H-D ELECTRIC SEPTEMBER 2021 VOL. 22 NO. 5

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A Touchstone Energy® Cooperative

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COOPERATIVE CONNECTIONS

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New Spink

MITTE

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Joyce Schermer, Karisma Tripp and Brad and Lori Johannsen are shown at Spink Family Restaurant in Elk Point

Unplug With Meaningful Community Programs



Matt Hotzler Manager

Most adults have a vague memory of a time when "checking for messages" meant listening to an answering machine. We carried on with our days without relying on cell phones and managed just fine. But today, we are more connected than ever through our smartphones and other devices.

Our phones are so much more now – from cameras to calendars to social media connections – and truly disconnecting from them can be tough. But it's even harder for our kids to unplug because they only know life with these tiny screens. It's difficult for them to imagine life without computers, gaming devices, tablets, or cell phones.

But there's great value in unplugging for children and adults, even if it's for just a short period. For kids, time away from the screen to be outside with other children allows them to connect with nature and others in a way that a virtual experience simply does not allow. They can experience life in the moment and allow their creativity and energy to break free.

Fortunately, we have access to great community programs and organizations like 4-H and summer recreation programs that provide children with a safe place to play, learn and grow, while cultivating new skills and interests.

These types of clubs and programs offer kids an opportunity to explore activities and interests outside of school academics. Children can investigate areas they might not otherwise have access to and discover new interests and passions. They often learn new skills and strengthen existing ones. It's no secret that the broader the range of experiences and activities children are exposed to, the more likely they are to find their path and possibly a career. Community programs also foster important leadership development and public speaking skills. Through guided and informal play and activities, children learn problem-solving and interpersonal skills that enable them to resolve conflicts peacefully and improve interpersonal relationships.

Adults can also find meaningful opportunities to spend time with the kids when we all unplug. From board games to craft projects to playing in the park, there are many ways we can unplug for some family fun.

While you and your children are disconnecting, take a moment to identify potential energy savings. Unplug electronics that are not in use to avoid "vampire" energy loss. This is the energy that is drained from technology and electronics even when they are not in use. For example, although it is turned off, your TV is waiting to receive a signal from the remote and your DVR is waiting to record the next show or perform an update.

Let's encourage youngsters to step away from the screens and join in. To play and be part of an organization that helps them connect with others and find meaningful interactions and explore new activities and interests.

When you do plug back in, H-D Electric is here to help you save money and energy by connecting you with our energy-saving programs and services. While we'd love to see you in person, we're also just a call or click away. We recently updated our website with a fresh look. It is at the same website address at www.h-delectric.coop

I am sure most of you have heard that many major car manufacturers will be investing and introducing several new electric car models over the next few years. That is a big change from the internal combustion engine cars we are used to. We saw the car industry trending in this direction so H-D Electric bought an electric vehicle in March of 2020 – a Tesla Model 3. We want to share our experiences with you, our members, so you can hear about them before electric vehicles become commonplace.

In July, I took a trip to the Black Hills for a meeting. It was the first time I drove the

COOPERATIVE CONNECTIONS

H-D ELECTRIC

(USPS No. 018-905)

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Tesla that far away. I had taken it to Pierre and Minneapolis which required a charge to make it back, but I had not taken a trip that would require multiple charging stops along the way.

I traveled a total of 1,022 miles round-trip with stops. Below is a chart of the stops made and costs. I drove about 150 miles between stops and did not risk being out of battery power. The car is rated for 323 miles between charges but driving on the interstate at 80 miles per hour reduces the range. I also would not charge to 100 percent as the charger slows its charge rate after it gets to about 70 percent of full charge. This helps keep the battery healthy. The cost of the charging on the road was more expensive than the H-D residential rate and averaged around \$0.15 per kWh. H-D residential rate second tier (over 1000 kWh in a month) is \$0.855 per kWh. Even with the higher charge cost the Tesla still had an equivalent of 71.4 miles per gallon based on \$3 gas. This lines up with what we have seen, with more than 100 miles to the gallon equivalent using H-D Electric rates.

