California Dairy Farm Benefits From New 9500CC Pivots

AN EXCLUSIVE Q&A WITH HOWARD BUFFET PAGE 4
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Sliman & Butler Irrigation

The World’s Most Expensive Bull

Every business has unique and interesting customers. For Zimmatic dealer Sliman & Butler Irrigation, based in Gooding and Buhl, Idaho, one of those customers has to be Guy Colyer and his unbelieva-BULL, C Miles McKee.

C Miles McKee recently sold for a record $600,000 (3/4 interest), the highest price ever paid for a bull, according to Guinness World Records. The previous record for a bull sale was $301,000. Recently another interest in C Miles McKee was sold, making his new value well over $1 million.

The Hereford bull was sold by Guy Colyer of Colyer Hereford & Angus of Bruneau, ID. Colyer retains one-quarter interest, with the ability to use the bull’s semen in his own herd.

“Never in my wildest dreams did I ever think that we would raise a bull that is worth over a million dollars,” says Colyer.

The world’s most expensive bull was renamed just before the sale in honor of Miles McKee, a professor emeritus at Kansas State University. Colyer noted that Dr. McKee is an icon in

CONTINUED ON PAGE 7
Early 2014 Forecast for Agricultural Exports

**Corn**
- Will increase by $2.1 billion to $10.7 billion
- From strong foreign demand and diminished competition

**Grain & Feed**
- Up from $31.3 billion to $35.8 billion
- Due to higher wheat prices and greater volumes and higher prices on corn, feed and fodders

**Soybeans**
- Up from $21.7 billion to $23.5 billion
- Based on record sales to China

**Livestock, Poultry, Dairy**
- $32.2 billion
- $32.2 billion + $600 million
- Increases in beef and dairy offset declines in pork and poultry

**Oilseeds & Products Exports**
- $33.8 billion
- A record
- Up $2.4 billion
- Driven by larger volume and higher prices for soybean and soybean meal products

Source: USDA, May 2014
Summer statistics will be released by the USDA in late August 2014
The Irrigation Association (IA) is dedicated to promoting efficient irrigation, and works to improve industry proficiency, advocate sound water management, and grow demand for water-efficient products and services.

On behalf of America’s growers, the Irrigation Association supports the Farm Bill since it not only drives innovation and productivity, but also incentivizes voluntary conservation practices that decrease the need for more regulations and other harmful burdens.

The Environmental Quality Incentives Program (EQIP) is part of the Farm Bill, and provides financial and technical assistance to agricultural producers in order to address natural resource concerns and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, reduced soil erosion and sedimentation or improved or created wildlife habitat.

“We are excited to work with the USDA in implementing the 2014 Farm Bill,” said IA’s Government and Public Affairs Director John Farner. “With an intensified focus on water quantity initiatives, farmers have more tools now more than ever to become more water efficient.”

For more information about the 2014 Farm Bill conservation title, visit:
http://www.irrigation.org/uploadedFiles/Policy/AgriculturalActof2014ConservationTitleOverview.pdf
What do you feel are the most critical issues facing farmers today in their efforts to help feed a growing world population?

A. The needs are different in various parts of the world and they vary depending on the economic status of the farmers. The U.S. will continue to play a critical role in feeding the world, but we face a number of challenges. I think our biggest issues will be reduced water availability for irrigation, and regulation of crop production practices if farmers do not embrace conservation production practices faster. The reduction of available water will come from depleted water sources, demands from urban populations, and from increased costs of requiring significantly deeper wells.

An example of this is on our farms in Arizona where we are replacing decades-old 400-foot (122 m) wells with 1,300 foot (396 m) wells. The
costs that come with such significant changes in well depth include increased power requirements, higher capital costs and additional maintenance—at a point where it becomes uneconomical to irrigate. Beyond a focus on water is a need for more attention on soil health, not just absolute yield. As farmers we need to consider our net profit and our environmental footprint above everything else.

How can we all, including farmers, continue to make better use of our existing water resources?

