

# EXTENSION IS ON THE MOVE

Nebraska Extension in Knox County, P.O. Box 45, Center, NE 68724  
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## 2018 Private Pesticide Applicator Trainings

Cost: \$40 at training plus \$25 billed from NE Dept. of Ag

Licensed private pesticide applicators can buy and use restricted-use pesticides in their farming operations after completing this training.

Private applicators needing recertification in 2018 should have or will receive a letter notifying them from the Nebraska Department of Agriculture and their local Nebraska Extension Office. The Department of Ag letter includes a bar code, which eliminates the need to complete the standard NDA application form for those wanting to recertify.

Date	Time	Location
<b>January 17, 2018</b>	<b>1:00 PM</b>	<b>Center, Courthouse Annex</b>
January 23, 2018	1:00 PM	Neligh, Courthouse Basement Meeting Room
January 23, 2018	6:00 PM	Neligh, Courthouse Basement Meeting Room
February 8, 2018	1:00 PM	Pierce, Extension Meeting Room
February 8, 2018	6:00 PM	Pierce, Extension Meeting Room
February 13, 2018	1:00 PM	Norfolk, Lifelong Learning Center
<b>February 21, 2018</b>	<b>1:00 PM</b>	<b>Bloomfield, Community Center</b>
February 22, 2018	6:00 PM	Norfolk, Lifelong Learning Center
March 1, 2018	9:30 AM	O'Neill, Holt County Courthouse Annex
March 1, 2018	1:00 PM	Hartington, City Auditorium Basement
March 1, 2018	6:00 PM	Hartington, City Auditorium Basement
<b>March 7, 2018</b>	<b>1:00 PM</b>	<b>Verdigre, Methodist Church</b>
March 8, 2018	1:00 PM	Neligh, Courthouse Basement
March 14, 2018	1:30 PM	O'Neill, Holt County Courthouse Annex
March 22, 2018	1:00 PM	Norfolk, Lifelong Learning Center
March 26, 2018	1:30 PM	Spencer, Our Savior's Lutheran Church
April 10, 2018	9:00 AM	Norfolk, Lifelong Learning Center
April 11, 2018	9:30 AM	O'Neill, Holt County Courthouse Annex

Extension is a Division of the Institute of Agriculture and Natural Resources at the University of Nebraska-Lincoln cooperating with the Counties and the United States Department of Agriculture.

# ON THE RANCH

## From Field to Bunk: Growing and Feeding Dairy Quality Forages

January 12, 2018  
Lifelong Learning Center, Norfolk  
9:30 am to 4:00 pm

The Early Bird registration fee is \$50 per person, and the deadline to register for this fee is December 29. The fee after December 29 is \$65 per person. This fee includes lunch and all materials.

For more information visit: <http://igrow.org/events/i-29-moo-university-2018/>

## Beef Profitability Workshop and Private Pesticide Applicator Training

January 17, 2018 at 1:00 p.m.

Courthouse Annex in Center, NE

Cost for both: \$40

Speakers: Nebraska Extension Educators  
Dennis Bauer and Amy Timmerman

During the winter of 2018, Nebraska Extension will host 16 Beef Profitability Workshops in Eastern Nebraska to help beef producers evaluate their operations to make them more profitable through the latest research information.

Example of topics that may be presented at specific locations are: Harvesting Crop Residues – How it affects future crop yields; Mineral Nutrition; Balancing the Ranch or Farm for Protein; Composting Livestock Mortality Carcasses; Windrow Grazing; Forage Testing and What the Numbers Mean; EPDs and Bull Selection; Economics in the Beef Industry and Beef Outlook; Fencing and Watering Options on Crop Residue; Managing Risk on the Average Sized Cow-Calf Operation; Evaluation and Valuing Cull Beef Cows and their Carcasses; Cow Depreciation – 2<sup>nd</sup> largest cost; Hay and Grazing

Rental Rates; Global Market Landscape; Livestock Outlook; Grass Production; and Cover Crop Production

Workshops are sponsored by Nebraska Extension.

