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IRRIGATION VIEW

Fall 2016 | www.tlirr.com

Longevity!

“T-L Pivots Just Won’t Die”

If Lonnie Bohn and his brother-in-law, Don Blaschko, have any complaints about their T-L center pivot units, it’s the fact that “they last too long.” It’s not that they don’t appreciate the durability and longevity of T-L products. It’s just that they would like to replace the oldest one, which is more than 40 years old, with a modern, remote control T-L machine like the one they most recently installed.

The newest and the oldest T-L pivots are just two of seven T-L machines that Bohn and Blaschko use to irrigate approximately 1,000 acres of the 1,500 acres they manage

near Gibbon, Nebraska, as B & B Partners. Other irrigation sources include a subsurface drip irrigation system on a 52-acre irregular-shaped field and one electric drive pivot that they’re also waiting to replace.

“The newest T-L pivot has already replaced one of two electric pivots that we had on the farm,” Don relates. “It was about the same age as the oldest T-L, when it literally tore apart from metal fatigue. We had welded on it several times before that,” he adds. “But it finally just split and pulled apart to where the water was just gushing out. That was about four years ago, and the T-L that was about the same age is still going.”

Even though they can’t bring themselves to replace a pivot that’s still working, the durability is one of the things the partners say they like most about their T-L units. With the replacement of a few drive motors and gearboxes and an update with drop hoses, it’s still doing the job.

“We have not had any problems with the T-L units at all,” Don adds. “The reliability and dependability have been outstanding. They just last a long time.”

“The reliability and dependability have been outstanding. They just last a long time.”



Local Dealer:
Mid-States Irrigation
Kearney, NE

Don Blaschko and Lonnie Bohn - Gibbon, NE

“Yeah, too long,” Lon echoes. “Especially when you’re looking for a good excuse to buy a new one.”

B & B Partners’ newest T-L pivot is, indeed, a dramatic advancement from the machines built 40 years ago. The biggest improvement for Blaschko

and Bohn, who have been partners for 45 years, is the availability of Precision Link, which allows web-based pivot control of the system. The newest model purchased from Mid-States Irrigation in Kearney, Nebraska, also allows variable rate irrigation (VRI) — a feature that has been added to a few of the partners’ other pivots — to match prescriptions created with the help of their agronomist and soil type and slope maps.

“We really like the Precision Link feature, which is available through T-L’s partnership with AgSense,” Lon relates. “The pivot that we have it on is five miles away from our center of operation. Yet, we can check it at any time with our phone or computer to make sure it’s running, see where it is in the field, find out how much water it’s putting on, etc.”

“We also ordered the newest T-L pivots with the large tires and planetary drives,” Don adds. “People always claim that T-L units move too slow, but with the large-diameter tires and planetaries, it will move right along. We can put fertilizer on or move it when planting at a pretty good pace.”

The ability to implement variable rate irrigation is equally important, says Lon.

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By combining VRI with no-till farming and cover crops over the winter — programs B & B Partners have used since 2001 — the Nebraska duo has virtually eliminated runoff.

"It's also reduced tracking in the field," Lon adds.

"The system is programmed to slow down where the yield potential is highest and speed up to match the absorption rate on the slopes, so all the water stays on the field. I think the neighbors appreciate it, too," he continues, noting that some of their slopes approach 16 to 20 percent grades. "But it has been beneficial for us, as well. We're paying to pump that water; we might as well use it."

"We recently did a field trial with different hybrids under variable rate irrigation," Don adds. "And what we found was that there are some hybrids that like less water and some that like more water. So if you know the amount of water your crops need, you can tailor that accordingly."

In the meantime, the two partners use all of their center pivot systems to apply fertilizer during the growing season. They found out early on that one of the drawbacks of a no-till system is the potential for crop residue to tie up applied nitrogen. To compensate, they currently have the Co-op put on

about 20 gallons per acre of nitrogen with the floater when they apply herbicides. Then, Lon and Don put on seven gallons of 32 percent nitrogen, five gallons of 10-34-0 and three gallons of thiosulfate with the planter.

"Then we spoon fezed the crop with at least two applications of nitrogen through the pivots," Don adds. "We'll apply one shot when the corn is about waist high and do another application when it's about shoulder high. At that point, we take leaf tissue samples for analysis. If they come out low, we'll put on another application of nitrogen; and if it tests out where it should be, we'll leave it alone."

"That program has done several things for us," Lon adds. "First, it has reduced our fertilizer costs because we don't have the early spring losses that we had previously experienced. It also gives us a lot better plant health."

Despite the savings on fertilizer, along with the water savings on the pivots that allow variable rate irrigation, B & B Partners still average around 220 to 230 bushels per acre on corn. And as icing on the cake, the yield under the newest T-L pivot was 258 bushels per acre.

