living with energy IN IOWA

APRIL 2021

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Win a $100 gift card to plant a vegetable garden ▶ See Page 3

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Meet the Freml family: A brotherhood of linemen

Plant a no-till garden this spring

Pecan-inspired recipes

Iowa Association of Electric Cooperatives
A Touchstone Energy® Cooperative

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ON THE COVER

Congratulations to Kay Popelka, a Consumers Energy member, for supplying the cover image for this month's issue of *Living with Energy in Iowa* magazine! She captured this photo during a recent Tulip Time Festival in Pella.

Spring forward with safety in mind

BY SCOTT MEINECKE

Spring is in full swing, and there are several safety precautions to be mindful of this season:

Call before you dig

April is National Safe Digging Month for a reason! Many of us will be working on landscaping and home improvement projects. Remember to contact Iowa One Call at least two business days before you dig to any depth so underground utilities can be properly located and marked. It's the law, and it could save your life or prevent serious damage. Before you dig, call Iowa One Call at 8-1-1 or visit www.IowaOneCall.com to process your request.

Move over or slow down on the road

We need your help in keeping our lineworkers, engineers and maintenance workers safe on Iowa's roadways. If you see any vehicle stopped on the side of the road with flashing lights activated, you are required by law to move over or slow down, preferably both. Please give our employees room on the road; their families thank you!

Kids at play

Talk to your children about the dangers of electricity and to stay away from power lines, utility poles and pad-mounted transformers. Keep kites, balloons and flying toys away from electric equipment and always assume power lines are energized and dangerous. Never use electricity near pools or water without using ground fault circuit interrupter (GFCI) outlets.

When thunder roars, go indoors

Storm season has returned and there is no safe place from lightning when you're outside. Be aware of weather forecasts and watch for developing thunderstorms as lightning can strike many miles ahead of a storm front. If you hear thunder, seek shelter immediately because it indicates lightning is within 10 miles of you. Safe shelters include inside a building or in an enclosed metal-topped vehicle. Authorities warn against outdoor activity until 30 minutes after the last clap of thunder is heard.

Safety in the field

As you head into the fields to plant, keep a 10-foot clearance between your equipment and power lines at all times. Take time to study where all overhead power lines, poles and guy wires are located on your property and inform your workers about them. Plan your route between fields and on public roads so that you avoid low-hanging power lines; never attempt to raise or move a power line to clear a path. When moving large equipment or high loads near a power line, always use a spotter to help make certain that contact is not made with a line.

If equipment comes into contact with a power line, assume the line is energized and deadly. The operator should NOT get off the machinery unless in immediate danger. If the operator touches the ground and the equipment at the same time, they will become a channel for electricity. Instead, the operator should stay on the equipment and contact the local electric utility or 911 immediately to report the incident so power lines can be deenergized safely before exiting.

Scott Meinecke is the director of safety and loss control for the Iowa Association of Electric Cooperatives.

EDITOR'S CHOICE CONTEST

Win a $100 gift card to plant a vegetable garden

It's almost time to plant a garden, and there are some steps you can take to make your home garden more efficient. Learn more on Pages 10-11 of this issue. Plus, we'll award one lucky winner with a $100 gift card from a local nursery to plant your garden this year!

Visit our website and win!

Enter this month's contest by visiting www.livingwithenergyiniowa.com no later than April 30, 2021. You must be a member of one of Iowa's electric cooperatives to win. There's no obligation associated with entering, we don't share entrant information with anyone and multiple entries from the same account will be disqualified. The winner of the Breville Juice Fountain from the February issue was Dawn Reiser from Raccoon Valley Electric Cooperative.

MiEnergy Cooperative wins national industry award

The National Rural Electric Cooperative Association (NRECA) recently announced MiEnergy Cooperative as the winner of the 2021 Electric Cooperative Purpose Award at its PowerXchange Conference. MiEnergy provides electric energy to about 22,800 services in northern Iowa and southeastern Minnesota.

The award recognizes electric cooperatives who work with their membership to make outstanding contributions, which result in visible, lasting improvements to the quality of life and the purpose of the cooperative in the community.

NRECA highlighted the cooperative's partnerships as being innovative and helping to boost the quality of life for its members. MiEnergy members who were frustrated with the lack of high-speed internet in rural areas reached out to see if the electric cooperative could help.

In 2018, MiEnergy Cooperative answered by partnering with two local telephone cooperatives, Mabel Cooperative Telephone Company and Spring Grove Communications to create MiBroadband. Since then, MiBroadband has expanded to serve over 600 subscribers and has been a winner of federal and state grants and loans to help bring broadband to local rural residents.

MiEnergy also partnered with NRECA and the Iowa Economic Development Association to pilot a residential battery storage program.

"MiEnergy has distinguished itself as a progressive electric cooperative that is always looking for new opportunities to control costs, enhance service and exceed member expectations," said NRECA President Curtis Wynn. "Its continued success in improving the lives of people in its community is why MiEnergy is so deserving of this award."

