

Name: Ag Oasis
Number of milking cows: 12,000
Location: 4 dairies located in Kansas and Oklahoma
Type: Open-lot
SCC: 120,000
Approach: On-farm surveillance for *Staph aureus* and *Mycoplasma*

Ag Oasis runs four open-lot dairies in Kansas and Oklahoma, with a total of 12,000 milking cows. The dairies have a somatic cell count of 120,000—an impressive statistic for an open-lot operation.

Their success is not due to luck. The team at Ag Oasis takes a very proactive approach to herd health. One example is their contagious mastitis surveillance program. The program initially involved sending bulk tank and string samples to an out-of-state lab for culture, but the team was disappointed with the result turn-around time. It could take up to three weeks to receive *Mycoplasma* culture results, during which time all cow movement was halted to prevent the possible spread of disease. The team had growing concerns about the impact of overcrowding on cow health. They wanted to eliminate the stressful conditions that reduced production, delayed breeding, and caused lameness.

In 2017, Ag Oasis decided to establish their own in-house mastitis testing lab. Rather than sending samples off to an out-of-state laboratory once a week, Ag Oasis wanted to test samples in-house on a daily basis. The team selected MasCow Dairy as their centralized lab location.

The team, led by consultant Ron Fehn DVM, considered several testing options. They had two major criteria: the testing must be both fast and simple. It was important for the testing and results to reinforce their simple and straightforward management style. Their goal was to test all fresh and clinical cows—approximately 700 samples a month—for the two major contagious mastitis pathogens in their region: *Mycoplasma* and *Staph aureus*. They needed results as soon as possible to prevent the spread of disease and reduce the stressful conditions created while waiting for results.

The team considered tri-plates, but they decided that the system was too complicated for their management style. Tri-plates are designed to guide targeted treatment, an approach that did not align with their strategy. Ag Oasis wanted to avoid multiple treatment protocols that could create confusion. The search for the right method continued.

Ag Oasis began by culturing all fresh and clinical cows for *Staph aureus*. They found the plating process to be a simple task, and they had results in less than a day. After experiencing a high rate of false positive results using the plates, they started looking for a confirmatory test. They settled on coagulase testing, which confirms the presence of *Staph aureus* by the next day.

By late 2017, the team was still searching for an on-farm solution for *Mycoplasma* testing. Brian Hemann, a partner at Ag Oasis, came across an ad for the Acumen Detection on-farm pathogen

detection system. He was very interested in receiving *Mycoplasma* results in less than 3 hours. Instead of waiting weeks for results, they could know a cow's status before the next milking. Their consultant, Dr. Ron Fehn, contacted the midwestern sales rep, Maggie Faulkner, and arranged for a brief demo. Maggie provided training and support for several employees.

Ag Oasis decided to purchase two Acumen Detection systems to test all fresh heifers and clinical cows for *Mycoplasma*. An average day in the lab involves testing 48 samples using the Acumen Detection system. They begin by preparing all the samples for testing using the Milk Prep Kit. The entire process is guided by a user-friendly software application that provides step-by-step instructions. The samples are then transferred to the test tube. Up to sixteen samples can be tested at a time. Lab staff are able to complete other tasks, such as culture plating, while the tests are in progress. The results are reviewed at the end of the test run, enabling the team to make decisions before the next milking.

While establishing an on-farm lab and implementing a contagious mastitis surveillance program is a big undertaking, Dr. Fehn said it was worth it. Without a surveillance program, "Three cases could easily become three-hundred."