### 2018 Location Sites (No meals unless otherwise stated)

*The cost is \$15.00, but may vary from location depending on local sponsorship and Private Pesticide Applicator Training. To register please call contact number listed.*

January 16, 2018  
Extension Office  
**Hartington** at 1:00 p.m.  
Contact 402-254-6821

January 17, 2018  
(Private Pesticide Training)  
Extension Office  
**Center** at 1:00 p.m.  
Contact 402-288-5611

January 18, 2018  
Extension Office  
**Pierce** at 1:00 p.m.  
Contact 402-329-4821

January 30, 2018  
Loup County Fairgrounds  
**Taylor** at 1:00 p.m.  
Contact 308-346-4200

February 6, 2018  
Methodist Church  
**Ericson** at 6:30 p.m.  
Contact 308-346-4200

February 8, 2018  
Filmore County Fairgrounds  
**Geneva** at 1:00 p.m.  
Contact 402-746-3417

February 15, 2018  
(Private Pesticide Training)  
Extension Office  
**Butte** at 1:30 p.m.  
Contact 402-336-2760

February 20, 2018  
(Private Pesticide Training)  
Extension Office  
**O'Neill** at 6:30 p.m.  
Contact 402-366-2760

February 22, 2018  
Extension Office  
**Neligh** at 1:00 p.m.  
Contact 402-887-5414

February 26, 2018  
Eastern Nebraska Research &  
Extension Center  
**Mead** at 1:00 p.m.  
Contact 402-624-8030

February 27, 2018  
Extension Office  
**Tecumseh** at 1:00 p.m.  
Contact 402-624-8030

February 28, 2018  
Lutheran Church  
**Wilber** at 1:00 p.m.  
Contact 402-821-2151

March 6, 2018  
(Private Pesticide Training)  
Methodist Church  
**Bassett** at 1:30 p.m.  
Contact 402-387-2213

March 13, 2018  
Fire Hall  
**Wayne** at 1:00 p.m.  
Contact 402-372-6006

March 14, 2018  
Colfax County Fairgrounds  
**Leigh** at 1:00 p.m.  
Contact 402-372-6006

March 15, 2018  
Extension Office  
**Blair** at 1:00 p.m.  
Contact 402-372-6006



## Interpreting Forage Quality of Grass Hay

By Bruce Anderson, Nebraska Extension Forage Specialist

Have you ever tested the quality of your grass hay and been disappointed at the low relative feed value? Well, maybe your worry is unnecessary.

Farmers and ranchers often tell me their prairie hay or cane hay or other grass hay looks really good but when a lab tested it the relative feed value, also called RFV, was surprisingly low, maybe in the 70s or 80s. So what's wrong with the hay?

Well actually, nothing may be wrong. You see, relative feed value was initially developed primarily to test legumes like alfalfa for the dairy industry. It used two types of fiber, the acid detergent fiber (ADF) and the neutral detergent fiber (NDF) to calculate RFV. The NDF helped estimate intake and ADF estimated energy.

However, this system assumed all fiber had the same digestibility. We know that is not true, and it especially misrepresents the forage quality of grasses. Grasses have more fiber than legumes but grass fiber usually is more digestible than legume fiber. So grass hay frequently is ranked lower than it should be using relative feed value.



Grasses have more fiber than legumes but grass fiber usually is more digestible than legume fiber.  
Photo courtesy of Troy Walz

Fortunately, new, low-cost tests have been developed that do a very good job of measuring digestible fiber, thus doing a better job of estimating forage quality of grasses. This test is called relative forage quality, or RFQ for short.

Forage scientists and animal nutritionists have worked together with these tests to also revise the intake and energy estimates so results from these tests predict how animals will truly perform much more accurately.

While this new RFQ test is especially useful when testing grassy hays, it also has been proven to be better with alfalfa and other legumes. So when you test forages in the future, look for labs that offer relative forage quality. Your numbers will be more accurate.