A. The quickest way to improve the use of water resources is simple—and we know how to do it. There shouldn’t be a flood irrigated acre in the U.S. We could conserve tens of millions of acre feet of water a year by eliminating flood irrigation. Farmers could cut water in half by switching from flood irrigation to pivot or drip irrigation, upgrading existing pivots with the most efficient sprinkler packages, and using soil moisture technology. Our government should be providing farmers the incentives to make those changes but farmers need also be very concerned about what government-led regulation might look like and self-regulate where possible.

What role will technology play in helping to make irrigation and farming more efficient, profitable, and sustainable?

A. I think we are entering a new era of technology as it applies to farming and specifically to irrigation. The efficiencies that can be gained are huge. From soil moisture probes that communicate and adjust pivot applications to variable rate application, we will continue to see new technology develop. When I joined the Lindsay Board of Directors in 1995, a pivot was a piece of iron on tires. The panel literally had two buttons. Today, pivots are evolving into sophisticated machines that will be a critical component of feeding a growing population while conserving our diminishing water resources.
How has farming and technology changed over the years on your own farms in Illinois and Nebraska?

A. I have seen a huge change in our options regarding how we plant our crops to making no-till more efficient and better management of our nutrient applications. We can be much more precise with guidance systems and technology. Over 20 years ago when I began no-tilling, the basic equipment from major manufacturers did not exist to accomplish conservation production at scale – today it does. It keeps getting better and I believe we will see continual improvements.

Describe the work you are doing through the Howard G. Buffett Foundation?

A. The foundation primarily focuses on addressing hunger, improving agriculture, securing water resources, and mitigating conflict. Historically we have spent 85 percent of our annual funding internationally. However, in the past few years our expenditures are split evenly between the U.S. and international. We have stepped up our focus on hunger in America, advocating for U.S. farmer adoption of conservation agricultural practices, and preserving water resources as it relates to U.S. agriculture.

Internationally, we work in some of the most difficult environments in Africa and the poorest countries in Latin America. We have had projects in 44 of the 54 countries in Africa including Sudan, South Sudan, Burundi, Democratic Republic of Congo, Sierra Leone, etc. Hunger and conflict are inextricably linked, so agriculture is a component of peace and sustainability.

How can your book, “40 Chances,” apply to farmers and those of us involved in agriculture?

A. The title “40 Chances” comes from my own farming experience. Farmers have about 40 growing seasons before they turn the planter responsibilities over to the next generation. That isn’t a long time when you think of it in those terms. Therefore, we need to take this short time and improve ourselves, support others, and do the best we can to leave our farms, our communities and our general environment in better condition than when we started. We can all accomplish some great things in our lifetime, but we can’t go back and straighten our crooked rows of corn just like we can’t look back and regret we didn’t do a better job in life.

Anything else you would like to add?

A. I think most of us face two obstacles when it comes to life outside our daily routine: (1) we want to help but we don’t always know how to do it; and (2) it becomes easy to forget that most people in the world do not live like we live.

Everyone reading this article will be what some call the “Global One Percenters,” which is anyone with an income that exceeds $34,000, because the other 99 percent of the world lives on less than that amount. In the U.S., the poverty line is defined in monetary terms at about $16,000, yet a typical two-bedroom apartment is out of reach in 21 states for Americans earning $34,000. So the gap isn’t that large from being considered poor in this country and rich in the balance of the world. What that translates into here at home is 50 million food insecure people, 16 million children living in poverty, and one in six of our country is going to bed hungry.

What it means globally is one in six people struggle to survive on about $1.00 per day. Food and water are the most basic ingredients of survival, and as many as four billion people do not have enough of one or the other – or both. So as farmers, those who use the earth’s resources to produce food for others, we must take our jobs seriously. U.S. farmers alone cannot feed the entire world, but we will remain a crucial part of the equation. One thing we should strive for is to ensure that no person in our own country goes to bed hungry. That is in our hands and on our watch.

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the cattle industry and had a long tenure in KSU’s Animal Science Department, where he taught for more than 40 years and headed up the department until his retirement a few years ago.

The Colyer family includes Guy’s wife, Sherry, son, Kyle and his wife, Bobby Jean, daughter, Katie, and long-time employees Tony Willis and Dan Juarez. Guy’s parents, Ray and Bonnie Colyer, also assist in the family cattle business.

