A Zimmatic® system is more than a pivot – it’s a customized irrigation solution.

Designed for optimum efficiency, it grows a bigger bottom line. Each system is backed by trained irrigation professionals who provide expertise and support beyond products and technology.

Season after season, this system will prove profitable no matter what the crop or terrain. Which is why we’re experts in our field... and yours. www.zimmatic.com
Getting the most out of your pivot.

Q: How can growers get more out of their existing pivots?
A. Make sure that the pivot is mechanically ready for another growing season. Next look for efficiencies. For example, sprinkler packages are constantly improving in terms of uniformity and efficiency.

Q: How are growers using technology and upgrades to increase ROI on existing pivots?
A. Technology as a whole is becoming more important to an efficient operation. Programmability and communication can save time and money. FieldNET™ puts you in constant communication with your pivot without having to physically be there. Computer panels enable you to control your center pivot in various crop conditions and field variables.

Q: What are the benefits to growers?
A. In addition to customized designs for individual fields, Smart Design allows growers to look at all of the different scenarios and possibilities for their fields. It helps them see outside of the box and realize that there are many different ways to profit from a well-designed, custom-made pivot package.

Q: What key things should growers be doing to make sure their pivots are operating at peak efficiency?
A. Regular maintenance is important. A routine maintenance program is available from your local dealer which could be beneficial during the hectic spring planting season. Also, tower box rebuilding and replacement have been very well received as a proven way to minimize downtime.

Q: What is the market for used pivots?
A. We are seeing the used pivot market as moderately strong, especially for quality brands which are still manufactured today.

Q: Tell us about your dealership?
A. Holzfasters Equipment was started as a Zimmatic dealership by Ralph Holzfaster in 1969. Holzfasters Equipment was the first pivot dealership signed by Lindsay Manufacturing. The current management team has been together for about 15 years.

Editor: Dirk Lenie
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Lean, Clean and Green. Lindsay Corporation is committed to developing environmental awareness and implementing sustainable practices to reduce the use of and protect energy, water, and all other resources.
The largest pivot in Brazil is also Lindsay's longest. Installed by Lindsay America do Sul based in Mogi-Mirim, Brazil, the pivot is 4,265 feet (1,300 m) long, with 26 towers. Owned by Bunge Alimentos, the pivot is in a sugar cane field on Cana Brava farm in the state of Tocantins.

Pivot irrigation for sugar cane is still relatively new in Brazil, where self-propelled Hose Travelers are currently the most common way to irrigate.

The extensive, high-clearance pivot provides water to 1,310 acres (530 ha) of sugar cane, and was developed through a partnership between Bunge and Lindsay.

The pivots were installed as part of a feasibility study analyzing whether the increase in productivity of irrigated sugar cane offsets the system installation costs, according to Ricardo Lopez, Corporate Agriculture Manager, Sugar and Ethanol, at Bunge Alimentos S.A. Operation tests with reduced water blade are part of the strategy balancing productivity and higher profitability.

Eugenio Brunheroto, Managing Director for Lindsay America do Sul explains, “Sugar cane irrigation through mechanized sprinkling is still uncommon in Brazil, and the project analyzes the feasibility of this system for large areas in order to increase crop yields.”

The irrigation project began in 2008 with 12 towable pivots, which could apply 2.5mm (.10 inches) of water daily. In 2009, 16 more systems were added, including the 26-tower pivot.

“The close furrows in the sugar cane field, along with high tension at the pivot point in a system of this magnitude can create unique challenges,” says Juliana Terra Barsanti, Lindsay Marketing Coordinator. However, proper preparation keeps the pivot running smoothly.

The Lindsay wire alignment system is used successfully in all Bunge pivots with more than 14 spans.

The pivot is operated manually now, but Bunge intends to install Lindsay's GrowSmart software so the equipment can be controlled remotely while saving time and energy costs.

