**NEW! AT GEARBOX**

**DESIGNED TO LAST LONGER AND WORK HARDER.**

The all new AT Gearbox from Zimmatic®

Inspired by the best elements of our field-proven PowerDrive gearbox, the all new AT Gearbox takes power and strength to the next level. Features include the industry’s largest expansion chamber for long-lasting performance – and an easy-fill design for trouble-free maintenance.

Its rugged design sets the industry standard for what a gearbox should be.

To learn more about how the AT Gearbox can add to the strength of your pivots and the success of your operation, see your local Zimmatic dealer or visit www.zimmatic.com.

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Dealer View

Demand for Irrigation Technology

Q: How are farmers using new irrigation technology?
A. New technology plays a huge role in agriculture in our area, especially as we see younger farmers transition into managing the family farm operation. They are demanding and using technology that trims labor costs and makes their operations more convenient. Nearly all of the Zimmatic pivots we sell today have some sort of computer technology on them and we continue to fulfill requests to retrofit older pivots with this new technology.

This trend will continue in the future. Lindsay has been a leader in offering growers new high-tech products such as FieldNET™, FieldNET Mobile, and variable frequency drive (VFD) pumps and controls.

Q: How important are irrigation parts sales to your dealership?
A. Parts sales and service are huge for us. We tripled the size of our parts store so we have more inventory. We ship parts locally and regionally. With today’s high-dollar crops, growers can’t afford to have their irrigation down at critical times.

Q: What is the irrigation water supply like in your area?
A. We are in a critical aquifer area so water scarcity is a huge issue. We’re about 50/50 canals and deep wells for irrigation. Water rights are huge. Most gravity irrigation is gone. Efficient irrigation is a high priority for growers in our area and Lindsay again has been at the forefront in developing efficient irrigation products and technology to meet this demand.

Q: How long have you been a Zimmatic dealer?
A. Dale Adams and I are the co-owners and we have been in business since 1975. We became a Zimmatic dealer in 1986. Butte Irrigation covers south central Idaho and a small part of Utah. The market we are in is made up of vast acres of very productive land and progressive, capitalized farmers. Major crops in our area are potatoes, sugar beets, wheat, corn, alfalfa, dry beans, peas and other vegetable crops.
Johnny Fraser considers water management one of the keys to profitably growing crops on his diversified New Zealand farm. Thanks to AccuFlow VRI, a new precision irrigation product from Lindsay, Fraser plants, grows and harvests his crops when and where he wants in his field.
No one can claim that growing tomatoes or vegetables is easy—especially when water...

Fraser's farm is located near Otane, on New Zealand's north island. Fraser says the climate in his area is similar to California's so he is able to raise multiple crops throughout the year. Many of his crops, including the peas, potatoes and sweet corn, are processed for food. “We have heavy soils so managing the water is critical,” he says. “It’s important not to overwater and saturate the soil. The lighter soil areas require more water. AccuFlow VRI works perfectly for my farming operation.” Fraser’s cropping patterns vary, but he describes a typical scenario in which his pea crop is followed by sweet corn and his potato crop is followed by wheat or a different crop. All of the crops are planted and harvested at different times of the year. With AccuFlow VRI, he is able to turn off the irrigation water over his pea crop, for as far as changing crops. I can adjust any time to suit my cropping needs,” Fraser says. Fraser uses AccuFlow VRI to grow irrigated potatoes, peas, sweet corn, silage, corn, wheat and barley—all in the same field.

**FAST FACTS**

**JOHNNY FRASER
OTANE, NEW ZEALAND**

- Third-generation New Zealand farmer
- Farms 2,100 acres (850 ha)
- Includes 741 acres (300 ha) of peas, potatoes, sweet corn, silage corn, wheat and barley
- Peas, potatoes and sweet corn used for food processing
- Pasture for sheep and cows
- Considers water management key to raising crops profitably
- His father, John Fraser, age 65, assists in the farming operation
INDIVIDUAL SPRINKLER CONTROL

With AccuFlow VRI, each sprinkler is programmed to turn on/off or pulse at a customized rate depending on crop, terrain or obstacle.

example, to harvest the peas, while still irrigating his potato crop – all with the same pivot and in the same field.

