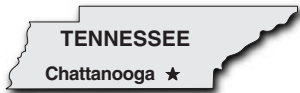


# Capacity Boost

TENNESSEE FEED MILL NOW SERVES A WIDER GEOGRAPHY



TENNESSEE

Chattanooga ★

## Pilgrim's Pride Corp.

Pittsburg, TX • 903-855-1000

**Founded:** 1946

**Annual sales:** \$5 billion

**Annual feed production:**

155,000 tpy

**Annual poultry production:** 6

billion lbs./year

**Number of employees:** 40,000

### Key personnel:

- Mark Daniel, mill manager
- Doug Page, maintenance supervisor
- Fangie Jones, production supervisor

### Supplier List

**Aeration system ...** North American Equipment Sales Co. Inc.

**Batch control system .** Feedworks

**Bearing sensors ...** Maxi-Tronic Inc.

**Bin level monitors .....** Bindicator

**Bucket elevators ...** The Essmueller Co.

**Concrete tank builder .....** JSC International LLC

**Contractor** AGR International Inc.

**Conveyors (drag) .....** The Essmueller Co.

**Conveyors (screw) .....** Thomas Conveyor Co.

**Elevator buckets ...** Maxi-Lift Inc.

**Engineering ....** AGR International Inc.

**Hammermill ...** Bliss Industries Inc.

**Hammers .....** CMS

**Loadout controls .....** Beta Raven

**Millwright.** Chattanooga Mechanical

**Mixer ....** Hayes & Stolz Ind. Mfg. Co. Inc.

**Motion sensors ...** Maxi-Tronic Inc.

**Pellet cooler .....** TS/UMT

**Pellet mill .....** TS/UMT

**Speed reducers .....** Dodge

**Square bins ....** Material Handling System Inc.



*Pilgrim's Pride Inc.'s 120-tph feed mill at Chattanooga, TN, acquired in 2003 after the previous owner, ConAgra Foods, upgraded it from 70 tph. Photos by Ed Zdrojewski.*

The 1988 feed mill built along a CSX main line at the base of Lookout Mountain in Chattanooga, TN is on its third owner. Pilgrim's Pride Inc., Pittsburg, TX bought the vertically-integrated mill from ConAgra Foods last year, which in turn purchased the mill from its builder, Seaboard Farms, late in 2000.

Mill Manager Mark Daniel, a Chattanooga native, has worked for all three owners, having managed the operation since 1996. At the time of the 2000 acquisition, he says, ConAgra acquired both the Chattanooga mill and another mill 35 miles southeast at Dalton, GA. Both mills supplied poultry feed to producers

in Tennessee, northwest Georgia, and northeast Alabama.

"When ConAgra bought out Seaboard Farms, the Dalton mill was old and antiquated," Daniel says. "ConAgra made the determination to close that mill and expand and upgrade the mill at Chattanooga."

In January 2001, ConAgra began a three-phase project to boost production capacity at Chattanooga from 70 to 120 tph, and Pilgrim's Pride purchased the upgraded mill. Phases included:

- The addition of a new 300,000-bushel slipform concrete storage tank and new grain receiving equipment.



*Mark Daniel*

*Reprinted from July/August 2004 GRAIN JOURNAL*



From left, new enclosed rail receiving pit, 300,000-bushel slipform concrete tank, and 20,000-bph Essmueller leg were all part of the upgrade.

- Automation of finished feed loading onto trucks.
- An upgrade of batching, mixing, and pelleting systems, including the replacement of one of two pelleting lines.

To accomplish this, ConAgra hired AGR International Inc., Roswell, GA (770-594-0963), as contractor on the project. JSC International LLC, Mt. Olive, NC (919-635-1143) built the concrete tank, and much of the grain handling equipment was supplied by The Essmueller Co., Laurel, MS (800-325-7175).

Work was completed by December 2001, and cost of the project remains confidential.

### Grain Receiving

Prior to the addition of the new storage, the Chattanooga mill had only 143,000 bushels of grain storage on-site, not nearly enough to handle the 75-car shuttle trains offered by the CSX.

The new 300,000-bushel tank stands 60 feet in diameter and 142 feet tall. Since it is designed for rapid turnaround, the tank has no grain temperature monitoring or aeration. However, some air is supplied through

a KanalSystem floor, for unloading purposes only.