Nebraska's Cow-Calf Profitability Series

## Beef Profit Tips Workshop and Private Pesticide Applicator Training

Don't Miss This One of a Kind Workshop

**January 17, 2018**  
Courthouse Annex Meeting Room  
Center, Nebraska  
1:00 p.m.  
Cost: \$40 per person  
**Pre-registration by January 15**

Program topics presented by University of Nebraska-Lincoln Extension Educators  
Dennis Bauer  
Amy Timmerman

Topics:  
Methods of Seeding Perennial Grasses  
Harvesting High Quality Forages to Reduce Mineral Supplementation  
Private Pesticide Applicator Information

This workshop is Sponsored by  
Nebraska Extension in  
Knox County

To register call the Nebraska Extension Office in  
Knox County at 402-288-5611 or  
email [knox-county@unl.edu](mailto:knox-county@unl.edu).



# IN THE FIELD

The Nebraska Crop Budgets have been updated for 2018 costs and conditions and include five new budgets relative to corn-soybean rotations. In total there are 78 crop production budgets for 15 crops as well as information on crop budgeting procedures, machinery operation and ownership costs, material and service prices, and a crop budget production cost summary.

Visit:

<https://cropwatch.unl.edu/budgets> or contact your extension office.

## Corn Stover Removal: Nutrient Value of Stover and Impacts on Soil Properties

Corn residue can be viewed from many perspectives, including as

- a source of feed or bedding for livestock,
- protector of the soil surface to prevent wind/water erosion and evaporative losses,
- source of cellulosic biofuel production,
- resource for pelleted feeds for livestock,
- food for microbes resulting in nutrient source for future crops, and
- a challenge to achieving uniform emergence and plant stands, particularly in no-till continuous corn.

With downed corn ears common in many areas and able to be raked up and baled with residue, we've received questions on the nutrient value of the residue (stover). Some have also asked about how to estimate the total residue produced by a corn crop. Grain yield is related to residue production. For every 40 bu/ac of corn produced (56 lbs at 15.5% moisture), 1 ton of residue (at 10% moisture) is produced. For example, a 240 bu/ac field will produce approximately 6 tons of residue while a 120 bu/ac field will produce approximately 3

tons of residue.

Nutrient value can depend on the season, management practice, time of harvest, location, and what part of the plant is being removed. For example, more nutrients are concentrated in leaves and husks than in the stalks. Per ton of dry harvested corn or sorghum residue, average nutrient concentrations include 17 lbs of nitrogen, 4 lbs of P<sub>2</sub>O<sub>5</sub>, 34 lbs of K<sub>2</sub>O, and 3 lbs of sulfur. Multiplying these nutrient values in pounds per ton by current fertilizer prices in dollars per pound gives the value of nutrients in the residue based on dollars per ton of residue removed.

$$\text{Nutrient amount (lbs/ton)} \times \text{fertilizer price (\$/lb)} = \text{Value of Nutrients in Stover (\$/ton)}$$

Calculate the value of each nutrient and then total these values for total nutrient value. Note, this formula takes into account the full fertilizer value of the nutrients removed. However, if the soil has adequate capacity to supply some nutrients (such as potassium in Nebraska), the value of removed nutrients may be less (from 0-50% of fertilizer value).

Also consider that positively charged ions in calcium, magnesium, and potassium help neutralize soil acidity. Removing them through residue harvest may mean lime will eventually be needed. Harvesting 1 ton of corn residue removes cations equivalent to 35 lbs of lime. If lime is worth \$40/ton, \$0.70 should be added to the value of crop residue.

Additional values to the residue come from potential soil loss due to wind and/or water erosion, any potential yield loss (link to other CropWatch article), any increased irrigation due to evaporative losses, and the cost of raking/baling/transporting residue.

Retaining an average of 2.4 tons/acre annually is suggested for maintenance of soil organic carbon. If there is moderate to high risk of wind or water erosion, much more should be retained, especially with if tillage is practiced.

