FEATURE STORY
Florida grower saves water and energy – with the Lindsay Advantage
Page 8

Wine and water
Page 14
THE LINDSAY ADVANTAGE

THE FREEDOM TO MANAGE YOUR PIVOTS REMOTELY

FIELDNET® | WIRELESS IRRIGATION MANAGEMENT

Now more than ever, you need precise command of your pivots. And only the Lindsay Advantage can deliver this degree of control. Our line of innovative irrigation management products is designed to save you water, fuel, labor, and most importantly, time.

FieldNET lets you program end-guns and set up variable rate irrigation in sectors, making you more efficient and saving you money. With FieldNET, you have the power to manage your pivots conveniently from your phone or Web-enabled devices, including smartphones. This means easy, immediate access to pivot status updates, water usage reports and alerts – for ultimate peace of mind.

To learn more about FieldNET, visit www.lindsayfieldnet.com or talk to your local dealer.

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How Pivot Irrigation Helped Transform a Local Economy

One of the first and oldest Zimmatic dealerships in the world – Holzfaster’s Equipment of Ogallala, Neb – was recently purchased by Michael Holzfaster from his father, long-time Zimmatic dealer Ralph Holzfaster. Ralph Holzfaster reflects on the many changes he has seen as a result of pivot irrigation.

Q: When did you start your Zimmatic by Lindsay dealership?  
A: I sold my first Zimmatic pivot in November of 1969... to a neighbor. It was a 15-tower system covering 180 acres (73 ha). It was the biggest system we have ever sold.

It has been fascinating to see firsthand how pivot irrigation has helped transform our region’s economy into an agricultural powerhouse over the years, with increased crop production and variety, higher land values and creation of professional irrigation-related jobs.

Q: What were the keys to success of your business?  
A: Selling Zimmatic pivots was actually easy because you knew you were doing customers a favor and helping them out with rain insurance through irrigation. Lindsay was an innovator in pivot irrigation and always stood by the products.

Center pivot irrigation created new industries in the Ogallala area and increased the tax base. It resulted in a shift from growing wheat to growing corn and soybeans, and helps feed the world.

Q: What’s next in your future?  
A: First, I have to say that I couldn’t have run the business without the help of my wife, Beverly. We plan to continue being active in our community and residing on our farm near Ogallala.

As for the future, Michael Holzfaster says he will carry on the great service provided by his father and help growers in the area take advantage of the latest irrigation technology solutions offered by Lindsay.
What if you have a field with low areas, runoff, different soil types, or a creek running through it? It has a lot of potential, but you’ve never thought about irrigating it. This “problem” field can now be a “profitable” field.

Variable Rate Irrigation (VRI) allows you to apply exactly the right amount of water and chemicals to each area of your field – giving you full control over every square foot to maximize yields and save water and chemicals.

Extension Crop Production Specialist Dr. Gene Stevens of the University of Missouri has been using VRI as a method of increasing crop yields and decreasing input costs. “In southeast Missouri, it is not unusual to have sandy loam and clay soils in the same field. Variable rate irrigation on center pivots allows farmers to match irrigation water rates to the water holding capacity of each soil,” said Dr. Stevens.

**How it works**

Growsmart® by Lindsay offers Precision VRI, which lets you define custom irrigation zones with easy-to-use mapping software. Zones can be defined by soil type, topography, crop type, field obstacles or any other variable.

**Zone and individual sprinkler control options**

The variable rate program is then loaded into the Precision VRI controller to direct individual sprinklers through wireless nodes. Sprinklers turn on or off for zone control, or pulse at the precise cycle to achieve the desired variable application rate.
VRI BENEFITS
- Higher yield potential
- Increased efficiency of power and water
- Adjust application rates over different crops, soil types and terrain
- Reduce over-watering on laterals and part circles
- Improved track maintenance
- Reduce runoff and leaching
- Save on fertigation and chemigation costs
- Decrease/eliminate watering in low or flooded areas

WHY DO YOU NEED VRI?
Variable rate irrigation could be beneficial if your fields have:
- Different crops or non-crop areas
- Varying soil types
- High runoff areas
- Low/flooded areas
- Obstacles such as buildings, tracks, roads, etc.

