

# CONNECTING FARMERS, FEED MILLS

An open and productive relationship between livestock farmers and their feedmills is crucial to enhance performance, quality, and sustainable business processes. A 2022 study by the IOP Conference looked at the perception of dairy farmers regarding their feed mill logistics service. The study looked at logistics, storage and material flow as tools aiding in this relationship. Technology like block-chain, artificial intelligence and delivery were all factors in determining profitability.

*Reference: N Nuraina1, A N Hamidah1, D Despal1\* and E Taufik2. 1Department of Animal Nutrition and Feed Technology, Faculty of Animal Science, IPB University, Indonesia <https://iopscience.iop.org/article/10.1088/1755-1315/1001/1/012025/pdf>*



## SENSORS, SOFTWARE PUT FEED MILLS, FARMS ON SAME PAGE FOR BULK INVENTORY LEVELS

Feed mills and farms often experience tension when it comes to feed management. While they share a common goal of producing and delivering quality products, inventory management and delivery schedules sometimes falter due to communication gaps.

Weekend deliveries, feed outages, and last-minute orders frustrate feed mills and run up costs for farmers. Technology innovation from BinMaster bridges this gap, allowing feed mills and farmers to work in harmony. FeedView®, an inventory management solution, combines sensors and software to create a dynamic system that supports both entities in their goals

### Frustration on the farm

Historically, farmers have faced climbing bins to measure silos. Manual measurement of silos result in guesswork, massive spreadsheets, and piles of paperwork. The result: unreliable inventory data leading to running low or out of feed at the most inopportune times.

BinMaster FeedView inventory management app is a comprehensive feed management solution that combines wireless, battery-powered level sensors with a cloud-based, simple-to-use software. It automatically measures bin levels and projects consumption using historical consumption rates to help farmers project outages and know when to schedule deliveries.

### Feed mills flustered

From the perspective of a mill manager, unscheduled, emergency orders create chaos. When a farm runs out of feed, mill staff must work overtime to make an unscheduled delivery. In a rush, the amount of feed in a truck may not fit the silo resulting in spills or wasted feed. All this is a waste. Mills lose money and charge farmers, creating tension in the relationship.

Feed mills benefit from FeedView. Farmers are better informed about bulk inventory and can be proactive in ordering. Farmers also know how much space remains in silos to prevent ordering too much feed. Orders can be placed ahead of time or sent to the mill automatically using a feature in the FeedView software. Farmers also have the option of allowing the mill to remotely monitor feed silos on the farm and project what feed needs will be based upon historical use.

## FEEDVIEW CASE STUDY: TWO HOURS REDUCED TO 15 MINUTES

Thanks to BinMaster's wireless monitoring system, one ag operation experienced a reduction in labor from two hours to just 15 minutes per day.

While farms focus on finishing livestock, operations are lean with just two or three people. In the case of a major hog producer in the Midwest, just two employees managed four barns and eight feed bins, readying more than 5,000 head for market. At this operation, each barn included two silos used in tandem. One silo empties then pulls material from the second silo. At that point, the empty silo is scheduled for refill.

Before installing sensors and software, each silo had to be climbed and a tape measure dropped to estimate how much feed was in each silo. Climbing silos, dropping a tape, and recording measurements back in the office could take up to 15 minutes per silo—or about two hours a day. This process had to be done almost every day—rain, snow, or shine. Measurements were handwritten and manually recorded in a spreadsheet. The amount of feed on hand was then calculated by entering an estimate of the amount of feed remaining in each bin. Some days there just wasn't enough time to get feed inventory done, which led to a disconnect between the farm and the mill.

### Goodbye tape measures, hello sensors

The biggest roadblock to automating silo measurements for this producer was that of many other hog farms: no power was available at the feed bins. The solution? A battery-operated sensor from BinMaster that eliminates the need for wiring. Low-power level sensors are mounted on top of the bin through a hole cut in the roof. The sensor is pointed at the feed near the outlet of the bin, automatically measuring feed levels once an hour. Level data is sent through a wireless gateway to FeedView.



FeedView converts the sensor data into tonnage and allows for user-friendly tracking and reporting of feed intake, medicated supplements, head count adjustments, and feed orders. The farm's goal was to save time and streamline the ordering process. They found the integration of level sensors and software made their operation more efficient.

"With FeedView, I can reorder feed with confidence. We've eliminated most delivery emergencies and overfills, all without climbing feed bins... thanks to the wireless level sensors," said the operations manager. "Using sensors to measure feed levels in bins saves a lot of time and is far safer than climbing ladders. Plus, the laser sensors are more accurate than a tape measure because they are aimed at a fixed point in the silo."