Regarding soil losses due to water erosion, additional studies in Gage, Sherman, and Chase counties in Nebraska looked at tillage, soil type, and terrace effects on the amount of residue that could be removed to maintain less than 5 tons/acre/year soil erosion from water for silt loam and silty clay loam soils. The research found that no residue could be removed if the land is tilled by disking unless the field is terraced, had 2% slope (but not 5% or greater), and yielded greater than 150 bu/ac. Fields that were no-tilled and terraced even up to a 10% slope could have residue removed and still maintain less than 5 tons/acre/year water erosion. Another study found that ground covers of 30% and 60% were estimated to be sufficient to reduce wind erosion by 70% and 90% respectively compared to bare soil.

By totaling the value of these factors — nutrients removed, lime equivalent value, yield loss, soil loss from wind and water erosion, any increased irrigation, and raking/baling/transportation — you can estimate the cost of crop residue harvest in dollars per ton. Impacts of stover removal on the subsequent crop yield can be viewed in this CropWatch article, [Crop Residue Removal: Impacts on Yield](#).  
Source: [cropwatch.unl.edu](http://cropwatch.unl.edu)

## Chemigation Certification Schedule

**no charge for the training or the manuals**

If your chemigation certificate will expire on December 31, 2017 and you plan to chemigate during 2018, you will need to attend a training session and pass a written test to become recertified.

If you plan to become certified, please pre-register at the Extension Office whose training session you plan to attend. If you pre-register, you can receive a training manual and calibration workbook to review prior to the training. On the day of the training session, please bring your Chemigation Training Manual, Calibration Workbook, No. 2 pencil, and calculator along to use during the training and test. If you do not pre-register, you will receive a new copy of the training materials the day of the training. Review of the materials in your training manual prior to the training session will be very helpful when taking the exam. Training and testing will take approximately 2-3 hours.

Norfolk	January 25	1:00 pm	Lifelong Learning Center	402-370-4044
Norfolk	February 13	9:00 am	Lifelong Learning Center	402-370-4044
O'Neill	March 1	1:00 pm	Holt County Courthouse Annex	402-336-2760
Neligh	March 8	9:00 am	Antelope County Extension Meeting Room	402-370-4044
Norfolk	March 22	9:00 am	Lifelong Learning Center	402-370-4044
O'Neill	April 11	1:00 pm	Holt County Courthouse Annex	402-336-2760

### Crop Production Clinics at Five Sites this January

Nebraska Extension Crop Production Clinics will be conducted at five sites this January to provide research updates and educational information focused on local agriculture. Programs for each of the clinics are customized, often featuring extension presenters from the area or who have conducted research in the area. One of the five clinics will be held in Norfolk on January 15 and 16.

Topics will be in the areas of soil fertility, soil water and irrigation, insect pests, plant diseases, weeds, cropping systems, agribusiness management and marketing. View programs for topics offered at each location at <https://cropwatch.unl.edu/2017/crop-production-clinics-five-sites-january>.

Anyone attending the pesticide applicator license recertification sessions will also meet the requirements for dicamba applicator training. Dicamba is now a Restricted Use Pesticide (RUP) in Nebraska and additional training is required for its purchase and use.

# HEALTHY EATING

## National Pear Month

### Pear Party Salsa makes 4 servings

#### Ingredients

1 pear, cored and finely chopped, 1 apple, cored and finely chopped, 2 kiwifruit, cored and finely chopped, 1 orange, peeled and finely chopped, 2 tablespoons honey, 1 teaspoon lemon juice, and cinnamon graham crackers (optional).

#### Directions

Combine pear, apple, kiwi, and orange in a medium-size bowl. Pour honey and lemon juice over fruit and gently toss. Scoop up bites of fruit salsa using bites of cinnamon graham crackers (optional)



## Chocolate

By: Brad Averill, M.Ed., Nebraska Extension Educator-  
Food, Nutrition, and Health

Chocolate will be the topic of this week's article. That's right, your food, nutrition, and health educator is going to talk about the nutritional benefits of CHOCOLATE! Not all chocolates are created equal (nutritionally that is). Milk chocolate, white chocolate, sweet chocolate, and semi-sweet chocolates all have some nutritional benefits, but dark chocolate is loaded with nutrients that can positively affect your health.

