

# Dairy Education Assists Producers with Implementing Technology to Improve Profitability and Efficiency

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## Introduction

A producer's decision to implement a precision technology is a significant investment. Understanding the challenges, maintenance requirements, data analysis, and technical support are critical factors in the decision. Iowa lost 10% of their dairy producers over an 18-month period and with continued low profit margins, labor efficiency and adoption of profitable technologies are key factors in farm viability.

Combining good management practices with financially sustainable technologies can provide greater levels of farm productivity. Dairy cows and the economic activity that they generate in the local economy continues to be an economic stimulus. Through direct and indirect association, one cow generates \$23,445 of economic impact in Iowa’s dairy industry.

## Project Overview

This project focused on automatic milking systems, low-cost parlor automation, feed mixing automation, automatic calf feeders, and health sensors.

With limited interaction in person during the project, more emphasis was put into time lapse camera demonstration to show how it can be used to improve farm productivity. We completed 31 producer management surveys, 9 on-farm workshops, 4 webinars, 5 best management practice videos, and 18 individual farm visits. We also installed time lapse cameras on 9 farms and captured over 1800 hours of activity in barns and milking parlors on time-lapse video.

Over 100 producers and industry partners increased awareness, understanding, and decision making ability regarding precision technologies. Long term, producers will reduce risk and increase labor efficiency, impacting profitability.

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Knowledge Gain Topic Area	%Knowledge Increase
Understanding where time lapse cameras can be used on the farm	58%
How to set up a time lapse camera	50%
Challenges with capturing footage	53%
Monitoring cow/stall issues with time lapse cameras	58%
Monitoring feed bunk issues with time lapse cameras	58%
Dairy cow daily time budget	50%
Stall size and structure	50%
Stall use metrics	50%
Monitoring heat abatement strategies using time lapse cameras	54%
Understanding what sensor monitors do	80%
Understanding what groups may benefit from sensor monitors	80%
Understanding what options for monitors are available	80%
Understanding how monitors can affect daily labor duties	80%
Understanding the economics of AMS	50%
Understanding the keys to success with AMS feed management	39%
Understanding the keys to success with overall management of AMS	39%
Design Considerations for AMS facilities	46%
Understanding of calf barn design principles	30%
Understanding group housing design	30%
Bedding and flooring considerations for optimal health	30%
Importance of colostrum	15%
Impact of pre-weaning nutrition program	20%
Tools to evaluate calf equipment hygiene	30%
Economics of implementing an automatic calf feeding system	30%

Table 1. Knowledge Gain from Educational Resources



Image 1. Field Day-automatic milking and feeding systems.

## Producer Impacts

**Producer Story #1:** They wanted to ensure consistency across milking shifts with different milking parlor operators. We installed the time-lapse cameras in the milking parlor to record activity over a 10-day period. The producer was able to use the video to assess consistency of parlor protocols across employees. The producer noted that the time-lapse video will be useful for identifying bottlenecks in milking parlor performance and improving throughput, thus saving labor and possibly improving cow performance due to more consistent milking procedures.

**Producer Story #2:** A very active social media dairy producer posts regularly about management activities that take place in their robotic milking facility. They were interested in capturing time-lapse video to assess cow flow around robotic milking units as well as feed bunk management. We installed time-lapse cameras in several locations to capture footage over several days. They noted that the video was useful in assessing feed delivery timing. They also realized when watching the video that the lighting system was not operating properly and were able to correct the issue. Being an avid agvocate, this producer also identified a novel use for time-lapse footage as a tool for social media promotion. We helped them create a video showing a full day of activity compressed to a 1-minute video that they were able to share to the public all the activity that occurs in the barn daily.

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## RESOURCES from the Iowa State University Extension and Outreach Dairy Team

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