For more information about Lindsay's longest pivot, you can contact Lindsay America do Sul at www.lindsay.com.br, or e-mail them at cibele@clicknoticia.com.br.
STATS ON LINDSAY’S LONGEST PIVOT:

- Radius of 4,265 feet (1,300 m)
- Takes 44 hours to make a full turn at full speed
- Irrigates 1,310 acres (530 ha)
- Flow rate of 134,000 gallons (506 m³) per hour

Maximize ROI With Crop-Specific Information

Whether you grow corn, soybeans, cotton, peanuts, or a combination of these crops, you know that each of these crops has different irrigation needs. That’s why Lindsay has developed a series of new crop-specific brochures that can help you optimize your irrigation for peak efficiency.

Written by Lindsay irrigation experts, the brochures provide useful agronomic information, helpful statistics, charts and illustrations to make the most of your irrigation efforts.

Brochures are also available on irrigating potatoes, sugar cane and biofuel crops.

To request a Lindsay crop-specific brochure, contact your dealer or go to www.zimmatic.com and click on downloads.
No one can claim that growing tomatoes or vegetables is easy – especially when water and labor are scarce. New technological solutions in pivot and lateral irrigation provide economical options to growers who have never considered using it before.
California grower John Diener, pictured below on the cover of Vegetables West magazine, uses pivot irrigation to water more than 1,300 acres (526 ha) of tomatoes, hay, corn, wheat, sugar beets, peas and onions.

On the heavy, clay loam soil of Red Rock Ranch, Inc., near Five Points, California, John Diener is leading the way in the use of pivot irrigation. In fact, he’s the first in the state, with pivot irrigation watering more than 1,300 acres (526 ha) of tomatoes, hay, corn, wheat, sugar beets, peas and onions.

“In the Midwest, it’s all about the amount of land you farm,” explains Diener. “In California, it’s all about water . . . how we manage it and our stewardship of it.”

While drip and pivot irrigation systems provide similar water efficiencies, labor is significantly less with pivots. “Depending on the crop, I’m saving 60 to 90 percent on my labor,” says Diener. “My return on investment has been good.”

How can labor savings be so high? Tractors, trailers and manpower aren’t needed for moving pipe around. Diener uses GrowSmart™ technology to move pivots where and when they’re needed. “We work with technology to make sure we’re doing it right,” says Diener. “The more acre feet we have, the more revenue we have.”
Plus, pivots are easier to maintain, needing only occasional visual inspections of the sprinklers and tires.

Blake Onken, PhD, a Certified Professional Soil Scientist for Lindsay, explains: “With drip, especially when it’s a subsurface drip system, you can’t see that there’s a problem until the plant is stressed,” he says. “By the time you can do anything about it, you’ve already taken an economic hit. With pivots, you can make sure there’s uniformity throughout the field, even at a distance.”

Diener agrees. “With drip, you need people to check and flush out the lines. With pivot irrigation, you have practically no labor costs.”

Another reason Diener started using pivots was because it worked with the minimum tillage program that he’s working on with the University of California. “We’re working really hard on conservation, and the center pivot/low tillage program was a good combination,” Diener explains. In fact, this combination of low till and pivots takes advantage of significant savings on both labor and diesel fuel.

In Brazil, Bagisa S. A. Farming and Commerce in Chapada Diamantina near the cities of Ibicoara and Micuge is a pioneer in vegetable planting. They’ve been growing tomatoes for more than 12 years. Together with Lindsay America do Sul, they designed and installed 16 pivots on 25 hectares of tomatoes.

The laterals feature water distribution systems that can handle the different phases of the tomato plants in their compact soil, misting during the germination phase, then using emitter jets aimed between the plant rows during the culture cycle.

With a year-round growing season, proper irrigation is a matter of survival for the crops in this area – and watering tomatoes provides real challenges. Tomatoes are prone to disease, fungus and sun damage.

The Bagisa movable lateral system makes it possible to
irrigate the entire area without wetting the leaves and sensitive fruits on the tomato plants. It can also administer chemigation, fertilization and insecticide directly to the plants.

Diener says this is a distinct advantage on his farm, too, where chemigation and fertilization costs dropped significantly.

Neighbors are taking note of Diener’s success with his pivots. “There are about 25 of them who have either already installed pivots or they’re ready to do it now,” says Diener.

