

California Grower Benefits From Pivot Irrigation

Converting from Flood to Pivots



SUMMARY

When California dairy farmer Mark Ahlem looked to modernize the irrigation system on his farm near Livingston, in California's San Joaquin Valley, he turned to Lindsay and three new Zimmatic® 9500CC Custom Corner systems with GPS Guidance.

The land was previously irrigated using a combination of flood, aluminum sprinkler and tape irrigation.

In making the decision to go with modern, new mechanical move sprinkler systems, Ahlem relied on his

past experiences with pivots elsewhere and a desire to bring more of his land into production with corner systems. He also wanted to tie in the pivots with his fertigation system and a nearby large dairy wastewater lagoon.

Much of California agriculture is still irrigated by flood, drip or set-line pipe

irrigation systems. As water becomes more and more scarce, growers like Ahlem are looking to new technology such as mechanical move sprinklers for water, labor and energy efficiencies, and increased production.

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– Mark Ahlem, Ahlem Dairy



Charles and Mark Ahlem



FAST FACTS HILMAR CHEESE COMPANY

Hilmar Cheese Company and its business unit, Hilmar Ingredients, serve customers in more than 50 countries.

- Production facilities in Hilmar, California, and Dalhart, Texas
- Employs more than 1,200 people
- Processes more than 21 million pounds (9.5 million liters) of milk each day received from more than 230 dairies
- Produces more than 2.4 million pounds (more than 1,100 metric tons) of cheese each day
- Annually produces more cheese and whey from one site (Hilmar, CA) than any other manufacturer in the world

CHALLENGE

When Ahlem purchased a piece of land at his nearby Livingston, California, farm, he knew he had to modernize an existing cadre of old and inefficient flood, aluminum sprinkler and tape irrigation components on the farm.

He had several goals in mind in modernizing the irrigation system, including:

- Work around numerous obstacles in the mostly-square fields, including wells, a pump station, power poles and transformers and several roads that go through and near the fields
- Maximize productive farm ground in the corners of the field
- Make use of chemigation as part of his farming operation

- Have the ability to apply millions of gallons of wastewater to his crops from a nearby dairy wastewater lagoon
- Deploy modern irrigation management technology to save water, time and labor and increase production

SOLUTION

Working with his local Zimmatic® by Lindsay dealer, Agri-Valley Irrigation, based in California's central San Joaquin Valley, Ahlem knew he wanted to deploy mechanical move sprinkler irrigation based on past experience with the systems.

"I went with pivots because I had experience with them on farms elsewhere and I like the ability of the pivots to make a round in 12 hours, which can help with wind and seed germination," Ahlem says.

The pivots Ahlem purchased were Lindsay's most modern and biggest: three new 9500CC Custom Corner systems with GPS Guidance.

With the ability to create a custom irrigation program based on the field's unique characteristics, the 9500CC Custom Corner system is easy to use and helps make the most of the land already being farmed.

Field obstacles

Agri-Valley's Stein notes that there was extensive planning and GPS-

“The pivots are very efficient and provide a huge savings in labor.”

– Steve Bellow, Farm Manager

design work prior to pivot installation because of numerous obstacles in the mostly-square fields.

“We had to do lots of GPS work because of all the obstacles in the fields, including wells, a pump station, power poles, pad mount transformers and several roads that go through and near the fields,” Steins says. “We just worked around everything when we designed and mapped the fields.”

Because Ahlem went with the GPS Corner Guidance on his 9500CCs, there also was no need for buried wire on the mostly square fields.



Ahlem irrigates alfalfa, corn, oats and sudangrass.

“I wanted the corner systems to bring additional acres into production and to take advantage of the water available on these farms,” Ahlem says.

Ahlem is now using the pivots to irrigate 145 acres (59 ha) of alfalfa, corn, oats and sudan. He may also grow carrots in the future under the pivots.

Crops grown on the farm are used for feed at the nearby Ahlem dairies, with milk processed into cheese and

other products at the Hilmar Cheese Company. Mark’s father, Charles Ahlem, is one of the original founders of the cheese processing company and is also active in the farming and dairy operation.

Sandy soil

Another key reason the farm went to pivot irrigation is the extremely sandy soil in the area, according to Steve Bellow, Farm Manager.

Compared to flood irrigation, the center pivots on Ahlem’s farm can apply water at different rates and

much more uniformly.

“Doing flood irrigation, with our very sandy soils, it took a lot of water. Plus, we couldn’t apply the fertilizers accurately. Now, with these new pivots, the water application is much more uniform. We just push a button to turn on the system,” Bellow says.

FieldNET® by Lindsay’s wireless irrigation management system is used to manage and control the pivots.

Reclaimed dairy wastewater lagoon.



ENVIRONMENTAL STEWARDSHIP

Hilmar Cheese Company was founded in 1984 by several central California dairy families seeking to maximize the value of the Jersey cows’ high solids milk. One of those dairy farmers is Charles Ahlem, father of Mark Ahlem.

Since its founding, the cheese company, like the Ahlem dairy farms, has focused on resource conservation and sustainability:

- The Hilmar, CA, cheese facility has the most advanced food processing water treatment and recycling facility in the state and likely the nation
- Nearly all of the water used in the Hilmar and the Dalhart, TX, facilities is reclaimed for use as irrigation water and used on local farmland or internally for non-food applications
- The reclaimed water is in very high demand due to chronic agricultural water shortages in the region
- Dairy wastewater is used to irrigate nearby crops via three new Zimmatic 9500CC Custom Corner systems



Above: Mark Ahlem using the BOSS control panel.

Right: Zimmatic 9500CC Custom Corner system with GPS Guidance.



RESULTS

Mark Ahlem is pleased with results so far from his new pivots and overall irrigation management system.

“It is too soon to tell the exact savings yet from our new pivots and the corner systems. However, now I don’t need to build levies and don’t need an irrigator. Plus, I’m hoping to save 20 percent on the water usage and see increased yields because of this precision irrigation,” he says.

An added benefit is that millions of gallons of wastewater from the nearby 1,600-cow dairy operation can be pumped through the pivots and used to irrigate nearby crops, saving precious water and promoting environmental stewardship on the farm.

“The pivots are very efficient and provide a huge savings in labor,” Bellows says. “Plus, we can accurately inject the fertilizer and the dairy wastewater through the pivots, which was impossible with the old pipeline system.”

“Flood irrigation required groundwork, levies and borders every 100 feet (30.48 meters). No borders, no groundwork, that means lots of labor savings and extra space for actually growing the crops for feed.”

Stein adds, “The Ahlems are real pace-setters in that they now own what are probably the newest and most modern corner pivot irrigation systems in the entire state of California. We’re definitely seeing interest from neighbors in mechanical move sprinkler systems such as those on the Ahlem farm.”

For more information about Zimmatic® and Lindsay irrigation solutions, visit www.zimmatic.com or talk to your Lindsay dealer.

SOURCE: Hilmar Cheese Company

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