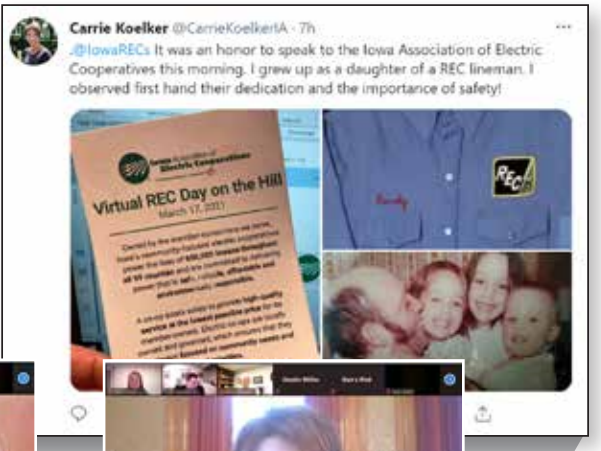
Brian Krambeer, president/CEO of MiEnergy accepted the award

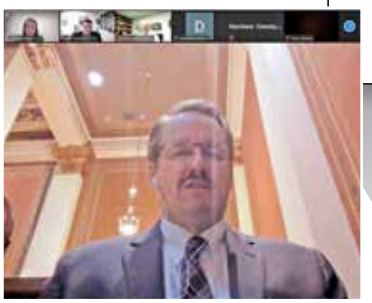
(pictured), and said, "Our team is humbled to be recognized for this distinguished award. I'm also very proud of our employees and board of directors in what we have been able to accomplish on behalf of our membership with the creation of MiEnergy Cooperative."

NRECA is the national trade association that represents more than 800 electric cooperatives.

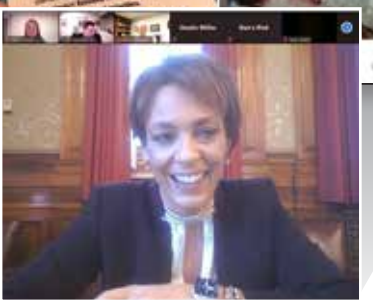
Co-op advocates discuss top priorities with legislators

On March 17, employees and directors of Iowa's rural electric cooperatives (RECs) met virtually with their local state representatives and senators. The event, known as REC Day on the Hill, is typically held at the Iowa State Capitol during the legislative session and provides co-op leaders with the opportunity to discuss issues important to the state's member-consumers. Due to the ongoing pandemic, instead of being in Des Moines, co-op leaders used Zoom to hold a virtual event. The meeting included REC participants from over 120 locations and guest appearances by Sen. Carrie Koelker (R-Dubuque) and Rep. Dave Deyoe (R-Story). This year, topics included vegetation management, expanding broadband connectivity and balancing sales tax treatment of utilities. To learn more about statewide advocacy efforts by Iowa's electric cooperatives, visit iaruralpower.org/advocacy.





Rep. Dave Deyoe (R-Story)



Sen. Carrie Koelker (R-Dubuque)

Spring forward with energy savings

As spring weather arrives, and nature comes out of winter hibernation, it's easy to think green. While green could be spring's signature color, green means something even more to your electric cooperative. It is synonymous with electric cooperatives' environmental responsibility initiatives, and it's something co-ops take seriously in every season.

As you gear up for warmer weather, it's a great time to expand your "spring cleaning" routine into discovering energy-saving opportunities. These steps can reduce energy consumption and lower your energy bills as warmer temperatures arrive.

10 ways to save energy:

1. **Seal and insulate.** Air loss through ducts accounts for about 30% of a cooling systems' energy consumption. To keep the cold air inside and the warm air out, insulate your attic and walls, and seal cracks and openings.
2. **Cover the windows.** During the cooling season, about 76% of the sunlight that hits a double-pane window enters and becomes heat. Installing window coverings or closing the blinds can reduce energy loss through the windows and lower cooling bills.
3. **Buy ENERGY STAR products.** Look for the ENERGY STAR label, the symbol of quality and energy efficiency, on a wide range of consumer products to save up to 30% on related electricity costs.
4. **Use ceiling fans.** Circulating the air in a room can allow you to raise the thermostat setting about 4 degrees F while keeping the same comfort level.
5. **Clean and change filters**. Routinely replacing or cleaning your air filters can lower your air conditioner's energy consumption by 5-15%. Schedule an air conditioning checkup to ensure the equipment is running efficiently.
6. **Turn it off.** Turn off all lights, appliances and electronics when not in use.
7. **Program it.** A programmable thermostat, properly programmed, can save up to 10% on cooling and heating costs.
8. **Reduce water temperature.** Reduce water heater temperature to 120° F to save energy and money on heating water. Turning down the water heater thermostat also can prevent scalding, which is great for households with young children.
9. **Do laundry with cold water.** Wash clothes in cold water to save an average of $63 a year.

10. **Control the flow.** Use low-flow faucets and shower heads to save on water heating and water consumption.

A brotherhood of linemen
connected through cooperative service

BY ANGELA CATTON

Electric cooperatives set aside the second Monday in April to celebrate and recognize the men and women who work around the clock to keep the lights on. Lineworkers are some of the most visible people at your local co-op, and every day of the year, we appreciate the commitment and passion they bring to serving members.

In many families, the tradition of being a lineman may involve some family members across generations. For the Freml family of western Iowa, all six children in a single generation became linemen.

Wes Freml with his sons (left to right) Jim, Charley, Rich, Joe, Tom and Gerry in 2010.

Photo Credit: Ed Thompson, October 2010 issue of *Rural Electric* magazine. Used with permission.

A legacy begins

The Freml co-op story begins in Denison in the 1950s, on a 200-acre family farm. Wesley (Wes) and Rita Freml were grain farmers who also raised livestock and received their electric service from South Crawford Rural Electric Cooperative (which eventually became Western Iowa Power Cooperative).

The Fremls raised six children – all boys – on that farm. Sons Jim, Tom, Charley, Rich, Joe and Gerry were responsible for contributing to the operation. While having six sons to carry on the operation would have been a dream come true for Wes, he quickly realized he was facing a dilemma – farm work was tough, and there wasn't enough land to pass along to six boys. How could he secure a future for his sons, raised with a foundation of service to their neighbors and the agricultural community?