Overall, the trip went well, and the charging wait time was not bothersome. Before I left on the trip, I wondered if I would be at the charging stations alone but at every station, I saw at least one other Tesla charging and at one station, I saw five. The stations had from four to eight available chargers. If you would like to learn more about our electric vehicle, give me a call and I can share what we have learned so far and we can arrange a time for you to take it for a test drive.

Charge Location	Time to Charge	Cost of Charge	Type of Charger
Mitchell, S.D	38 mins	\$6.89	Tesla superchager station
Murdo, S.D	34 mins	\$6.61	Tesla superchager station
Spearfish, S.D	17 mins	\$3.74	Tesla superchager station
Chargepoint Charg	er6 hours 40 m	ins\$6.69	Level 2 charger at the hotel
Return Trip			
Murdo, S.D	28 mins	\$6.22	Tesla superchager station
Mitchell, S.D	39 mins	\$7.65	Tesla superchager station
H-D Electric		\$5.04Used	H-D rate of \$0.0855 cent per kWh

Have a great month. With school beginning, please beware for students around schools and more traffic and school buses out on the roads.

Operating Statistics

	June 2020	June 2021
Customers		
Amount Collected	\$898,318	\$1,093,800
Average Bill	\$243.58	\$292.85
Average Kilowatt-Hour	2,027	2,612
Kilowatt-Hours Purchased	7,948,936	10,355,976
Kilowatt-Hours Sold	7,476,539	9,757,325

Be aware of overhead power lines on farms

Powerlines pose a major hazard for South Dakota farmers. Lines over roads and rural areas have a minimum clearance of 18 feet but just 12.5 feet over residential private property.

Before working in a field or around shops or grain bins, always take the time to note the location of your cooperative's power lines so that you can make sure to remain a safe distance from them and stay free from harm. To stay safe around overhead power lines, farm operators and workers must:

• Always use a spotter when operating large machinery near utility power lines.

• Use extra caution when raising augers or grain truck beds around co-op power lines.

• Keep equipment at least 10 feet from power lines - at all times, and in all directions.

• Inspect the height of farm equipment to determine the proper clearance.

• Always lower extensions to the lowest setting when moving loads.

• Never attempt to move a power line out of the way or raise it to get added clearance.

• Call your electric cooperative immediately if a power line is sagging or is hanging too low.

• If contact is made with a power line, remember that it is almost always safest to stay on the equipment. Make sure to warn others to stay away and call the cooperative immediately.

• The only reason to decide to make an exit is if the equipment is on fire. If this is the case, then remember to jump off the equipment with both of your feet together, avoiding touching the ground and vehicle at the same time.

Then, still keeping your feet together, "bunny hop" away from the vehicle until you reach a safe distance.

If you see someone else's equipment that has come in contact with a power line in your area, the best help you can give will be from a safe distance.

Make sure to yell out to, signal or call the equipment operator to make sure he or she remains in the vehicle, and notify your local cooperative immediately.

Please remember to follow these tips to avoid accidents during the harvest season.

TIPS FOR A SAFE HARVEST



The Upper Midwest Agricultural Safety and Health Center offers this useful checklist for farm safety called Stop-Think-Act. Take these steps to minimize injury risks during harvest season.

Stop

- What could go wrong?
- How bad could it be?
- Has anything changed?
- Think
- Do I clearly understand the task?
- Am I physically and mentally ready?
- Do I have the right equipment and tools for the job? **Act**
- Make it safe.
- Use the right tools.
- Follow proper procedures.
- Reduce risks.
- Stop the task if it cannot be done safely.



You put the 'pow' in power!

Madilyn Gaikowski

Madilyn sends out a special note of appreciation for line workers across the state of South Dakota. She is the daughter of Gene and Loree Gaikowski. Gene serves as the Wessington Springs line foreman at Central Electric in Mitchell.

Kids, send your drawing with an electrical safety tip to your local electric cooperative (address found on Page 3). If your poster is published, you'll receive a prize. All entries must include your name, age, mailing address and the names of your parents. Colored drawings are encouraged.