It's little wonder they're ready for the last electric pivot and their oldest T-L unit to die so they can reap all the benefits of new technology. ■



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Bob Gruner - Amarillo, TX

Imagine a \$120-per-acre investment that could reduce irrigation expenses by 30 percent or more, while increasing yields by at least 20 percent. According to Bob Gruner, who farms southeast of Amarillo, Texas, those aren't fantasy figures. He has the records to prove that installing a T-L Irrigation Precision Mobile Drip Irrigation (PMDI™) system on a half-mile pivot a year and a half ago provided exactly that kind of results.

The idea seems simple enough. The system consists of in-line drip hoses, in place of nozzles or sprinkler heads that are dragged by the center pivot or lateral-move system. It doesn't have to be installed on a T-L system, either. In Gruner's case, the PMDI system was installed on an electric-drive unit.

As the hoses are pulled through the field, emitters deliver an even water pattern across the full length of the pivot or linear system. In effect, PMDI technology combines the lower cost of center pivot irrigation with the proven efficiency of drip irrigation for total water efficiency that approaches 95 percent.

"I put the T-L PMDI system on a 270-acre pivot that

I would typically divide between 90 acres of wheat, 90 acres of corn and 90 acres of fallow," Gruner explains, noting that he installed the system, which consists of drip hoses on 40-inch centers in June 2015. "However, this time we split the circle between 135 acres of wheat and 135 acres of corn.

"Where our average on wheat is normally 50 to 55 bushels per acre, we saw a 68-bushel-per-acre average under the PMDI system," he continues. "And the corn did equally well. Our normal average on late corn is 175 to 180 bushels per acre; yet, under the PMDI circle, we averaged 210 to 220 bushels per acre that first season and just over 250 bushels per acre this year."

At the same time, Gruner says he was able to shut off the water a month early on the PMDI field due to the amount of water in the soil profile, even though the farm only received 5½ inches of rain during the year. In fact, he has the soil profile charts that compare the PMDI field against a field with drop hoses and LDN (low drift nozzles) on 60-inch centers that was receiving 30 percent more water. With each application,

the water applied with the PMDI system penetrated all the way into the root zone, while the LDN heads concentrated the water in the top three inches of the soil profile.

"In our part of the country, it can take four hours for water to seep into the soil. So if you have sprinkler heads that pool water on the surface, you're going to have some runoff. But with the PMDI hoses, the water spreads out and seeps into the soil before it has a chance to run off, evaporate or blow away in a mist," Gruner continues. "We're on limited water in this area and the well on the whole 270-acre pivot only puts out 500 gallons per minute. So we have to conserve as much water as we can. That's why I can see this system paying for itself in two years or less.

"I was a little concerned that because the hoses are on 40-inch spacings, we would see some striping in the wheat," he admits. "But that never happened. Now, if we had sandy soil, like they do in some areas, we might need the hoses to be closer together. Otherwise, the water would go down faster than it spread out. But with our thick soil, it wasn't an issue."

Gruner does admit, though, that the PMDI system requires a little more maintenance than bubblers or LDN sprinklers. While it may not be necessary everywhere, Gruner says he ties the drip hoses up to the goose-neck drop hoses at the end of the season to prevent deer from stepping on them over the winter. Worse yet, deer seem to want to chew on the drip hoses ... possibly due to calcium in the irrigation water ... if they can reach them. Once spring arrives, he simply unties and inspects all the drip hoses prior to first use and enjoys near maintenance-free performance until fall.

Some 80 miles north, near Stratford, Texas, Jon Engelbrecht has seen similar results from a PMDI system he installed on an electric pivot in early 2016.

"The key ingredient down here is water," he agrees. "There's only so much we can use each year and you're talking real dollars for every extra inch you pump. With the PMDI, we're using just two-thirds the amount of water we would use with a regular nozzled sprinkler."

Engelbrecht explains that instead of making a full circle



with the pivot every nine to 10 days, he can make a circle with the PMDI unit in eight days. More importantly, the water does not run off or pool in low areas, but is seeping into the ground and soaking underneath between the hoses.

"Another major benefit is that the wheel tracks stay dry, since the hoses are being dragged along behind the unit," he adds. "My guys are constantly having to dig out the other pivots because they're always getting stuck. The other thing they like is that they can work on or around a pivot while it is

running without getting wet."

Because all his corn is planted in 20-inch rows, Engelbrecht says he does see the drip hoses ride up into the corn stalks quite often. However, he says it doesn't seem to matter on water application.

"That was one of my concerns," he says. "Every PMDI system I had seen before was on 30-inch rows, so I wasn't sure how it would work on narrower rows. But it doesn't seem to matter. When the tape is up riding on the leaves, it's like watching a cool, little waterfall," he adds, noting the PMDI hoses are



Harold Grall - Dumas, TX

spaced 40 inches apart. "It just goes from leaf to leaf until it reaches the ground, where it's still doing the job."