Jim. Wes' eldest son, Jim, seemed curious when the local REC guys came around the farm. "Dad worked horse teams with a few guys who worked for the REC, and he had spoken to them about their experiences," he explains. A neighbor, Vernon Newman, also served on the board of directors.

Wes took Jim to the REC, where they learned there would be an opening due to an upcoming retirement. The timing was perfect for Jim, so he went to power line school at Northwest Iowa Vocational School (now known as Northwest Iowa Community College) in Sheldon. He graduated in 1973 and went to work for South Crawford Rural Electric Cooperative.

Following in their brother's footsteps

Tom. Tom had an affinity for farm work and often performed odd jobs for several neighboring farms. "We were Baby Boomers and at that time, every family had a big batch of kids," Tom says. "Since land was scarce, I knew I might have to consider another career but wanted to stay in a rural setting. I also enjoyed working for the neighbors we knew so well."

Tom talked with Jim about his work and soon realized that work for a co-op provided opportunities to serve the rural community. Tom completed his education at Northwest Iowa Vocational School, graduating just one year and three months after his big brother. Tom went to work for Central Iowa Power Cooperative (CIPCO) in Creston.

Charley. Charley was convinced his career would take on a different trajectory. Following high school, he worked at the local meat-packing plant. The work was hard. "You wore rubber boots and gloves all day long. I wasn't happy in that environment," recalls Charley.

Wes saw the careers Jim and Tom were building and felt compelled to give Charley a gentle push. He offered to pay Charley's tuition to Northwest Iowa Vocational School if Charley could pay for his room and board. "I was a saver," Charley adds. Covering room and board was easy, and he couldn't pass on the opportunity. He graduated from the lineman program in 1977 and went to work for Glidden REC, which later became Raccoon Valley REC.

Gerry. Wes had helped his youngest son Gerry rent and work ground while he was still in high school. Gerry enjoyed the work but was experiencing the pressures of the farming economy in the early 1980s. Gerry admits, "I saw no future in it. I knew I wanted to go to school in Sheldon, too." Two weeks after graduation, Gerry headed for power line school, graduating in 1981. Soon after, he accepted a position with Northwest Iowa Power Cooperative (NIPCO) on the Harlan Outpost crew.

Rich. Rich worked for the local Safeway grocery store and thoroughly enjoyed it. "This was going to be my career," Rich says. "But when the national office closed many of Iowa's stores, I was forced to consider other options." Rich trained in law enforcement, walked beans and even acquired a CDL (chauffeurs driving license) and worked a pop-route.

Rich felt uninspired. Brother Gerry had learned of an opening for a boom truck operator at Nishnabotna Valley REC in Harlan and Rich was soon hired (in 1983). After four years of driving the boom truck, Rich began assisting with installing radio-controlled switches at member locations to support the co-op's load management program. From there, Rich moved into member services.

Joe. Joe also became a lineman after completing coursework in telecommunications at Des Moines Area Community College. Joe took employment with an Iowa co-op, but it was a telephone cooperative in Lake Mills. As telephone companies underwent deregulation, Joe was bounced from telco to telco and became frustrated with the experience. He went to work for Adams County REC, which became Southwest REC, in Corning. Joe died in 2012.

The surviving brothers, except for Gerry, who serves as crew foreman for NIPCO's Harlan Outpost, are enjoying retirement from their respected cooperatives. Gerry will soon follow in their footsteps, too.

Foundation for the next generation

Rita Freml passed in 2004 and Wes in 2014, leaving a legacy of cooperative linemen. "Dad was really proud of that school in Sheldon," Gerry says. "When he passed, the family created two $500 scholarships in their name for students pursuing linework." The next generation of Freml lineworkers continues in Jim's son Lance who serves as a journeyman lineman for Pella Cooperative Electric Association.

While linework has its challenges and can be dangerous, it can also be gratifying. Like the Freml brothers' experiences, lineworkers know that their service benefits rural communities.

"When storms take out the power, and you get the lights turned back on, members really appreciate the work of the co-op," Charley says. "It's rewarding work to serve co-op members."

Angela Catton is the manager of member relations and development for Northwest Iowa Power Cooperative.

Frosted Pecan Bars

- **1 cup pecans, chopped**
- **1⅓ cups butter, divided**
- **1 cup brown sugar**
- **1 cup white sugar**
- **2 eggs**
- **2½ teaspoons vanilla, divided**
- **1½ cups flour**
- **2 teaspoons baking powder**
- **pinch of salt**
- **2 cups powdered sugar**
- **3 tablespoons hot water**
- **18 pecan halves**

Sprinkle chopped pecans over bottom of greased 9x13-inch baking dish. Melt 1 cup butter, then combine with brown sugar, white sugar, eggs and 2 teaspoons vanilla. Beat well. Combine flour, baking powder and salt. Add to wet ingredients and mix well. Pour batter (it will be very thick) over chopped pecans. Spread evenly and bake at 350 degrees F for 35-40 minutes. Brown ⅓ cup butter over low heat. Add powdered sugar, ½ teaspoon vanilla and hot water. Beat with electric hand mixer until smooth. Quickly spread over warm bars and top with pecan halves. Cut when cool. *Makes 18 bars*

Jennine Maas • Casey
Guthrie County Rural Electric Cooperative

Tips Source: American Pecan Council

PECAN POINTS

STORING PECANS

To protect the pecan's rich oils and buttery taste, do not store shelled pecans at room temperature. For the best quality, always keep your shelled pecans in the refrigerator. They'll keep for about nine months in an airtight container, and up to two years in a sealed plastic bag in the freezer.