Incoming grain arrives through an enclosed 1,100-bushel mechanical rail receiving pit, which sends it via inclined 20,000-bph Essmueller drag conveyor to the boot of a 20,000-bph Essmueller leg. The leg is outfitted with 16x8 Maxi-Lift Tiger-Tuff buckets mounted on an 18-inch belt from Nott Co.

Plans for later in 2004 call for the addition of a second 20,000-bph leg, which will allow Pilgrim's Pride to unload unit trains in 15 hours or less.

At the top, a 20,000-bph Essmueller drag conveyor carries grain to the new tank. The tank empties onto a 120-tph Essmueller drag, which takes grain into the mill.

For grinding corn, a used 40-tph Bliss hammermill was added to existing grinding equipment. The Bliss unit was the only equipment to be salvaged from the Dalton mill.

### Truck Loadout

Ten new 60-ton Lemanco steel storage bins for finished feed were added above the truck scale, for a total of 600 tons of additional storage. Also added to the loadout operation was a traveling weigh scale under the control of Beta Raven software. The new technology, which is designed to be simple for truckers to operate, allows each bin to be weighed and discharged individually.

### Milling Operations

A new 5-ton Hayes & Stolz double-ribbon "one-minute" mixer was installed.



Inclined Essmueller drag conveyor deposits incoming corn into the boot section of the new Essmueller leg.

"It really does batches in one minute, and the CVs (coefficients of variance) look pretty good," Daniel comments.

An older 30-tph pellet line was replaced with a new 75-tph TS/UMT line. The new line includes a conditioner, Model C900/305 pellet mill, and counterflow cooler. Due to limited space, Daniel comments, an existing crumbler was sited beneath the cooler, and an Essmueller drag curving upwards to 45 degrees from beneath the crumbler carries feed to the finished bins.

"Everything has been working very well so far," Daniel comments.

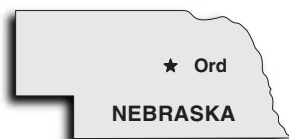
*Ed Zdrojewski, editor*



KanalSystem unit on the new tank provides air assist for unloading, although Pilgrim's Pride does not aerate grain in the tank.

# Annex Relieves Ground Piles

THREE-TANK CONCRETE FACILITY IMPROVES FLEXIBILITY DURING HARVEST



**Cargill, Incorporated**  
Wayzata, MN • 952-742-7575

**Founded:** 1865  
**Annual earnings:** 1.03 billion  
**Number of employees:** 101,000  
**Crops handled:** Corn, soybeans, wheat  
**Services:** Grain handling and merchandising

#### Key personnel at Ord:

- Robert Racek, Farm Services Group manager
- Jeff Mesick, Farm Services Group operations leader
- Brad Wiley, Farm Service Center manager
- Mike Jantz, leadperson
- Jo Moraczewski, customer solutions representative
- Bert Meyer, elevator operator

#### Supplier List

**Aeration fans** ..... Airlanco  
**Aeration system** ..... North American Equipment Co. Inc.  
**Catwalk** ..... Warrior Mfg. LLC  
**Contractor** ..... Younglove Construction, L.L.C.  
**Conveyors**... Hi Roller Conveyors  
**Conveyor belting** ..... Rubber Belting & Hose  
**Distributor** ... The Essmuller Co.  
**Electrical contractor** ..... Boyd's Electrical Services Inc.  
**Level indicators** ..... Kistler-Morse Corp.  
**Millwright** ..... Younglove Construction, L.L.C.  
**Motion sensors** ... Electro-Sensors Inc.  
**Motors** ..... Toshiba International Corp.  
**Roof system** ..... Diathon Roof System  
**Speed reducers** ..... Falk Corp.  
**Tower support system** ... Warrior Mfg. LLC



*Reprinted from July/August 2004 GRAIN JOURNAL*

New 385,700-bushel slipform concrete annex at the Cargill AgHorizons rail-loading terminal in Ord, NE (shown opposite page) improves efficiency at harvest and helps speed train loading. Photos by Ed Zdrojewski.