Engelbrecht says he is already planning to install T-L PMDI systems on three or four more pivots over the winter, bringing the total to nearly 1,000 acres under PMDI. At the same time, he hopes to increase the total acreage irrigated with a subsurface drip irrigation (SDI) system to around 1,000 acres, as well.

"Both systems are extremely water efficient," he says. "However, there's a tremendous difference in price between installing an SDI system and simply adding PMDI to an existing pivot. If you can't pay for a PMDI system in three years or less, you're either a pretty poor farmer or you're putting on too much water."

Harold Grall, who farms north of Dumas, Texas, agrees that the investment in a PMDI system just makes sense on fields that already have a pivot.

"We are looking at all the options that are out there," says Grall, who is on the board of directors for the North Plains Water District. "This past season, we had trials on our farm that compared

subsurface drip irrigation, bubbler heads on center pivot drop nozzles, and T-L's PMDI system."

Grall explains that one 120-acre demonstration features a T-L hydraulic-drive pivot equipped with PMDI hoses on 30-inch spacing, while another 120-acre T-L pivot has the drop tubes divided between PMDI units and bubblers, with both on 30-inch spacing.

"I like the idea of doing something with the pivots, since we already have the capital investment in the system," he relates. "We've seen some great results with subsurface drip irrigation, but it's a huge capital investment to put drip in. So if we can use something we already have to get the same kind of results, we're that much ahead."

"The biggest plus with the PMDI system, though, is the fact that the wheel tracks remain dry," he adds. "With our soils, we normally can't shut off the pivots or they get stuck. With the PMDI system, it doesn't matter how fast you put on the water or whether we have to stop part way around the field."

"I can definitely see some advantages with the PMDI system." ■

"The biggest plus with the PMDI system, though, is the fact that the wheel tracks remain dry."

Frugal Investments

These Wisconsin brothers focus on assets that provide the most return.

Seeing David Affeldt drive around in a purple 1968 Volkswagen Beetle, one might be led to believe that he is either nostalgic or extremely frugal. Truth be told, David, who farms in partnership with his brother, Kevin, near Markeson, Wisconsin, simply chooses to invest in items that provide the best return on his investment ... like the 10 T-L center pivot irrigation systems he and Kevin have installed in the past four years. Why drive the pickup, he reasons, when the Volkswagen gets 40 miles per gallon?

By the same token, neither David nor Kevin feels they can justify paying high rental rates for more land when the investment in irrigation pays a higher return on the land they already farm. That fact was brought home in 2012 after the brothers installed the first three pivots on their grandfather's farm.

"We didn't even get the first pivot up and going until the middle of June," David recalls. "Yet, the increase in yields on 50 acres of corn under that first pivot basically paid for all three units. A number of our fields are very low in organic matter and simply won't hold water in the soil. Plus, we don't get a lot of rainfall, because we have a big lake to the south of us and a river that runs around the other three sides of the area. So any rain clouds seem to split up and go around us."

"As a result, our corn yields on those fields used to average around 100 bushels per acre," Kevin adds. "Now, with irrigation available, we're seeing

225 bushels per acre pretty consistently."

According to David, Kevin owns 207 acres, and together, they rent approximately 1,000 acres. While a portion of it was once owned by their grandfather, the rest is rented from local landowners who have since retired.

"It costs around \$450 an acre to cash rent good farm ground," Kevin continues. "And, without irrigation, it's still only going to yield around 100 bushels per acre of corn. We figured that even when corn was \$6 per bushel, it took 100 bushels to cover expenses. That's why we decided to put irrigation pivots on some of the fields we already have," he adds, noting the seven more pivots were added in 2013.

David says another thing that pushed them toward pivots was the rising cost of crop insurance. Due to the unreliable nature of the weather, it was getting almost too costly to insure a crop income.

It also helps that the pivots are used to apply micronutrients and a large portion of the nitrogen on corn crops. In addition to the nitrogen applied with the planter, the brothers apply another 60 pounds right before the V6 development stage with the remainder of the 300 pounds per acre applied through the pivot up to the tasseling stage. In the meantime, seed rates on



David and Kevin Affeldt - Markeson, WI

Local Dealer:
TIP, Inc.
Custer, Wisconsin

irrigated ground have been bumped up to 36,000 seeds per acre with a goal of 34,000 plants.

While the brothers appreciate the ability to irrigate and spoon-feed their crops, they're even more happy about their decision to purchase T-L units, which were supplied and installed by TIP Inc., in Custer, Wisconsin.

"The nice thing about T-L is their pivots are easy to

"We liked the fact that the hydraulic drive on T-L pivots provided continuous movement."

maintain," Kevin explains. "Using a 9/16-inch wrench and a pair of Vice-Grips™, we can fix just about anything that goes wrong. We don't have to call somebody at \$150 an hour to come out and fix it. We have some neighbors who have electric units and we see their service guys all the time."