Dark chocolate is made from the seeds of the cocoa tree. High quality dark chocolate is packed full of antioxidants and minerals. Iron, magnesium, copper, manganese and potassium are vital nutrients that make dark chocolate a healthy snacking option.

Dark chocolate can improve blood flow in the arteries and cause a small but statistically significant decrease in blood pressure. Also, observational studies show a drastic reduction in heart disease risk for the people who consume the most chocolate. Cocoa may also significantly improve cognitive function in elderly people with mental impairment. It also improves verbal fluency and several risk factors for disease.

When purchasing dark chocolate, there are a few things that you should look for to ensure you are purchasing a nutritious version of this sweet treat.

1. Make sure that the dark chocolate you buy has at least 70% or higher cocoa content. Make sure cocoa is the first ingredient listed on the nutritional information. Anything less and you are buying a product filled with added sugars and other additives. The higher the cocoa content, the higher amounts of dietary fiber.

2. Dark chocolate is often flavored with spices, extracts, and oils to improve the flavor. If you go for the flavored chocolate, make sure it is organic to avoid any artificial additives.

3. High-quality dark chocolate shouldn't have any milk added to it. Milk is often added to soften the chocolate and add flavor.

Keep in mind that even though there are vital nutrients and dietary fiber in dark chocolate, it is high in calories and is moderately high in sugar. Dark chocolate is best consumed in moderation, just like everything else that taste amazing.



# Beef Roast For The Holidays

By Bethany Johnston, Nebraska Extension Educator

The winter season is a great time to gather friends, family, and (my favorite) food! What better way to celebrate than with a juicy, tender, and flavorful beef roast? Before you purchase your beef roast at the meat counter, ask yourself “How do I plan to cook this roast?” The two options for cooking a roast are 1) dry roasting and 2) braising.

## ***DRY ROAST***

For dry roasting, the roast is cooked at high heat. A rack holds the roast out of the juices in the bottom of the pan. The roast is left uncovered during cooking with the fat side up.

Place the roast in a hot oven and use a meat thermometer to tell when the roast is done. For medium rare, remove the roast when the thermometer reads 130 degrees F. Tent the meat with foil. Let the roast set for 15 minutes. The roast will continue to cook on the counter, bringing the temperature up to 145 degrees F.

Carve the roast across the grain of the meat for optimal tenderness. Make gravy or sauce using the drippings in the bottom of the pan and drizzle over the meat.

Choose beef cuts that are naturally tender, such as rib roasts or tenderloin roasts, for dry roasting. Look for choice or prime labels to increase the juiciness and flavor of the roast.

## ***BRAISING***

For fork tender, fall apart roasts like grandma made, use the braising or slow, moist heat method. Start by browning the roast on all sides in a skillet with oil. You are only cooking the outside of the roast. The browning will develop the rich, beefy flavor.

Next transfer the roast into a crockpot or large pan with a lid. Add ½ to 2 cups of liquid (broth or water). Aromatics (onions, carrots, celery) and seasonings can be adding to the pan. Cover with a tight fitting lid and place on low heat. Cook for 4-10 hours (dependent the cooking temperature) until the meat is fork-tender.

The roast can be served as a pot roast, or shredded to make sandwich or taco fillings.

Choose less expensive beef cuts like chuck or round roasts for braising.

BEEF RECIPES can be found at <http://www.beefitswhatsfordinner.com/> for holiday roasts, appetizers, and more!



Peppery Beef Rib Roast.  
Photo courtesy of beef.org

# TODAY'S FUTURE

## 4-H Enrollment is Now Open

Enrollment for the 2018 4-H program year in Knox County is now open for members, clover kids and volunteers and must be completed by April 15. Visit <https://ne.4honline.com/Login.aspx?403D4050364539525371705375593D>

New and returning club members, as well as new and returning club leaders, must enroll through 4-H Online. Members who are re-enrolling will only need to update their profile (do not setup a new profile) and project listing. New members will need to create a family profile or if our family has already enrolled you only need to add a member.

