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IRRIGATION VIEW

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No Time For Downtime

A short growing season means Hank Cheyne pushes his irrigation systems hard and expects dependability.

The view afforded from Hank Cheyne's Bonanza, Oregon, front window includes a sweeping vista of mountains and every one of the 10 irrigation systems he uses to water his 1,000 acres of alfalfa, barley, wheat, and oats. He uses his vantage point to keep vigilant watch over the sprinklers, including four T-L pivots with corner machines, one T-L linear system and five electric pivots. Their constant operation is critical to the success of his crops, which

have just 90 frost-free days to produce in the semi-arid valley that otherwise receives a scant 12 inches of precipitation per year.

"If you've got a pivot down for a week, there's the potential it could cost you an entire cutting of alfalfa," he says. His sandy soils don't retain water long and the dry climate quickly wrings moisture from the growing plants. "The humidity is usually in the teens, so when it gets hot here it absolutely cooks things, dries them right out."

Cheyne starts irrigating around May 1 and takes his first cutting of alfalfa in early June. He then settles into a schedule of cutting every 28-30 days for up to four cuttings per season. "June and July are crunch time for our pivots," he says. "They're running all the time." Each pivot gets 1,300 to 1,400 hours of use during the 90-day production window. To counter the dry environment during the hottest summer months, Cheyne runs his pivots at just 12 inches per minute applying 1-inch of water or more per pass.

When everything goes correctly, Cheyne can produce crops the generations of his family that farmed in the



Local Dealer:
Aluminum Pipe and Repair
Bonanza, OR

Hank Cheyne - Bonanza, OR

valley before him couldn't imagine. Cheyne is the fifth generation to farm in Klamath County just north of the Oregon-California border. The reservoir he pulls water from, Gerber reservoir, is named after his mother's family. Their original homestead rests at the bottom. He now farms land his grandfather farmed and stewarded from flood irrigation to wheel lines. In 1995 Cheyne took the next step, replacing labor-intensive and inefficient wheel lines with T-L pivots. "Initially the simplicity of the T-L pivots as compared to the electric systems is what drove our purchase decision," says Cheyne, who prefers to do most of his own service work. "They're easy to work on and when it was time to install more pivots, I went with T-L again and will in the future."

As Cheyne acquired land he also inherited existing electric pivots. With the nearest electric pivot dealer 45 miles away, he had to teach himself

to work on these pivots as well. "It's not bad because I understand how they work, but I work on them twice as much as the T-L systems," he says. The electric systems take a beating on his fields that have some slope. All the stopping and starting results in the gear boxes wearing more. "The constant movement of the T-L units is a lot easier on the gear boxes because they don't have the shock of

stopping and starting on the hillside. We don't have to replace them quite as often as the

gearboxes on the electric units."

Each of Cheyne's three types of T-L units have their advantages. His linear system stretches a quarter of a mile wide and moves 3,300 feet back and forth across his field. He uses a small diesel engine to run the hydraulic pump. "That engine has 22,000-23,000 hours and I've never touched the motor," he says. He credits the engine's

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Beef Under Irrigation

Thanks to T-L pivots on grass, this Oklahoma producer can support one cow/calf pair per acre.

Dustin Donley - Mooreland, OK

When it comes to Oklahoma farmers, Dustin Donley certainly doesn't fit the mold. To begin with, he's a first-generation farmer, having grown up near Mooreland, Oklahoma, where his father worked for an oil company.

"During high school and college, I worked for a farmer who taught me a lot of what I needed to know," says Donley, who farms a little over 5,000 acres just south of Mooreland. "It's something I've always enjoyed, so farming has become a major sideline to a construction company that I also own and operate."

Secondly, his priorities involving irrigation would seem to be reversed in the minds of most producers. Although he grows nearly 4,000 acres of wheat annually, nearly all of it is dryland cropped, while more than 1,300 acres of Bermuda grass is irrigated. That's because Donley says he can make more profit from beef on irrigated grass than he can on irrigated wheat.