The other thing that persuaded the brothers to purchase T-L pivots was the \$192,000 estimate for the electric company to run three-phase electricity to the pivot sites. Instead, they had the company run 110-volt, single phase lines to the pivots to power the hydraulic pumps and installed diesel engines to run the pumps.

"As if we needed another reason to go with T-L, we saw

some spoking in a local sweet corn field a couple years ago," David adds. "It was during a time of drought, so it was very evident where the electric pivot had stopped and started. We liked the fact that the hydraulic drive on T-L pivots provided continuous movement."

It's not just corn that benefits from the Affeldts' 10 center pivot units, though. Their crop rotation program also includes snap beans, peas, soybeans and wheat. While the majority of their soybeans are full-season varieties, another 40 to 50 acres of soybeans are typically planted behind peas.

"Irrigation makes a profitable difference on vegetables, too," David continues. "Our average on snap beans has been five to six tons per acre on dryland fields. However, with irrigation, we get about eight tons per acre."

Unfortunately, a reduction in corn prices and DNR regulations has slowed their plans for future pivots.

"We can't add any more pivots without adding another well; so the main focus now is getting the permit to put in an additional well," David explains. "Unfortunately, there's a year's wait or more on approval, by the time they go through their list and review it against all the regulations. We haven't given up on putting in more T-L pivots just yet, though." ■



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Local Dealer:
R&K Pivots
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Joe Neal Ballance - Bowling Green, KY

Use Water Where You Find It

A drought in 2012 and a gas well that yielded water paved the way to irrigation on one Kentucky farm.

It's always been said that, "When life gives you lemons, make lemonade." That was certainly the case a few years ago for Joe Neal Ballance, who operates Triple Oaks Farms near Bowling Green, Kentucky, with his son Neal, a brother and a nephew. Together, the family manages a little over 10,000 acres of corn, wheat and soybeans that are double-cropped behind the wheat.

"We'd been on a natural gas search, drilling wells on our property in hopes of finding a natural gas pocket that would help us cut down on the cost of grain drying," Ballance recalls. "However, in one of those wells,

we ran into water that the driller said was in much greater quantity than he had run across in several years. So that got us kind of excited about putting in some pivots, especially after we had experienced such a crop loss during the 2012 drought in this area."

Consequently, Ballance says they took some of the crop insurance money from that year's loss and purchased several T-L center pivot units. Even though much of the crop was considered a loss, corn prices were high that year, which meant the insurance payment was better than average.

"So, instead of competing for more land and paying these high-priced leases in our area, we decided we would invest in irrigation and try to improve our own land, while providing some insurance against another drought," he explains. "Consequently, we put in eight pivots that first year. We also chose to go with T-L pivots, mainly because of Ken Moore, who is the local dealer. We have a couple neighbors who have T-L pivots and they've been very happy with them. I also have a friend who had bought a farm that had a couple of electric pivots on it and he said he much preferred the T-L pivots with hydraulic drive and commented that he got better service from the T-L dealer. So that's why we went the way we did."

"Being totally new to center pivot irrigation myself, I wanted a dealer like Ken and R & K Pivots, which is only about 20 miles away, that I could call anytime I have a problem," he adds. "Plus, I like the idea of hydraulic drive. I've always been under the impression that electricity and water make for a bad combination."

Unfortunately, central Kentucky doesn't have aquifers into which farmers can tap for a water supply, which meant that Ballance had to improvise in a few cases to get enough water to supply the pivots.

"We're solid rock at 20 to 40 feet, and in some places, just 10 feet down," he explains. "So, we're looking for that underground cave or stream that we can tap into; and that can be pretty hard to find at times," he adds, noting that the driller actually pulled up a crawfish from one well.

Moreover, most of the wells can only pump for 12 to 24 hours without having to replenish for several hours to again reach capacity. Hence, the solution for Ballance has been to establish or enlarge a pond or lake to serve as a reservoir for low-producing wells and rainfall runoff. The most recent addition was a 14-acre pond that was dug last year to supply three different pivots. As a result, he can put on more water than most wells

can sustain at a time when it is needed most.

"The reason we put in such a large lake this last time is the pivots aren't near any creek or river and the nearest well is only capable of producing around 500 gallons per minute," he says. "We have some wells that produce 500 gallons and some that produce up to 800 gallons per minute or more. However, by storing rainfall and well water that we've pumped into the lake, we can put five inches of water on 200 acres or more in a short period of time if necessary."

In the short amount of time the family has used center pivot irrigation, Ballance says he has already seen corn yields increase by as much as 100 to 120 bushels per acre, despite limited availability of water.