The list of awards for their stock are many:

- C Miles McKee recently won the Supreme Champion award at the National Western Stock Show in Denver.

- The bull’s mother won the Supreme Champion award at Denver in 2004.

- Pacesetter, another Colyer bull, won the Grand Champion award in 1983 and again in 1984. The Colyers sold 50 percent interest in Pacesetter for $238,000 at that time.

- Since Pacesetter’s winning Grand Champion in 1983 and 1984, Colyer has had two other two-time Grand Champion bulls in Denver.

Colyer believes strongly that it takes a combination of factors to produce prize-winning genetics and breeding stock.

“Top feed, top irrigation like my Zimmatic pivots, and top genetics are all critical to meeting the overall goal of raising quality breeding stock,” Colyer says. “Sometimes, great genetics are priceless and happen once in a lifetime. But, you can’t stand on genetics alone, it takes high-quality feed from the crops grown with our pivots to make it all come together.”

Colyer, who has six Zimmatic pivots purchased from Sliman & Butler, raises corn silage and alfalfa and has about 500 registered Hereford and Angus cows.

“We couldn’t be happier for Guy and his family. They are pioneers in cattle breeding and genetics,” – Dave Butler, Zimmatic Dealer

Butler noted that the Colyers are Internet pioneers as well, purchasing the Hereford.com URL during the web’s infancy, and conducting the first sale of livestock via the Internet.

For more information on C Miles McKee and a fascinating audio recording of the record-setting bull auction, visit http://www.hereford.com.
When California dairy farmer Mark Ahlem looked to modernize the irrigation system on his farm near Livingston, in California’s San Joaquin Valley, he turned to Lindsay and three new Zimmatic 9500CC Custom Corner systems with GPS Guidance.

“I went with pivots because I had experience with them on farms elsewhere and I like the ability of the pivots to make a round in 12 hours, which can help with wind and seed germination,” Ahlem says.

Ahlem is now using the pivots to irrigate 145 acres (59 ha) of alfalfa, corn, oats and sudan. He may also grow carrots in the future. The land previously was irrigated using a combination of flood, aluminum sprinkler and tape irrigation.

Crops grown on the farm are used for feed at the nearby Ahlem dairies, with milk processed into cheese and other products at the Hilmar Cheese Company. Mark’s father, Charles Ahlem, is one of the original founders of the cheese processing company (see Hilmar Cheese Company story) and is also active in the farming and dairy operation.

“Mark and his dad are real pacesetters in that they now own what are probably the newest and most modern corner pivot irrigation systems in the entire state of California,” says Eric Stein of Agri-Valley Irrigation, the Ahlem’s local Zimmatic dealer.

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Much of California agriculture is irrigated by flood, drip or set-line pipe irrigation systems. As water becomes more and more scarce, growers like the Ahlems are looking to new technology such as mechanical move sprinkler systems for water, labor and energy efficiencies.
Another key reason the farm went to pivot irrigation is the extremely sandy soil in the area, according to Steve Bellow, Farm Manager.

Compared to flood irrigation, the center pivots on Ahlem’s farm can apply water at different rates and much more uniformly.

“Doing flood irrigation, with our very sandy soils, it took a lot of water. Plus, we couldn’t apply the fertilizers accurately. Now, with these new pivots, the water application is much more uniform. We just push a button to turn on the system. It’s a huge savings in labor and we can accurately inject the fertilizers through the pivots,” Bellow says.

FieldNET by Lindsay’s wireless irrigation management system is used to manage and control the pivots.

Mark Ahlem adds, “It’s too soon to tell the exact savings yet. However, now I don’t need to build levies and don’t need an irrigator. Plus, I’m hoping to save 20 percent on the water usage and see increased yields because of this precision irrigation.”

Ahlem went with the GPS Corner Guidance system on his 9500CCs, which eliminates the need for buried wire, because of several obstacles in the mostly-square fields, including wells, a pump station, power poles and several roads that go through and near the fields.

An added benefit is that millions of gallons of wastewater from the nearby 1,600-cow dairy operation can be pumped through the pivots and used to irrigate nearby crops, saving precious water and promoting environmental stewardship on the farm.

