MSU Agriculture Innovation Day
Focus on Forages and the Future
College of Agriculture and Natural Resources
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Investing in Dairy Cattle Precision Technologies

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Investments in dairy cattle precision technologies represent important decisions on dairy farms.

Making decisions about the use of precision technologies on a dairy farm requires careful consideration and information gathering. A precision technology will be valuable if it addresses a management area that needs improvement and will be used routinely.

A number of factors influence whether an investment should be made in a precision technology and which technology to purchase.

- Cost – Initial purchase, replacement and maintenance costs must be considered. Initial investment includes individual cow monitoring units, antennas that transmit data to the computer (or data readers in the parlor), and computer software that summarizes data and generates reports.
- Warranty period – What is the replacement policy for all malfunctioning equipment?
- Reliability and flexibility - A precision technology is valuable if it records the data properly and for the right cow. Can tags be misread and how often?
- Sensitivity and specificity – What percentage of the events (e.g. heats, illness) are detected: goal, > 80% (sensitivity)? How many false alerts are indicated: goal, <1% (specificity)?
- Easy to use - Data should be summarized into reports that are easily interpreted by herd managers and others making decisions. Can data be integrated into the farm's herd management software (e.g. PCDART or DairyComp 305) for quick look-up of individual animals?
- Data collection frequency – Are data collected continuously through antennas placed in the freestall barns or only read when cows go through the parlor? If needed, is a reliable internet connection available on the farm?
- Labor requirements - Labor needs will depend on the herd's current management system and the precision technology being considered. Although additional labor may be required to review data and reports generated by the precision technology and to make decisions about needed action, an actual net labor savings may occur.
- Customer service and technical support - What type of training is provided to use the technology? Is technical assistance readily available when needed? Is there a local sales representative serving the area?

The University of Kentucky Extension publication, "Pre-investment Considerations for Precision Dairy Farming Technologies", offers additional information for dairy producers making purchasing decisions.

A major consideration for any investment is the benefit to cost ratio. What is the goal for the amount of time required to recoup the investment? The actual breakeven time frame will likely depend on a combination of reduced costs and increased revenues.

Precision Cattle Monitoring Take Home Messages

- The data provided by a precision dairy monitoring technology is only valuable if it records the data properly, for the right cow, and is used by the producer

- Precision dairy monitoring technologies have the potential to alert producers to animals that may be developing mastitis, hoof problems, fresh cow diseases, be in heat, or calving

- Technologies change producers' time budget through the day. Instead of observing cows for heat, producers may focus on business aspects of their operation.

- No "best" technology exists. Many factors play into which technology is best for a particular producer

    - Factors that may play into choosing the best technology:
        - Cost
        - Warranty
        - How will technology be used to manage the herd
        - Customer service
        - Representation in the area
        - Sensitivity/specificity for variable of interest

- Heat detection via technologies is the most researched and reliable variable of interest