"Our soils don't have a lot of water-holding capacity," Ballance explains. "We need rain every week to 10 days to grow a good corn crop. Yet, I've seen 95-degree days around the first of July; and that can really have an impact on the crop if you're a week behind on rainfall. That's when irrigation makes a difference, even if you only put on four or five inches of water per season. Being able to give the crop that moisture when the ear is starting to form and fill is critical."

"We're still doing things to increase the availability of water," he says, noting that T-L pivots only cover about 10 percent of the farm's tillable acres. "And we plan to add more pivots as we develop water sources."

"Unfortunately, I think too many farmers have the attitude that irrigation is something that you would only want to consider when corn prices are high ... like when it was \$6 to \$7 a bushel," Ballance adds. "My opinion, though, is that we need that revenue stream and yield guarantee a lot more when corn is \$3.50 or \$4.00 per bushel than we do when the price is at those higher levels."

"That's why we're still trying to climb that ladder that leads to consistently higher yields." ■

T-L Aids African Food Production



Local Dealer:
Multicrop Irrigation
Systems
Lusaka, Zambia

Doug Cantley - Lusaka, Zambia

Water seems to abound in the Southern Province in Zambia, Africa. Not only is it home to Victoria Falls, Zambia's premier tourist attraction, but the Zambezi River forms the province's southern border. In addition, Lake Kariba lies along the southeastern edge of the province, while the Kafue River marks the northeast border. It's no wonder the Southern Plateau, which lies in the center of the province, represents the largest area of commercial farmland of any Zambian province and produces most of the country's corn (maize) crop.

Located to the northern part of this fertile province is the town of Mazabuka, where Clinton Bruyns serves as both general manager and farm manager for Kapinga Enterprises, the largest private T-L user in Zambia. Wholly owned by Doug Cantley, Kapinga Enterprises is a commercial farming operation that manages nearly 5,000 acres (1,980 hectares) of corn, soybeans, wheat, sugar cane and pasture. Of that total, approximately 3,324 acres (1,345 hectares) is irrigated, including several acres of virgin land that has yet to be planted.

"This past year, we had 850 hectares (2,100 acres) of soybeans, 350 hectares (865 acres) of maize, 500 hectares (1,235 acres) of wheat and 245 hectares (605 acres) of sugar cane," says Bruyns, who is also a shareholder in the operation. "In addition, we have about 35

hectares (86 acres) of pasture. Fortunately, the majority of the farm is now irrigated."

Although Kapinga Enterprises uses some overhead sprinklers and drip irrigation, Bruyns says most of the irrigated acres are watered by a total of 25 T-L center pivot units, thanks to a move to center pivot irrigation approximately 12 years ago. However, even though water seems to surround the province, Bruyns insists that getting water and power to the units is still the biggest challenge. Since none of the irrigation water comes from wells, it all has to be routed from nearby rivers and lakes. In the meantime, the need for power isn't as much for the pivots, thanks to T-L's hydraulic drive, but rather for the pumps, which are driven by electric motors.

"We've had very few problems with our T-L pivots," Bruyns continues. "With the hydraulic drive, we're able to do much of our own maintenance, and we are well looked after by our agent, Multicrop Ltd., and by T-L reps."

It was Multicrop Irrigation, in fact, that led a massive

project to bring irrigation to the Oaklahoma Farm, the most recently developed of three farms on the operation. In addition to installing 22 pivots that cover 2,693 acres (1,090 hectares) on the Oaklahoma Farm alone, Multicrop helped install a pump station at the pickup point from the canal. To distribute the water to the various fields, the company also installed four 120-horsepower, 1,450 RPM (90kW) booster pumps, which have the capability of moving 8,800 gallons per minute (2,000 M3/hr) through a network of PVC pipes a total of 23,157 feet. (7,060 M).

Phase two of the Oaklahoma Farm project involved the installation of two 215 horsepower (160kW) 1,450 RPM VSD-driven booster pumps, which have the capability of moving 7,700 gallons per minute (1,750 M3/hr) a distance of 12,300 feet (3,750M). Once the project is complete, Multicrop will also be installing hand move drag hoses that will cover 237 acres (96 hectares) of crop land.

"Another thing we like about T-L center pivots is that they are robust and yet safe at the same time," he continues. "They 'walk' continuously in a straight line tower-for-tower, which gives me an advantage when applying fertilizer or chemicals."

That's particularly important to Bruyns, since many of his crop protection chemicals and fertilizer are applied through the pivot. While they broadcast a base fertilizer, nearly 350 tons of top dress and foliar fertilizers are annually applied with the pivot. The same goes for many of the herbicides and insecticides.

"Our main sugar cane herbicide is applied through the pivot, as well as insecticides for the troublesome yellow sugar cane aphid," he explains. "Ground-dwelling insects are also controlled with the pivot, including cutworm/black maize beetle grubs. American bollworm is another pest that is treated through the pivot at late stages of the row crops. From time to time, we even use the pivot to treat for stalk borers in sugar and row crops."

