

# Comparison of owning a bull vs. AI for producers of various sizes

A black bull is shown in profile, standing in a grassy field. The bull is facing right and has a yellow ear tag. The background consists of a clear blue sky and a line of green trees. A wire fence is visible in the distance.

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*Pearl*

# Why AI?

- More early calves
- Uniform calf crop
- Higher quality genetics than you could afford to buy in the bull.
- Reduce time for genetic progression
- Can select for calving ease
- Strategically plan matings
- Increased marketability of calves
- Sexed semen



**Cow Gestation Length: 283 days**

**Days in a year: 365 days**

**Difference: 82 days**

**Goal: 1 calf every year...**



# Systems

- Progressive terminal cross breeding
- Replacement heifers
- Registered producers



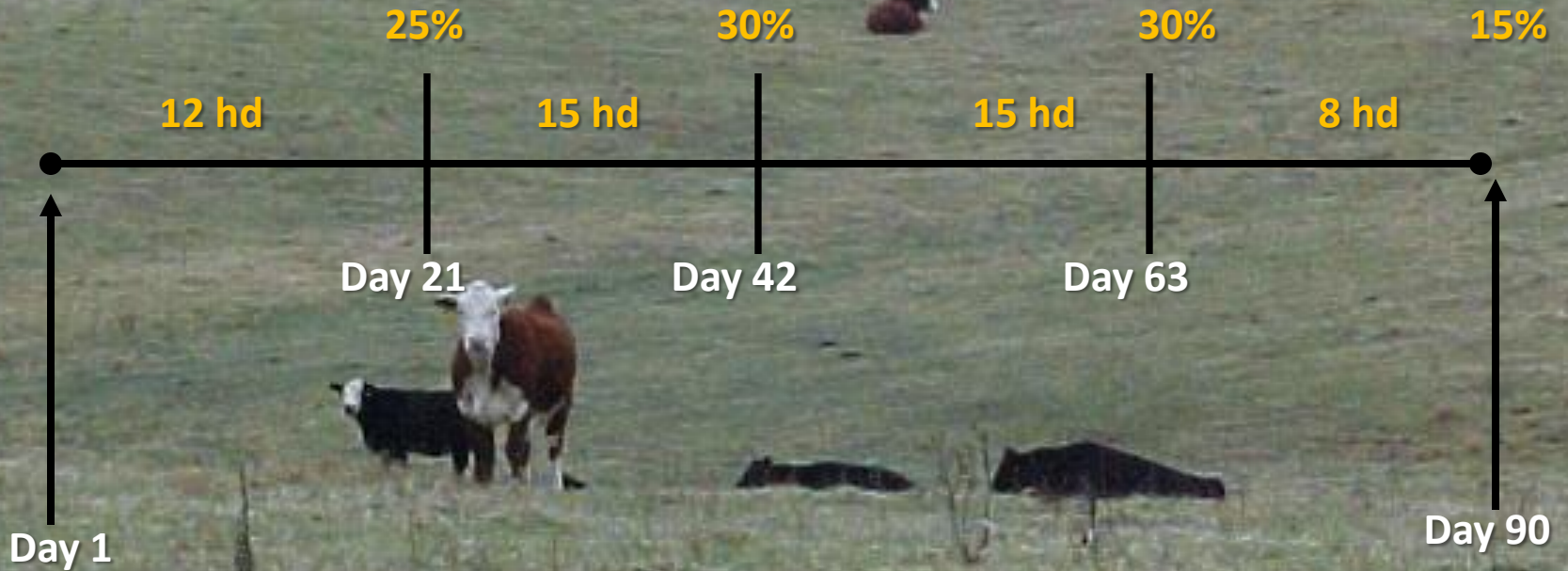
# Large Herds; $\geq 50$ hd



# Tighten Up Calving Season



# Not So Ideal Reproduction Performance (50 head herd)



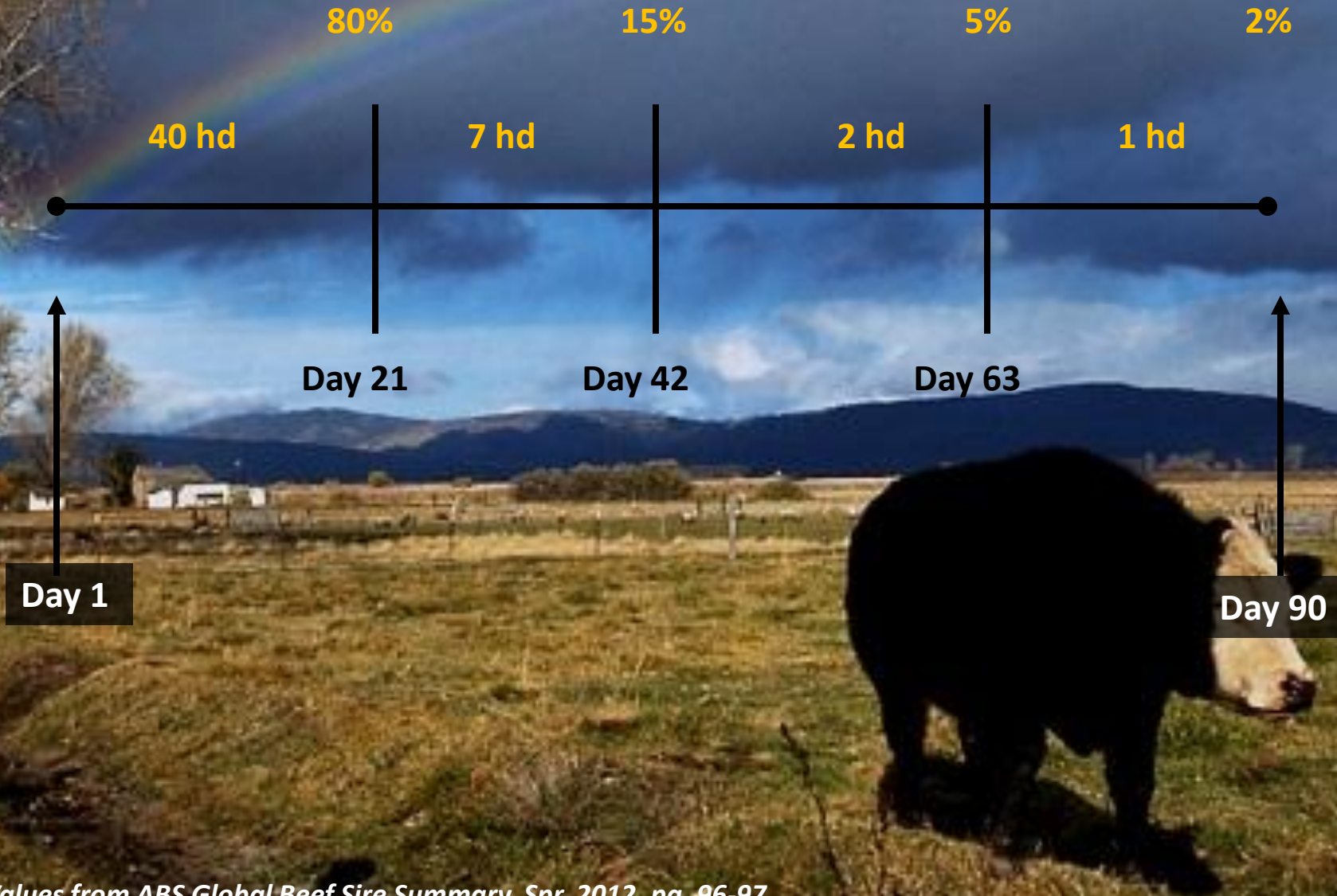
# Weaning Projections

## (Not So Ideal Scenario)

	<b>No. Head</b>	<b>Days to Weaning</b>	<b>ADG</b>	<b>Total LBS.</b>
<b>Day 1-21</b>	<b>12</b>	<b>210</b>	<b>2.1</b>	<b>6,252</b>
<b>Day 21-42</b>	<b>15</b>	<b>189</b>	<b>2.1</b>	<b>7,154</b>
<b>Day 42- 63</b>	<b>15</b>	<b>168</b>	<b>2.1</b>	<b>6,492</b>
<b>Day 63-90</b>	<b>8</b>	<b>147</b>	<b>2.1</b>	<b>3,110</b>
	<b>Total lbs</b>			<b>23,008</b>
	<b>Total \$</b>	<b>@</b>	<b>\$1.69/lb</b>	<b>\$38,883</b>