The more you invest in your crop the more control you want to protect your investment and ensure a profit at harvest. Center pivot sprinkler systems not only provide you the management tool to control soil moisture levels, but also to quickly respond to unexpected events like insect infestations, disease outbreaks, weed escapes, and fertility issues. Many crop protection chemicals including insecticides, fungicides, herbicides, and fertilizers are labeled for application through center pivot sprinkler systems. This means that you don’t have to wait on, or pay for, a ground rig or plane to apply something that you know your crop needs today.

**The advantages of chemigation/fertigation with center pivot sprinkler systems include:**

**Timing of Application** – Chemicals/fertilizers can be applied at the first sign of trouble. There’s no waiting for an applicator; it’s already in the field waiting for you to pull the trigger. Chemicals can be applied when conditions would prevent ground rigs from entering the field.

**Uniformity of Application** – Center pivots have uniformity built into them. Excellent water distribution provides uniform distribution of chemicals and more consistent control of pests.

**Incorporation and Activation** – Chemicals are incorporated and activated by the water they are applied with. Chemicals can be positioned at just the right spot in the soil by adjusting the amount of water used.

**Reduced Compaction and Crop Damage** – There is no need to traffic your field with heavy spray equipment. A center pivot covers your crop without additional areas of compaction, no matter how many times you chemigate. Center pivots are designed with crop clearance that prevents the damage ground rigs cause.

**Reduced Spray Costs** – Applying chemicals through a center pivot is less expensive than calling in a spray service or using dedicated spray equipment.

**Reduced Hazards** – Center pivots reduce worker exposure to chemicals. Adjust the injector pump and the center pivot does the rest. There is no need for an operator to be in the field.

Center pivot sprinkler systems provide you with the management edge that you need to make your growing season a profitable one.
Greg Sweatt of Whitewater Irrigation in Cochise, is Curry’s Zimmatic dealer. He says the correct spray package under the pivot is essential in proper chile irrigation. “It shouldn’t be too aggressive because the stream is hitting the dirt,” Sweatt explains. “It can’t splash onto the plant, as that can cause problems.”

As enthusiastic as he is about his pivots, Curry hasn’t used them exclusively. After using pivots for many years, he went back to drip irrigation in some of his fields. That lasted only about a year. He then installed five new pivots, bringing the total to 10 pivots irrigating his chiles, with only a few drip systems still in the mix.

So why did he return to pivots? In a word: labor.

“Labor is a bigger factor than ever in Arizona, where immigration issues are prevalent. It’s difficult to find enough people who are legally able to work in the fields.”

Plus, repairing drip is very labor intensive. Curry says his pivots don’t require nearly the maintenance of his old drip system.

Whether you like them hot or mild, chances are, you’ve had chiles developed by fourth-generation farmer Ed Curry. On his farm outside Cochise, Arizona, he farms 1,200 acres (485 ha), with much of that land dedicated to breeding many different kinds of peppers. In fact, Curry’s operation provides about 80 percent of the world’s green chile seeds.

Keeping enough water on his plants in the desert lands of Arizona can be challenging. How does he do it? Primarily with Zimmatic pivots. Curry has used Zimmatic to irrigate his land for nearly 30 years.

“I love our pivots,” Curry says. “I just feel so blessed that we live in a country that helps us with better water technology. Greg, our Zimmatic dealer, is awesome. He’s very knowledgeable, and he’s really good with technology.”

I just feel so blessed that we live in a country that helps us with better water technology.

– Ed Curry
Curry uses 30-inch drop technology with soft, flat, smooth pads to irrigate. His pivots also deliver fungicides and chemicals directly to his crops – another distinct advantage over drip irrigation.

“With drip, we had to go out and spray our plants all the time,” Curry says. “That requires a lot of time and labor.”

Curry spends much of his time working on new varieties of chiles with New Mexico State University and the University of Arizona.

He also processes and sells his own chiles, as well as providing chiles for brands such as Ortega® and Old El Paso®. That means he can’t spend a lot of time out in the fields.

Using FieldNET has made multi-tasking possible, requiring less labor while increasing control. Curry checks his pivots on his laptop every night. “I need to travel a little for my business, but as long as I have phone service, I can check my pivots so I know what’s going on.”