THE LINDSAY ADVANTAGE
Growsmart Precision VRI can be installed on center pivots, laterals and competitive machines.

VRI FAQs
Q. Will the system work with any brand of pivot?
A. Yes, as long as power is available to the system.

Q. Will the system work as a retrofit?
A. Yes, it can be installed on an existing or new system.

Q. What is the maximum number of zones?
A. Any number of zones can be created, in any position, in any shape required. There is no maximum number of zones.

Q. How small of an area can be irrigated?
A. Zones are not restricted or related to degrees around a pivot, but only by the size of the sprinkler package. For example, a nozzle that waters an area of three feet can technically be controlled to that extreme by the software and components.

Q. Are expansion “modules” required?
A. No – the system has a modular design to make installation and diagnostics simple. If a partial or existing system is being expanded, extra nodes and valves can be added where required. Each node controls up to four valves.

Q. How does the controller communicate?
A. Communication is through wireless links from the controller to the wireless nodes. The wireless nodes turn the sprinklers on, off or pulse at a cycle determined by the VRI controller.

Q. Will the system work with low-pressure spray nozzles only? Or also with high-pressure impact sprinklers?
A. It will work with both types – pressure regulators are necessary to maintain application uniformity.
Lindsay’s popular FieldNET® Wireless Irrigation Management system is now integrated with Land.db, a farm management software program from Ag Connections®.

With the integration, growers can electronically import all of their irrigation records, pivot run times, and chemigation and fertigation events from FieldNET into Land.db.

“Integration of FieldNET with Land.db will save growers many hours of manual data input and allow for more accurate and detailed production reports to processors, government agencies and other farm business partners,” says Randy Wood, Lindsay’s Vice President of Sales and Marketing. “Many of our shared customers have asked for this convenience, and along with Ag Connections, we’re delighted to provide it for them.”

For more information about Ag Connections, visit www.agconnections.com.

FIELDNET RECORDS
FieldNET by Lindsay Wireless Irrigation Management provides full control and monitoring of many brands of pivots. It provides information on pivot position, status and water use.

Zimmatic pivots also can be used to easily, cost-effectively and safely...
chemigate and fertigate crops. With monitoring and control of the pivots by FieldNET, these chemigation and fertigation records can be automatically passed to Land.db.

LAND.db WIDELY-USED
Land.db, a product of Ag Connections of Murray, Kentucky, is a widely-used farm management software program that provides production costs as well as production traceability. Land.db helps growers track and forecast crop production records, including crop protection, fertilizer, seed and service applications, and now irrigation events through integration with FieldNET.

“Integration of FieldNET with Land.db is a first in the industry and a tremendous benefit for growers,” says Rick Murdock, Ag Connections’ Vice President. “Whether it’s one or 100 pivots, growers have the ability to connect their pivots directly to our servers and software and use the information in their production records.”

SEAMLESS INTEGRATION
Both Wood and Murdock noted that more and more processors and other end users of high-value crops and commodities are requiring detailed reports and information on crop production practices, water usage, sustainability, and chemical and fertilizer applications.

“Today’s growers demand strong, durable, rugged and highly-efficient irrigation systems with advanced remote management tools. Integration of FieldNET with Land.db is another plug-and-play offering to The Lindsay Advantage portfolio of products,” Wood says.

Contact Info:
Visit www.lindsayadvantage.com or www.lindsayfieldnet.com or talk to your local Zimmatic by Lindsay dealer for more information.
Visit www.agconnections.com to see how the integration product works.
Holt County is one of the largest counties in Nebraska. It also has the highest number of irrigated acres – nearly 340,000 (137,593 ha) – of any county in Nebraska.

Now, thanks to FieldNET® by Lindsay and one of the first radio network bridges of its kind in the world, virtually all of the pivots in Holt County can be managed from any computer or cell phone with access to the Internet – even if there’s no cell phone coverage in the area.