CROCKPOT CRAVINGS

CROCKPOT APPLE BUTTER

Ingredients:

- 4 cups of sugar (more or less depending on sweetness of apples)
- 4 tsp. cinnamon ¼ tsp. cloves ¼ tsp. salt

METHOD

Fill a 5 quart crockpot full of chopped apples (quartered or smaller), no need to peel, but do remove seeds. Tart apples are best. Top with the ingredients above. Lid won't fit at first but settles down as apples cook. Begin cooking on high and when bubbling, put heat on low and cook all night, or until thick and dark color. Stir occasionally. If need be, blend a few seconds to soften peels. Pour into jars and seal.

Cherie Leibel, Timber Lake

SLOW COOKER BEEF STEW

Ingredients:

3 cups water

- 1 package McCormick® Classic Beef Stew Seasoning Mix Packet
- 2 lbs beef stew meat, cut into 1-inch pieces
- 1/4 cup flour
- 2 cups potato chunks
- 1 1/4 cups carrot chunks
- 1 medium onion, cut into thin wedges
- 1/2 cup sliced celery

METHOD

Mix vegetables, water and Beef Stew Seasoning Mix in slow cooker. Coat beef with flour. Stir into ingredients in slow cooker. Cover. Cook 8 hours on low or 5 hours on high until beef is tender.

mccormick.com

CROCKPOT BUTTERNUT SQUASH WITH APPLES

Ingredients:

- 1 ½ to 2 lbs. butternut squash, peeled and chopped (about 5 cups)
- 2 to 3 tart apples, chopped (about 2 cups)
- ¹⁄₄ c. dried cherries or cranberries
- 1 ½ tsp. grated fresh ginger ½ tsp. salt
- 1/8 tsp. pepper
- ¹/₂ tsp. cinnamon
- ¹/₄ tsp. nutmeg
- ¹/₂ c. apple cider
- 14 tsp. salt

METHOD

Combine all ingredients in your slow cooker and stir together. Cover and cook on low 3-4 hours or until squash is tender, then turn to warm until serving. Can also be baked in conventional oven at 325 degrees until fork tender. Sweet potatoes can be used instead of butternut squash if desired.

Linda Sherry, Sioux Falls

Please send your favorite dairy recipes to your local electric cooperative (address found on Page 3). Each recipe printed will be entered into a drawing for a prize in December 2021. All entries must include your name, mailing address, phone number and cooperative name. Dear Pat: I was an electric vehicle skeptic, but I just saw an announcement of the all-electric Ford F150 Lightning. I didn't realize electric pickups could be this compelling or competitive. Are there other electric pickups or SUVs coming out soon? - Mike



Pat Keegan Collaborative Efficiency



Brad Thiessen Collaborative Efficiency

Electric SUVs are available now and pickups will be soon. This development has been anticipated for years. Electric vehicle (EV) sales are about 24 times higher than they were 10 years ago, with several factors driving demand:

• The instant torque from electric motors boosts acceleration.

• The low center of gravity improves handling and reduces rollover risk.

• The superior traction control of electric motors can increase off-road capability and safety in winter.

• The upfront cost of an EV purchase is now more competitive with similar internal combustion models, and most EVs qualify for a federal tax credit of up to \$7,500.

• The cheaper operating fuel cost per mile (for electricity) compared to gasoline or diesel is another attractive feature for drivers.

Ford's electric F150 Lightning is scheduled to arrive in spring 2022, starting under \$40,000 for the commercial trim package (230-mile range model). A 300+ mile battery is an option, and all models are 4X4 with respectable towing and payload capacities. The Lightning is also equipped to provide 9.6kW of home backup power or portable power for a jobsite.

Tesla has more than a million preorders for their new Cybertruck, which will likely arrive in 2022. The 250-mile range 2WD model starts under \$40,000 and steps up to \$50,000 for the 300-mile range 4WD model. Tesla plans to offer a 500+ mile range version for \$70,000 that can tow more than 14,000 pounds.

GMC has announced a late 2021 release of an electric Hummer with 1,000 horsepower and additional features for off-road performance.

Rivian, a startup backed by billions of dollars from Ford and Amazon, is planning to unveil their R1T electric pickup later this year.

Crossover SUVs (CUVs) are one of the most popular types of vehicles, and a number of manufacturers say they'll have electric models available soon. Ford's Mustang Mach-E is actually available now with a range up to 305 miles, starting at \$45,000. Volkswagen's ID4 CUV starts at \$40,000 and is available with AWD options. More electric SUVs are coming, including Rivian's R1S, Nissan's Ariya and Volkswagen's six-passenger ID6.