Fraser estimates AccuFlow VRI has resulted in one-third less water usage. “It’s basically saving me 30 percent on costs since I don’t have to pump as much water.”

While groundwater, the source for his irrigation, is still plentiful in his area, Fraser predicts managing and using water wisely will become more and more critical in the future.

“As a grower, I believe the single biggest thing you can do to increase yield is to manage your water, just like you manage your fertilizer, chemical and other crop inputs,” Fraser says. “Potatoes are a great way to measure how well you are managing your water since they are very sensitive to over-or under-watering.”

Fraser uses moisture probes in his field and reads the data manually because he wants to “get in the fields” and see for himself how the crops are doing.

He currently does not chemigate or fertigate but is considering it since AccuFlow VRI gives him the flexibility to do so in the future.

Fraser’s Zimmatic MAXField Custom corner pivot was equipped with the AccuFlow VRI system when he bought the pivot new.

“It’s very simple to run. With AccuFlow VRI, I have unlimited crop and agronomic options. I can plant and harvest when and where I want.”

Johnny Fraser

ABOUT ACCUFLOW VRI

• VRI: Variable Rate Irrigation from Lindsay
• Simple map-based software provides complete control
• Infinite number of irrigation zones
• Saves water and energy
• Changes application rates over different crops or soil types
• Compatible with most center pivot models
Showcasing a completely new design, the AT is a direct replacement for the field-proven PowerDrive gearbox. It incorporates some of its most effective features, such as forged steel gears, cartridge seals and large bearings on both sides of the input shaft.

In addition, the cutting-edge AT includes new features such as a universal mounting pattern and an externally gusseted bell housing, which make this the most advanced gearbox on the market.

“Designed for Long-Lasting Performance”

INTRODUCING THE NEW AT GEARBOX

To continuously improve the Zimmatic product line, the new AT gearbox has been designed by Lindsay engineers for the future of center pivot irrigation.

“One of our primary objectives is staying at the forefront of research and development in this industry. By design, Zimmatic products promote the conservation of water resources and the reduced usage of energy resources, which provides growers with increased return on investment. This new gearbox is the most recent addition to our lineup of durable and efficient products,” said Tanner Hoffman, Zimmatic product manager.

“This new gearbox is the most recent addition to our lineup of durable and efficient products.”

– Tanner Hoffman
Growing Irrigated Tomatoes
IN CORN AND SOYBEAN COUNTRY

Everyone knows they grow tomatoes in . . . Indiana?
That’s right, Indiana, one of the leading corn and soybean producing states in the U.S., is also tomato country.

Each year, Rice Farms of Wanatah, Ind., grows approximately 10,000 tons (9,072 MT) of pivot-irrigated tomatoes that are used to make tomato juice, ketchup, salsa and a host of other tomato-based products.

“It has been a stable business for us,” says Scott Rice, a fourth generation Indiana grower. “Prices don’t fluctuate like grain.”

Rice, his two adult sons, David and James, and his father, Gene, grow approximately 300 acres (121 ha) of tomatoes on their northwest Indiana farm. They also raise seed corn, field corn, soybeans and wheat. Nearly all of their crops are irrigated with pivots.
The farm has been in the Rice family since 1917.

“Our entire tomato growing operation is mechanized. There is very little hand labor involved,” Rice says. “We treat our tomatoes like row crops, planting in 60-inch (152 cm) rows, which works great with our corn and soybean equipment.”

Rice uses 5-inch (127-mm) starter transplants to plant his tomato crop. Fields are cultivated once during the growing season, with fungicides and insecticides applied with a sprayer as needed.

Zimmatic pivots are used to supplement Indiana’s normal rainfall during the tomato growing season.

“The pivots are used strictly for supplemental watering as a hedge in case we don’t get rain, and during critical times of the growing seasons, such as flowering and first set, when getting enough water to the tomatoes is critical.”

To spread out percolation of water into the soil, Rice applies six-tenths of an inch (15.24 mm) of water to his tomatoes during two separate rotations of the pivots, for a total of 1.2 inches (30.48 mm) of water.