If you need assistance with enrollment process please refer to the 4HOnline step-by-step instructions on our website [knox.unl.edu](http://knox.unl.edu) or contact the Extension Office.

## Code-a-pillar!

### Where Development Comes into Play

Written by: Ruth Vonderohe, Nebraska Extension Educator in Knox County

Preschool teachers, imagine turning your room into an obstacle course and preschoolers working together for 45 minutes problem solving and programming.

The Code-a-pillar inspires little learners to be big thinkers by encouraging preschoolers to arrange and rearrange the easy-to-connect segments. This learning toy helps children to learn that the arrows indicate different directions. This is a perfect time to introduce the difference between right and left by using the color-coordinated segments that hook together with USB ports. Every time a child changes or rearranges the segments the child is working on learning directions, how to problem solve, planning and sequencing and critical thinking.

Teaching preschoolers about coding and the binary system foster curiosity, experimentation and problem-solving. Allowing the children to become engineers and robots all at once allows a child to work in a fantasy world while learning. The binary system has only two numbers so preschoolers can learn and be successful almost immediately. The number 1 stands for stepping forward and 0 stands for turning right. While one preschooler writes his code on the whiteboard, another preschooler follows the directions given through the coding. The children learn very fast that they can navigate the entire room using only the two codes.

Bringing the preschooler's attention back to the Code-a-pillar is very easy. Their little brains are ready to arrange and rearrange the segments to get their Code-a-pillar to a particular place in the classroom. They soon realize adjustments (problem-solving) are

needed so they can navigate around the tables and chairs in the classroom.

Once the preschoolers understand what a sequence is or program a path, the sky's the limit. Thinking as they figure out how to get the Code-a-pillar to go wherever they want.

Coding is an excellent way to supports children's curiosity and develop children's inquiry skills by asking children to brainstorm solutions, or use open-ended questions like: How did you get that caterpillar to move?

Using open ended questions encourages children to listen, reflect, and then respond back how they made decisions or describe the actions they took to reach a specific goal. This is an important scientific skill to learn and develop because it will allow children at an early age to practice using the scientific method! (Predict, Collect Data, Describe, and Reach a Conclusion, then... TRY AGAIN!)



# WORLD OF WORK

## 2018 Nebraska Grower and Brewer Conference and Trade Show

Jan. 18-19, 2018  
Embassy Suites Omaha  
– Downtown/Old Market,  
555 S. 10th St., Omaha

For more information & to  
register, visit  
<http://www.growbrewnebraska.com/>.

## Six Factors Affecting Farm and Ranch Profit

By Jay Jenkins, Nebraska Extension Educator

Six factors interact to affect farm and ranch profits. The number of production units, production per unit, direct costs, value per unit, mix of enterprises, and overhead costs all interact to determine profitability.

**NUMBER OF PRODUCTION UNITS** - The most basic factor affecting profit in any business is the number of production units. This may be acres for the farmer, cows for the rancher, or factories for the industrialist. It doesn't matter what business you are in, your potential for profit (or loss) is closely tied to your number of production units. If you have an enterprise that is generating \$50 of profit per acre and you could double the number of acres, then you would have twice as much profit. Losses, unfortunately, work the same way; more of a loser just loses more.

**PRODUCTION PER UNIT** - The productivity of your land and livestock also has an impact on profit. Productivity is measured in yield per acre, weaned calf crop percentage, and weaning weight for starters. This is an area where farmers and ranchers tend to concentrate. When profitability wanes, it is natural to try to increase productivity. It is important to remember that production per unit is only one factor affecting profitability. It is also hard to increase production without also increasing costs.

**DIRECT COSTS** - Direct costs are those costs that vary with production. Thence it's other name, variable costs. These are costs that wouldn't occur if you did not produce. Seed, fertilizer, feed and veterinary expenses are all examples of direct costs. Direct costs can be attributed to one or more enterprises. Farmers and ranchers often try to deal with profitability problems by reducing direct costs. Care must be taken however, or a drop in productivity will also result.