"We're about 99 percent wheat and cattle," Donley relates, noting that he typically runs about 800 head of Angus-cross cows. "I have a little bit of milo that I use in rotation with wheat, along with about 160 acres of corn that I cut for silage. But eight of the 13 pivots I own are planted to Bermuda for hay and grazing."

The three additional pivots, he says, are planted to corn, teff grass, milo or wheat, depending on the need for silage, winter forage or a rotation crop. In addition, much of the dryland wheat is grazed during the winter and early spring, which means he only harvests about half of the 4,000 acres that he plants each year.

"We usually graze wheat until around June 15," he says "As a result, the cattle are on wheat about four months of the year and on Bermuda the other eight months."

If there's any doubt about the value of irrigation on grass, Donley says that with

an annual rainfall of around 25 inches, he could normally support one cow/calf pair for every 15 to 20 acres of dryland pasture. Yet, with irrigation, his fields of Bermuda can support one pair per acre. Once calves reach approximately 1,000 pounds on grass and corn silage, Donley ships them to a feedlot in Gage, Oklahoma, where he retains ownership until they are marketed.

While the extra water alone accounts for the increased volume of Bermuda, Donley says he also applies fertilizer through the pivots at regular intervals throughout the growing season.

"It's mainly 32-0-0 (nitrogen-phosphate-potassium), but we apply whatever the agronomist says the crop needs," he adds. "The fact that we're putting on so much of our fertilizer through the pivots, particularly on grass, is one of the reasons I prefer the T-L pivots. I like the constant flow of hydraulics and the steady movement of

the pivots that ensures that fertilizer is applied evenly throughout the field. Plus, I don't really like electricity underneath water."

Donley says he bought his first T-L pivot in 2004 after seeing a friend put one on his property.

"I got to visiting with the owner of Southwest Center Pivots and bought the first one from him," he recalls. "Since then, we've continued to buy more land, drill more wells and put up more T-L pivots to the point we now have 13 total. Of course, we continue to work with Southwest Center Pivots on service and sales. If we have any kind of problem, which has been rare, they usually have us up and running within a day."

"Thanks to irrigation, we basically have a guaranteed forage source," he relates. "And as long as you keep it watered and fertilized, Bermuda comes back every year. If you treat it right, it will treat you right," he concludes. ■



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Irrigation Means More Cotton Per Acre



Local Dealer:
Helton Irrigation
Walnut Hill, FL

Nick Marshall - Baker, FL

T-L pivots help one Florida producer improve yields, while conservation practices protect resources.

There probably isn't a farmer in America who wouldn't like to either increase yields or reduce the input costs related to crop production. Yet, Nick Marshall, who grows around 2,500 acres of cotton and peanuts near Baker, Florida, has been able to do both.

As a third-generation farmer, who shares the operation with his father, James, Marshall has always been on the leading edge of innovation. As an example, the Marshalls have been strip-tilling their fields for more than 15 years now. They've also been planting cotton on 36-inch rows, with peanuts planted in double rows on 36-inch centers.

Marshall explains that even though two-thirds of their acres are planted to cotton and one-third to peanuts, they try to rotate several fields annually between the two crops to avoid any disease problems. To reduce the chance of wind erosion on the farm's sandy soils, they also plant a cover crop of wheat behind both peanuts and cotton after harvest. Then, about a month before planting time, they spray the crop with Roundup® and strip-till the field for planting.

To conserve fertilizer in their sandy soil conditions, Marshall explains that they split applications over several stages. It starts with diammonium phosphate (DAP) on both peanut and cotton acres, which is variable-rate applied ahead of the planter based on grid samples.

"We then put the cotton sidedress fertilizer on in two shots, because if we apply too much at a time in our sandy soils, it just leaches out and we lose it," he explains. "In the meantime, we start applying a growth regulator at first square and then follow with

applications about every 10 days to control vegetation height and encourage boll fill."

The family's agronomic practices are only half the equation, though. While conserving input costs, Marshall has also increased yields on several fields by adding T-L center pivot irrigation.