“We had to consider several unique challenges in developing and designing a pivot package for Mark’s fields, including obstacles in the fields such as wells, power poles and roads. We also had to account for the extremely sandy soils and the need for better water and labor savings,” says Chuck Powell, Lindsay Regional Manager. “We knew right away that the best irrigation system for these fields would be the Zimmatic 9500CC because of its ability to adapt to the unique characteristics of each field and apply water at extremely precise rates.”

**ENVIRONMENTAL STEWARDSHIP**

Hilmar Cheese Company was founded in 1984 by several central California dairy families seeking to maximize the value of the Jersey cows’ high solids milk. One of those dairy farmers is Charles Ahlem, father of Mark Ahlem.

Since its founding, the cheese company, like the Ahlem dairy farms, has focused on resource conservation and sustainability:

* The Hilmar, CA, cheese facility has the most advanced food processing water treatment and recycling facility in the state and likely the nation.
CREATE MULTIPLE IRRIGATION PLANS
Easily create irrigation plans based on crop, field or weather. FieldNET allows you to determine and schedule the amount of water applied, timing, and more.

AUTO STOP
FieldNET lets you easily program your pivot – automatically or manually – to move from one part of the field to another and stop where you want it to.

CREATE USAGE REPORTS
Monitor performance and gain insight on your entire operation and equipment using FieldNET’s customizable water and energy usage reports.

NEW! CONTROL DRIP SYSTEMS
FieldNET now remotely manages micro-irrigation systems the same way it manages pivots and laterals. You can operate and monitor drip control valves, flush cycles, chemical and fertilizer injection, and frost protection all from one single screen.

STAY IN THE KNOW
Often overlooked, alerts are also one of the easiest FieldNET features to use. Choose from text message or email alerts to stay informed about your pivot: run status, pressure, and more.

MONITOR AND CONTROL PUMPS
Gain full access to pressure, flow, water level, power, variable frequency drive (VFD) and run status.

Visit MyFieldNET.com for more information.
WAYS FIELDNET IS AN IRRIGATION GAME-CHANGER

REMOTE IRRIGATION MANAGEMENT: MADE EASY. DONE RIGHT.

CONTROL END GUNS
FieldNET makes it easy to adjust end guns to avoid watering roads or neighboring farmland.

SIMPLIFY CHEMIGATION
Reduce exposure while ensuring that chemicals are applied precisely where and when you want.

MONITOR SOIL MOISTURE AND WEATHER
Check soil moisture levels and weather conditions (rainfall, temperature, humidity) in individual fields to make informed irrigation decisions. Track trends and run reports on daily and cumulative rainfall data and other information to ensure irrigation is applied at the right time.

MONITOR PRESSURE
If a pump fails to stop when a pivot stops, a “Stopped Wet” alert is sent. You can also receive alerts for low pressure warnings, which help you determine if your system is operating correctly.

Download FieldNET’s true mobile app from Apple App Store™ and Google Play™.

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Roadside ATTRACTION

NFTrax Airless Wheel Assembly
“I love them – I can’t praise them enough. I’m very pleased with them.” Guymon, Oklahoma grower Tab Beck is talking about Zimmatic’s NFTrax airless wheel assembly.

NFTrax is the most revolutionary wheel design ever introduced to the field of mechanized irrigation. It combines pneumatic properties with all-new design concepts to maximize performance, specifically for irrigation applications.

This ideal wheel design not only provides incredible traction, consistent performance and limits downtime, but also improves wheel tracking over standard pneumatic tires and solid wheel alternatives on the market. The airless wheel design will never go flat.

NO COMPARISON

Beck grows wheat near Gruver in Hansford County, Texas. He explained that his dealer, Dennis Martin, owner of Panhandle Irrigation LLC, Guymon, OK, initially tried NFTrax on wheat to make a two-inch track, and he was unsuccessful. “I’ve been placing three times the amount of water and it still won’t make a track. I can’t believe it.

I’ve got 10-inch tracks already on other systems. Dennis and I even experimented with pneumatic tires and NFTrax on the same circle, and there’s no comparison.

NO DOWNTIME

The airless design means it won’t puncture or develop bad sidewalls, plus the open design provides less soil buildup and improved cleanout.