Tesla has more than a million preorders for their new Cybertruck, which will likely arrive in 2022.

And it's not just vehicles that are shifting to electric. Electric snow machines and jet skis are arriving soon. Even large construction equipment like excavators, backhoes and heavy-duty trucks will have electrically fueled models.

One remaining hurdle for increased EV adoption in rural areas is fast, sufficient charging for longer trips. Most EV owners charge at home, but more fast-charge stations on rural highways will be helpful.

If you're interested in an EV, talk to your electric co-op. They may offer special EV rates or rebates.

THE MAGIC TOUCH

REZA BURNS

Brookings native and rising magician puts SD on the entertainment map

Billy Gibson

billy.gibson@sdrea.coop

While most of his peers at Brookings High School were playing sports, hunting and entering rodeo events, Reza Borchardt was venturing off in a completely different direction.

He was pursuing his childhood dream of becoming a magician and master illusionist in the style of his idol David Copperfield. From the time Reza (pronounced ray-zuh) got his first magic kit, he was determined to make a life and a living in the world of entertainment.

Today, Reza is on the tail end of a 140-day stretch captivating audiences at Branson's Famous Theater and making a big name for himself across the globe. In addition to touring extensively to more than 30 countries, Reza has made appearances on A&E's popular Duck Dynasty show and the CW network's Penn & Teller: Fool Us.

It all began for Reza in elementary school when he was asked to go on stage during a magic act. When he saw the response the magician was getting from the audience, that's when he caught the bug. By the age of 14, Reza was performing magic acts of his own and was inspired after meeting Copperfield in person on several occasions during his youth. By the time he was in college at SDSU, Reza was already touring across the region performing at corporate events and concert halls.

"When I got asked to go on stage and the guy was doing a simple trick with rings, it seemed like a really big deal. The kids were into it," Reza remembered. "That laid the groundwork for me. My parents bought me a magic kit and took me to see professional shows in Branson. I started building props and putting together an act in a warehouse in Brookings and started traveling and having some success."

When he was able to sell 200,000 tickets over 40 shows at a theater in Acapulco, that's when he had a hunch he could make it as a pro.

But Reza is savvy enough to know that the key to sustaining success in the business is reinventing his act and conceiving new ways to keep and hold the attention of audience members. That's how Copperfield was able to reach legendary status, he said.

"You have to find a way to keep making your brand relevant and keep your show exciting. People have so much sensory overload and the ways we receive information is moving so fast. So, I'm constantly updating the show and elevating the art form," he said. "I still film every show and watch it and critique it and look for ways to improve."

On stage, Reza carves out time to mention his South Dakota background and share stories of growing up in Brookings on the "cornfield side of the state." In some ways, he sees himself as an ambassador for South Dakota.

"I want to always remember my humble beginnings and how excited I was to be that kid who had dreams and plans," he said. "It's a vision that I saw happening, and now it has come true. And to think it all started in South Dakota...that's insane."





Rhonda Otten, along with her husband and three sons, has worked to keep Spink Family Restaurant open for business. *Photos by Billy Gibson*

Spink restaurant emerges strong from hardships brought by fire and pandemic

Billy Gibson

billy.gibson@sdrea.coop

Old Spink. New Spink. That's how Rhonda Otten variously refers to her restaurant, depending on whether she's alluding to the Spink Café that burned down in 2019 or the Spink Family restaurant that was throttled by the pandemic but is thriving today.

For more than 20 years, the Spink Café was a big draw in the township located in Union County. The eatery was known for its Friday night fish fries during Lent, Sunday dinners and its famous Spinkburger. The 80-year-old structure had recently been re-decorated with a 50s theme, featuring old LPs, vinyl album covers on the wall and pictures of Elvis Presley.

But life for Otten and her husband Sam changed in November of 2019 when the area's most popular attraction was totally consumed by fire.

The way the Ottens saw it, there was no option but to rebuild. But the planned resurrection of the business wouldn't occur in the confines of Spink. The new iteration, renamed Spink Family Restaurant, would be located in the old American Legion hall in downtown Elk Point.