"This is our third year with irrigation," he relates. "I put in two pivots three years ago and then added a third one last year. We tend to get plenty of early spring rains," he adds, noting that he typically plants cotton in mid to late April.

"But it's not unusual to see several days of dry weather right about the time the cotton bolls are forming.

"We've found that cotton responds very well to irrigation," Marshall adds. "A normal dryland yield for us would be 1,100 to 1,300 pounds per acre. However, with irrigation, we're seeing 1,500 to 1,700 pounds per acre. So it's a pretty safe

bet to say we'll have a 300- to 400-pound increase every year and the potential is there to go a lot higher."

Being totally new to irrigation, though, Marshall says they didn't know what to look for when buying a pivot system.

"I wasn't very familiar with any of the brands," he admits. "But we decided to go with the T-L pivots primarily for the safety issue offered by the hydraulic drive rather than electric drive.

We figured the hydraulic drive system would also be easier to work on ourselves, since we're already familiar with hydraulics.

"As a result, we've purchased all our pivots through Jacky Helton with Helton Irrigation," he adds. "We really haven't had any problems with the pivots, yet any time we've had a question, Jacky answers the

phone or comes right over. So the service has been excellent."

Marshall notes that of the three T-L pivots they currently own, two of them make a full circle, while the third does a half circle for a total of around 300 acres. All three, however, are equipped with T-L's Precision Link web-based monitoring and control system.

"I like being able to just roll over in bed and look at the cell phone to check on the pivots," he says, while admitting that he also enjoys the ability to monitor the pivots when he has the chance to go fishing in the Gulf of Mexico. "I can stop a pivot from my phone, see which direction it is traveling and tell exactly where it is in the field without ever having to get up. It also calls me if it stops for any reason; so it's been a big help."

Marshall says pivot control

is especially important with their sandy soils. In fact, he insists that 1/2 to 6/10ths of an inch of water is all they can put on at a time. Otherwise, it seeps through the soil profile too quickly and is lost, which makes it even harder for their 1,200-gallon-per-minute well to keep up.

Having grown two crops of cotton under the pivots since the T-L purchase, Marshall now has peanuts under all three units for 2017.

"I don't expect to see the same kind of response to irrigation with peanuts as we did with cotton," he concludes. "But I certainly think there will be a noticeable difference between peanuts that are irrigated and those that aren't irrigated, especially if the rains suddenly stop mid-season. It was for that type of insurance that we put them up in the first place." ■

T-L is Leading The Way With Technology



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Local Dealer:
R&K Pivots
Russellville, KY

Ethan Stults - Loretto, Tennessee

A Labyrinth Of Pipes And Pivots

If center pivot irrigation can fit here, it can fit anywhere.

Gaze across the timbered ridge tops of southern Tennessee and you'd never guess there are 19 T-L center pivot systems hidden among the rolling hills southwest of the small town of Loretto. Yet, for Stults Farms, the investment in irrigation has not only been an insurance policy against times of drought — such as the one that hit Tennessee and Kentucky in 2012 — but the extra water has led to higher yields on the 1,536 acres already covered by pivots. Plus, it has allowed the farm owners to more successfully produce a double-crop of soybeans behind wheat.

According to Ethan Stults, who owns and operates Stults Farms in partnership with his brother, Mark, the first four pivots were installed in 2013. A year later, eight more pivots were installed on another part of the operation after two 18-inch PVC pipelines — which allow for future growth — were laid side-by-side to supply water from a nearby creek.

By the time they finished erecting seven more pivots between 2015 and 2017, R&K Pivots, the T-L dealer in Russellville, Kentucky, had installed eight pumps and 50,660 feet of PVC pipe. That included a 300-horsepower engine in one of the main lines to boost the pressure and send water through another 4,000 feet of 18-inch pipe and up an additional 205 feet of elevation.

According to Ken Moore, owner of R&K Pivots and Stults Farms' T-L dealer, water is pumped through 18-, 15-, 12-, 10-, 8- and 6-inch PVC pipe, as needed to maintain pressure. Meanwhile, the total distance from water source to the end of the farthest pivot is 3.5 miles and the total elevation from the water source to the highest point is 325 feet.

