

Cattle Feed Lots Maximize Profit with Micro Motion® Flowmeters

RESULTS

- Maintained high accuracy and repeatability despite wide temperature shifts
- Eliminated maintenance of existing volumetric meters
- Cost savings of more than \$70,000 (U.S.) per year and paid for itself within 21 months



APPLICATION

A company that manufactures cattle feed produces feed around the clock. The main liquid component is molasses, to which calcium has been added. The molasses/calcium mixture is then mixed with the dry grain on a weigh belt conveyor. Later in the process, hot animal fat is added to the grain, molasses, and water. Once the mixture cools in a tank, it is reheated to different temperatures, and finally weighed.

CHALLENGE

The company had been using volumetric wobble plate technology for flow measurement. Suboptimal mixes caused by poor wobble plate measurements resulted in feed with a caloric content that was too low. Although the cattle were eating the prescribed amount of feed by weight, they were being underfed from a caloric standpoint. As a result, cattle owners were not achieving optimal slaughter weight. The owners were paying a premium price for suboptimal feed. The feed producer needed to improve its flow measurement, and in turn its feed quality, or face losing customers to other feed lots.

The process itself was challenging because of wide shifts in ambient temperature, which produced wide shifts in molasses viscosity. Also, in the end product stream, solid particles suspended in the animal fat eroded the measurement instruments.

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The company was able to improve its feed quality based on more accurate measurements from Micro Motion meters.



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The processor also wanted to eliminate the persistent maintenance problems associated with the wobble plates, which often clogged. When clogging occurred, operators would have to use steam at high pressures to dislodge and clean the lines and flowmeters. This caused the volumetric devices to wear out prematurely and degraded their performance over time.

The company was looking for an accurate, repeatable, and reliable device to meter the exact amount of molasses needed to create the optimal feed mixture. A reliable device was also needed to measure the final mixture of grain, molasses, calcium, hot animal fat, and water.

SOLUTION

The processor decided to purchase Micro Motion® Coriolis mass flowmeters as a replacement for its volumetric meters. In the molasses/calcium application, the Micro Motion meters provide precise and consistent mixtures, allowing the manufacturer to manage the feed process better. In the final measuring process, output from the transmitters provides tighter process control based on a live density measurement, which guarantees that the final product will meet its specifications. Thus, the cattle owners could achieve optimal slaughter weight in their cattle, therefore maximizing their profits.

Because the meters are non-intrusive and have no moving parts, they are not affected by the highly viscous and erosive materials. No maintenance is required, which provides the customer with long-term reliability. The use of steam to dislodge buildup of the material and clean the lines does not adversely affect the Coriolis meters.

The manufacturer estimates that it saves \$375 (U.S.) per measurement on the cost of ownership over the wobble plate meter, and saves \$70,600 per year by not having to rebuild all its volumetric meters. Payback on the purchase of the Micro Motion Coriolis meters was less than 20 months.