In the meantime, Bruyns uses crop rotation to help with weed and insect control, as well as fertility.

"Sun hemp is largely my green manure crop," he explains. "Some fields are planted to maize for two years, soybeans for one year and then sun hemp. Others are planted to soybeans for two years, maize for a year and then sun hemp. Wheat is planted between these crops. For the sugar cane fallow, we try to follow with a rotation of soya, wheat, sun hemp and then replant to sugar cane."

In response to the need for water and crop protection on his mix of sandy and loam soils, Bruyns says the pivots run an average of 2,000 hours per year, with water applications averaging around 20 millimeters (0.79 inch) per revolution, unless fertilizer or chemicals are being applied. Then the speed depends on the product and the application rate.

"We definitely want to look at adding more T-L units in the future, as long as the price remains competitive," Bruyns concludes. "The advantages they provide in our operation are far superior to irrigation methods we used in the past." ■



From Worst To Best

It's not often that a farmer can take a field that's in the bottom 25 percent of the farm's acreage in terms of productivity and move it to one of the top-performing fields. Certainly, improved fertility can help. But when the field lacks water-holding qualities, even the best fertilizer program can't make that much difference.

Still, that's the kind of improvement Sam Walker saw in two of his fields in Escambia County, Florida, after installing a T-L towable pivot. Today, having purchased the first T-L unit in 2008, Walker is up to five T-L pivots - four towable units and one fixed pivot that covers 85 acres.

"We started by putting the pivots on our lighter soils, which didn't produce as well," says Walker, who farms in partnership with his wife Vivian and his son, Scott. "We bought one that first year, one in 2009 and two more in 2011. Now, we're in

the process of putting in our first permanent pivot."

Although Walker occasionally grows some corn on the farm, which has been in the family since 1915, his main crops are cotton and peanuts, which were his only crops this past season. And even though the Florida panhandle generally gets ample amounts of rain from the clouds that drift up from the Gulf, there are still times that a crop can go three to four weeks without it.

"Cotton needs the water worse than the peanuts do," he relates. "But even the peanuts need moisture when they're filling the nuts. If the quality's not there and the

peanuts are stressed at the wrong time, you can lose half your price. If the peanuts are damaged, they have to go for oil instead of nuts, so the price drops dramatically."

As long as the quality is there, though, the Walkers' peanuts go to markets that use them for peanut butter and candy. The larger peanuts that are generally sold in the shell, he explains, are grown farther north in states like Virginia.

"The quality on cotton, on the other hand, isn't affected that much by drought, compared to the peanuts, but the quantity is certainly affected," he continues. "The varieties we have available to us now have super potential to produce, but they need moisture. Consequently, our highest yields are in the fields where we have irrigation."

Of the four towable units on Walker Farms, one is in a long, narrow field, while the other three are in fields that are adjacent to each other. Of those, one is moved between two fields and the other is a 600-foot unit that is moved between two fields on opposite sides of a road, plus part of another field, for a total of 120 acres. Last, but not least, is the permanent pivot, which was just installed this past spring to irrigate around 85 acres. Consequently, Walker is now able to irrigate around 400 acres, or about 20 percent of the farm.

"By using the T-L towables on two or three fields each, the cost per acre is a lot less than it would be with stationary pivots," he relates. "Of course, they're more work, too. Fortunately, T-L pivots are



Local Dealer:
Helton Irrigation
Walnut Hill, FL

Sam Walker - Escambia County, FL

relatively easy to move. If it's a straight pull, I can move the machine by myself in about 30 to 45 minutes. It's just a matter of spinning the cart around and hooking it up to the tractor."

Walker admits that there are some years, when rains are timely and plentiful, that he doesn't see any benefit from having irrigation available. On the other hand, he has seen peanuts yield as much as 3,000 pounds more on irrigated versus non-irrigated fields in dry years. In order to give the crop the most yield potential, he plants peanuts in twin rows on 38-inch centers. Finally, to keep it simple, Walker says he generally tries to plant all the fields that are irrigated by the same towable in the same type of crop. Otherwise, different crops often require a different watering schedule, which can lead to one crop getting shorted when it needs water the worst.

Walker says his biggest challenge these days isn't water, but rather protecting the peanuts from deer and wild hogs.

In an attempt to keep hogs and deer out of fields, Walker has sprayed repellents on the crop, hung reflective pie pans and/or applied perfume around the field edges and installed electric fences around the field. The worst damage, he explains, occurs

when hogs get into the peanut fields. However, they can also damage cotton when they go down the rows searching for and digging up peanuts that remain from the previous crop.

"We've tried everything and spent a lot of money in the process," he admits. "But with commodity prices the way they are, you can't just let them eat up the profits. So you have to do something to control them."

Fortunately, Walker has no such problems with his T-L pivots, which is one of the reasons he prefers T-L units.