Kracl Irrigation of O’Neill, Lindsay’s local Zimmatic dealer, recently completed installation of an extensive radio network bridge that allows growers to monitor pivots with FieldNET – including many non-Zimmatic panels.

“There are some very sparse areas in our county, with limited or no cell phone coverage,” says Tim Cahoy, general manager at Kracl Irrigation. “The radio bridge is an inexpensive solution to pivot monitoring and control and can be more reliable during times of peak cell phone usage.”

Secure Accounts

In operation less than a year, Kracl’s radio network bridge has more than 100 pivots connected to it already. Growers have their own secure accounts.

“Our FieldNET bridge has been very popular and we see usage tripling in the near future. We have customers calling us every day for it and some farmers who live outside of our service area want to put up their own network,” Cahoy says.

FieldNET Wireless Irrigation Management allows growers to
manage pivots remotely. The user-friendly Web portal provides a quick view of every pivot, information on location, status and water usage. It also provides details on pivot runtimes, speed, direction and water and chemigation use.

**How It Works**

Cahoy explains how the Kracl Irrigation radio network bridge works.

1. A radio RTU (remote telemetry unit) is installed on the pivot. A Growsmart by Lindsay computer panel can be installed on the pivot as well if more control is needed.

2. The radio RTU then sends information to a strategically placed radio repeater which serves to extend the range of communication and send it to a FieldNET bridge.

3. This bridge is connected to an always-on Internet connection via a radio receiver attached to the bridge in the office.

The key to the whole network are repeater stations which are strategically placed on grain legs or elevators to cover any pivots in the area within a 10-mile (16-km) radius.

“The radio repeaters allow us to provide coverage for most of Holt County,” Cahoy says. “We did it as a service for our customers who couldn’t get cell phone coverage and who needed a more reliable option for managing their pivots.”

**More Efficient**

“Lindsay has the lead in wireless irrigation technology with FieldNET and we predict use of this technology will only grow in the future. It’s a great way for farmers to be more efficient and save wear and tear on their vehicles. It pays for itself in no time.”

Cahoy foresees FieldNET Wireless Irrigation Management tied to more and more time and labor-saving features in the future.
FLORIDA GROWER SAVES WATER, ENERGY WITH THE LINDSAY ADVANTAGE
INVESTING IN PIVOTS FOR THE FUTURE

As Alan Jones puts it, he's jumped in with both feet and has high expectations of great things to come.

Jones is talking about his recent conversion from flood irrigation to highly-efficient, water-conserving center pivot irrigation and control technology from Lindsay.

“This is my first experience with center pivots,” Jones says. “It’s been a challenge but overall I’m feeling comfortable with the investment.”

That investment includes 14 new Zimmatic by Lindsay pivots, Growsmart by Lindsay control panels, FieldNET by Lindsay Wireless Irrigation Management, and Variable Frequency Drive (VFD) control technology from Watertronics, a Lindsay company.

The Lindsay Advantage
Jones' entire irrigation system epitomizes The Lindsay Advantage of a customized, unique irrigation system that maximizes time, labor and water savings for his commercial farming operation near Parrish, on the west coast of Florida.

Prior to pivots, Jones irrigated his 1,850 acres (749 ha) of potatoes using semi-closed flood irrigation and a network of PVC pipes and ditches, with the water pumped by diesel motors.

Converting to Electric
Working with his local Zimmatic by Lindsay dealer, Richard Lovett of Lovett Irrigation in Homestead, Florida, and a team of Lindsay irrigation and pivot control technology experts, Jones converted his entire water delivery system to electric.

Several existing irrigation pumps had to be reworked to handle pressure requirements.

These irrigated potatoes are used for making chips and for table stock.

As of Lindsay irrigation and pivot control technology experts, Jones converted his entire water delivery system to electric.