#### Customer-focused features

Many of the features built into FeedView were developed based upon customer recommendations.

"Some of the great feedback we got from our first customers was to add a feature that allowed them to place a feed order directly with the mill using the software," stated Scott Hudson, Executive Vice President at BinMaster. "Now farms can view their recent feed orders without having to track them separately. It also allows them to see their order history and plan in advance when the next order needs to be placed."

#### FeedView is feed mill friendly

"Customers hate surprises when it comes to their feed inventory," said Nathan Grube, Regional Vice President for BinMaster. "Now, alerts are sent in advance before feed bin levels get low. They can also look at feed levels anytime and avoid the hassle and extra cost of an emergency or weekend delivery." With automation, staff can plan ahead and be notified when it is time to order. Additionally, employees can check feed levels any time of day—even on weekends—from their computer or phone. With FeedView, farms are ordering the right amount of feed and eliminating the hassle of overages.

#### A fast return-on-investment

The producer found FeedView provides a quick return on a long-lasting investment by eliminating common pain points. Not running out of feed ensures animals reach target weight on schedule. Avoiding extra delivery charges when feed is needed right away increases the bottom line. Closing out with less than a half-ton of feed when animals are sent for processing reduces waste and costs.



**STORAGE**

# NO MORE GRUNT WORK

by BinMaster, USA

**S**ensors and software bring feed mills and farms together to simplify feed inventory. Feed mills and farms have often been opposing forces when it comes to feed management. Although they share a common goal of producing and delivering quality products, inventory management and delivery schedules create friction. Weekend deliveries, feed outages, and last-minute orders frustrate feed mills and run up costs for farmers.

Technology innovation from BinMaster bridges this gap, allowing feed mills and farmers to work in harmony. FeedView, a new inventory management solution, combines sensors and software to create a dynamic system that supports both entities in their goals.

**Frustration on the farm**

Historically, farmers have been faced with climbing bins,

relying on guesswork, massive spreadsheets, and piles of paperwork to manage feed demands. This has resulted in unreliable inventory data and running low or out of feed at the most inopportune times. FeedView transforms this process, making current and projected feed inventory information easily available on any internet-capable device such as a phone, tablet or computer.

FeedView is a comprehensive feed management solution that combines wireless, battery-powered level sensors with a cloud-based, simple-to-use software. It automatically measures bin levels and projects consumption using historical consumption rates to help farmers project outages and know when to schedule deliveries.

**Feed mills flustered**

Mill managers are often victims of an emergency phone call. A farm is out of feed or will not have enough feed to get through the weekend and so mill staff are called to work overtime or on a day off to make an unscheduled delivery. Upon arrival, the amount of feed in the truck may not fit in the silo and can result in spills or wasted feed. These interruptions cost the mill money and necessitate extra charges be passed on to farmers, creating tension in the relationship.

Feed mills benefit from FeedView as farmers are better informed about their inventory situation and can be proactive in their ordering. Farmers will also know how much space they have in silos to prevent ordering too much feed.

Orders can be placed ahead of time or sent to the mill automatically using a feature in the FeedView software. Farmers also have the option of allowing the mill to remotely monitor feed silos on the farm and project what feed needs will be based upon historical use.



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**Feedview™ case study**

Using wireless monitoring to improve farm productivity: Feed monitoring reduced from two hours to 15 minutes a day

While farms focus on finishing livestock, operations are often leanly staffed with just two or three people. In the case of a major hog producer in Nebraska, just two employees manage four barns and eight feed bins, readying more than 5,000 head for market.

At this operation each barn has two silos used in tandem. Once one silo is emptied, feed is pulled from the second silo and the empty silo is scheduled for refill.

Before installing sensors and software, each silo had to be climbed and a tape measure dropped to estimate how much feed was in each silo. Climbing silos, dropping a tape, and recording measurements back in the office could take up to 15 minutes per silo—or about two hours a day.

This process had to be done almost every day—rain, snow, or shine. Measurements were handwritten and manually recorded in a spreadsheet. The amount of feed on hand was then calculated by entering an estimate of the amount of feed remaining in each bin. Some days there just wasn't enough time to get feed inventory done, which led to a disconnect between the farm and the mill.