North central Nebraska isn't usually thought of as a major grain production region, but there's always been plenty to handle at the Cargill AgHorizons elevator along the North Loup River in Ord.

"We haven't had enough upright working space to handle both corn and soybeans at harvest and load 100-car shuttle trains," says Farm Service Center Manager Brad Wiley, a 13-year Cargill veteran who has held positions at facilities in Texas, Oklahoma, Oregon, North Dakota, and Ohio, before coming to Ord last year. The Ord elevator is located on the Central Nebraska Railroad, a short-line connecting to the Union Pacific (UP) at Grand Island, NE.

"Usually, we have at least 1 million and up to 2 million bushels in ground piles," Wiley says, noting that while grain is well cared for in these piles and quality maintained, handling that grain is too slow for shuttle train loading, with the UP's 15-hour turnaround time.

### Scaled-Back Project

To speed up train loading and help deal with corn and soybean harvest while loading trains in the fall, Cargill AgHorizons built a three-tank, 360,000-bushel slipform concrete annex in 2003.

The original proposal was for a "four-pack" annex that did not have the flexibility and efficiencies that eventually were built into the three-pack annex. The proposal for the four-pack was floored due to financial and operational concerns.

With input from Loren Field at Younglove Construction L.L.C., Sioux City, IA (712-277-3906), and an engaged crew at the Ord location, the project was right-sized in order to meet financial requirements while making several significant operational improvements over the initial proposal. The project was then resubmitted and approved.

Cargill did its own engineering on the project in-house, and Boyd's Electrical Service Inc., Neligh, NE (402-887-4653), did the electrical work and installed the PLC-based automation systems.

Construction began in June and was completed in December. The Cargill

AgHorizons crew at Ord was able to begin filling the new tanks in October. Cost of the project remains confidential.

### Concrete Storage

The three 120,000-bushel tanks stand 38 feet in diameter and 130 feet

tall. The tanks are outfitted with channeled KanalSystem floors, in which aeration is used both for grain quality management and to assist in unloading. One Airlanco 50-hp centrifugal fan per tank provides up to 1/10 cfm per bushel of aeration.

The tanks also are outfitted with three-cable Rolfes grain temperature monitoring systems, Kistler-Morse Sonologic level monitors, and 2-hp roof exhausters.

Grain reaches the annex via a 20,000-bph Hi Roller overhead enclosed belt conveyor, which delivers it to a five-hole Essmueller distributor. Two of the five holes are capped, and grain reaches the tanks through gravity spouting from the



Brad Wiley

other three holes.

Grain from the tanks is unloaded onto another 30,000-bph Hi Roller conveyor in a below-ground tunnel, which carries it back to the facility's three existing receiving legs. Andco actuators allow for blending of grain as the tanks are unloaded.

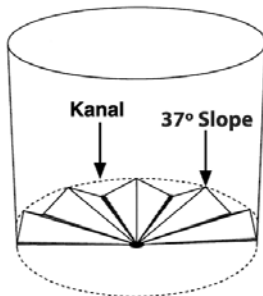
In addition, Wiley says, each tank has a concrete "knockout" available, should Cargill decide to add truck sidedraw spouts or a conveyor out to one of the temporary storage piles in the future. There is also space to add a new receiving pit and leg, which might be justified with the construction of additional storage space, addition of a conveyor from the annex to existing ground storage, or if the equipment became necessary to assist with train loading while unloading more than one commodity.

"We haven't been through a harvest with the new annex yet," Wiley says, "but we're already seeing some new options for segregating grain."

Ed Zdrojewski, editor

BIN UNLOADERS

## KANAL SYSTEM

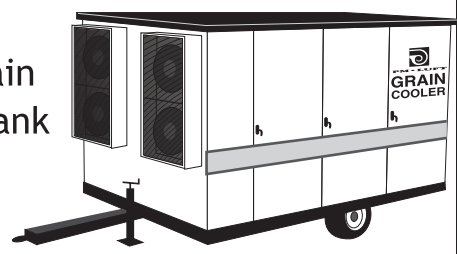


**Dual Function**

- Aeration
- Unloading

GRAIN COOLERS

## TORNUM/PM-LUFT



Cool grain in the tank

### NORTH AMERICAN EQUIPMENT Co.

Atchison, KS • 800-514-7608