Several existing irrigation pumps had to be reworked to handle pressure requirements.

continued ➤
“We worked with Alan’s local power company in getting electricity to the fields and in essence sizing and pressurizing his entire irrigation system,” says John Atkinson, Watertronics agricultural sales manager. “All of the existing water pumps were kept in the ground and the old diesel motors were replaced with seven highly-efficient electric motors and with VFD control technology from Watertronics that automatically adjusts motor speed to match irrigation demand.”

**Water, Energy Savings**

Already, Jones is seeing a big savings in water and energy.

“We have been in a drought year but I am definitely seeing water savings of 50 percent or more compared to flood irrigation, plus energy savings that we are now documenting,” Jones says. “There was a lot of skepticism at first because hardly any potatoes are grown in this area with pivots.”

**Wireless Irrigation Management**

In addition to the 14 Zimmatic 9500 Series pivots, which irrigate potato fields ranging from 40 acres (16 ha) up to 200 acres (81 ha), the entire system is equipped with FieldNET Wireless Irrigation Management.

“We installed FieldNET Premier on all of the machines so Alan and his employees can monitor and control the pivots, motors, and field valves from any computer, tablet or smartphone,” says Lovett, who has been a Zimmatic dealer since 1990.

An added benefit of FieldNET is that all of Jones’ potato crop applications, such as fertilizers and fungicides, can be tracked and retrieved for reporting purposes to processors and other end-users of potato products.

Jones says he is looking for big things from FieldNET, especially labor savings and making his farm more efficient overall. He also hopes to get better potato yields.

**Commitment to the Future**

Jones will now fine tune his system during the off-season. And, he plans to add a couple of 9500CC Custom Corners to his 9500P pivots.

“With this new system, we’ve eliminated point, air and noise pollution and drastically reduced our carbon footprint. We’ve increased water savings and reduced our energy usage.”

– Alan Jones, Owner of Jones Potato Farm

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**Top left:** There are 14 new Zimmatic pivots on the farm.

**Top right:** Jones irrigates 1,850 (749 ha) of potatoes.

**Bottom left:** Jones with his local Zimmatic dealer, Richard Lovett of Lovett irrigation.

**Bottom right:** FieldBOSS control panel for complete irrigation management.
The Jones family has a long heritage of farming in Florida, with Jones Potato Farm raising potatoes and other high-quality produce since 1960.

Now, Jones sees his investment in new pivots and high-tech irrigation technology as a huge commitment to a sustainable future.

“With this new system, we’ve eliminated point, air and noise pollution and drastically reduced our carbon footprint. We’ve increased water savings and reduced our energy usage,” Jones says. “Farmers have a great story to tell and we need to let people know that we are doing more with less to provide a safe, reliable and affordable food supply from the USA.”

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ZIMMATIC PIPELINE
THE RIGHT OPTIONS

Lindsay understands that no field, farming operation or grower is the same. With an endless variety of environments, cropping requirements, field designs and terrain, growers need more and more equipment options to get the job done. Lindsay responded to this need by releasing the new 8 5/8-inch (219 mm) pipe diameter option to its 9500 Series line of pivots.

“We’ve added this new pipe diameter to our product line for increased flexibility and efficiency in cost, machine set-up and operation,” said Tanner Hoffman, Zimmatic product manager. “Lindsay has made the capital investments necessary to produce this popular pipeline size, and we are proud to offer the new 8 5/8-inch diameter pipe to our irrigation customers around the world.”

More Flexibility
Initially offered in galvanized steel, the new pipe diameter is available in a variety of span lengths and extensions.

“Incorporation of 8 5/8-inch spans into the Zimmatic 9500 Series product line allows even more flexibility to design a machine that is the perfect fit for each specific
FOR ANY FIELD
NOW WITH 8 5/8-INCH SPANS

The 9500 Series is the most durable, rugged and longest-lasting member of the Zimmatic pivot family. It is ideally suited for the roughest terrain, the longest systems and applications that require the most robust pivot point and pipeline structure.

grower’s needs. The 8 5/8-inch spans can be used in many different applications to reduce friction loss, save energy, lower overall upfront machine costs and provide span length and clearance options needed to match nearly any terrain or field design,” Hoffman said.

