

## ECONOMIC IMPACTS OF EXTENSION EDUCATION

### HEAT STRESS CREATES CHALLENGES FOR DAIRY FARMERS

- A variety of factors can influence a cow's milk production and dairy profitability. In Texas, two of these factors are heat stress and reproduction.
- External heat accumulates from solar radiation, high ambient air temperature, and high relative humidity, causing a cow's body temperature to increase. This has an adverse effect on both reproduction and milk production.

### AGRILIFE EXTENSION'S RESPONSE

- Texas A&M AgriLife Research scientists and Texas A&M AgriLife Extension Service specialists, as well as their counterparts across the South, have developed effective heat-abatement (cooling) options that are part of a broader effort to maintain a comfortable environment for dairy cows.
- The most common heat-abatement methods include the use of fans, soakers, and shade.
- Cooling systems provide such advantages as reduced body heat, increased feed intake, improved reproduction, and improved milk production.
- Over the past decade, AgriLife Extension has collaborated with pharmaceutical companies, local veterinarians, artificial insemination (AI) organizations, cooling-equipment manufacturers, and other dairy industry consultants to develop and conduct educational programs for dairy producers across the state.
- These programs focused on improving reproduction through heat abatement and also on synchronization breeding programs, which are designed to control when a cow ovulates.

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- Extension specialists and agents conducted field demonstrations on different cooling methods and breeding programs. They also conducted field days to help producers learn more about these technological advancements.
- Reproduction workshops for farm employees and annual nutrition conferences for industry consultants emphasized techniques that mitigate the impacts of heat stress.

### ECONOMIC IMPACTS

- More than 90% of the dairies (635,000 dairy cows) in Texas have adopted some form of heat-abatement method in their operation. The change in net returns for heat-abatement programs in Texas was estimated at \$8 per cow, or \$3.5 million in 2024.
- Adoption of breeding programs and heat abatement has resulted in higher pregnancy rates and an additional \$48.2 million in annual benefits for milk producers, bringing the total estimated benefit to \$51.7 million.