Glazed Pecans

- **1 pound pecan halves**
- **½ cup sugar**
- **oil**

Boil pecans in water for 1 minute and rinse under hot water. In a large bowl, add sugar to pecans and stir until sugar is dissolved into pecans. Heat oil and fry pecans ½ pound at a time. Fry for 3-5 minutes or until golden in color. Remove from oil and drain in sieve. Spread on paper to cool. Great to share in little bags or jars as Easter gifts! *Serves 10-14*

Camilla Williamson • Albia
Chariton Valley Electric Cooperative, Inc.

Peach Praline Pie

- **4 cups peaches**
- **½ cup sugar**
- **2 tablespoons quick tapioca**
- **1 teaspoon lemon juice**
- **¼ cup flour**
- **¼ cup brown sugar**
- **½ cup pecans**
- **¼ cup butter, softened**
- **pie shell**

Combine peaches, sugar, tapioca and lemon juice. Set aside for 15 minutes. Mix flour, brown sugar, pecans and butter into a praline mixture. Place ⅓ praline mixture in the bottom of pie shell. Pour in peach mixture. Crumble the remaining praline mixture on top of peaches. Bake at 350 degrees F for 25 minutes.

Patrice Bottjen • Remsen
North West Rural Electric Cooperative

Pecan Pie Bars

- **2 cups flour**
- **1 cup brown sugar**
- **1 cup margarine or butter, softened**
- **5 eggs**
- **1 cup white sugar**
- **1 cup light corn syrup**
- **1 teaspoon vanilla**
- **2 cups chopped pecans**

Make crust by mixing flour, brown sugar and margarine (can substitute brown sugar with ⅓ cup white sugar). Press in 9x13-inch pan. Bake at 350 degrees F for 10 minutes. Mix eggs, white sugar, corn syrup, vanilla and pecans together. Pour over partially baked crust. Bake bars at 325 degrees F for 40 minutes or until they reach the consistency of pecan pie. *Makes approximately 24 bars*

Allyson Bailey • Hamilton
Chariton Valley Electric Cooperative, Inc.

Pecan Chicken

- 1 cup pecans
- ½ cup breadcrumbs
- 1 teaspoon dried basil
- 4 skinless chicken breasts
- salt and pepper
- ¼ cup honey mustard
- 2 tablespoons olive oil, approximately

Grind pecans in food processor. Combine pecans, breadcrumbs and basil in a bowl. Season the chicken with salt and pepper. Brush each chicken breast with honey mustard and coat in crumb mixture. Place chicken on baking sheet then drizzle with olive oil. Bake at 400 degrees F for 15-20 minutes. *Serves 4*

Karen Schwickerath • Waverly
Butler County Rural Electric Cooperative

Kentucky Pecan Pie

- 1 cup white corn syrup
- 1 cup dark brown sugar
- ⅓ teaspoon salt
- ⅓ cup butter or margarine, melted
- 1 teaspoon vanilla
- 3 whole eggs, slightly beaten
- 9-inch unbaked pie shell
- 1 heaping cup whole pecans, shelled
- whipped cream or ice cream, optional

Combine syrup, sugar, salt, butter and vanilla, mix well. Add slightly beaten eggs. Pour into unbaked pie shell. Sprinkle pecans all over. Bake at 350 degrees F for 45-50 minutes for a gas oven. If using an electric oven, add 15-20 minutes to baking time. Test pie after 45 minutes. If a toothpick inserted in the center comes out clean, it's done. When cooled, top with whipped cream or ice cream if desired.

Raymond Robbins • Fort Madison
Access Energy Cooperative

Pecan Pie Muffins

- 1 cup pecans, chopped
- 1 cup firmly packed brown sugar
- ½ cup flour
- 2 large eggs
- ½ cup butter, melted

Mix pecans, brown sugar and flour in medium-sized bowl. In a separate bowl, beat eggs well and mix in butter. Pour wet ingredients into dry ingredients and mix well. Fill muffin tins with foil or silicone liners and add ⅔ cup batter to each. Bake at 350 degrees F for 20 -25 minutes. *Yield: 12 muffins*

Sheryl Murphy • Mystic
Chariton Valley Electric Cooperative, Inc.

Pecan-Cinnamon-Apple Pork Chops

- 2 tablespoons butter, divided
- 4 boneless pork loin chops
- 3 tablespoons brown sugar
- 1 teaspoon ground cinnamon
- ½ teaspoon ground nutmeg
- ¼ teaspoon salt
- 4 medium tart apples, thinly sliced
- 4 tablespoons chopped pecans

In a large skillet, heat 1 tablespoon butter over medium heat. Add pork chops and cook 6-8 minutes on each side or until a meat thermometer reads 145 degrees. Meanwhile, in a small bowl, mix brown sugar, cinnamon, nutmeg and salt. Remove pork chops when cooked; keep warm. Add apples, pecans, brown sugar mixture and remaining butter to pan. Cook and stir until apples are tender. Serve apple pecan mixture with pork chops. *Serves 4*

Jackie Netherton • Ida Grove
North West Rural Electric Cooperative

PECANS AND PRODUCE
Pecans contain polyphenols, specifically flavonoids, which are the types of bioactive compounds found in brightly colored produce. Flavonoids are powerful antioxidant agents.

PECAN POINTS

HEART-SMART
Scientific evidence suggests that eating 1.5 ounces per day of most nuts, such as pecans, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease.