By all accounts, the "new Spink" wasn't so easy to bring forth from the ashes. Two weeks after working hard to get the new facility ready for business in Elk Point, the pandemic hit and threatened to dash the Ottens' hopes for good.

"The fire was in November, we made the decision to keep going in December, and we re-opened in March. We were open for two weeks when the pandemic hit, Rhonda said. "Those two weeks were very, very busy. It was a madhouse in here. We had a lot more space and we were finally getting in the groove."

Facing the same problems as just about every restaurant owner in the state and nation, the Ottens were forced to hit the pause button and try to figure out the next step to take. They closed for a month, regrouped, and then returned to offer carry-out service only.

Members of the community rallied to support the restaurant, including employees at Union County Electric located just two blocks away.

According to Union County Electric General Manager Matt Klein, the cooperative always strives to support other local businesses that help the community thrive.

"At lunchtime you're likely to see some of our guys eating there," Klein said. "When they had carryout, we ordered food for meetings and just did what we could to help – just like we do with other members of the community. We help whenever and wherever we can."

SPINK RESTAURANT



Server Karisma Tripp tends to another satisfied customer at Spink Family Restaurant in Elk Point.

Rhonda said it was inspiring to see the town pull together to face the impact of the pandemic, and also to help the business survive after the back-to-back calamities.



Cody Olson, center, enjoys lunch with his co-workers from Valley Ag Supply.

"The community really supported us and we're very grateful for that," she said. "But we've seen this many times before; people watching out for each other and helping when there's a need. That's what really pushed us through."

One regular patron who is happy to see the new Spink succeeding is Joyce Schermer. She occupied a table in the restaurant one recent lunch hour along with her son Brad Johannsen and his wife Lori. The Johannsens are regular visitors to the area from Sedona, Ariz., and always make a point to stop at Spink, preferring the hot beef sandwich and the prime rib sandwich.

"It's always good every time you come," said Schermer, a resident of Akron who opted for her go-to French Dip. "You're never disappointed in the food or the service. It's wonderful."

Also enjoying a lunchtime meal were several employees of Valley Ag Supply. The company is located a half mile from the old Spink building that was destroyed by fire.

"We used to go there all the time and we were disappointed when it burned down. You could see our fertilizer plant from there," said Cody Olson while noshing on the French Dip. "Now there's no place to go. So, we just drive into town because it's so good. It's great that they came back and are still operating."

As for "old Spink," the Ottens are still trying to figure out what to do with the heap left in the wake of the conflagration. The building had an upstairs apartment where several members of the family lived at Percentage of South Dakota restaurants

75% forced to lay off some staff members during the pandemic.

various times through the years.

"It's going to have to be torn down eventually, but we just don't want to let it go," Rhonda said. "There are so many memories attached to that place; both of our parents were such a big part of it."

She emphasized that while the restaurant is in a new location, the food is the same as before. The Ottens, who have always used family recipes, depend on all three of their sons – ages 17 through 23 – to handle the cooking to maintain consistency on a daily basis.

"The secret to our success is that the five of us do all the cooking here. We use time-proven family recipes that have been popular for decades," Rhonda said.

Plan On Safety This Harvest Season

Harvest is upon us and your local Touchstone Energy Cooperative would like to remind local farmers to stay safe this season. Overhead power lines can be easily overlooked and deadly if ignored. While you focus on getting those crops out of the ground, your local electric cooperative urges you to review these important tips.

BE ALERT

Awareness doesn't spread as fast as an electrical current, but a little goes a long way. Remember to look up and look out for power lines this harvest season. Follow these Four S's to Stay Safe.

STAY ALERT. Avoid distractions when operating farm equipment. While harvest days can run long, failure to be aware of your surroundings can lead to power line contacts and other accidents.

SLOW DOWN. Cold weather often delays harvest in our region. If you get in the fields later than you had hoped, avoid the temptation to rush through your work. Slow down and stay safe.

STUDY. Educate yourself on any new equipment you may have purchased recently. New equipment has higher antennas and attachments than ever before. What cleared power lines in previous years may not in your new ride. Know what you're working with.

SEARCH. Sometimes trees or brush can make power lines difficult to see. Don't just glance up, really take a minute to search your surroundings when moving equipment.