More options for a better fit
With this addition, growers now have access to a total of six different pipe diameters in

Zimmatic machines: 4 ½-inch (114 mm), 5 9/16-inch (141 mm), 6 5/8-inch (168 mm), 8-inch (203 mm), 8 5/8-inch (219 mm) and 10 inch (254 mm). The new 8 5/8 inch diameter pipeline is built using heavy wall 11 gauge pipe, consistent with other 9500P spans.

Zimmatic’s standard 6 5/8-inch pipe is more than 10 percent thicker than that of the competition.

Zimmatic offers not only galvanized steel but also aluminum, stainless steel and poly-lined piping options to give growers even more customization.

To learn more about Lindsay’s unique, field-tested product offerings, visit www.lindsayadvantage.com or www.zimmatic.com.

ZIMMATIC PIPE DIAMETERS

10-inch (254 mm)
Can be used for inboard spans to reduce horsepower requirements

8 5/8-inch (219 mm)
The newest addition to the Zimmatic pipeline offering provides even more flexibility

8-inch (203 mm)
Used on inboard spans of longer systems – 1,800 feet (549 mm) or more

6 5/8-inch (168 mm)
The industry standard diameter, commonly used on 1,300-foot (396 m) systems with flow rates of 1,000 gpm (3785 lpm) or less

5 9/16-inch (141 mm)
For shorter systems with lower flow rates

4 1/2-inch (114 mm)
Available on 7500 series only

“Incorporation of 8 5/8-inch (219 mm) spans into the Zimmatic 9500 Series product line allows even more flexibility to design a machine that is the perfect fit for each specific grower’s needs.”

Tanner Hoffman
Zimmatic Product Manager
Recently worked with Australian Zimmatic® dealer Flow Smart® in engineering a customized, unique system for distributing excess treated wastewater from the winery’s world-class wastewater treatment facility to nearby crops.

The project includes two ditch-fed Zimmatic by Lindsay 9500L lateral irrigation systems, specially-engineered concrete water canals, and FieldNET® by Lindsay Wireless Irrigation Management.

**ENGINEERING KNOW-HOW**

Bryce Yates, owner of the Flow Smart dealership in Griffith, NSW, Australia, and his team of irrigation engineers worked on the system from the get-go.

“We were engaged as the principal contractor responsible for the design, supply and installation of two lateral irrigation systems, concrete supply ditches, connecting pipelines and telemetry systems,” Yates says. “This project required...
a great deal of engineering expertise on our part since it was custom-built to suit the needs of Casella Wines.”

As the [yellow tail] brand has expanded, it has demanded more resources, but not at the expense of the environment, according to Casella Wines, a family-owned company based in Yenda, a small town just outside Griffith in NSW, Australia (see sidebar).

**WASTEWATER TREATMENT**

In 2007, the winery built the largest wastewater treatment scheme of its kind in Australia. The wastewater treatment facility has a capacity to recycle 106 million gallons (400 ML) of water annually – the equivalent of 160 Olympic swimming pools. Bacteria are used to treat the wastewater instead of chemicals. The facility can provide both primary and secondary (drinking water quality) treatment. However, during peak times of the winery’s operation, excess primary treated water is generated and used to irrigate nearby crops. “Since the Zimmatic lateral systems were installed, we have been able to spread out treated effluent over a large cropping area and in turn reduce the nutrient load on crops and soil,” says Chris Forwood, Casella Farms Manager, Casella Wines. “The system is effective in allowing us to combine maximum irrigation coverage with a uniform watering pattern to ensure quality standards are maintained year on year.”