PECAN POINTS

LOW IN CARBS, HIGH IN FIBER
In each 1-ounce serving of raw pecans you get 12 grams of "good" mono-unsaturated fat, with 0 cholesterol or sodium. Compared to other nuts, pecans are among the lowest in carbs and highest in fiber.

PECAN POINTS

Wanted: Spectacular Sandwiches
The Reward: $25 for every one we publish!

Whether they are hot or cold, toasted or grilled, on a bun or bread, sandwiches are a versatile canvas for creativity. If we run your recipe in the magazine, we'll send a $25 credit for your electric co-op to apply to your power bill. Recipes submitted also may be archived on our website at www.livingwithenergyiniowa.com.

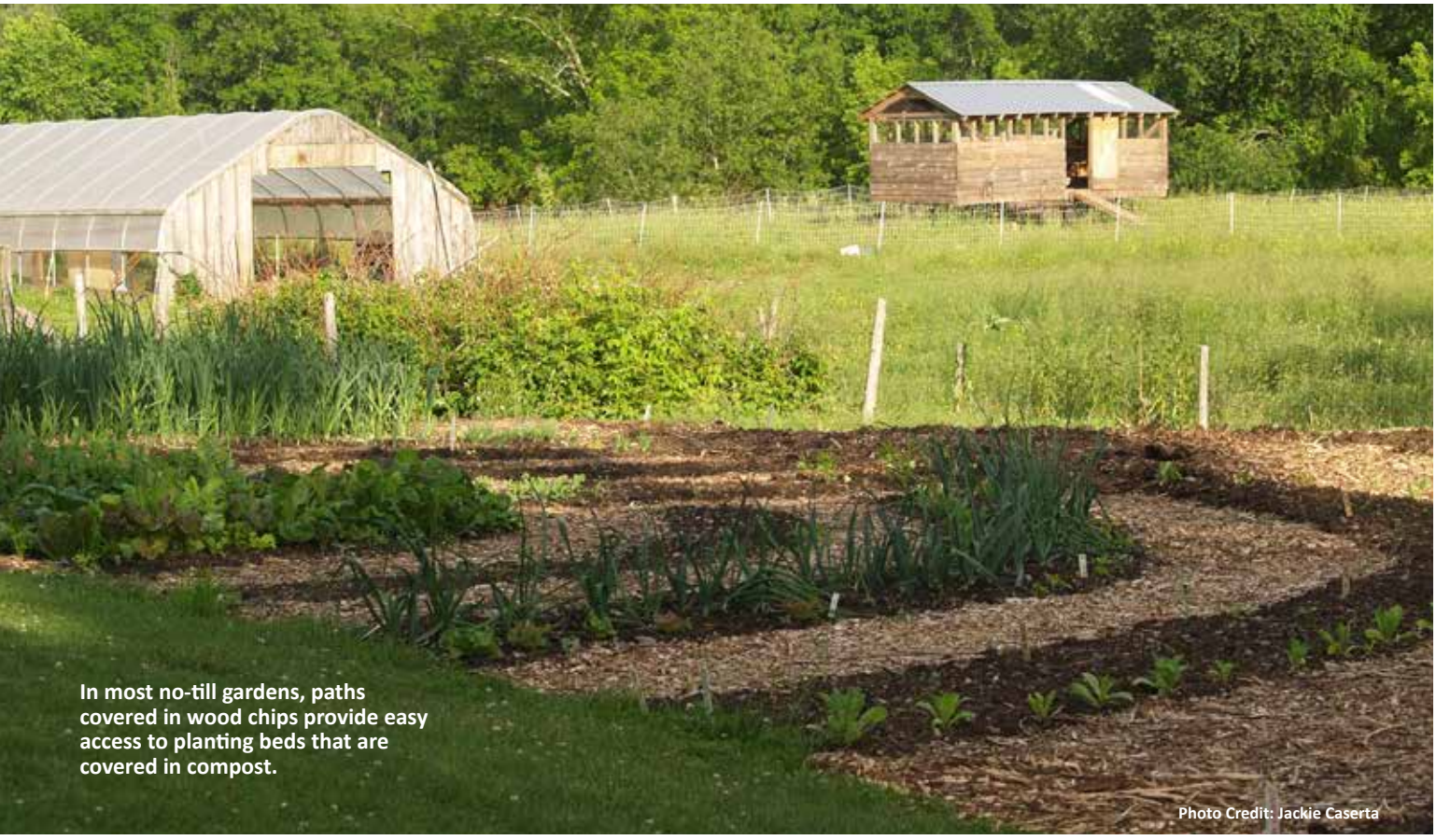
The deadline is April 30, 2021. Please include your name, address, telephone number, co-op name and the recipe category on all submissions. **Also provide the number of servings per recipe.**

EMAIL:
recipes@livingwithenergyiniowa.com
(Attach your recipe as a Word document or PDF to your email message.)

MAIL:
Recipes
Living with Energy in Iowa
8525 Douglas Ave., Suite 48
Des Moines, IA 50322-2992

Tips for planting an efficient,

BY PAT KEEGAN AND BRAD THIESSEN



In most no-till gardens, paths covered in wood chips provide easy access to planting beds that are covered in compost.

Photo Credit: Jackie Caserta

No-till growing can be done on commercial farms as well as home gardens.

Photo Source: USDA

It's almost time to plant a garden, and there are some steps you can take to make your home garden more efficient.

