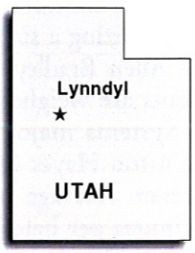
Feeding Layers in the Desert

DELTA EGG FARMS BUILDS A 60-TPH FEED MILL TO SUPPLY POULTRY OPERATIONS



Delta Egg Farms Inc.
Delta, UT • 435-864-4991

Founded: 1998
Production capacity: 1.2 million layers, expanding to 1.5 million
Feed milling capacity: 60 tph
Number of employees: 70
Products: Layer mash feeds

Key personnel:
- Scott Patton, general manager
- Scott Wilcken, mill manager

Supplier List

Aeration system . Caldwell/Div. of Chief Industries
Air compressor ..... Sulair
Batch control system . Agri-Systems
Bearing sensors ..... Agri-Systems
Bin level monitors . BinMaster Level Controls
Bucket elevators . Caldwell/Div. of Chief Industries
Contractor ..... Agri-Systems
Conveyors . Caldwell/Div. of Chief Industries
Distributors ..... Schlagel Inc.
Dust collection system ..... Agri-Systems
Dust filters ..... IAC
Elevator buckets ..... Tapco Inc.
Engineering ..... Agri-Systems
Hammermill ..... Bliss Industries
Liquid tanks Agri-Systems, Alimet
Magnets ... Bunting Magnetics Co.
Mixer .. Hayes & Stolz Ind. Mfg. Co.
Microingredient system .. Sudenga Industries Inc.
Motion sensors ..... Agri-Systems
Scales ..... Agri-Systems
Screener ..... Agri-Systems
Screw feeders ..SCC Indutries Inc.
Speed reducers ..... Dodge
Square bins ..... Abel Mfg.
Steel storage ..... Behlen Mfg. Co.
Truck scale ..... Agri-Systems

Delta Egg Farms's new 60-tph feed mill at Lynndyl, UT, which specializes in mash layer feed. Photos courtesy of Agri-Systems.

The American West has been an important region for egg production, but production does not equal demand. The heavily populated cities of the West Coast traditionally transported in some of their egg supplies from points east via refrigerated truck, an expensive proposition.

Dick Latta, owner of Sunbest Foods of Iowa, Lincoln, AR, had a better idea. It's a lot cheaper to haul grain long distances than to haul eggs, he reasoned.

So in 1998, Sunbest Foods joined forces with Cal-Maine Foods, Jackson, MS, and formed Delta Egg Farms Inc., in the high desert around Delta, UT.

"Delta is a farming community with about 60,000 acres under cultivation, most of it in alfalfa," comments Delta Egg Farms General Manager Scott Patton. "However, they also grow some wheat, corn, and barley, and the community was looking for some ag-based companies to settle in the area."

The agribusiness-friendly community plus a highly skilled and motivated workforce convinced Sunbest Foods and Cal-Maine Foods to locate their western layer roots in Utah's Millard County. Today, the company gathers eggs from some 1.2 million layers in production barns at its layer complex, and the number is expected to grow to about 1.5 million by 2001.

Feed Mill Project

All of those birds have to be fed, so last year, Delta Egg Farms began construction of a 60-tph mash feed milling operation along a Union Pacific (UP) main line running through the community of Lynndyl, UT, about 12 miles northeast of Delta.

To handle the design and construction of the feed mill, Delta Egg Farms let bids and chose Agri-Systems, a full-service contractor based in Billings, MT (406-245-6231/ www.agrisystems.net). Construction began in July 1999 and was completed by this Au-

Production center for the Delta Egg Farms feed mill, including control room at upper right and 4-ton Hayes & Stolz mixer below left.

gust. The mill was in full production by September 2000. "They did an excellent job," Patton comments.

The Agri-Systems crews built a 50-x-120-foot steel feed mill and warehouse, with the production tower standing on a 50-x-40-foot footprint. The mill also includes an elevator with 200,000 bushels of grain storage.

Ingredient Receiving

The Lynndyl feed mill has a siding track off the UP capable of handling 15 covered hopper cars. Patton notes that most corn and soybean meal is shipped in from the Midwest, but there are plans to try to originate more locally-grown grain, as well.

The elevator can receive grain and soymeal by truck or railcar. The railcar pit feeds a 150 tph (5,000 bph) Caldwell leg, while the truck pit feeds a 120 tph (4,000 bph) leg. Both legs are equipped with 12x8 Tapco buckets on 12-inch spacings. Corn is routed through a Schlagel electric distributor and a 150 tph whirly cleaner before being sent to storage.

A 150-tph Caldwell drag conveyor carries corn out to a pair of 100,000-bushel Behlen corrugated steel tanks. These flat-bottom tanks stand 48 feet in diameter and 71 feet tall and are equipped with Agri-Systems custom-built sweep augers. A single 7-1/2-hp Caldwell centrifugal fan on each tank supplies 1/10 cfm of air per bushel. Neither tank has a temperature monitoring system.

Soybean meal is stored in a reconditioned bolted steel tank standing 26-1/2 feet in diameter by 64 feet tall holding about 650 tons.

Corn and soybean meal are reclaimed by another 150-tph Caldwell drag conveyor in a below-ground tunnel, which returns it to one of the receiving legs and the distributor.

From there, corn is routed through another whirly cleaner, past a Bunting magnet, and into a 200-hp Bliss hammermill, normally operated at 45 tph. There is enough room to add a second hammermill, if needed.

The mill has 14 Abel ingredient bins holding up to 800 tons. One of the ingredients, salt, is blown into its stainless steel bin pneumatically through an Agri-Systems baghouse filter.

Milling Operations

The entire facility from grain receiving to loadout is under control of Agri-Systems software, utilizing a single PC and off-the-shelf Allen Bradley PLCs.

Feed ingredients are weighed on a 4-1/2-ton Agri-Systems major scale, then mixed in a 4-ton Hayes & Stolz single-ribbon mixer. Average mixing time is 3-1/2 minutes per batch. The mixer also takes in dry ingredients from an eight-bin Sudenga microingredient system plus liquid ingredients from three separate tanks holding fat, choline, and methionine.

Because the mill is used strictly for mixing layer feed, no pelleting is done, and there are no plans to add a pelleting line. Finished mash feed is sent to a series of eight 60-ton finished feed tanks.

These tanks are mounted over a shuttle conveyor loadout spout, which loads trucks parked on a 10-x-70-foot Agri-Systems truck scale. It takes about 10 minutes to fill a semi.

"We're made minor adjustments to the system," Patton said in mid-September, "but so far, everything has performed well."

Conveyor-mounted loadout spout can load a semi in about 12 minutes.