**Goodbye tape measures, hello sensors**

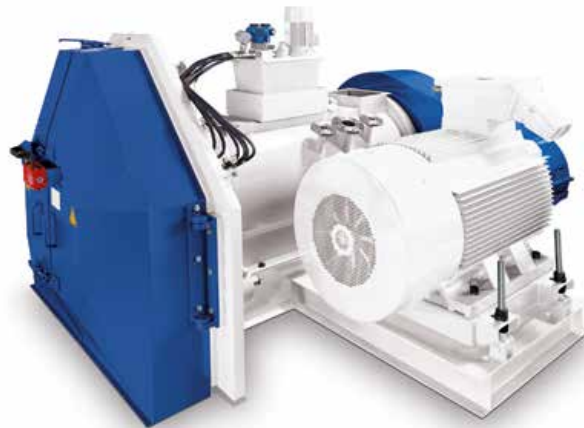
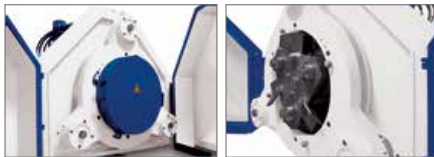
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## STORAGE

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The farm's goal was to save time and streamline the ordering process. They found the integration of level sensors and software made their operation more efficient.

"With FeedView, I can reorder feed with confidence. We've eliminated most delivery emergencies and overfills, all without climbing feed bins... thanks to the wireless level sensors," reported the feed order manager.

Employee safety and measurement consistency are ensured by using technology instead of humans to do the work.

"Using sensors to measure feed levels in bins saves a lot of time and is far safer than climbing ladders. Plus, the laser sensors are more accurate than a tape measure because they are aimed at a fixed point in the silo," he added.

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[www.binmaster.com](http://www.binmaster.com)









## square silo experts

SCE offers industrial steel buildings that include square silos, mostly used in feed & food processing industries. Those square silos take up less space than round silos and allow you to store 27% more. Thanks to the specific design, you can assemble our silos in any production unit.



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Industry	Bulk Material	Sensors	Software	Applications
 Agriculture Farming Livestock	Grain Flour Beans Fertilizer Seed Liquids  Bins, silos, tanks, piles, domes	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D sensors Ultrasonic Flow detector	BinCloud BinView AgriView Binventory FeedView 3D Multivision	Prevent overflows Process control Inventory management Remote monitoring Monitor piles Flow detection Bin aeration Dust detection Aeration Ag Chemical Storage
 Bioenergy	Corn DDG Biomass Wood pellets Wood fiber Forest residue  Bins, silos, tanks, piles, domes	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic Flow detector	BinCloud BinView Binventory 3D Multivision ResinView	Prevent overflows and outages Process control Inventory management Remote monitoring Flow detection Slurry tank detection Measure DDGS
 Cement	Sand Gravel Clinker Rock Powder  Bins, clinker silos, tanks, piles, domes, chutes, crushers	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Plugged chute detector Airbrator Diffuser air pad	BinCloud BinView Binventory 3D Multivision CementView	Prevent overflows and outages Process control Inventory management Remote monitoring Monitor piles and bunkers Inventory domes Plugged chutes Measure crusher levels ESPs or clinker silos Prevent conveyor overloads Silo aeration
 Food processing	Brewing Foodstuffs Solids Slurries So much more...  Silos, mixers, batching tanks, conveyors, pipelines	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Airbrator Diffuser air pad	BinCloud BinView AgriView Binventory 3D Multivision	Prevent overflows Inventory management Remote monitoring and VMI Process control Sanitary level measurement Detect levels in mix or slurry tank Detect levels on conveyors Flow detection Silo aeration
 Mining	Lump coal Ores Aggregates Fine alumina powder  Silos, crushers, conveyors, domes	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Airbrator Diffuser air pad	BinCloud BinView Binventory 3D Multivision CementView	Inventory management Monitor piles Prevent overfills or outages Detecting plugged chutes Measuring inventory in domes Level measure in crushers or bins Prevent overloading Process tanks Remote monitoring Silo aeration Dust detection
 Plastics	Resins Flakes Powders Granules Re grind  Silos, bins, containers, hoppers, tanks	Rotary level indicator Capacitance probe Vibrating rods Diaphragm switch Tilt switch Radar SmartBob 3D level scanner Ultrasonic sensor Flow detector Airbrator Diffuser air pad	BinCloud BinView ResinView Binventory 3D Multivision	Prevent silo overflow Eliminate outages Inventory management Remote monitoring Vendor managed inventory Flow detection Bin Aeration Dust Detection