Try no-till gardening

One exciting approach to gardening is no-till, also known as no-dig. No-till gardens have been gaining ground with farmers in recent years, partly because of the energy savings. The principles behind no-till gardening work well for large farms as well as smaller home gardens. No-till can be done without chemicals. Research shows that this approach can produce more fruits and vegetables within a few years, and they get better over the long term. Best of all, this approach to gardening takes less time and effort – and you won't even have to fire up the rototiller!

Two ideas are at the heart of no-till gardening. First, don't break up the soil. We usually think that by breaking up the soil and mixing it up, we keep weeds from growing. But tilling can bring weed seeds that are deep in the soil to the top where they can germinate and grow. Tilling also destroys microbes in the soil that bring nutrients to the plants.

Incorporate compost and mulch

The second idea is to spread thick layers of compost and other mulch on top of the soil. When compost and other mulch are spread on top, they feed the soil from above, the same way leaves in a forest fall to the ground, decompose and turn into rich soil over time. When you build up the soil by spreading layers of compost

no-till garden

and other mulch on top, the weed seeds are kept dormant. Mulch keeps the soil moist, so less water is used to irrigate, which means less electricity use for pumping water from your well or community water system.

Your no-till garden can be planted at ground-level or in raised beds. Start by laying weed-blocking material on top of the old dirt. Sheets of cardboard are often used because they will decompose over time. Then spread at least 4 inches of weed-free soil or compost on top.

If the soil under the cardboard is reasonably loose, you can probably start planting right away. Your garden may be less productive the first year but will grow healthier and have less weeds every season from then on. If the ground is heavily compacted or clay, you may have to till in some compost or healthy soil before laying down the cardboard and give it a year for the new mix to get looser.

In the fall, you can cut the dead plants at ground level and leave the roots in the ground to decompose over the winter. You may also want to plant a cover crop, like peas, fava beans or barley late in the growing season. Setting up a no-till garden takes a fair bit of work, but it will require less maintenance in the future and get healthier every year.

If you're ready to try your hand at planting a no-till garden, many colleges and universities offer classes and resources for folks who are not enrolled as students. You can also watch a variety of videos online that can guide you through setup and long-term care.

These tips will help you prepare for a more energy-efficient garden this season. Happy planting and eating!

Pat Keegan and Brad Thiessen of Collaborative Efficiency write on energy efficiency topics for the National Rural Electric Cooperative Association, the national trade association representing more than 900 local electric cooperatives. From growing suburbs to remote farming communities, electric co-ops serve as engines of economic development for 42 million Americans across 56% of the nation's landscape.

Tips to reduce energy use related to gardening:

- **Use drip systems, which lose less water to evaporation.**
- **Add timers as a convenient way to control irrigation, but be sure to override the timer and shut off watering cycles when a rain shower can do the job.**
- **Consider purchasing a rain barrel for energy efficient watering.**
- **Learn how to store your produce to reduce waste.**
- **Make sure your freezer is energy efficient.**

Cereal rye is one of many cover crops that can be planted in the no-till garden over the winter to help build soil health.

Photo Credit: NRCS/SWCS photo by Lynn Betts

Soil matters:

Steps to access the information at your feet

Are your plants getting the right diet to be the best they can be? Maybe it's time for a soil test. You'll end up with a wealth of knowledge about what fertilizers to use, how to amend your soil and whether your plants are getting the nutrients they need to be healthy and prolific.

Contact your local extension office for a list of certified soil testing labs. Once you determine a lab to use, follow these important steps.

How a soil test works

Step 1: Pick areas that you'd like to test, say for vegetable plantings, fruit trees, annuals or shrubs.

Step 2: Take a sample from the area by scraping off any mulch, grass or weeds, then digging your shovel straight down about four inches into the ground. Put the soil into a bucket.

Step 3: Repeat this vertical sample process four to six times in the same general area.

Step 4: Mix the samples in the bucket well, then remove approximately 1 cup of soil, placing it in a clean plastic bag. Label each bag with the type of plants you plan to grow. This is very important.

Step 5: Repeat in other planting areas, such as lawns, flower beds or vegetable gardens, keeping the samples separate.

Different plants require different nutrients and soil acidity to flourish, so it's important to know how to prepare your soil before you plant.

Step 6: Submit your bagged samples according to the testing lab's directions. They will likely supply you with special bags to transfer your samples into for testing. There's a place for your name, address and the type of planting for the area.

By testing your soil before you plant and amending it according to the recommendations, you're setting the stage for long years of successful gardening. If the soil is right, you have a much better chance of getting your garden to grow.

Typically, within two to three weeks, you'll get back a detailed report that tells you the current condition of your soil and exactly what you need to do to amend it for your plants.

For more information, contact your local extension office.

Three cutting-edge technologies to save energy at home

BY MARIA KANEVSKY

As homeowners are looking for new ways to save energy at home, there are many cutting-edge technologies currently being developed to improve the efficiency of your home.

Magnetic refrigerators

Refrigerators typically use a good deal of energy to properly cool your food. Reducing the amount of energy your refrigerator uses can help lower your home energy consumption. One emerging technology that can save energy is the magnetic refrigerator.

Most refrigerators use a traditional compressor to cool perishables, but magnetic refrigerators use a magnetic field as an innovative way to cool food. This is possible through a phenomenon called the magnetocaloric effect, which causes certain materials to cool down when a magnetic field is removed. This creates a more energy-efficient refrigerator, using approximately 30% less energy than traditional refrigerators.

Magnetic refrigerators also remove the need for harmful chemicals used in traditional refrigerants, making them more environmentally friendly.

There are a few magnetic refrigerators commercially available, however the market is still extremely limited. Researchers and universities are currently working to improve this technology, with the goal to make the commercial market for magnetic refrigerators more widespread.