**VALUE PER UNIT** - Value per unit (price received) dominates farmer and rancher discussions. Unfortunately we have little control over the prices we receive. We generally accept what the market dictates. Often steps can be taken to move into higher segments of a market, such as certified seed or more timely marketing. This is limited however, and the benefits gained are often at an increased cost.

These first four factors deal with the profitability of individual enterprises. The final two deal with the operation as a whole.

**ENTERPRISE MIX** - The enterprise mix deals with how enterprises combine to influence overall profits. Different enterprises have different levels of profitability. There are many reasons why farmers and ranchers choose to have several enterprises. Crop rotation demands diversification. Diversification spreads the risk. It can also spread out the workload and decrease peak labor demands. Wise enterprise selection contributes to both long and short-term profitability. Concentrating only on profit in the short run encourages growing what is "hot." This often increases risk and can jeopardize long-term profits.

**OVERHEAD COSTS** - Overhead costs are those costs that do not vary with production. All costs are either direct or overhead. Overhead includes operator living withdrawal and "killer toys." common examples of excessive overhead in traditional agriculture include: expensive tractors, expensive bulls, fancy shops, too much equipment, and excessive family draw. Finding yourself in the predicament of excessive overhead often isn't due to an extravagant lifestyle. Many producers find themselves with excessive overhead costs when two generations try to make a living from the farm or ranch.

As you can see, none of these factors stand alone as either the problem or the solution. They all work together to determine your profitability. Consider each factor. Examine each cost. Know how cost cuts will affect production before you make the cut. Watch overhead costs, your management can easily become dominated by the need to maintain what you have, rather than the desire to get what you want. If an enterprise is continually unprofitable, then get rid of it, don't "ride a dead horse." Carefully consider options. Take an honest look at the productive capability of your land. Trying to get your land to produce above its capability is both expensive and frustrating. If you take the time to carefully analyze your operation and consider each factor, you will be able to increase your profit. Small changes in each area add up to big changes in your bottom line.

# SPLASH INTO EXTENSION

## Winter Watering

It's hard to think about our plants in the winter months. It is even harder to realize that they are still alive and sometimes need care in the winter months. Once plants go dormant for the year many people believe that they need nothing until spring, but that isn't always the case, especially in years with low or no snow or rain throughout the winter months.

Visit

<https://water.unl.edu/article/awns-gardens-landscapes/winter-watering> for details.

Sign up today for the UNL Water Newsletter at:

<https://water.unl.edu/newsletter>

## What's the Deal with Smelly Water?

By: Meghan Sittler, Extension Educator



Odors that can be compared to rotten eggs are not ideal in your home or coming from your drinking water faucet. Sulfates, which are a combination of sulfur and oxygen, are naturally occurring minerals. They are found in some soil and rock formations where groundwater is also found. Bacteria that feed on sulfur can produce hydrogen sulfide gas which is the primary offender when it comes to odor.

Sulfates and hydrogen sulfide gas in drinking water are generally considered “nuisances” meaning they do not pose serious risks to human health. Elevated concentrations of sulfates can cause dehydration in small children or serve as a mild laxative for adults. However, most often people become acclimated to those levels and any issues tend to be minimized.

Hydrogen sulfide emits the rotten egg odor and at extremely high concentrations can cause people to become light headed if they are exposed to the gas for extended periods of time in a small confined area (i.e. a shower). However those instances are extremely rare. Occasionally the odor can actually come from a hot water heater if the magnesium corrosion control rod present in many hot water heaters interacts with sulfates in the water to form hydrogen sulfide gas.

Perhaps the largest challenge with these nuisance elements for the majority of people are that they can cause black sludge to form in pipes, water softeners and water fixtures in your home. This can also result in stains on clothes or other light colored linens in your home.