Tomato harvest at Rice Farms begins in August and ends in mid-October. The tomatoes are harvested mechanically and bulk transported in trucks to Red Gold, a family-owned Indiana tomato processing and marketing business (see related story).

Rice describes some of his tomato yields as “prolific,” with 100 or more tomatoes on a single plant.

Because of potential diseases, the tomatoes can’t be planted on the same ground for a minimum of four years so they are rotated with the other row crops.

Rice uses FieldNET web-based irrigation management and control on his pivots and plans to add FieldNET Mobile, which will give him the ability to monitor and control his pivots with smartphones.

“FieldNET has been a big plus on all of our pivots. It’s helped us to be more efficient and get some of our life back by not having to physically drive out to the pivots to turn them off and on,” Rice says.

**Fast Facts**

**Red Gold Tomatoes**

- Rice Farms sells its tomatoes to Red Gold, a family-owned business headquartered in Orestes, Ind.
- Red Gold produces tomato-based products for the retail, foodservice, private brand and club channels of distribution.
- Red Gold consumer brands include Red Gold, Redpack, and Tuttorosso canned tomato products, along with Sacramento Juices.

Much is being made of the alfalfa grown in Cochise County, Arizona — and for good reason, too. Just as Nebraska’s climate and soil are ideal for irrigated corn production, Cochise County’s cool night air is aiding the growth of high-quality dairy hay.

Because Cochise is located at a 4,200-foot (1,280-meter) elevation, evening temperatures generally drop into the 60s F or 70s F (15-25+ °C), down from daytime temperatures that can reach the low 100s F (37+ °C), allowing for slower plant growth. This phenomenon results in higher quality alfalfa and more cuttings of dairy hay per season.

“This valley is capable of high-yielding and very high-quality hay,” says Cochise County grower Jason Barnard. “Average yields vary from 8 to 10 tons per acre (17.9-22.4 MT/ha) annually.”

Barnard’s farm, located just north of Elfrida, Ariz., is made up of a combination of alfalfa, red chili peppers and sorghum. Of his 1,200 acres (486 ha), 525 (212 ha) are alfalfa. Like many growers in the area, he has come to rely on pivot irrigation to make the most of a
limited water supply and keep his high-quality alfalfa irrigated.

“Pivots have definitely helped us to be successful with alfalfa,” says Barnard. “With the expense of pumping our water, the newer technology and conservation-minded measures help us keep water use to a minimum, while still maximizing yields.”

Fellow grower David Collins has also seen the positive effects of Cochise’s climate, as well as the benefits of pivot irrigation.

“The elevation and nighttime temperatures make the feed value higher by increasing the leaf size and leaf-to-stem ratio,” says Collins. “The only thing that keeps us from making dairy-quality hay for all six or seven cuttings is the amount of rain we get in the summer – six plus inches (152+ mm) in July.”

Collins’ farmland includes 360 acres (146 ha) east of Willcox, Ariz. – 240 acres (97 ha) for alfalfa and 120 (48.5 ha) for corn. He irrigates all 360 acres via center pivot, the first of which he installed in 1992.

“After adjusting farming habits and practices, yields increased and our input costs, including water, fertilizer and labor, went down,” he says. “We currently have eight pivots – all Zimmatic. Five are three years old or newer. The other three are 14 to 18 years old.”

Before purchasing his center pivots, Collins used furrow irrigation, but the results were less than ideal. In addition to being inefficient and time consuming, uniform water application was nearly impossibly to achieve. Now his Zimmatic pivots deliver the precision application he needs to get the high-quality dairy hay he wants.

“The pivot gives us the ability to apply exactly the right amount of water the alfalfa needs,” Collins says. “We can apply as little as .15 inches (3.81 mm) or as much as two inches (50.8 mm) per irrigation. We also have the ability to chemigate and fertigate the crop.”

Both Barnard and Collins use FieldNET™ irrigation controls to further boost the efficiency of their operations.

“With FieldNET, even though our farms are very spread out, we’re still able to monitor and manage without being on-site every day, and our labor requirements are much less than with any other type of irrigation,” says Barnard. “FieldNET has been an important part of our operation for three years now. It allows timely management and monitoring that previously took many man-hours and miles. Plus, it gives us management options that were not possible before.”