Photo Credit: McElroy Metal

Cool roofs

When temperatures are highest, having the right roofing material can make a huge impact on how much heat your home absorbs. Certain types of roofing reflect more sunlight than others, which can help to keep your home cooler, reducing the amount of air conditioning you'll need. These "cool roofs" are specifically designed to absorb less heat and reflect more sunrays than traditional roofs.

Cool roofs are lighter in color and can use reflective paint, highly reflective tiles or a reflective sheet covering. There are several types of cool roofs commercially available, and choosing the right type partially depends on the steepness of your roof's slope. Low-sloped roofs are better suited for reflective sheet membranes, while high-sloped roofs work better with reflective shingles and tiles. Although cool roofs can reduce heat, the overall heat savings you can achieve from roofing depends on home insulation, climate and a few additional factors.

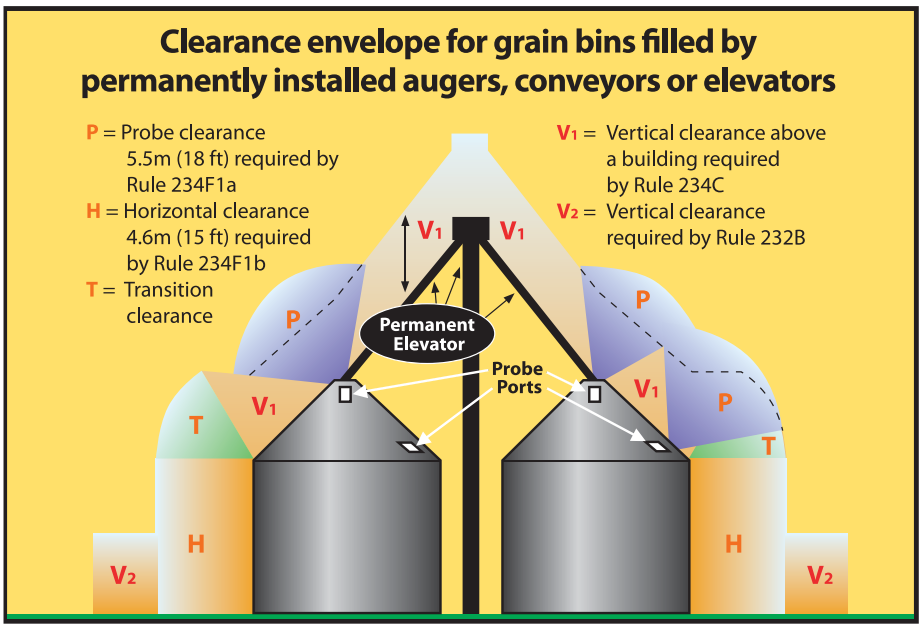
Heat pump clothes dryer

If you're looking to save energy in the laundry room, a heat pump clothes dryer can help reduce energy use by at least 28% compared to standard dryers. Instead of releasing warm and humid air through a vent outside the home, heat pump clothes dryers work by sending humid air through an evaporator that removes moisture without losing too much heat.

Photo Credit: Whirlpool

Heat pump dryers do not require outside ventilation like standard dryers, which is a major efficiency benefit. Additionally, since these dryers use lower temperatures, they are gentler on clothes. Several commercial brands like Whirlpool and Samsung sell ENERGY STAR®-certified heat pump dryers, and the cost typically ranges from $900 to $1,500 depending on additional features.

Maria Kanevsky writes on consumer and cooperative affairs for the National Rural Electric Cooperative Association.



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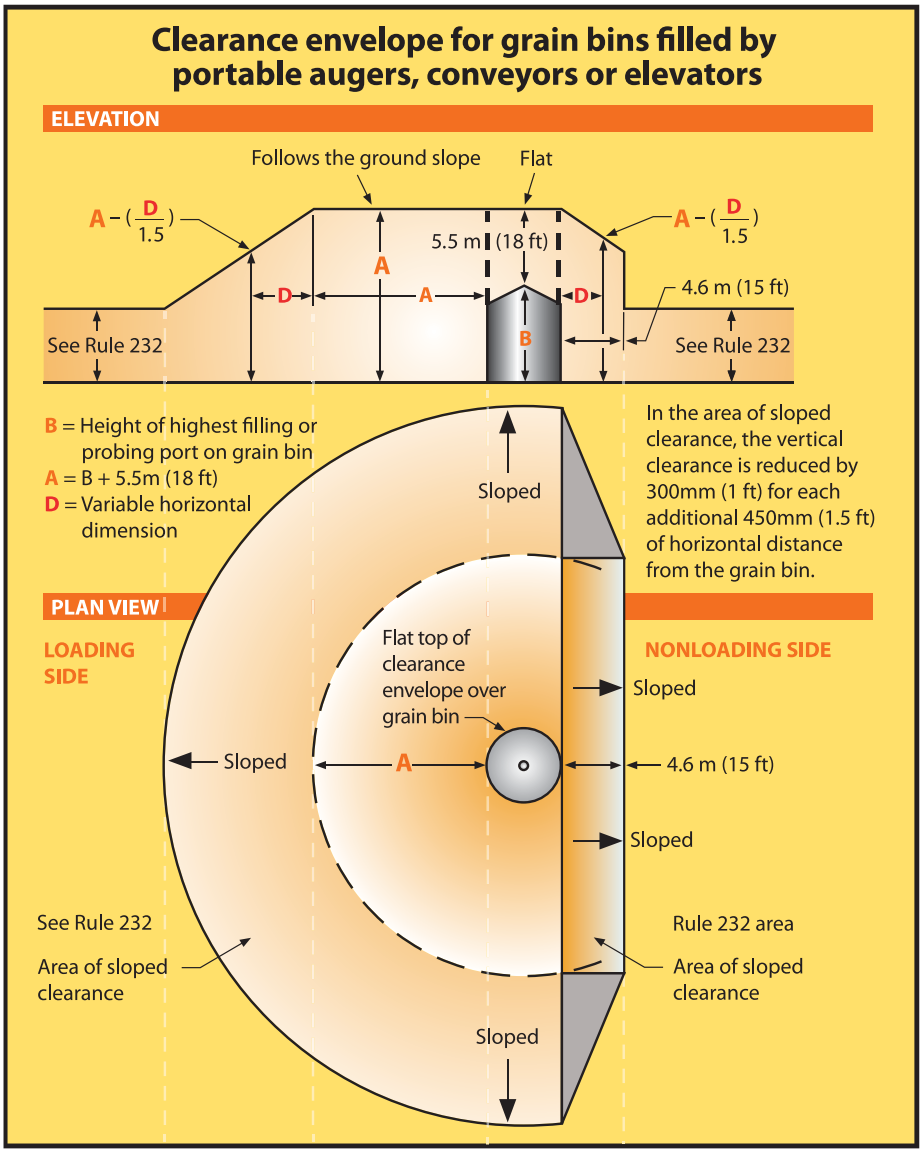