“When I used old pneumatic tires, every time I had a flat, was at least an hour of downtime to fix it.”

“We’ve got gummy clay soil here, and NFTrax doesn’t get stuck. I’ve tried every other option out there, and nothing works as well as NFTrax does.”

NO TRACKS

“We’ve got gummy clay soil here, and NFTrax doesn’t get stuck. I’ve tried every other option out there, and nothing works as well as NFTrax does. They’re impressive. The smoothness of them just amazes me. They stay clean.” The improved track maintenance is a result of the horizontal tread and high/low pressure soil interaction, which keeps wheel ruts to a minimum. The flexible track adapts to obstructions and rough terrain.

“My landlord originally wanted to place NFTrax on the entire pivot system, but I said no. I’m kicking myself now for not saying yes.”

TOUGHER THAN TOUGH CONDITIONS

According to Leslie Koehn, Irrigation Manager for American Irrigation, Ulysses, Kansas, NFTrax is serving its purpose well. “It’s a great fit for tough conditions, especially deep pivot tracks in our region. The ability to make pivot circles and not get stuck is critical and NFTrax helps tremendously with this.”

Through extensive field testing, NFTrax’s wheel track depth can be as much as 30-50% less than standard 11.2x38-inch tires.

“In our region, we run our pivots really slowly, especially during the pre-watering season. Our producers rarely shut their pivots off during the growing season so our fields often have very deep wheel ruts, which doesn’t happen with NFTrax.”

GAME-CHANGER

Koehn said, “NFTrax is making a huge difference on issues of tires getting stuck. We make so many pivot passes in the year, averaging over 3,000 hours per pivot per year.”

“There is nothing like it on the market. It’s the only one of its kind. It’s a game-changer because tires are such a huge expense.”

To learn more about NFTrax, contact your local dealer or visit www.zimmatic.com.
ON THE FARM

SMALL FIELD PIVOTS PROVIDE BIG RESULTS FOR IDAHO PRODUCERS

Just 15 minutes away from Gooding, Idaho is a recreation-lover’s dream. Skiing, boating, hunting – you name it. But this blend of lush grassland and rolling hills also makes this area one of the richest irrigated agricultural districts within the United States. Acres of corn, wheat, potatoes and pasture cover the sometimes rugged landscape. Large pivot systems draw from area canals, but look closely and you’ll find numerous Zimmatic® by Lindsay 7500P Small-Field pivots tucked in corners, near rough terrain and in areas only smaller systems can reach.

“The 7500P is a high-value option for these environments because it’s a sound investment,” said David Butler, owner of Sliman and Butler Irrigation, Inc. in Gooding, Idaho. “It has the height growers need to irrigate anything from low-growing grasses to corn, it’s built for durability, and it’s affordable.”

The 7500P provides maximum flexibility, effectively irrigating smaller fields and corners, up to 60 acres (24.3 ha). Featuring high tensile strength and 4.5 inch (114.3 mm) diameter pipeline, the 7500P delivers the reliability and strength that growers have come to expect from Lindsay in a compact design.

“The 7500P has the height growers need to irrigate anything from low-growing grasses to corn, it’s built for durability, and it’s affordable.”

– David Butler, Sliman and Butler Irrigation, Inc.

7500P FEATURES

| PIPELINE | 11-gauge span pipeline and tower joints |
| STRUCTURE | Exclusive Uni-Knuckle span connection offers full support, stress-free flexibility and external design to eliminate flow restriction |
| DRIVELINE | Standard 43 RPM center drive motor and AT gearbox |
The University of Nebraska-Lincoln’s (UNL) Agricultural Research and Development Center (ARDC) near Mead, Nebraska is home to one of the nation’s most unique research facilities. This multi-disciplinary research facility spans 9,663 acres (3,910.5 ha) of land with a variety of row crops and livestock. Nearly 5,000 acres (2,023.4 ha) are used for crop research, half of which utilize irrigation systems such as Zimmatic by Lindsay center pivots.

The crop production team relies heavily on technology and precise control to effectively monitor and share information on a range of areas, including prescription mapping. Among the technology used is Growsmart by Lindsay Precision VRI (variable rate irrigation) with customized FieldMAP software, FieldNET by Lindsay web-based irrigation management and Zimmatic BOSS control panels.