“The success growers are seeing in our area has to do with the climate, but it also has to do with hard work, the spacing between drops, spray packages and FieldNET,” says Greg Sweatt of Whitewater Irrigation, Inc. in Cochise. “As a Zimmatic dealer, we’re tremendously excited about the potential of pivot-irrigated alfalfa in our area.”

Looking toward the future, the growers in Cochise want to make the most of their ideal growing circumstances by utilizing the most efficient irrigation systems and technology available.

“I anticipate that pivots will always be the main irrigation utilized in this valley. Modern pivot technology has allowed us to use less water more efficiently, resulting in larger yields,” says Barnard. “Our future is going to be dictated by water availability and cost, and I am looking forward to some of the technology that is being developed to help us be even more efficient and productive with our water.”

Contact Info:
Whitewater Irrigation
1078 N. Hwy 191
Cochise, AZ 85606
(520) 826-0033

Cochise County grower David Collins relies on center pivots to irrigate his alfalfa fields.
Most pivot dealers have, at one point or another, found themselves installing irrigation systems under adverse conditions – in rain, on hot summer days or while dodging strong winds. But Canadian Zimmatic dealer Boyd Derdall’s recent installation experience takes the cake, and, if given the opportunity, he’d do it all over again.

It all began when the Canadian government asked Derdall, president and founder of Rain Maker Irrigation Development in Outlook, Saskatchewan, to contribute his services to a major international project. The Canadian International Development Agency (CIDA) was sponsoring the $50-million restoration of an irrigation system near Kandahar City, Afghanistan.

The project called for the installation of two Zimmatic pivots on what was once a flood-irrigated rice field turned al-Qaeda training site, in order to grow wheat and corn for the people of Afghanistan.

“The goal was to help the Afghans in the nearby city grow their own food and increase their protein consumption, which will in turn benefit North American agriculture,” Derdall says.

Derdall, who has designed and installed pivots in Libya and Egypt, accepted the offer immediately, but not without some reservations.

“The goal was to help the Afghans in the nearby city grow their own food and increase their protein consumption, which will in turn benefit North American agriculture.”

– Boyd Derdall
“My co-workers and I have experience working in the Middle East, but we’ve never worked in a war zone before,” he says. “It was a daunting challenge, but one I knew we could handle.”

Derdall arrived at Kandahar Air Field (KAF) on November 18, 2010, along with employees Trevor Unruh, Wayne Martinson and John Boot, all who volunteered to go. They were met with searing temperatures and given flak jackets and helmets to wear during their long days in the field.

The group stayed at KAF, alongside troops from Canada and the United States. They were shuttled back and forth to the field during the 11-day installation process. Despite the benevolent nature of the project, not everyone in the area had good intentions, so tight security and expert strategy were a must.

“We took different routes to the field every day, and our drivers would vary the time when they came and left the field. The key was to avoid following a routine,” says Derdall. “We also had armored vehicles driving alongside of us and bodyguards with us at all times.”

Another concern was the presence of landmines in and around the field.

“The fields were demined before our arrival, but the possibility of additional mines kept us close to KAF and the field. We didn’t want to stray too far from the worksite.”

Over the course of their time in Kandahar, Derdall’s team installed two Zimmatic pivots, each with two towers. The pivots are equipped with FieldVision, Nelson rotators and drop nozzle packages, and each one irrigates about 15 acres (6 ha) of land. Water comes from a canal that was built in 1962 and revamped as part of the CIDA’s initiative.

“Installation went smoothly – we had all the parts and equipment we needed,” says Derdall. “Once everything was in place, we spent time training the local Afghans how to run the irrigation system, including starting, stopping, priming and pressurizing the system.”

The local Afghan farmers and farm managers, accustomed to flood irrigation and unfamiliar with center pivots, were wary of the new system at first, but their apprehension didn’t last long.

“At the start of installation, the local people were very serious. But after the pivots started running, they were all smiles and actually danced in the field,” Derdall says. “It was a great sight to see and realize that we were making a difference in the lives of the Afghan people.”