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Growing peppers in the desert lands of Arizona
Arkansas Farmer Grows High-Yielding Rice With Zimmatic Pivot

Osceola, Arkansas, rice grower Michael McCarty is not afraid to try new ways of doing things, especially when it makes economic sense. That’s why McCarty recently began growing rice using pivot irrigation, instead of traditional flood irrigation.

The result: rice yields on par with flood irrigated rice at 192 bushels dry per acre (9.68 mt/ha), substantial water, labor and energy savings, and increased production flexibility.

“I was amazed at the yield from my pivot irrigated rice,” McCarty says. “With flood irrigated rice, you normally need someone devoted to it full-time because of all the levees, gates and water levels that need to be checked and adjusted. Growing rice with pivots was much easier.”

McCarty worked closely with a team of Lindsay irrigation experts and his local crop consultant in putting 70 acres (28 ha) of hybrid rice under a Zimmatic pivot during the 2009 growing season. The other half of the pivot circle was devoted to soybeans.

The seven-year-old Zimmatic pivot was equipped with Lindsay’s latest tools and technology for pivot irrigated rice, including FieldNET, Lindsay’s award-winning Web-based irrigation and monitoring and control system.

“FieldNET was instrumental in making the whole pivot irrigated rice project work. It was huge because rice needs to be watered every other day,” McCarty says. “I ran the pivot across the field 29 times and only went to the control box on the pivot two times the entire summer.”

With flood irrigated rice, McCarty estimates he has to physically go to his well pump 40 to 45 times during the growing season to turn the irrigation water on and off and to check water flow.

McCarty’s Zimmatic pivot was equipped with Lindsay’s Z-TRAX tracking system and three-wheel drive tubes for improved flotation and reducing rutting.

Because center-pivot irrigated rice fields dry out more quickly at the end of the growing season, McCarty was able to harvest his rice sooner.

“Overall, I was extremely pleased with my pivot irrigated rice. The yields were on par with my flood irrigated rice, I was able to reduce labor and input costs, and I saved on water and energy costs as well,” he says. “Pivot irrigated rice has given me new options in growing rice on ground that has never seen rice before.”

For more information, visit www.zimmaticrice.com

Zimmatic pivot equipped with Z-TRAX tracking system and three-wheel drive tubes

Michael McCarty
Osceola, Arkansas

- Michael and his wife, Nikki, are the parents of two children, Caden and Trenten
- Raises approximately 1,000 acres (405 ha) of rice in northeast Arkansas
- Also raises soybeans, corn, cotton and wheat
Several new features have been added to the Zimmatic water-driven pivot, which is designed to meet the specific needs of small growers for increased productivity and higher yields.

The water-driven pivot is now designed to complete circles in both 10 and 24 hours. In addition, the pipe diameter has been increased to 6 5/8 inches (168 mm). A new 30-inch (76.2 cm) outlet spacing also has been added.

The Zimmatic single-span water-driven pivot increases land use by efficiently irrigating up to 7.4 acres (3 ha) and is available in two- and four-wheel tow models which allows sharing of one pivot among several farmers or over separated fields to reduce cost per acre/hectare.

The pivot is driven by water pressure so no other energy is required and no electrical installation is needed.

The water-driven mobile pivot can be used to handle multiple fields or fields with irregular boundaries.

Find out how to achieve higher yields with a Zimmatic Water-Driven Pivot by visiting www.zimmatic.com.

**Growers Irrigating More Farmland**

USDA’s 2008 Farm and Ranch Survey shows that farmers and ranchers are now irrigating 54.9 million acres (22.22 million ha) of farmland across the United States, an increase of nearly 5 percent since 2003.

In addition, more acres were irrigated with sprinkler systems in 2008 than in 2003. During this five-year period, the area irrigated by sprinkler systems increased 15 percent to 30.9 million acres (12.51 million ha) in 2008. The area with gravity irrigation continued to decline, down 5 percent to 22 million acres (8.9 million ha) in 2008.

