ELECTRONIC HEAT DETECTION: A CASE STUDY

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INTRODUCTION

Detecting heat is the most costly and difficult aspect of artificial insemination. It has a high labor demand and is a boring job. Additionally, this chore often comes in the spring of the year when there are many other jobs around the ranch needing attention. An alternative to manual heat detection is now available. “Heat Watch,” an electronic heat detection system is being used in beef herds which utilize artificial insemination.

This paper discusses the pros and cons of using the “Heat Watch” electronic heat detection system. The following information is based on a case study conducted at the University of Nevada Gund Research and Demonstration Ranch located near Austin, Nevada. The study was conducted in April of 1997.

HOW THE SYSTEM WORKS

The system was developed by DDx, Inc. of Boulder, Colorado and became commercially available in 1994. Cows are fitted with electronic transmitters. These transmitters are inserted in a burlap pouch which is glued to the cow’s back, just in front of the base of the tail and between the hooks and pins. When a cow is mounted, the pressure activates the transmitter. The transmitter sends a radio signal to a receiver, which relays it to a computer. The computer processes the signal, recording the cow’s identity, location and the time and duration of the mount. Heat detection is a simple process of checking the computer morning and night and determining the optimum time for insemination based on first standing heat and duration of heat.

COST

A heat watch system consisting of a buffer, receiver, software, installation and training costs about $3,000. Transmitters cost $55 each; patches to hold the transmitters, approximately $3.50 each; and glue to attach the patches to the hide, $1 per cow. Mike Griswold, American Breeders Service representative for northern Nevada, leases the total unit and equipment. “It is really not practical for most producers to purchase the unit for a one-time annual use,” states Griswold. “My lease rates vary from 8 to 12 dollars per head depending on the number of cattle and the length of time involved. The lease includes all costs along with technical support and set up.”

HANDS ON EXPERIENCES

“Being able to inseminate at the most opportune time with confidence is a big plus,” states Lucy Snyder of Yerington, Nevada. “Additionally I have been able to detect a higher percentage of heifers in heat. These two factors have increased conception rates dramatically, with less labor.” Snyder synchronized approximately 200 replacement heifers in 1996 and 1997 and utilized the heat watch system.

“Being able to leave and do other chores knowing the heat detection is taken care of is the biggest advantage I see,” says Peter Church of the Keddy Ranch in Elko, Nevada. Church heat synchronized 45 mature cows in 1996 and 1997 and used the heat watch system.

Ken Conley and John Wilker of the University of Nevada Gund Research and Demonstration Ranch, agree with Snyder and Church. However, they point out that the patch and transmitter application process
is slow and messy. “We could only do 20 patches per hour. Clipping the hair on the transmitter site and gluing patches took a lot of time. Glue was everywhere,” states John Wilker. Conley feels a better system of patch placement needs to be developed. “We only had 60 heifers in our project. If we had 400 head to do we would have been in trouble,” says Conley. Buzz Yancey, vice president of sales and marketing for DDx agrees. “We are developing an easier and faster method of patch and transmitter application. We know the present system is messy and time consuming,” states Yancey.

CASE STUDY

In April of 1997 sixty replacement heifers were heat synchronized as part of a two-year study on target weights effect on puberty (See page , Influence of Target Weight on Puberty in Heifers: A Case Study). Heat watch was used as an aid in heat detection during the study. Ron Torell and Ben Bruce, Extension Livestock Specialists for University of Nevada Reno, conducted the heat watch trial at the Gund Research and Demonstration Ranch. “This is neat technology,” states Torell. “We were confident the heat watch system detected all of the cycling heifers. The heat watch system detected cows in estrus that we missed by manually observing heat.” Bruce feels that in addition to the practical applications of heat watch it is also valuable as a research tool.

CONCLUSION

Heat watch is a electronic heat detection tool that can increase conception rates when artificially inseminating cattle. Artificial insemination programs can be enhanced by utilizing the heat watch heat detection system. Producers considering using the heat watch system should be aware of the time and effort required to install transponder patches on cows. If interested in learning more about heat watch or leasing the system contact Buzz Yancey of DDx at 1-800-375-6624. The authors wish to thank DDx for donating the heat watch system used on the Gund Ranch study.