The Rain Maker team left Afghanistan 11 days later, with the pivots up, running and ready to irrigate the soon-to-be wheat and corn fields. The field is guarded 24/7 to ensure its safety and success. And Derdall is back home in Saskatchewan, satisfied with a job well done and looking forward to his next adventure.

“Some people may call us crazy for going into a war zone to set up pivots, but I would definitely do it again,” he says. “It was an amazing experience, and it was worth braving the harsh conditions to set the local people up with a more efficient irrigation system that will serve them for years to come.”

**Boyd Derdall in Afghanistan**

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**Contact Info:**

Rain Maker Irrigation  
200 Saskatchewan Rd  
Outlook, Saskatchewan S0L 2N0  
(306) 867-9606

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**Fast Facts: Afghanistan**

- Area: 652,230 sq. km (251,827 sq. mi.); slightly smaller than the state of Texas
- Capital: Kabul
- Terrain made up of mountains and desert
- Dry climate with cold winters and hot summers
- Main languages: Dari (Afghan Farsi), Pashto
- Government: Islamic Republic
- GDP (2009): $27 billion
- Natural resources include natural gas, oil, coal, petroleum and copper
- Agriculture products: Wheat, opium, sheepskins, lambskins, corn, barley, rice, cotton, fruit, nuts, karakul pels, wool and mutton
- Industry includes production of textiles, soap, furniture, shoes and fertilizer

Source: U.S. Department of State

http://www.state.gov/r/pa/ei/bgn/5380.htm
“In 10 years, between 1994 and 2004, our average beet yield was 26.75 tons per acre (60 MT/ha). When we installed the pivots, performance rose to 44.6 tons per acre (100 MT/ha).”

— Pedro Nickelsen Dessy
The Summer 2010 issue of *Irrigation Advances* explored the benefits of pivot irrigation on sugar beets in the United States. Nebraska grower Kevin Hall found that Zimmatic pivots help his sugar beets germinate properly, while also saving labor costs and conserving water. Not surprisingly, growers in the southern hemisphere are finding success with pivot irrigation on sugar beets too.

Pedro Nickelsen Dessy, CEO of Agricola La Selva Ltd., a family-owned farm 373 miles (600 km) south of Santiago, Chile, has seen the benefits firsthand – through improved water efficiency, increased yield and ease of operation. Nine Zimmatic pivots are used to irrigate. Water comes from a channel matrix and is supplied by a river that crosses the field.

"This irrigation system is enabling us to continue to cultivate beets," Nickelsen Dessy says. "Our water needs are 7.87 inches (20 cm) per month, which is entirely feasible with this equipment."

Agricola La Selva’s pivots also water some of the farm’s other crops, in a strict crop rotation. After the beets, the pivots irrigate oats, wheat and canola. The farm uses pivots on potatoes and corn as well, totaling about 6,178 acres (2,500 ha). The rest of the operation features 395 acres (160 ha) of fruit, including blueberries, apples and cherries.

Growers at Agricola La Selva have seen yields increase significantly with the introduction of pivot irrigation.

"In 10 years, between 1994 and 2004, our average beet yield was 26.75 tons per acre (60 MT/ha). When we installed the pivots, performance rose to 44.6 tons per acre (100 MT/ha)," Nickelsen Dessy says. "This 40-ton difference corresponds to 20 tons due to the irrigation system, and another 20 tons due to improved seed technology, nutrition and soil structure."

Each one of Agricola La Selva’s pivots is monitored using the FieldNET™ web-based irrigation management and control system. FieldNET saves the farm water by pausing irrigation in the large gaps between crops, and it saves labor when other tasks require the growers’ attention.

"FieldNET is very helpful for the efficient management of our pivots, especially when we are very busy with the rest of the tasks of harvesting fruits and cereals," Nickelsen Dessy says. "It has allowed us to have a statistical background on the irrigation operation; without this, we would have no telemetry. We have power outages quite often. With FieldNET, we know what has been watered."

Ignacio del Campo, product manager for Zimmatic dealership Agroriego Ltd. in Talagante, Chile, has seen other clients experience similar success, leading to a rise in the popularity of pivot irrigation.