According to the report, farmers and ranchers spent $2.1 billion on expenses related to irrigation equipment, facilities, land improvements and computer technology in 2008. Of those expenses, 50 percent was used for replacement of existing equipment, 35 percent for new expansion and 15 percent for water conservation.

General results of the 2008 Irrigation Survey are available online at www.agcensus.usda.gov.
Hi-Acres Nursery of Groveland, Florida, uses three Greenfield mini-pivots to irrigate 35 different varieties of woody ornamentals and ground cover grasses spread over nearly 90 acres (36 ha), according to Paul Leppin, nursery manager.

“The Greenfields are very handy units and easy to manage,” Leppin says. “We grow our perennials in small containers ranging in size up to 7 gallons (26 liters). Since different plants needs different amounts of water, we arrange our perennials in different zones under the pivots, like slices of a pie, and water each slice accordingly.”

Hi-Acres sells its woody ornamentals to landscapers throughout Florida and in other states as well.

At Billy Brock Farms in Chipley, Florida, Billy and Leola Brock bought their first Greenfield in 2001 after a drought and now use six of the mini-pivots to irrigate approximately 150 acres (61 ha) of sod grass, which is sold to homeowners and wholesalers.
throughout Florida. Two of the irrigation systems are towable models, allowing Billy Brock Farms to convert easily from fixed to tow mode for quick movement from one field to another.

Billy Brock says they are extremely pleased with their Greenfield systems. “We have small fields so they work great for our operation. The drop nozzles on the mini pivots are perfect for our sod operation and allow us to save water by applying it uniformly and closer to the ground.”

The City of Zolfo Springs, Florida, purchased two Greenfield systems a year ago to help dispose of effluent from the town’s wastewater treatment plant, according to Utility Supervisor Bubba Bass. “We use the Greenfields to pump the effluent on 70 acres (28 ha) of pasture grass. It works great and is a much cheaper way for us to dispose of our wastewater compared to fixed sprinkler heads or pumping it into old phosphate mines like some other cities are doing,” Bass says.

Zolfo Springs pumps 150,000 gallons (567,744 L) of effluent through the Greenfield systems daily and is authorized to pump up to 200,000 gallons (756,992 L) daily.

Quality Irrigation’s Lewis says customers like the versatility and simplicity of Greenfield mini-pivots. “We’re seeing Greenfields used on all sorts of crops in Florida. They are low maintenance, run off of small wells, don’t leave ruts and can operate with a single-phase electrical power option where a three-phase hookup is not available.”

Greenfield Applications

Al Kuta, Greenfield Product Manager at Lindsay, says the Greenfield systems are now equipped with a new longer wheel base beam, which improves tower and span stability in areas where high wind conditions are common. The new base beam is 11 feet long and available for both the 6-foot and 8-foot Greenfield towers.

Kuta says typical small field applications include:

- Sod/turf farms
- Alfalfa
- Vegetables
- Horse farms
- Livestock pasture
- Hunting lands

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Al Kuta
Greenfield Product Manager
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Lindsay announces the addition of pump control to its award-winning FieldNET Web-based irrigation management system. Growers can now access a single online portal to monitor and control their entire pump and center pivot irrigation system.

“This means that for the first time, growers have the ability to use a combination of cutting-edge irrigation and pump control technology, all in one package, to save energy, water and labor costs.”

FieldNET, the industry’s first full control Web-based irrigation management system, allows growers to monitor and control their pivots from any Internet connection or cell phone. With a user-friendly Web portal, FieldNET provides growers a quick view of every pivot, providing information on pivot location, pivot status and water usage.

With FieldNET pump control, growers now have information on their entire water delivery system, allowing them to monitor and maintain each pump and pivot for peak performance. This integrated solution automatically tracks and reports pump start-ups and shutdowns and sends alerts for any disparity of normal operations, such as flow alarms.

“For the first time, growers have the ability to use a combination of cutting-edge irrigation and pump control technology . . .”
By integrating the pump network with the pivot network, we created a pump and center pivot irrigation system that is self-regulating. A unique feature called Dynamic Demand Control (DDC) automatically lowers the pump’s pressure requirement when higher pressures are not needed so the system is always running at maximum efficiency. This significantly reduces the grower’s water, energy and labor costs while providing the convenience of controlling or monitoring the pump and pivot system from anywhere on the globe via the Internet,” Andrews says.