BE PREPARED

Hitting a power line can be scary. In certain situations, there may be

a lot of noise, which may spur your instinct to run – you've got seconds to understand what's happening and respond appropriately. Do you know what to do if you come in contact with a power line?

STAY PUT. Unless there is a fire, you need to stay calm and stay in the vehicle. Touching the ground and the vehicle at the same time (i.e. stepping out of the equipment) can be deadly. Don't risk becoming a conduit for the electricity to move from the vehicle to the ground through you, stay put. Even if it's loud.

CALL FOR HELP. Call for help from the vehicle if possible. 911 is a good place to start, especially if you don't know your local electric cooperative's number. If you don't have your phone, try radioing for help. If someone

Overhead power lines can be easily overlooked and deadly if ignored.

comes to assist you, they need to stay at least 40 feet away from the vehicle until professional help has arrived.

JUMP CLEAR. If there is a fire forcing you to leave, jump clear of the equipment. Jump with your feet together, as far away from the vehicle as possible. Be sure that no part of your body touches the equipment and the ground at the same time. Then, shuffle (tiny, quick steps) or hop with your feet together at least 40 feet away. Electricity spreads through the ground in ripples. Keeping your feet together prevents one foot from stepping into a higher voltage zone than the other foot, which could cause electrocution. Stay away from the equipment and keep others away until the authorities tell you it's safe to return.

Remember these life-saving tips while working in the fields this fall and help spread the word about the dangers of large farm equipment and overhead power lines. Together, with the power of prevention, we are re-energizing farm safety.



Smart lights outshine traditional bulbs

Smart lighting systems are growing in popularity and for good reason. Check out these seven reasons why smart lighting outshines their traditional counterparts.

Increased Security

Smart lighting systems are designed to connect to your smartphone. Not home? Mimic your presence by turning them on with a simple tap of your screen from wherever you are. They can be set to come on at scheduled times or randomly and can even connect with other smart devices like security cameras.

Increased Energy Efficiency

Smart lights use CFL or LED bulbs, both of which require less electricity than traditional incandescent bulbs. Less electricity use means a lower energy bill, saving you money.

Longer Life

Most incandescent bulbs have a lifespan of 750 to 2,000 hours. However, LED smart lights can be on continuously for up to 50,000 hours, which will save you money on multiple bulb replacements.

Easily Customizable

Whether playing a game or snuggling in for a movie, many rooms in your home are often used for multiple purposes. Customize your smart lighting to suit your needs at any given time. Brighter for when you want to focus. Dimmer for when you want to relax.

Set the Mood

Beyond brightening and dimming, lighting can help set the mood for any occasion. Cheering on your favorite team? Set your bulbs to match their colors. Enjoying a romantic evening at home, soft, warm lighting is just the thing. Friends coming over for a party? Set your lights up to switch colors every few minutes.

Sync Them

Kick up your average movie or game nights with smart lights that sync to your home theater, stereo or computer.

Sleep Benefits

Set your smart lights to a turn off at a slow fade to fall asleep more naturally. Set them to turn on the same way for a gentle, natural wake up.



H-D Electric Cooperative will be closed Monday, Sept. 6, 2021, in celebration of Labor Day. Have a fun and safe holiday!

Energy Efficiency Tip of the Month

Energy used for cooling and heating your home makes up the largest portion of your monthly energy bills.

By combining regular equipment maintenance and upgrades with recommended insulation, air sealing and thermostat settings, you can save about 30% on your energy bills while helping our environment.

Source: energy.gov

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LEARNING FROM ADVERSITY

The Dakota Lakes Research Farm produces information helpful to farmers and ranchers dealing with drought. Photos by Billy Gibson

SDSU agriculture researcher Dwayne Beck looks for better ways to gain higher yields through crop rotations and other techniques

Billy Gibson

billy.gibson@sdrea.coop

The drought conditions that gripped the state through the summer months caused difficulty for farmers and ranchers. The drought in 2012 also made it difficult to grow and harvest a productive crop.

But it's the drought that occurred in 1988 that Dwayne Beck remembers most. Beck, 70, is a researcher with SDSU who runs the Dakota Lakes research farm near Canning.