"Pivot irrigation was introduced to Chile by our company 22 years ago, and it has become very popular in the past 10 years, especially for sugar beet production," del Campo says. "The three principal reasons for its popularity are increased yields of about 15 to 20 percent, reduced labor costs and requirements, and the ability to irrigate areas where it's impossible to do so by flood irrigation."

As for Nickelsen Dessy, he couldn’t be happier with the decision to add pivot irrigation to Agricola La Selva.

"For us, the pivots have been a great tool," he says. "They’re efficient, economical and easy to operate."
Missouri cotton grower Alan Jones makes maximum use of pivot irrigation to boost yields, reduce labor costs and improve soil fertility on his 3,800-acre (1,538 ha) cotton farm.

“Cotton prices have generally been good recently and we are seeing more pivots going up in our area,” Jones says.

Jones farms in partnership with his father-in-law, Charles Parker, near Senath in the “bootheel” of southeast Missouri. Parker and Jones Farms has been raising cotton on cotton for many years and continues to see increased yields thanks to pivot irrigation and the latest cotton varieties and agronomic practices.

“With pivot irrigation, our goal is to keep the cotton plant going 100 percent, especially through fruiting and boll fill. Depending on how dry it is, we will start irrigating at planting time and continue watering until the cotton bolls open. Our goal is not to stress the cotton plant and to keep the soil fertility just right.”

According to Lindsay’s Blake Onken, PhD, CPSS, effective water management is important at each stage of cotton growth.
“Cotton is considered a drought-tolerant crop, yet it responds well to sufficient water,” Onken says. “Water stress at any stage of growth will have a particular impact on plant growth and development, which will ultimately translate to decreased fiber quality and lower yields.”

During peak growth stages, Jones will run his pivots on the cotton two to three complete circles per week, and apply .75 to 1 inch (1.9-2.54 cm) of water per circle.

“Pivot irrigation is more timely. When we are ready to water our cotton, we just turn it on. It has been a big labor savings for us,” Jones says. “With the pivots, we can water right now and don’t have to lay out pipe like furrow irrigation.”

During the 2010 growing season – a dry year for his area – Jones’ irrigated cotton out-yielded his dryland cotton by nearly a bale per acre. Each bale contains 500 pounds (227 kg) of cotton lint.

Most of his pivots have drop nozzles on them so the water is applied close to the soil surface to minimize evaporation.

This past fall, Jones even used his pivots after the cotton was harvested. That’s because the topsoil was so dry that fall tillage couldn’t be done properly. After adding moisture to the soil with his pivots, he was able to properly prepare the soil bed for the next year’s crop and for planting wheat as a cover crop.

Jones is now experimenting with applying fertilizer to his cotton crop via his pivot.

In addition to several other Zimmatic pivots, Jones recently purchased a MAXfield Custom corner system from his local Zimmatic dealer, Mike Cain, owner of C & C Irrigation, Osceola, Ark.

“The MAXfield Custom is on an irregular shaped field and allowed us to put an additional 35 cotton acres (14 ha) into irrigated production,” he says. “It’s been very reliable.”

Jones and several other local farmers are owners of a cotton gin which they use to gin their cotton and that of several other neighbors – about 70,000 to 80,000 bales annually.

The ginned cotton is sold to a broker and eventually used to make cotton products worldwide.

“Cotton prices have generally been good recently and we are seeing more pivots going up in our area . . .”

– Alan Jones

FAST FACTS

The World of Cotton

• U.S. cotton farmers annually harvest about 17 million bales or 7.2 billion pounds (3.26 billion kg) of cotton.

• Business revenue stimulated by the crop in the U.S. economy is estimated at $120 billion USD.

• More than half the U.S. crop (64 percent) goes into apparel, 28 percent into home furnishings and 8 percent into industrial products each year.

• One bale of cotton (about 500 pounds/227 kg) can make 1,217 T-shirts or 313,600 $100 USD bills.

(Source: National Cotton Council)
While cotton is relatively drought tolerant, optimum yields are only obtained when water stress is minimized or eliminated throughout the growing season. Cotton benefits from particular moisture conditions at each growth stage, and pivots provide growers the control they need to achieve this goal.