FieldNET with pump control is available in two service levels and can be installed on both new and existing Lindsay systems as well as on systems from other manufacturers.

For more information on FieldNET with pump control, visit www.lindsayfieldnet.com.

**PEAK PUMP EFFICIENCY**

One of the key features of FieldNET with pump control is Dynamic Demand Control (DDC), which automatically adjusts pump station pressure to best match demand from your pivots.

The following FieldNET dashboard illustrations show how DDC works to save energy and pumping costs.

1. Three pivots are running, with one of the pivots requiring water pressure of 60 psi.

2. The pivot operating at 60 psi is now off. The remaining two pivots require water pressure of only 48 psi.

3. FieldNET and DDC automatically sequence the pump station to meet the lower pressure required.
Reece Andrews, GrowSmart Product Manager at Lindsay, discusses key features and benefits of FieldNET with pump control.

Q. What is FieldNET with pump control?
A. It is a Web-based product and service that uses the power of the Internet to add convenience and return on investment for growers who want to significantly reduce energy and labor costs.

Q. What are the advantages of FieldNET with pump control?
A. Convenience and reduction of water, labor and energy costs. FieldNET is one integrated control system so everything a grower needs is a simple mouse click away. The ability of the pivots and pumps to share information means a smarter system that works to maximize performance and lower costs.

Q. A key feature of FieldNET with pump control is Dynamic Demand Control (DDC). How does DDC work?
A. Expert system designers identify and configure the pressure required by each pivot. As pivots turn on and off, FieldNET will control the appropriate pump pressure. The pumps automatically sequence to meet the demand. This results in smooth start-ups, less wear and tear on the system, and reduced energy and pumping costs.

Q. Can FieldNET with pump control be installed on existing irrigation systems?
A. Yes, FieldNET with pump control is available in two service levels and can be installed on both new and existing Lindsay systems, as well as on systems from other manufacturers.

Touch the future with FieldNET mobile
Talk to your local Zimmatic dealer or look for more details in the next issue of Irrigation Advances.
Pivot Maintenance

No matter what brand of pivot you use, proper maintenance can extend the life and reliability of your pivot. Servicing your pivot in spring offers:

• Less downtime
• Lower operating costs
• Longer pivot life
• Higher trade-in value

Your local Zimmatic dealer can service any pivot using durable Genuine Lindsay Parts to make necessary repairs or replacements. Key inspection points include lubrication, electrical components, drive train, tires and sprinkler packages.

To schedule a preventative maintenance check, contact your local Zimmatic dealer.

Upcoming Shows

Farm Progress Show
August 31-September 2, 2010
Boone, Iowa
www.farmprogressshow.com

Sunbelt Ag Expo
October 19-21, 2010
Moultrie, Georgia
www.sunbeltexpo.com

Husker Harvest Days
September 14-16, 2010
Grand Island, Nebraska
www.huskerharvestdays.com

Amarillo Farm & Ranch Show
November 30-December 2, 2010
Amarillo, Texas
www.farmshows.com

Take a look at these useful, up-to-date Websites

National Corn Growers Association
www.ncga.com

National Potato Council
www.nationalpotatocouncil.org

USA Rice Federation
www.usarice.com

California Ag Network
www.californiaagnet.com

Farm Credit Services of America
www.fcsamerica.com
Tough, Zimmatic® irrigation systems pay for themselves many times over their lifespan due to high-quality materials and design. These exclusive components are only available on Zimmatic pivots.

**Exclusive Collector Ring**
- External mount eliminates water flow restriction
- Uninterrupted power for each tower drive unit
- Completely encased in high quality fiberglass

**Formed Outlets**
- Precisely matched threads for a watertight seal
- 20-year warranty
- Better performance than welded-on couplings

**Uni-Knuckle Span Connector**
- Heavy-duty universal joint
- Stress-free flexibility on slopes up to 30%
- Dependable support between spans

See your local Zimmatic dealer or visit www.zimmatic.com for details on these components.