Stults says it's been worth it, though, because they're already harvesting an extra 50 bushels or more of corn under the center pivots. Plus, they know they can harvest a crop . . . even in the driest years. Their normal rotation on both dryland and irrigated acres consists of corn, followed by wheat and double-cropped soybeans for three crops in two years.

Stults says irrigation also guarantees that double-cropped soybeans after wheat will yield just as well, or better, than full-season soybeans on dryland acres. Unfortunately, less than 15 percent of the farm is irrigated as it is.

"Last year, our dryland corn averaged 178 bushels per acre across the whole crop," he adds. "But we saw about 50 bushels per acre more on the irrigated fields, which averaged 210 to 230 bushels per acre," he continues, noting that they probably added 10 to 12 inches of water to the

normal rainfall during the season. "In the meantime, the double-cropped beans on irrigated acres averaged around 50 bushels per acre, which was pretty good considering it was fairly dry after wheat harvest."

Stults says the decision to install T-L pivots didn't come without some thought and planning, though. And it involved more than R&K Pivots' ability to plot out a system that worked after water traveled through several thousand feet of pipe.

"I've known of others that had electric pivots that talked about having to replace motors, switches, etc. after a

"Safety was the big thing . . . not having to worry about somebody getting electrocuted."

field flooded," he explains. "Well, the easiest place for us to start, when we put in the first pivots, was on our bottom

ground next to the creek. So after talking to Ken about it and finding out that it was irrelevant if the creek flooded, because T-L used hydraulic motors on the drive system, we figured T-L was the only logical choice.

"However, the safety was the big thing . . . not having to worry about somebody getting electrocuted," he adds. "I told Ken, too, that I can figure out hydraulics, but electricity is a little more complicated."

Stults explains that the creek they're pulling water from is at

least 100 feet wide at several places and shoulder deep in a number of spots. "So we have plenty of water," he adds, "and it works very well with the way Ken has it laid out."

As Moore explains, "The system was designed to irrigate 505 acres at one time with one group of pivots and 496 acres with a different group of pivots at near equal amounts of pressure."

"We can be watering corn while we're cutting wheat," Stults adds. "Then, as soon as the corn is past its need for water, we can switch over and start irrigating soybeans in the wheat stubble just by turning a few valves."

The addition of center pivot units on part of the farm has also allowed the family to apply part of their fertilizer through the pivots. Plus, they variable rate both corn and soybeans, especially when planting irrigated fields.

"As farmers, we're always trying to get the best price we can on our commodities," he concludes. "But you have to watch expenses on the other end of it, too. That's as important as trying to sell for more. At least you have some control over the amount you spend on growing a crop. However, there are also times that you have to spend a little money to reduce costs or increase yields . . . whether it's adding GPS guidance to save on inputs or installing center pivot irrigation to guarantee yields." ■



Local Dealer:
Hernan Manrique Buenos Aires, Argentina

Mario Rovella - San Luis Province, Argentina

T-L Pivots Expand Forage Production

On The Pampas

The installation of T-L pivots has led to a five-fold increase in cattle numbers on this Argentina operation.



Six years ago, Mario Rovella owned about 4,000 head of Angus, Herford and Braford (Hereford/Brahman cross) cattle that he grazed on four different farms in the San Luis province of Argentina. Today, the cow/calf herd has grown to 20,000 head . . . a five-fold increase. No, the farms didn't get any larger and he didn't expand the feedlot. It's because Rovella has installed 28 T-L center pivot units since 2011.

"In the past, it required 10 hectares (25 acres) of land to support one animal," he explains. "Thanks to irrigation, we can now support one animal for every 1-1/2 hectares (3.7 acres)."

Located near the center of Argentina, which, in turn is in southern part of South America, the San Luis province incorporates everything from dry Pampa grasslands and pre-Andean hill, mountains and salt flats to irrigated farms of corn, sorghum and sunflowers and fields of fig trees and asparagus. It's just to the west of the capital city of San Luis where Rovella owns the La Primavera operation. The other four Rovella farms — Santa Rita, San Jorge, Bella Vista and El Silencio — are located about 140 kilometers (87 miles) north of the capital city.