According to the National Integrated Drought Information System, as of June 23 more than 97 percent of South Dakota and all of Minnesota were categorized as "abnormally dry."

As someone who considers himself a seasoned investigator and problem solver, Beck looks at the current drought conditions as an opportunity to learn.

So, what exactly did the farming and ranching community learn in 1988 when adverse weather conditions caused an estimated \$60 billion in agricultural damage across the U.S.?

"We learned not to do tillage," Beck responds without hesitation. "This drought is about the worse I've seen since 1988, and we learned then that in this part of the country if you till, you're screwed. No-till gives you a chance to have a decent crop and run a viable farming operation."

And the key to succeeding without tilling is proper crop rotation. That's what keeps Beck and other researchers busy.

On a recent afternoon, Melanie Caffe and her assistant Nick Paul were operating a small combine to gather their test crops laid out in strips measuring five feet wide by 20 feet long. Caffe, a native of France, is an ag professor at SDSU, while Paul is a local farmer and research technician.

The two-member team moved from section to section, cleaning out the collection bin as they went to keep the samples from being contaminated and corrupting the research data. The samples were



Dwayne Beck runs the Dakota Farms research facility near Canning.



Melanie Caffe and Nick Paul collect samples from a field at the Dakota Farms Research Station near Canning.

bagged and taken into the lab where Caffe and Paul planned to perform fertility experiments with the goal of developing varieties with higher yield, higher quality and stronger drought resistance.

Much of the research centers around maximizing yields through effective crop rotations. Beck has spent much of his career considering the ways farming was conducted 100 or more years ago and how it can be improved.

"The Natives grew crops before the Spaniards came and brought horses. They were all no-tillers because they didn't have cows and horses to pull the plows. They grew 13 different kinds of corn, beans, squash and sunflowers. They were very successful. The settlers never asked anyone how to grow crops here, they just got out their plow and started turning over the soil."

Beck has seen the wonders of crop rotation in his research. Some of his fields are rotated five ways.

"Good rotations can produce a lack of disturbance in places where you don't have a lot of water. Our research shows 99 percent of resistance issues could be solved with better crop rotations. There are fields where we haven't used insecticides for 18 years."

Beck said his methods aren't always adopted by industry but he continues to gather data and push out the information obtained through research.

"The nice about being a research guy is you always have more things to learn," he said. "The more you research, the more you don't know, but we're always looking for answers."

HOPS GROWERS NAVIGATING THEIR WAY THROUGH CHANGING INDUSTRY

Billy Gibson

billy.gibson@sdrea.coop

In many ways, Ryan Heine is like the average South Dakota farmer. He frets about the weather, plans for the future, worries about finances, watches the markets and is constantly trying to find a buyer for the crop he hopes will make.

But his crop is unlike most of the others that emerge from the South Dakota soil. Heine is owner of 6th Meridian Hop Farm near Yankton. His is one of six such farms left in the state growing hops for brewers to transform into craft beer.

Heine also sees his work as different compared to most farmers – he relies on his nose a lot. "There's a lot of

"There's a lot of experimenting with different aromas. There are so many flavor profiles and



varieties of hops that are used in creating craft beer," he said. "There's a vast palette of different aromas, and the market will dictate what consumers prefer."

Ryan and his wife Michelle launched their hop operation in 2014, leaving Omaha and returning to the small family farm near Yankton in pursuit of a more grounded lifestyle for their five children.

"We wanted to get out of the city and back to our farming roots," said Ryan, who works remotely as an electrical engineer for a company out of Minneapolis.

Ryan's interest in growing the essential elements of craft beer began when he was a student at Parks College in St. Louis, Mo. He went out with his friends and found most of what was offered at bars, pubs and restaurants was bland and uninspiring. He knew he liked the flavor of beer and he knew he liked the simplicity of the farming lifestyle.

"So I started doing some home brewing and found that it was a fun hobby to pursue. Now we have one of the biggest operations in the state," he said.

Heine's time on the farm is spent fussing over flavor and aroma profiles, acid levels, yeast growth, oil content, insect invasions, disease infections and more. He and Michelle do all the growing, harvesting, processing, drying, pulverizing, preserving, pressing and packaging.

