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## Use of Kamar<sup>®</sup> Heatmount Detectors in Beef Cattle Synchronized With Lutalyse<sup>®</sup>

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### Summary

The ability of the Kamar Heatmount Detector to identify cows ready for insemination 80 hours after two Lutalyse injections was tested with 439 beef cows and heifers. The detector was placed on the rump at the second injection and was "read" at insemination. Conception rate from the 80-hour timed insemination for cows with red (activated) and lost detectors was 56.5% compared with 7.6% of the cows with white detectors.

### Introduction

The Food and Drug Administration approved Lutalyse for synchronizing heat in beef cattle in 1979. Recommended procedure is to inject all cows in the herd with Lutalyse twice (11 days apart), then inseminate all cows 80 hours after the second injection. The procedure is popular as it can be used to artificially inseminate cows without heat detection. However, as many as 40 percent of a given herd may not be cycling when Lutalyse is injected, so they have no chance to conceive.

We tested the ability of the Kamar Heatmount Detector to identify cows ready for insemination 80 hours after Lutalyse injection.

### Experimental Procedure

In five trials, two Lutalyse injections were given 11 days apart to 439 beef cows and heifers, all of which were inseminated 80 hours after the second injection. A Kamar Heatmount Detector was placed on the rump of each animal at the second injection. At insemination the detector was read as (1) red (activated, indicating heat), (2) white (not activated, indicating the cow was not ridden, thus, not in heat) or (3) lost (assumed from riding, thus, indicating heat). Partially red detectors were considered white unless there were other indications of heat. Conception rates from the 80-hour insemination were determined by rectal palpation about 60 days after insemination.

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<sup>®</sup>Kamar is a registered name for heatmount detectors sold by Kamar, Inc., Steamboat Springs, CO.

Lutalyse is a registered name for the hormone prostaglandin sold by The Upjohn Co., Kalamazoo, MI, for synchronization of heat in beef cattle.

### Results and Discussion

Kamar heat detectors appear to effectively identify cows in heat after synchronization with Lutalyse. Only 11 of 145 cows with white detectors at the 80-hour insemination (Table 1) conceived to that insemination. If semen and insemination costs \$8 per cow, \$1160 was spent to settle 11 cows. The detectors for 439 cows cost about \$285. Not breeding cows with white detectors would have resulted in 11 fewer conceptions at first service, and their conception would have been delayed at least 21 days--a loss of \$370, assuming it costs \$1.60 for each day a cow is open. Subtracting potential losses from savings gives a net savings of \$505 for the herd, or about \$1.15 per cow. In this study, the breakeven cost of inseminating all cows or using detectors and not inseminating those with white detectors would have been \$4.50 per insemination, including semen.

The value of heat detectors will increase in herds with fewer cows cycling and decrease in herds with more cows cycling. In our trials, about 75% were cycling.

With many cows in heat at once, excessive riding will cause many detectors to be lost (17.1% in our experiment). Lost detectors must be considered activated and the cow assumed in heat. However, if cows are exposed to brush, loose wire fences, back-rubs, etc., detectors could be lost for reasons other than riding and, thus, cause heat detection errors.

Decisions regarding heat in cows with only partially activated detectors should be based on other indications. We counted partially red detectors unactivated unless there were other signs of heat like cervical mucus, enlarged vulva, etc. Of 15 cows with partially red detectors, only 2 conceived.

Conception rates for cows with red and lost detectors combined was 56.5%. Only 7.6% of cows with white detectors conceived from the 80-hour timed insemination, so not inseminating those cows would have resulted in a substantial saving.

Table 1. Conception related to condition of Kamar detector at insemination.

	Condition of Kamar								
	Red			Lost			White		
	# Cows	# Preg.	% Concep.	# Cows	# Preg.	% Concep.	# Cows	# Preg.	% Concep.
Trial 1	39	27	69.2	5	4	80.0	47	3	6.0
Trial 2	39	23	59.0	39	23	59.0	35	3	8.6
Trial 3	12	9	75.0	18	9	50.0	9	2	22.2
Trial 4	28	15	53.6	2	0	0	8	0	0
Trial 5	<u>101</u>	<u>51</u>	<u>50.5</u>	<u>11</u>	<u>5</u>	<u>45.5</u>	<u>46</u>	<u>3</u>	<u>6.5</u>
Total	219	125	57.1	75	41	54.7	145	11	7.6