# Ideal Reproduction Performance (50 head herd)



# Weaning Projections (Ideal Scenario)

	No. Head	Days to Weaning	ADG	Total LBS.
Day 1-21	40	210	2.1	20,840
Day 21-42	7	189	2.1	3,338
Day 42- 63	2	168	2.1	866
Day 63-90	1	147	2.1	389
<b>Total lbs</b>				<b>25,432</b>
<b>Total \$</b>		<b>@</b>	<b>\$1.58/lb</b>	<b>\$40,182</b>
<b>Difference</b>				<b>\$1,299</b>

# Increase in Calf Quality (weaning weight)

- Assume same breeding seasons as before but increased potential for weaning weight.
- Using a high quality terminal cross bull to maximize weaning weight, add 75 lbs (+.36 lb ADG) to AI sired calves.
- Increases total revenue by another **\$1,244**

# Weaning Projections (Ideal Scenario)

	No. Head	Days to Weaning	ADG	Total LBS.
Day 1-21 (AI)	30	210	2.46	17,898
Day 1-21 (bull)	9	210	2.1	4,689
Day 21-42	8	189	2.1	3,338
Day 42- 63	2	168	2.1	866
Day 63-90	1	147	2.1	389
<b>Total lbs</b>				<b>27,657</b>
<b>Total \$</b>		<b>@</b>	<b>\$1.50 lb</b>	<b>\$41,426</b>
<b>Difference</b>	<b>\$41,426-\$40,182 =</b>			<b>\$1,244</b>

- Increased weights by shifting to more earlier born calves = **\$1299**
- Increase in weights by better genetics = **\$1244**
- Only need one bull rather than 2 = \$6,000
  - Depreciated over the life of the bull = **\$1,200/yr**
  - Maintenance cost on the one bull not needed = **\$600**
- Annual Gross Profit of A.I. = **\$4,343**

# Costs of Timed AI

	Unit Cost
CIDR	\$ 10.25
GnRH + PG	\$ 8.00
Semen	\$20.00
Technician	\$10.00
<b>AI Cost/Cow</b>	<b>\$48.25*</b>

\*Does not include labor costs



- Annual Gross Profit of A.I. = **\$4,343**
- Cost of A.I. of 50 hd = **\$2,412** ( $\$48.25 \times 50$ )

Annual net profit of  
A.I. = **\$1,931**  
per 50 hd of calves



# <25 hd, A.I. is difficult to justify

- Must own a bull anyway
  - clean up remaining open cows
  - Bull \$6,000 over 5 yrs = **\$1,200**
  - Bull maintenance **\$600**
- Cost of AI (not including chute labor) **\$1,206**
- Total annual breeding cost **\$3,006**
- Gross Profit estimate (half of the 50 hd, previous slide) = **\$965**
- **-\$2,041 estimated cost** *(does not include chute labor)*