He finds markets by visiting with brewers, forging relationships across the region and even keeping in touch with his college buddies.

"There are some college roommates I've kept in touch with who are brewers and we're always talking about how to improve our products," he said. "Hops growers are down to just a handful in the state, but for those who have survived, I think the outlook is good."

A STICKY SITUATION

BULLISH ON BEES

Beekeeping industry struggles with drought and other obstacles along with overall agriculture sector

Billy Gibson

billy.gibson@sdrea.coop

Becoming a beekeeper wasn't something Chad Holbrook dreamed about back when he worked as a farm loan officer in Texas.

But he decided it might be an interesting hobby, so about 10 years ago he bought himself a hive just for the fun of it.

As things sometimes tend to go, one hive led to two, two hives led to four and before he knew it, Holbrook was giving his day job the boot. Goodbye business suit, hello beekeeping suit.

These days, Holbrook manages about 3,000 hives out of his main headquarters in Fairfax, MN, although he still has some hives back in Texas. A member of RenvilleSibley Co-op Power, he ships his hives for pollination purposes all across the Midwest and to other regions as well to help growers gain higher crop yields.

"After I got my first bee hive I just really enjoyed doing it, and it snowballed and just kept increasing every year," Holbrook said. "I finally quit my day job to run the business in January of 2017, which is something I never thought I'd do."

That's a move that took some courage because Holbrook knew from his brief experience that while bees can be tough buggers, they also have plenty of obstacles threatening their place in nature and their very existence.

After all, some of the boxes, frames, pallets and extraction equipment he purchased to start his own operation were acquired from beekeepers making a bee-line straight out of the business.

The list of real and potential apiary antagonists is long. Apiculturists are constantly trying to protect their colonies from various types of threats including several species of mites, insecticides, pesticides, extreme weather and destruction of their habitat.

One pitfall not often discussed in the public discourse is the attrition that takes place from merely moving colonies from one patch of farmland to the next, and in some cases, moving hives from one spot to another to protect them during the inclement non-pollinating months.

Holbrook figures the attrition rate can be up to 10 percent anytime hives are loaded onto a truck and hauled to different locations. It's a significant loss considering an estimated one-third of the world's food supply depends on the pollination work performed by

A STICKY SITUATION



Honey bees pollinate roughly one-third of the world's agriculture crops.

honey bees. Since 2010, beekeepers in South Dakota, Minnesota and across the country have experienced historically high colony loss rates of nearly 30 percent a year impacting roughly 90 different agricultural crops ranging from almonds and apples on the West Coast to cotton and cranberries in the East.

"Keeping them alive is the hardest thing," Holbrook said. "There are substances farmers use to manage vegetation and help their crops, but it's causing a reduction in the forage area for bees. But everybody has to make a living and I don't fault the farmers...if I were them I'd probably be doing the same thing. But we can all look for ways to be more environmentally friendly because we're all making a living off nature." Holbrook, who describes himself as a migratory commercial beekeeper, typically transports bees to California every January to pollinate that state's almond crop and then heads to his facility in Texas to extract honey. July is the slowest month of the year, then there's a short fall season before the bees head to an indoor storage facility in Idaho for protection against the cold.

Despite the drought conditions that have caused stress for farmers, ranchers and apiculturists across the region, Holbrook is bullish on the beekeeping industry. He noted that the city of Sioux Falls recently approved an ordinance that allows residents to maintain hives on their property. Would-be beekeepers must The estimated value \$9.2 billion of the worldwide honey market

apply for a permit, take an online class, inform their neighbors of their intentions and adhere to other prescribed guidelines.

Holbrook reports that through the spring and summer seasons - and despite the drought - honey prices have seen an upward shift. For instance, he said the price for honey in the region last year was about \$1.70 per pound but has climbed to more than \$2.25. The international market is expected to expand from \$9.2 billion to \$19 billion by 2028.

"We were fortunate that we've had some timely rains and the hot, dry weather hasn't caused problems for my business. It has been an average crop for me. But you don't ever really know for sure until the honey is extracted," he said.



According to owner Kiah Crowley, Sunrise Hives in Spearfish maintains about 400 bee colonies. Photo by Sunrise Hives

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