"I like the hydraulics and the continuous movement; and I like the dealer," he says. "I've known Jackie (Helton) for nearly 40 years and I know I can always count on Helton Irrigation (in Walnut Hill, FL) if we have a problem."

"I also like the safety issue of the hydraulic drive," he continues. "If you have a problem with a T-L, you can generally see it. I can't see electricity."

As a result, Walker says he will continue to specify T-L units as he moves forward.

"As profits allow, we intend to add more T-L pivots, putting them on the poorest fields first, just as we have in the past," he concludes. "We still need some better commodity prices, but at least we have the benefit of consistent, if not higher, yields on our irrigated acres." ■



Vegetables From A to Z

Local Dealer:
Lee Rain
Vineland, New Jersey

George Cassaday - Monroeville, NJ

Center pivot irrigation wasn't even a figment of the imagination when George Cassaday's great grandfather, Harry Cassaday, established Cassaday Farms in 1895. Today, the farm that started with 70 acres near Monroeville, New Jersey, has grown to an enterprise that markets 40 different vegetables from asparagus to zucchini on approximately 2,500 acres, thanks in part to T-L Irrigation.

Although vegetables have always been part of the mix, they served only as a supplement to grain in the late 1800s and to a poultry business the early to mid 1900s. It wasn't until the 1960s that vegetables took on a dominant role in response to a local demand from Campbell Soup and Seabrook Farms, Inc. In the late 1970s, George's dad, George Sr., purchased some neighboring farms, in addition to renting more land, and grew the farm from 70 to 300 acres.

"The local cooperative market auctions in Vineland and Heightstown, New Jersey, also became the new avenue for selling produce," says George Jr. "Later, the focus switched to fresh market vegetables that were sold through the local cooperatives."

During the 1990s, the sales focus changed once again,

particularly in light of the volume that Cassaday Farms produces on 2,500 acres. Today, most of the family's produce is sold to distributors, wholesalers, supermarket chains and a few roadside stands. To facilitate this move, George took a technological leap in late 2000 by building a large 80 x 200-foot packing facility, complete with sorting machines, cold storage and loading docks for semi tractor-trailers.

"Harvest generally starts in April with strawberries and asparagus and goes all the through late November with broccoli, cauliflower and sweet potatoes," George adds. "Our choice of vegetables is mainly determined by two factors. First, a vegetable needs to be profitable. However, some vegetables are grown out of necessity, because other farmers don't grow them, which means it captures more of a customer base."

With a few exceptions, like asparagus and strawberries, which are annual crops that grow in the same small field from year to year, most of Cassaday's fields produce two, three or even four crops per year. The fields that earlier produced peas or turnips, for

example, will be replanted to sweet corn or sweet potatoes. Others that produced an early crop will be replanted to squash. As a result, Cassaday usually ends up with around 350 acres of sweet corn each summer and another 350 acres of sweet potatoes with all the other crops occupying a share of the acreage.

In the meantime, produce from Cassaday Farms is sold throughout the eastern half of the U.S., as well as to islands in the Caribbean. Ironically, Cassaday even had a shipment of squash on the ill-fated El Faro, the cargo

ship that was destined for Puerto Rico when it sank in 2015 when it ran into Tropical Storm Joaquin.

Naturally, maintaining those types of markets means producing top-quality produce, year in and year out. That, in turn, means ensuring the crop has all the water it needs in a timely fashion.

"We started out with pipes and sprinkler heads and eventually traveling guns and hoses, but that required a lot of labor to continually move them around the field and between fields," Cassaday relates. "It also made it hard to keep the crops watered

evenly. We did have a couple of electric center pivot units early on, which helped with the labor issue. But, due to the electric drive, we seemed to get uneven water distribution. Plus, we had a few problems with the motors and electrical components.

"Since that time, we have gone entirely to T-L pivots," he adds. "One of the things I like most about the T-L pivots is that the hydraulic drive provides continuous movement. We like to put on some of our herbicides through the pivot, as well," he continues. "So the steady, non-stop movement of the T-L pivots is even more important for that reason."

Cassaday says pivot irrigation is especially beneficial when growing row crops like sweet corn. However, he says center pivot irrigation has also provided benefits on crops like sweet potatoes and turnips.

"We currently have seven T-L center pivot units and I am planning on adding two more within a few months," he adds. "We've had very little trouble with T-L units and even if we do have a problem, Lee Rain, which is our dealer in Vineland, New Jersey, has come out right away and taken care of it."

Ironically, Cassaday says his father actually started doing business with Lee Rain when the current managers' grandfather and father ran the business.