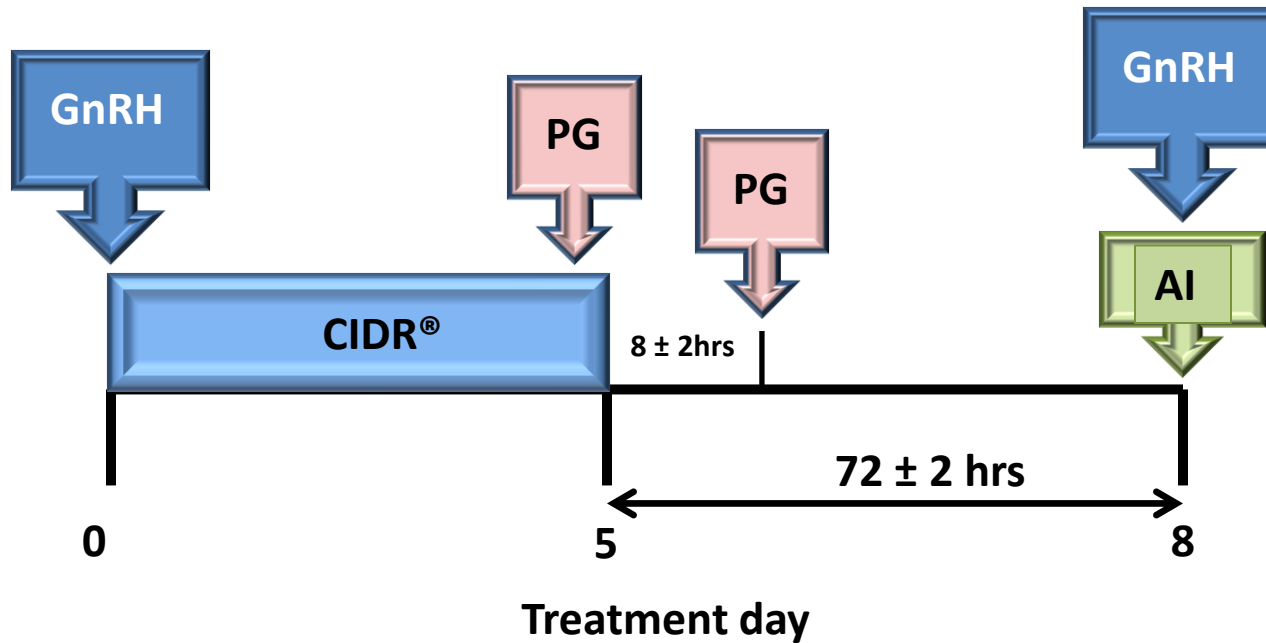
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# Replacement Heifers

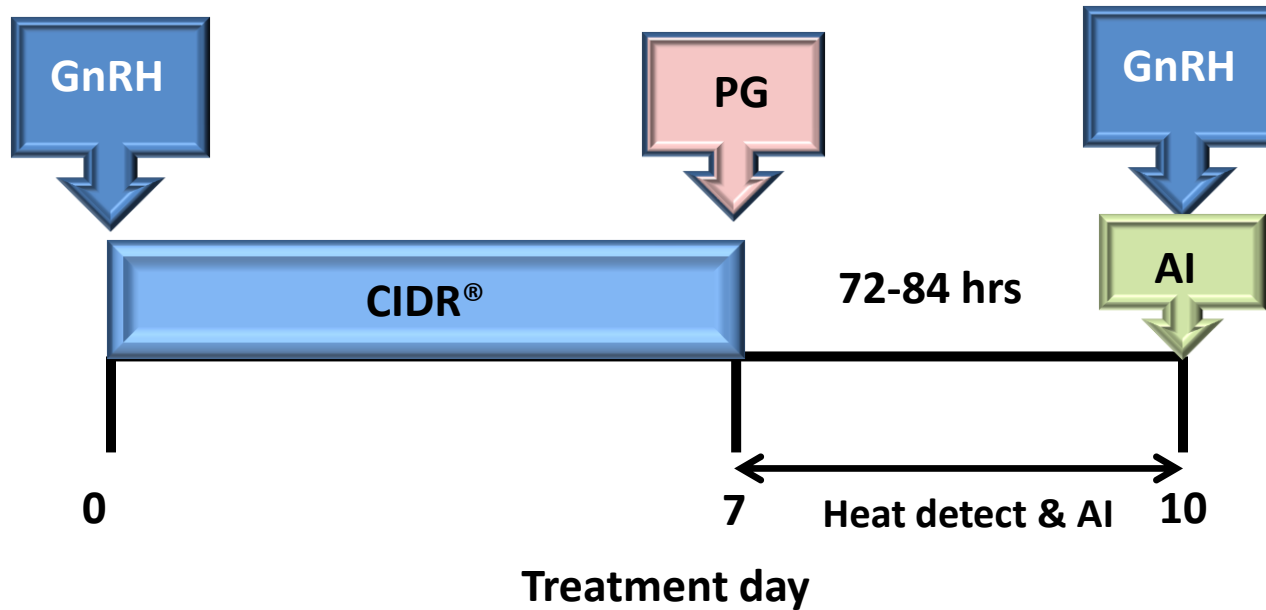
- **Use sexed semen from maternal bulls to produce replacement heifers.**
  - Will be older calves of the calving season
  - Bred to the 'right bull' and the 'right cow'
- **Use sexed semen from low BW bulls to breed to heifers.**
  - Get bull calves from the heifers – worth more at marketing
- **Potentially add \$100-150 more to the value of the cow**

