

SENIOR TEAM PROBLEM

TEAM NAME: _____ TEAM MEMBERS: _____

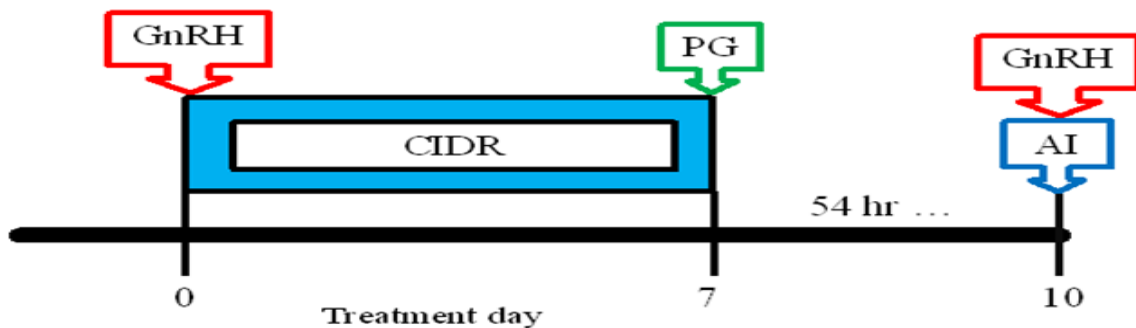
You own 100 head of replacement heifers that you intend to synchronize and AI breed the heifers one time before turning out 2, 15-month old bulls that will breed the heifers that did not conceive to our AI breeding. Your local Select Sires semen salesman has recommended that you use the CO-Synch + CIDR for your estrus synchronization program. Below is the cost of items that will be need for the CO-Synch program and the cost of your 2 new bulls that your purchased from the BCIA test station.

Item	Cost per Bottle or Package	Doses per Bottle or Package
OvaCyst (GnRH)	\$ 44.40	20
Lutalyse (PG)	\$ 57.40	20
CIDR	\$ 108.00	10
Item	Cost per Heifer	
AI Technician Cost	\$ 13.50	
Semen Cost	\$ 18.00	
Cost of Preg Check per Cow	\$ 5.75	
Bull Purchases	Amount	
Bull # 1	\$ 4,200	
Bull # 2	\$ 3,800	

Estrus Synchronization Program that you will utilizes to breed the heifers:

CO-Synch + CIDR

Perform TAI at 54 hr after PG with GnRH at TAI



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1. What is the total cost of completing the estrus synchronization program and artificial insemination, on a per-heifer basis? (Round to the nearest cent)
Answer: $(\$44.40/20) \times 2 + (\$57.4/20) + (108/10) + \$13 + \$18 = \$49.61$
2. If 60% of the heifers have conceived to our AI breeding and 10% of the heifers are preg checked open, how many heifers did your herd bulls breed? (Round to the nearest whole number)
Answer: 30
3. If the bulls are utilized for 4 years before being sold for a salvage value of \$1700 each, what is the cost, per year; of the bulls you purchased (not including feed cost)? (Round to the nearest cent)
Answer: $4200 + 3800 = \$8000 - \$3400 = \$4600/4\text{years} = \1150.00
4. Assuming that you will be using the herd bulls for 4 years, what is your cost per heifer that is bred naturally this year? (Round to the nearest cent)
Answer: $\$1150/30 = \38.33
5. What are the total breeding costs for 2014? (Round to the nearest cent)
Answer: $\$49.61 \times 100 + \$1150 = \$6111.00$
6. How much are your breeding costs on a per cow basis (including those that were AI bred, bull bred and those that did not breed)? (Round to the nearest cent)
Answer: $(\$6111.00 / 100 \text{ head}) = \61.11

Utilize the following information for the questions below:

Feed Cost of Heifers from Weaning to Preg Check: \$20000 Feed Cost of Heifers from Preg Check to Calving: \$18000

7. What is the feed cost, on a per head basis, from weaning to calving for the heifers that are confirmed pregnant assuming that open heifers are sold at preg check? (Round to the nearest cent)
Answer: $(\$20,000 / 100) + (\$18000 / 90) = 400.00$
8. What is the feed cost, on a per head basis, of the heifers that are sold as open heifers right at the preg check? (Round to the nearest cent)
Answer: $\$20000 / 100 \text{ head} = \200
9. Assuming the cow costs associated with the dam of the replacement heifers is \$600, how much do the open heifers need to bring to breakeven if they are sold right after being pregnancy checked? (Round to the nearest cent)
Answer: $\$600 \text{ cow cost} + \$200 \text{ feed cost} + 61.11 \text{ breeding cost} + 5.75 \text{ preg check} = \866.86
10. Assuming the cow costs associated with the dam of the replacement heifers is \$600, what is the breakeven price for each calf sold at weaning, assuming a 2% death loss in the calves that are born (remember only 90% of the cows actually bred; the others were sold at cull cow price and should not be included in this calculation)? (Round to the nearest cent)
Answer: $\$600 \text{ cow cost} + \$400 \text{ feed cost} + 61.11 \text{ breeding cost} + 5.75 \text{ preg check} = \1066.86
 $\$1066.86 \times 90 \text{ head} = \96017.40
 $\$96017.40 / 88 = 1091.11$