FieldMAP outlines the field’s unique characteristics including crop type, soil type, topography and obstacles, more accurately matching the size and shape of the field than traditional mapping tools. Using this information, individual sprinkler heads can be programmed to turn on or off or to pulse at a customized rate, assuring more efficient water use.

Further creating opportunities to improve farm management, researchers at UNL are testing advanced technologies that can be used with FieldMAP. Cosmic ray probes that can determine soil moisture and unmanned aircraft equipped with sensors to read water use and crop stress will be used to develop dynamic irrigation prescription maps for VRI systems.

“Ultimately, we’re working toward maximum water and energy conservation,” stated Derek Heeren, Ph.D., P.E., irrigation engineer and assistant professor at UNL. “With more precise mapping and monitoring technologies such as VRI with FieldMAP, we plan to equip growers to avoid over- or under-watering, which in turn will help them save resources.”

In addition, FieldNET simplifies reporting and streamlines communication among UNL’s researchers and graduate students. Its web-based platform gives approved team members access to vital information in real-time, including current status, water usage and scheduling. Students can monitor irrigation systems without gaining access to the controls.

“FieldNET is a time saver,” stated Mark Schroeder, ARDC director and farm operations manager. “Instead of spending much of our time communicating back and forth via phone or email, our students and faculty can access the data and reports themselves.”

The ARDC utilizes 18 pivots for row crops and livestock waste dewatering, many of which are Zimmatic 8500P and 9500P center pivots featuring BOSS control panels. These programmable controllers allow researchers to precisely control irrigation on uneven terrain and varying soil types. Intuitive and easy-to-use, BOSS panels require very little training to operate and maintain.

As more growers look to precision irrigation to conserve water and energy resources, the crop production team at UNL’s ARDC continues to utilize the latest technology and equipment to advance irrigation management.

Enhancing Research with VRI Featuring FieldMAP Software

Precision VRI’s custom mapping software program, FieldMAP, allows a user to assign application rates based on crop type, topography, soil type or any other variable. Irrigation zones are defined as polygons for ultimate flexibility.
PIVOT MAINTENANCE FOR HIGH EFFICIENCY

BY BILL KRANZ, PH.D.
Associate Professor & Extension Irrigation Specialist
University of Nebraska Lincoln

The goal of all center pivot irrigation systems is to deliver irrigation water. If the initial field reconnaissance has taken place correctly, the field elevation change, flow rate, pump outlet pressure and pumping water level all combine to match up with sprinkler requirements. Life is good.

But what should be done with systems that have been in the field for several years? I’ve found systems with sprinklers missing, and systems where tower boots were spewing water down toward the wheel track. There are several aspects of this that can have a very detrimental impact on water application uniformity.

Leaky systems
If extra water is coming out of the sprinkler coupler or there is a leaky boot, the pressure delivered to every other sprinkler on the system is less than the sprinkler design chart requires. So what looks to be affecting a small area of the field is actually affecting the whole area. Sprinkler cost is generally less than $40, and replacing a boot won’t break the bank either.

Temporary sprinklers
Another scenario I see involves replacing a sprinkler with one that you have lying around so that the geyser discussed earlier is not visible. Most times the owner has good intentions of replacing the sprinkler with the correct one as soon as a replacement is purchased. But then a week or two goes by, and now he has forgotten to purchase that replacement and he also needs to remember just which one of the sprinklers needs to be replaced.

A field I visited actually had three different types of sprinklers installed on the pivot. The long-term issue with making these temporary fixes is that the sprinkler may not have the appropriate distribution pattern and in most cases, the volume of water delivered in these areas is not even close to what is on the sprinkler package chart. If the sprinkler in question is near the outside edge of the center pivot, one sprinkler can cause problems for a number of acres. Again, $30 will buy a replacement that fits the system properly.