"Now Lee and Todd Fiochi, who represent the third generation to do business with my family, run the business," he explains. "It's been a great relationship and they've been a great dealership for T-L"

At the same time, Cassaday Farms is into its fifth generation of Cassaday family members. Today, George's sons, Cody, Clay and George III are all involved in the operation. A lot of things may have changed in the last 122 years, but a century and a half of continuous vegetable production certainly appears to be in sight." ■

Turkey

Isn't Just For Thanksgiving

Nine new T-L pivots are helping one North Carolina farm grow more of its own turkey feed.

Paul Talley - Rowland, NC

It takes a lot of corn and wheat to raise 2 ½ million turkeys from poults to 40-pound birds ready for processing ... more than Paul Talley can produce on 3,500 acres near Rowland, North Carolina, even though nearly a third of the farm is irrigated with T-L pivots.

"We can raise enough corn on our own to last about one month," admits Talley, who actually sub-contracts part of the turkey production to about 20 other growers. "In fact, we actually store most of the corn we produce on our farm as a July 'safety net' that we can use if prices go up or we start running short."

In an average month, Talley will go through about 30,000 bushels of corn, as well as several thousand bushels of wheat that is blended into pellets at a rate of about 20 percent wheat and 80 percent corn. To improve efficiency, Talley has his own pelleting mill and buys most of the grain from farms located around Stanfield, North Carolina, where he lives and produces antibiotic-free turkeys in about 100 individual barns. In addition to the birds they raise for the meat market, Talley Farms also houses several thousand hen turkeys that produce nearly seven million eggs that go to a hatchery.

"All the birds we produce are

marketed through a company in Pennsylvania as 'all-natural, humanely grown' turkeys that are free of antibiotics and growth hormones and are only fed a vegetarian diet with no animal by-products," he explains. "That means we have to take a few extra steps and precautions to keep them healthy, like letting the barns set empty a little longer between groups."

On average, it only takes 18 weeks for brood poults to reach 40-pound market weight and about 13 weeks to finish birds that have been previously started and transferred to the finish barn at five weeks. To attain those types of weight, Talley only feeds male birds, or toms, which are processed as meat birds. That means they're used for producing everything from turkey meatballs and ground turkey to turkey tenderloins, deli meat and turkey bacon. None are marketed as whole turkeys.

Consequently, when the opportunity arose to purchase more land for feed production near the South Carolina border following a property value depression some 10 years ago, Talley didn't hesitate to expand the operation. In addition to several hundred acres of corn,

"Irrigation can add another 100 bushels per acre. We're seeing yields of 220 bushels and up."

the Rowland farm produces some wheat and soybeans. The only drawback is that the Robeson County farm is nearly 90 miles from Talley's home in Stanfield.

Seven years ago, he began adding T-L pivots to the property to increase production and to serve as crop insurance in times of drought ... particularly during corn tasseling and ear fill. Today, he is up to nine T-L center pivots covering close to 1,000 acres on both farms.

"I have two in Stanley County, where I live, and seven at the farm near Rowland, including three that I had installed this past winter," he says. "The two near home are fed from a lake, while the ones at the Robeson County are supplied by wells. The oldest one is seven years old and is still the largest, which covers about 270 acres. The rest are four-, five- and six-tower units."

"We didn't have to turn them on very early this year, due to plentiful rain this spring," he says. "But on average, irrigation can add another 100 bushels per acre. Instead of 100 to 120 bushels or more, we're seeing yields of 220 bushels and up."

Talley says he also had Precision Link pivot control

installed on the three newest units so they can be controlled from his cell phone. Even if he's at the farm, instead of 90 miles away at his home, the three newest pivots are still 10 miles from the Rowland headquarters. Hence, he can check on a pivot or stop the machine from anywhere, including the North Carolina coast, where he likes to go fishing when he finds the time.

"The remote control even came in handy when we were installing some bridges over a canal," he relates. "There are a number of canals that crisscross the county, so as we were putting in bridges for each tower, we were able to move the pivot forward and check the position of each bridge without someone having to run back to the control box. That alone saved a lot of time."

"While the hydraulic drive system was appealing to Talley, due to its simplicity, he admits it was the lack of high-voltage electrical wiring that sold him on T-L systems.

"We've had an oil leak every now and then, which, on a T-L, is something we can fix ourselves without having to call anybody," he explains. "However, the bigger issue is copper theft. The Rowland farm is located in a rather poor area where about the only jobs are related to agriculture. So there is a lot of theft. I know of one farmer who had his electric pivot stripped and had no more than got it repaired and running when it was stripped again."

In addition to providing timely water for higher yields, Talley says the pivots also allow him to spoon feed the corn crop with liquid nitrogen applied through the pivots. Again, T-L's hydraulic drive held the advantage since it provides continuous movement without the start and stop motion associated with electric units.

"So far, the pivots have required very little maintenance, yet they've allowed us to produce a little more of our own feed," he concludes. "With irrigation, water is one more thing we can control and the T-L pivots have allowed us to do that in a dependable manner." ■

Local Dealer:
Circle S Irrigation
Laurinburg, NC