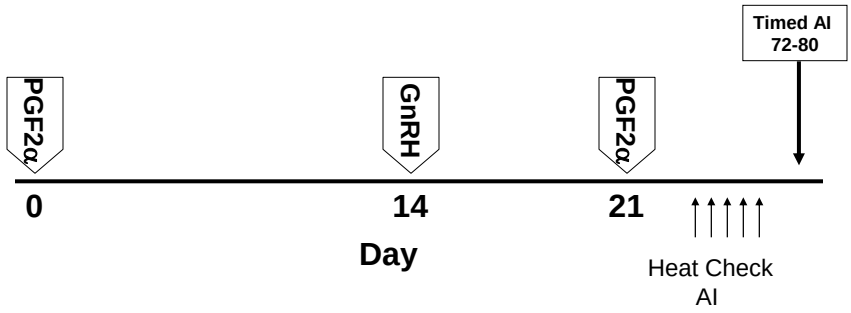
Advantages

- **Less time spent on heat detection**
- **Less veterinary visit for pregnancy examination**
- **Providing some natural synchronization of follicular development**
- **A tighter estrus synchrony compared to single injection of PGF2α**

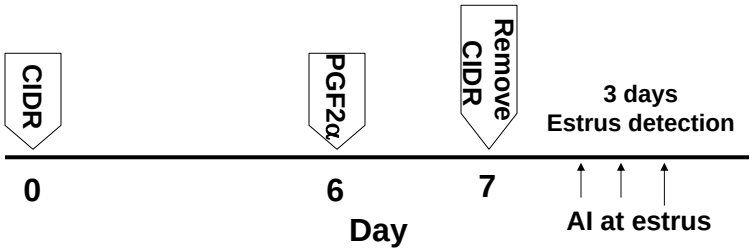
Disadvantages:

- Cow handling and labor
- Heat from 2-5 days after the 2nd injection (wide spread)
- Low fertility rate for cows that are timed AI
- Need for heat detection

Modified Targeted Breeding™ Protocol



EZ-Breed (CIDR)

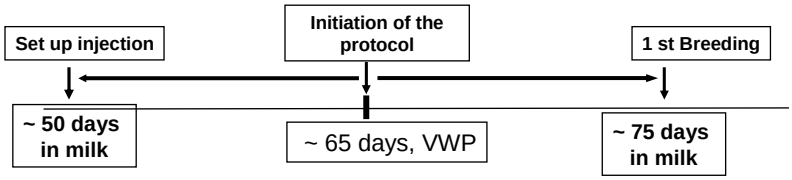


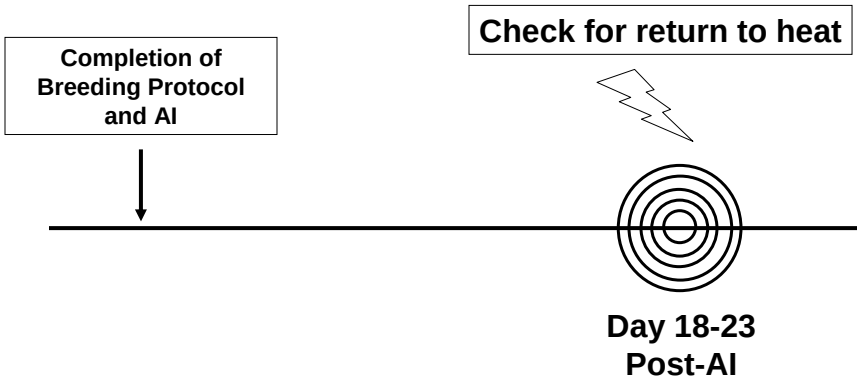
Advantage: tight synchrony of estrus

Disadvantage: ???

Which method should I choose?

When Do We Start ?





Reproductive Performance Goals Compared to Idaho

	Goals
Reproductive Cull Rate	< 8 %
% Heat Detection	> 70
Average Days to First Breeding	70 - 75
First Service Conception Rate	60%
Overall Conception rate	50-55%
Breeding Per Conception	2.0
Days Open	< 120
Calving Interval	13 months

HAPPY A.I.