Sprinkler package design
A third issue is when the current flow rate and pressure does not match the design of the sprinkler package. Consider a situation where the original design of the sprinkler package called for 750 gallons per minute (2839 liters per minute) at 40 pounds per square inch (2.75 bar) at the pump outlet. Now change the situation so that the pump outlet pressure is only 30 psi (2.06 bar). The flow rate at 30 psi (2.06 bar) is close to 660 gpm (2498 liters per minute) and the part of the system most impacted is at the distal end of the pivot, where again, a large number of acres are impacted not only by the reduced flow rate, but the water distribution pattern is altered in a negative way.
The field productivity suffers as a result of the reduced flow rate and pressure. Installing, maintaining and monitoring the pressure being supplied to the center pivot using a $40 pressure gauge will help identify when this sort of problem is developing.

Sprinkler past life expectancy

Sprinklers have a predetermined lifespan and just cease to function properly. For example, when sprinklers begin having issues, two things normally happen: 1) part of the sprinkler is broken so that it rotates at a much faster rate than normal; and 2) the sprinkler seizes up and stops rotating all together. In both cases, water continues to be distributed by the sprinkler. However, the water distribution uniformity delivered by the sprinkler that seizes up is much lower than it should be because the deflection pad is no longer rotating.

Remember that sprinklers are designed for an expected lifetime of about 12,000-13,000 hours of operation. If your sprinklers have been on your system for 15 years, there’s a good chance that some of these problems have already started. The interesting thing about this problem is that the malfunctioning sprinklers are easy to spot from the edge of the field during routine checks throughout the irrigation season.

Sprinkler spacing

A problem that has developed in recent years is restricted to those systems that are used to irrigate corn and other tall crops. Several years ago, corn hybrids grew to a final height of between 8 and 9 feet (2.43 and 2.74 m). More recent hybrids grow to a final height of 12 feet (3.6 m) or more. Thus, tall corn means that low pressure spray sprinklers installed on drop tubes will be operating in the corn canopy for much of the irrigation season. The corn leaves intercept the water pattern, creating devastating effects on grain yield. Field data collected in western Nebraska found that corn irrigated halfway between the sprinklers yielded 40 bushels less per acre than corn irrigated directly under the sprinklers mounted on drop tubes.

The issue here was not that the sprinklers were operating in the crop canopy – it was that the sprinkler spacing was too wide for these new corn hybrids. If this system was used to apply fertilizer, both water and fertilizer were not applied very uniformly. Work conducted in Nebraska and Kansas suggests that the maximum spacing between sprinklers should be less than 7.5 feet (2.28 m) if the system is used to irrigate corn. Again, it is easy to eliminate this problem.

Sprinkler positioning

The final concern is sprinklers that are not installed on the center pivot in the correct positions. And yes it still happens. One new center pivot had a mixture of sprinklers installed between the 5th and 6th towers. The grower did not check the system out, but the yield monitor on his combine showed that the corn yield dropped by 80 bushels per acre in the area irrigated by the 5th span, and he was not impressed to say the least.

Comparing the sprinkler package design chart with the sprinklers that are installed on the pivot can eliminate these types of problems. Verifying the sprinkler package should only need to happen once in the lifetime of the sprinkler package. The printout gives coupler number, sprinkler nozzle size, and distance from the pivot point. Often the printouts are placed in the pivot control panels. If not, contact the company that installed the sprinkler package and request a copy of the printout.

Most of the items described are quite easy to remedy. The fix is often less than $100, and does not require very much time. However, failure to keep tabs on your center pivot can result in reduced yields for a significant impact on your bottom line.
NEW!
LAKOS FILTRATION

LAKOS separators and filtration products are the most environmentally efficient method for removing solids from liquids.

Sand Separators and Specialty Filters:
- Extend pivot, sprinkler, end gun and booster pump life
- Help maximize irrigation uniformity and performance
- Reduce other waste, including solids being filtered

To learn more, visit www.zimmatic.com or contact your local Zimmatic® by Lindsay dealer.

Center Pivot Low Pressure Separators
Remove sand from irrigation water to extend sprinkler life, eliminate sand in the overhang, and enhance booster pump and end gun operation.

Pump Protection Separators
Remove sand from wells before it reaches the irrigation system to extend pump and sprinkler operational life.

PC Screens
Remove debris from intake through a self-cleaning screen in adjustable mesh sizes. Optimal for canals, lakes and ponds.