

Bin Monitors Can Add Moisture To Dry Grain

Tony Wendler, owner of Farm Shop Manufacturing, originally created the End Zone Grain Temp Guard system for natural air drying of corn and soybeans. Wendler wondered if he could use fan controls to add humidity rather than dry air to his overly dry soybeans, thereby raising their moisture content and adding weight.

Using two 10-hp. fans on a half-full bin of soybeans, he managed to raise the moisture content from 8 to almost 13 percent in less than three weeks of spring weather.

"I had temp and humidity monitoring inside the grain so I could see equilibrium humidity was gradually increasing," Wendler says. "It was a money-maker to be able to add moisture to the beans."

He explains that on average, raising moisture levels from 10 to 13 percent in 20,000 bushels of soybeans equates to an extra 900 bushels, worth well over \$15,000.

The End Zone Grain Temp Guard is built to be compatible with existing blowers and fans using a specially designed relay added to the motor's magnetic starter to manipulate the coil.

Monitors measure temperature and humidity to track grain conditioning. High and low temp/humidity warnings with audible and visual alarms detect changes in target values. Fans are programmed to run only when the outside air is between the programmed limits.

Farm Shop Mfg. supplies equilibrium charts to identify ideal settings for both humidity and temperature levels.

Sensors are hung in various locations inside a bin on lengths of rebar mounted to sidewalls or ladder supports. Cables connecting the sensors to monitors come in pre-set lengths of 45 to 150 ft.

"It's best to position the sensors looking for moisture fronts moving from floor to roof," Wendler says. "In larger 42 to 48-ft. bins, we'll split them into pie shapes for



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risk of hot spots. Mount rebar off the back wall, monitoring in thirds, placing sensors in a corkscrew pattern so each one monitors different areas and heights. It's also best to mount the monitors close to the exterior door and ladder area to conserve cable length."

Control systems and hardware are built and assembled in Armstrong, while cables are manufactured in Switzerland. Kits include everything required and are designed to be farmer installed.

Dual temp alarm system monitors retail for \$1,500 while fan controls including temperature and humidity monitors sell for \$2,300.

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Smart sensors monitor the temperature and humidity in the area of the cow to be sure that each soak is the right amount.

Automated Sprinkler Keeps Cows Cool

The Smart Soaker from Agpro fights heat stress in cattle at the feed bunk and uses less water than other water misting systems. Sensors detect when a cow steps up to the feed bunk and sprays her down.

"Spray heads provide the optimum spray pattern, angle and droplet size, heavy enough to soak the skin for maximum cooling," reports David Sumrall, The Cow Tech Report.

Soaking time and intervals are fully programmable. For example, it can be set to allow the cow to dry down before being soaked again. Different routines can be set up for different feed bunks to meet the needs of different groups of animals.

"Smart sensors monitor the temperature and humidity in the area of the cow to be sure that each soak is the right amount," explains Sumrall. "Cows are encouraged to stand and eat while being cooled off."

The end result is an increase of 5 to 6 lbs. of milk and healthier cows.

The Smart Soaker uses as little as 30 percent of the water used by conventional soaking systems.

Smart Soakers cost about \$100 per cow. Contact: FARM SHOW Followup, Agpro, 859 Airport Rd., Paris, Texas 75462 (ph 903-785-5531; toll free 800-527-1030; info@agprousa.com; www.agprousa.com).

Gravity Box Converted To Low-Cost Dryer

Aeration bin flooring can be used to turn a gravity box wagon into a low-cost crop dryer. Scott Ravenkamp calls the ones he built "air wagons" and uses them to dry down small batches of seed.

"I've used air wagons to dry down chaffy seed before rethreshing it, as well as with small batches of sunflowers and other seed," says Ravenkamp. "It's easy to turn the seed, moving it from one wagon to another. If I want the seed to dry faster, I hook up a fan to blow air through the floor."

Ravenkamp built his first air wagon when a neighbor needed a way to dry down a few hundred bushels of Jimmy Red field corn (Vol. 46, No. 1). "You can't put a few hundred bushels of grain on a dryer bin floor and dry it," says Ravenkamp.

Instead, he used aeration flooring that had been salvaged from a local elevator. He cut the legs off the flooring and used self-tapping screws to attach it to the floor of the gravity box. Strips of salvaged metal roofing were screwed to the edge of the flooring as flashing.

"The local grain dealer was planning to scrap the flooring," recalls Ravenkamp. "The flooring from one 48-ft. bin can do a bunch of wagons."

The first one worked so well that he has made more. At first, he worked with 225 or 250-bushel gravity boxes and 12-in. fans. He has since moved on to 300 to 400-bushel wagons with 18-in. fans. He notes that they, too, are too small for use with modern combines.

"We now cut the legs, so the flooring is around 2 in. off the wagon floor," says Ravenkamp. "We've used them for lots of small seed batches like clover and alfalfa.



Aeration flooring used as flooring in a gravity box wagon helps dry down seed.

There used to be special wagons for those small seeds, but these are better. You can turn them from one wagon to another in just a few minutes."

Ravenkamp is the contract production manager for Green Cover Seed. The larger air wagons have found a home there.

"We get lots of small batches of seed that we can't dry with a bin," says Ravenkamp. "The air wagons allow us to dry it efficiently and move it easily as needed. If we want to use them for normal grain, they are still completely useful."

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The Mini Clip attaches to front-end loader arms with universal quick attach brackets. Weighing only 632 lbs., it requires only 1,200 lbs. of lift capacity.

Compact Tractor-Mounted Tree Shear

Precision Manufacturing says their new Mini Clip tree shear is designed for smaller equipment but works like the big shears do.

"We've been making clippers for large tractors and skid steers for nearly 30 years (Vol. 40, No. 2)," says Bill Reed, Precision Manufacturing. "We've had lots of requests for one that fits compact and utility tractors, so we developed the Mini Clip."

It attaches to front-end loader arms with universal quick-attach brackets. Weighing only 632 lbs., it requires only 1,200 lbs. of lift capacity. A counterweight is recommended. The Mini Clip can be used at ground level to clip off saplings and trunks up to 7 in. in diameter. It manually telescopes out to 6, 7 or 8 ft. past the height of the loader and rotates up to 180 degrees to quickly clip branches.

"It can clip off any species of tree," says Reed. "The 4-in. cylinder produces almost 20 tons of pressure at 2,500 psi across the 1/8-in. edge on the blade. The blade should last forever with no sharpening needed."

Reed reports that customers especially appreciate the clean cut, the size they can cut, and the close cut offered.

"They like being able to get within a few

inches of the trunk of the tree when cutting limbs and within 3/4-in. of the ground when cutting a trunk," he says.

The Mini Clip is available in two models, both priced at \$7,500. Both can be equipped with a sprayer for applying herbicide to cut stumps. The MC6551 is for skid steers and tractors with auxiliary hydraulic outlets. The price includes a wireless remote to control the rotation of the cutting head.

The MC7551 comes with an extra valve kit to create an auxiliary hydraulic valve for tractors without auxiliary power. It comes with a control valve with one button to activate cutting and a second to rotate the head.

When not being used for the Mini Clip, the kit's auxiliary power can be used on other accessories, such as a grapple on a loader. Auxiliary kits are available for tractors with a hydraulic flow of up to 13 gpm and those with a flow of up to 24 gpm.

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