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Maintain proper clearance around grain bins

The state of Iowa requires specific clearances for electric lines around grain bins, with different standards for those filled by portable and permanent augers, conveyors and elevators. According to the Iowa Electric Safety Code found in Iowa Administrative Code Chapter 199 – 25.2(3) b: *An electric utility may refuse to provide electric service to any grain bin built near an existing electric line which does not provide the clearances required by the American National Standards Institute (ANSI) C2-2017 "National Electrical Safety Code," Rule 234F. This paragraph "b" shall apply only to grain bins loaded by portable augers, conveyors or elevators and built after Sept. 9, 1992, or to grain bins loaded by permanently installed augers, conveyors, or elevator systems installed after Dec. 24, 1997.* The Iowa Utilities Board has adopted this language.

Your local electric cooperative is required by the Iowa Utilities Board to provide this annual notice to farmers, farm lenders, grain bin merchants and city and county zoning officials. The drawings on this page show the required clearances, but your co-op's policies may be more restrictive. If you have any questions concerning these regulations – or what needs to be done before you begin placing a new grain bin or moving an existing one – please call your electric co-op for help.

Disclaimer

These drawings are provided as part of the Iowa electric cooperatives' annual public information campaign and are based on the 2017 Edition of the National Electrical Safety Code. To view the actual drawings, refer to that publication.

Every care has been taken for the correctness of the contents of these drawings. However, the Iowa Association of Electric Cooperatives and its member cooperatives accept no liability whatsoever for omissions or errors, technical inaccuracies, typographical mistakes or damages of any kind arising from the use of the contents of these drawings, whether textual or graphical.

Challenges of today's cooking

BY VALERIE VAN KOOTEN

I've never been someone who hates to cook. I get tired of it, like most of us do by having to come up with something different all of the time. My well-worn recipe books open automatically to the favorites of our family. Since it's just Kent and me at home, the requirements are simpler; I don't feel the need to provide a "well-balanced" meal each evening. He takes on a lot more grilling. And we've downsized to smaller baking dishes and don't need the 9x13-inch pans anymore.

This contrasts with the years we had three teenaged boys at home, plus lots of their friends. My hazy memory of those years was that I was constantly either cooking, baking or cleaning up from the cooking and baking. One day at the grocery store a lady looked at my overflowing cart and commented, "You must be stocking up!" I winced. It was one week's groceries. Those days have passed.

What becomes more problematic now is when our family gets together for meals at our house. With COVID restrictions, this hasn't happened for a while, but as things loosen up, we will once again get to enjoy each other's company, if not each other's food.

Family preferences

My daughter-in-law hates onions. I long ago gave up on using even minced ones, as she'll pick them out. She says it's more the texture than the taste that repulses her. Often, I'll add the onions last, taking a portion out for her beforehand.

My son-in-law is vegan. This has forced a whole new way to look at meals, so we end up eating a lot of pasta when they're over, with meat as a side dish to add if desired. Frequently, he'll bring his own main dish, and I'll try to add a few side dishes (such as a relish tray or potatoes mashed with soy milk) to the spread.

My mother is gluten-free. She long ago discovered that gluten is found in the strangest things, like toothpaste and Worcestershire sauce. You have to become an avid label reader to avoid problems. She's tried all the mixes and the flours and the recipes and says most of them taste like sand. I feel guilty every time I invite my family over for my homemade buns, knowing she's can't partake and will have to gnaw on a gluten-free cracker.

Meal planning

If the whole family comes at once, it takes the skills of a D-Day commander to figure out things that everyone can and will eat. I start a list of what I can provide and what each person will need to bring themselves. Sometimes it feels as if we're each eating a separate meal.

Kent recently had a brilliant idea. Communal meals should be peanut butter-based. Or better yet, just pass around a jar of peanut butter with a knife and everyone can help themselves. Who can argue with peanut butter? Well, except those who have peanut allergies, so it's back to the drawing board.

Valerie Van Kooten is a writer from Pella who loves living in the country and telling its stories. She and her husband Kent have three married sons, two incredibly adorable grandsons and a lovely granddaughter.


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