"Everything we grow is for producing cattle," he says. "That includes 4,200

hectares (10,378 acres) of maize (corn), triticale, alfalfa, avena (oats) and sorghum — both grain and forage — all of which are under pivot irrigation. In addition, we have approximately 8,000 hectares (19,768 acres) of Buffelgrass that is not irrigated that is used as pasture year-around."

Meanwhile, most of the irrigated crops go to the feedlot, where calves are fed grain and silage until they reach a market weight of around 420 to 450 kilograms (926-992 lbs.), or are used to supplement winter pasture. While some corn and sorghum is harvested as grain, Rovella says nearly 90 percent of all the crops are chopped as silage.

Unfortunately, Rovella says most of the soils in the San Luis province are sandy and do not retain moisture very well, which is the main reason he turned to T-L irrigation units to increase beef production.

"Our average rainfall totals about 300 millimeters (11.8 in.) per year, with most of it coming between September and March (which is summer in Argentina)," says Rovella. "So we apply about 400

millimeters (15.7 in.) of irrigation water in the summer crops and around 200 millimeters (7.9 in.) to the winter crops."

Winter crops, or thin harvest crops, he says, include oats and triticale, while sorghum, forage sorghum and corn are planted prior to summer. In the meantime, water is drawn by electric pumps from wells that average around 250 meters (820 ft.) deep with a dynamic water level of 45 meters (148 ft.).

"T-L is the only brand of pivots or irrigation equipment we own. The main reason is the reliability and the stability in the production they generate."

"T-L is the only brand of pivots or irrigation equipment we own," Rovella continues. "The main reason is the reliability and the stability in the production they

generate. We've had very few problems; but even if we do have an issue, service has never been a problem. T-L irrigation in this arid zone has allowed us to transform our operation from a cattle breeding field into a highly efficient meat-producing business," he concludes.

However, Rovella isn't done yet. Based on his success with T-L pivots, he is already planning to add 15 T-L towable pivots to the operation. And you can bet that will translate into even more beef. ■



Continued from page 1

durability to the fact it's only running at about half power all the time, just enough to run the hydraulic pump. "In an electric system, the motor would have to throttle up to full speed to generate the proper electrical current to get the span moving with every stop and start, which causes a lot more wear."

For his corner systems, he prefers the simplicity the T-L hydraulic planetary design affords overall, but especially when it comes to swinging out the extra arm on his pivot. "When you look at my electric corner systems, there gets to be a lot going on," he says. "I can open the T-L box and troubleshoot pretty quickly if something happens." He also can count on support both from his local dealer, Miles and Patience Hankins, at Aluminum Pipe and Repair in Bonanza, and even by calling the factory directly—which he resorted

to when he didn't have a local dealer.

When doing his own work, he appreciates the reduced risk he takes with the T-L units, too. "With only 28 volts of DC current running down the span to the corner units instead of 480 volts of AC, the T-L pivots are easier and safer to work on." Safety is one of several reasons Cheyne plans to replace the electric pivots with T-L pivots as they wear out. He predicts having all T-L pivots will cut down on repairs overall and will reduce the variety of parts he keeps on hand.

Fewer repairs mean his T-L pivots are more likely to be ready to go when it's crunch time. "When we take a cutting of alfalfa, we haul the bales off the field immediately and have the pivot running that night or the next day and it doesn't stop running until 5 to 6 days before we make the next

cutting. If it's down for a day or more, it's potentially costing us yield in this environment," he says.

Efficient and effective sprinkler irrigation has taken the family farm to the next level of production and Cheyne intends to keep it that way. "If my grandfather could see how we're irrigating

and how much we are able to produce with pivots, he'd be flabbergasted," Cheyne says. His grandfather passed in 1974 right before they installed their first wheel lines. "I don't think he could fathom the change in our production that has occurred from flood irrigation to today. We've more than doubled our yields." ■



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