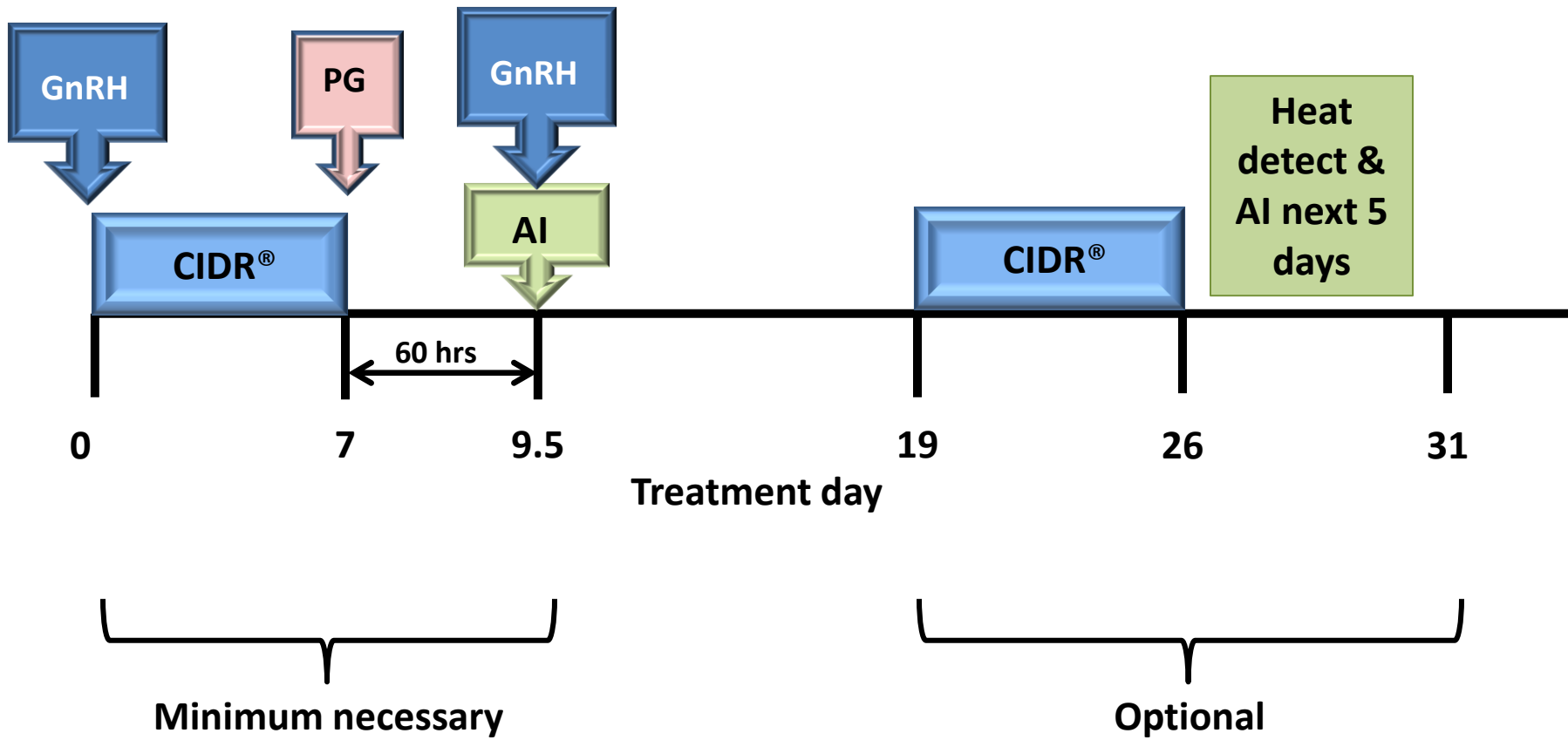
# 5-day CO-Synch + CIDR<sup>®</sup>



# Select Synch+CIDR<sup>®</sup>

*(Heat Detect & Timed AI)*





# Questions



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THE SAMUEL ROBERTS

**NOBLE**

FOUNDATION

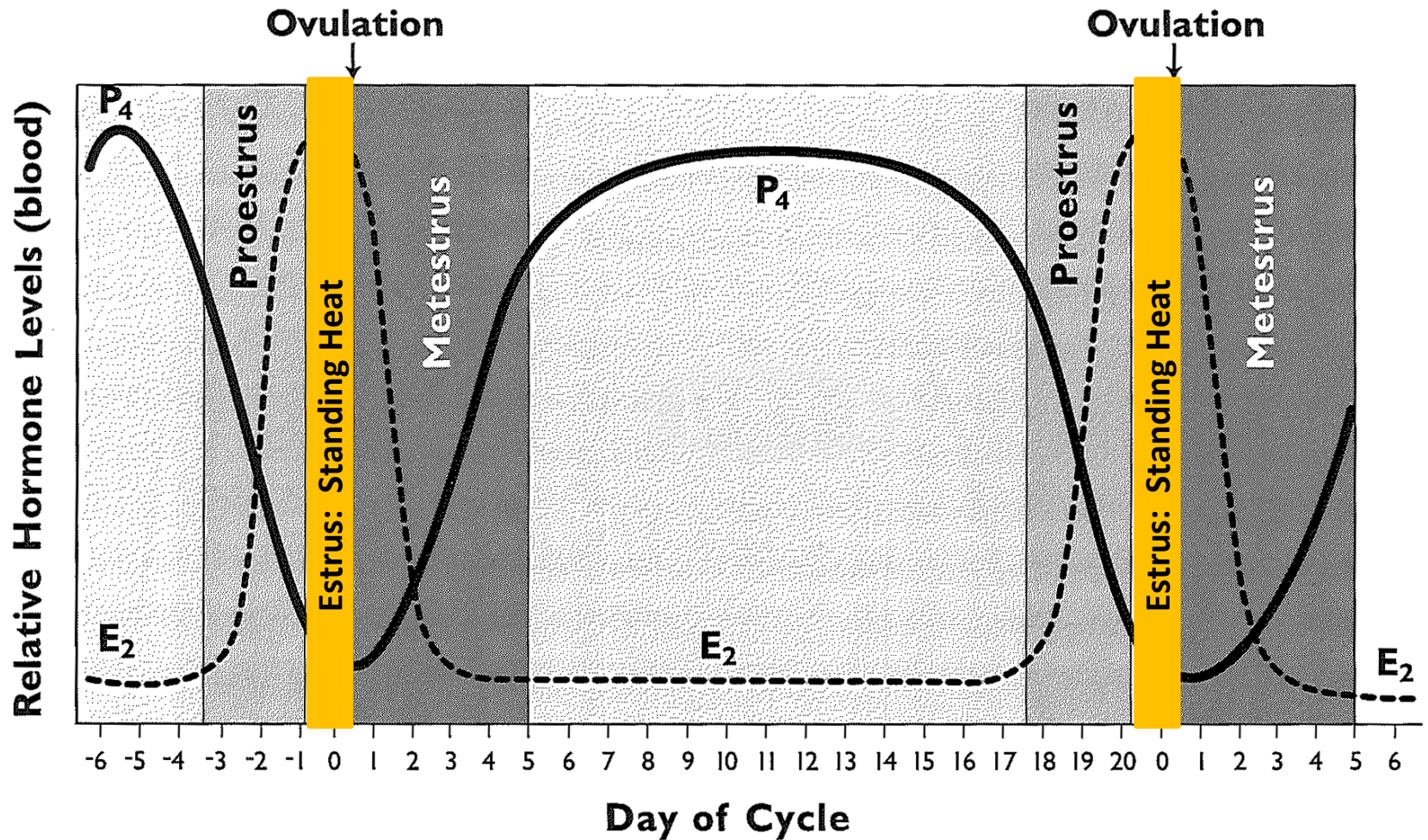


Figure 7-2. Stages of the estrous cycle. Proestrus is characterized by a significant rise in estradiol ( $E_2$ ). When estradiol reaches a certain level, the female enters estrus. Following ovulation, cells of the follicle are transformed into a corpus luteum during metestrus. Diestrus is characterized by a fully functional CL and high progesterone ( $P_4$ ).