Cotton is vulnerable to yield reductions from drought stress at each growth stage. Drought stress causes poor emergence and stand establishment early in the season; slow plant development; square shedding and reduced fruiting branches in mid-season; and excessive bloom and boll loss later in the season. Drought stress during late bloom and boll fill causes the largest negative impact on yield.

Beginning the growing season with a full soil profile, through early season rains or pre-irrigation, will encourage deeper rooting and ensure that mature cotton plants exploit the moisture and nutrients that are available throughout the soil profile. During subsequent growth stages optimum soil moisture increases yield by:

1. **Emergence**: Adequate early moisture helps insure timely and uniform seedling emergence, stand establishment, and early vigorous growth.

2. **Squaring**: Water use increases rapidly as leaf area increases and setting early squares is vital to achieving high yields.

3. **First White Bloom**: Cotton responds well to frequent, low-volume applications of water that minimize water stress, thereby increasing fruit retention. Water stress during this phase will cause excessive square and bloom shed.

4. **Peak Bloom**: Water use reaches a maximum during peak bloom. At this growth stage, plants are blooming and filling early bolls, adding to total water requirements. Frequent irrigation (every 2-3 days) of small amounts of water (.20 –.25 in/5.08-6.35 mm) has been shown to be very effective.

5. **First Open Boll**: Control of late-season irrigation is essential. Irrigation should continue until 20% of bolls are open (1-2 weeks after first open boll). After this point, soil moisture depletion should be sufficient to bring the crop to full maturity. Excess water in late season can encourage unproductive vegetative growth and subsequent shedding of mature bolls.

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**Optimize Cotton Yields With Pivot Irrigation**

*From Blake Onken, PhD, CPSS*

Lindsay’s “Dr. Pivot”

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**WATER REQUIREMENTS FOR DIFFERENT GROWTH STAGES**

<table>
<thead>
<tr>
<th>Stage</th>
<th>Water Use (in/d)</th>
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<tbody>
<tr>
<td>1 - Emergence</td>
<td>0.1 - 0.4</td>
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<tr>
<td>2 - Squaring</td>
<td>0.1 - 0.4</td>
</tr>
<tr>
<td>3 - First White Bloom</td>
<td>0.4</td>
</tr>
<tr>
<td>4 - Peak Bloom</td>
<td>0.4</td>
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<tr>
<td>5 - First Open Boll</td>
<td>0.4</td>
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I 16
NEW PRODUCTS!

Z-II Small-Field Pivot
A small-field pivot with full-clearance height, lower cost per acre and Zimmatic-quality strength.

MAXfield GPS Guidance
GPS guidance improves the accuracy of your corner arm.

FieldNET Pro with GPS Positioning
An add-on controller that gives your current pivot the power of the FieldNET Wireless Irrigation Network.

Look for more details in the next issue of Irrigation Advances or contact your local Zimmatic dealer.

Upcoming Shows

Southern Plains Farm Show
April 7-9, 2011
Oklahoma City, Oklahoma
www.farmshowusa.com

Farm Progress Show
August 30-Sept. 1, 2011
Decatur, Illinois
www.farmprogressshow.com

3I Show
May 4-6, 2011
Garden City, Kansas
www.ricecongress.com

Husker Harvest Days
Grand Island, Nebraska
www.huskerharvestdays.com

Lindsay Online

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.
Point. Touch. Grow.

Introducing FieldNET Mobile

Pivot control from your smartphone

FieldNET® Mobile from GrowSmart™ combines the benefits and timesaving innovation of FieldNET with the convenience of Web-enabled phones.

- Saves labor with fewer trips to the field
- Convenient control and monitoring from your smartphone
- User-friendly interface provides full remote access
- Real-time alerts reduce risk of unknown downtime

Key Functions of FieldNET Mobile

- Full control
- System alerts
- Water usage reports
- Pivot runtime histories
- Current pivot status list

To learn more about FieldNET Mobile, contact your local Zimmatic dealer or go to www.lindsayfieldnet.com.