**ABOUT CASELLA WINES**

- Australia’s largest family-owned winery
- Maker of the world-famous [yellow tail] wine brand
- The ‘roo’ featured on the [yellow tail] is actually a yellow-footed rock wallaby, a smaller cousin of the kangaroo
- Over two million glasses of [yellow tail] are consumed every day around the world
- The largest storage tank in the Casella winery is 290,589 gallons (1.1 ML). If you were so inclined to drink your way through it at a bottle per day, it would take you 3,835 years!
**ConCRETE wAtEr CAnAlS**

Flow Smart used its engineering expertise to design and construct nearly a mile (1,550 m) of concrete water canal from the wastewater treatment plant to the new Zimmatic laterals and fields.

“The winery wanted a high-quality lined canal so there wouldn’t be any leaching into the ground. The concrete canals provide higher flow rates and eliminate the labor and downtime of the traditional hose drag/hydrant system. The Flow Smart engineering department designed and manufactured all of the equipment in-house to form and lay the ditches,” Yates says.

**LATERAL IRRIGATION SYSTEMS**

The two laterals, which are used to irrigate two 49-acre (20-ha) sorghum fields, range in size from 215 yards (197 m) to 335 yards (306 m), respectively.

The laterals run with auto reverse which eliminates the labor needed to change hose hydrants and turn the machines around as is normally the case with hose-fed laterals. The machines can run up and back in the field for weeks with minimum staff intervention, according to Yates.

The laterals are equipped with Zimmatic 3-wheel towers to improve stability and reduce wheel track formation. Automatic screen filters are used to maintain an efficient supply of water to the sprinklers.

Flow Smart modified the standard Lindsay above-ground guidance panel to guide the laterals along the concrete ditch.

**CARBON FOOTPRINT TOOL**

Casella Wines remains a family-owned business and feels strongly about the conservation of the environment.

As Managing Director John Casella says, “Casella Wines aims to be a key player in the development of a carbon footprint tool for the Australian wine industry. We are on the front foot.”

**FIELDNET by Lindsay Wireless Irrigation Management** is used to log and keep detailed records of the wastewater applied from the two Lindsay lateral irrigation systems at Casella Farms.

FieldNET Mobile provides monitoring and control of the laterals from the convenience of smartphones.

Another Lindsay product, FieldLink, is used to control water valves at the canal head.

“The FieldNET alerts have been effective in keeping us informed on various parts of the irrigation process. If any issues do arise, the system gives us access and control from any computer or phone, saving on time and labor costs, and ensuring that we can react faster in maintaining crop quality standards,” says Chris Forwood of Casella Farms.

The lateral suctions incorporate a weir system to hold the channels full regardless of varying grade. The flow to the machine is tuned by a variable speed drive on the delivery pump to ensure a minimum amount of water passes the weir on the machines. The water that does pass is collected and returned to the top of the ditch to ensure there is no overflow from the system.

FieldNET by Lindsay is used to monitor and control the lateral systems (see sidebar).

**TREATED WASTEWATER FROM THE WINERY IS APPLIED TO SORGHUM FIELDS.**

Treated wastewater from the winery is applied to sorghum fields.

Remote Monitoring and Control

FieldNET by Lindsay Wireless Irrigation Management is used to log and keep detailed records of the wastewater applied to Casella Farms' concrete canals.
Looking for Lindsay online? Visit our new YouTube page at www.youtube.com/lindsayirrigation for short, informative videos on the latest Lindsay irrigation products and control technology.

You can also check out the Irrigation Advances blog at www.irrigationadvances.com for the online version of Irrigation Advances magazine.

And, as always, www.zimmatic.com is the place to go to find detailed information on Zimmatic products and features, and to locate a Zimmatic dealer near you.
And everything in between. Whether it’s pumping systems or customized corners, advanced controls or GPS positioning, there’s a product for every grower and every field. With so many choices and options, Zimmatic® by Lindsay can engineer a unique system that maximizes time, labor and water savings for each grower’s individual needs.

Growers around the world rely on Zimmatic’s innovative technology supported by a network of knowledgeable dealers to add value, reduce risk and take full advantage of every growing season.

To find out how the Lindsay Advantage can work for you year after year, visit www.lindsayadvantage.com or talk to your local dealer.