If you suspect you may have sulfates or hydrogen sulfide in your private water supply the first step is to have the water tested to determine the concentration of both elements in your water supply. There are several treatment options you can use to address sulfates or hydrogen sulfide. Treatments include distillation, reverse osmosis, activated carbon filtration, oxidizing filters, and de-aeration. More information about each treatment option as well as sulfates and hydrogen sulfide can be found at: [water.unl.edu/category/drinking-water](https://water.unl.edu/category/drinking-water).

# IN THE DIRT

## Don't Toss Your Fresh Cut Christmas Tree!

After the holidays, take your fresh cut Christmas tree outside and prop it up and tie it securely against a post or fence. Your Christmas tree will provide winter protection for birds. If you feed the birds, position the tree several feet from the feeders. You want to make sure the tree isn't too close or predators like neighborhood cats could use it to prey on the birds.

Enlist the help of your children or grandchildren to make homemade fruit and nut garland and pinecones rolled in suet on the tree. Be sure to hang your garland and suet pinecones out of the reach of pets.



## Soil Amendment? Yeah, But.....

By: Kelly Feehan, Extension Educator

When plants do not grow well and the reason why isn't obvious; gardeners may blame the soil and look for a quick fix. We all know marketing can make a product sound like the next best thing to sliced bread or a quick fix; fortunately most of us know it pays to learn a little more when something sounds too good to be true.

The role of Nebraska Extension is to extend research-based information. Here's some information related to a few soil amendment products that may sound better than they actually are.

A soil amendment is something incorporated into soil to improve soil structure. The goal is to make the soil easier to work, increase moisture and nutrient holding capacity, aeration, and drainage. Fertilizer is not a soil amendment. It adds nutrients but it does not improve structure.

A few soil amendment products that have not lived up to their hype are hydrogels, also known as water crystals and water retention granules, gypsum, and soil microbes.

Hydrogels are polyacrylamide gels. These gels or crystals absorb water and swell to several times their original size. The gels then slowly release water over time into the soil.

They might work for a while, once they begin releasing water to plants. However, within two to five years, these gels degrade into substances such as acrylamide. Acrylamide is a neurotoxin and potential carcinogen and it can be absorbed through the skin or inhaled.

Even in its intact state, polyacrylamide can cause skin irritation and mucus membrane inflammation. The use of these gels, crystals or granules is not recommended in home gardens and landscapes.

Gypsum is marketed as softening clay soils, loosening compacted soils, and treating soil salinity. In very specific soil situations, gypsum can be a helpful amendment. But rarely are these soil conditions found in home gardens and landscapes.

Gypsum is hydrated calcium sulfate. It is effective in treating sodic soils, which are soils high in exchangeable sodium. Although gypsum can improve structure in sodic soils that are well drained, it will not soften clay soil or loosen compacted soil.

Products sold as soil microbes do not work well either; with the exception of inoculating legume crops with rhizobia. In most other cases, little or no improvement in soil health and microbial populations are observed.

Soil microbes are an extremely important component of soil ecosystems. Most occur naturally and do not need to be added. Even poor quality soils contain some soil microbes. If soil is managed correctly, such as adding organic matter, not overwatering, not working the soil when wet and more, existing microbial populations increase.

Organic matter is the most important soil amendment. It improves soil structure in sandy and clay soil. As a rule, we recommend incorporating organic matter, like compost, on a regular basis. Organic matter is the next best thing to sliced bread and it can be made at home or found for free.

And by the way, sand may be free but it is not recommended for adding to clay soil. If not added in the right proportions, sand can make clay soil issues even worse. The best way to improve the structure of clay soil is to thoroughly incorporate organic matter.

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## Watching... and COUNTING... Birds!

John Wilson, Extension Educator - Innovative Cropping and Water Systems

Now I'm not complaining about the weather, but the open conditions we've had most of this winter has not been great for birdwatching. They don't seem to come to our feeders when the weather is nice. But my wife and I noticed an increase in activity any time we get an inch or two of snow on the ground. We enjoy being able to sit at the dining room table and see all the different birds that come to the feeders.



Keep birdfeeders clean to prevent the spread of disease as they feed.

### Keep Feeders Clean

Based on our experiences, here are a few suggestions if you are feeding our feathered friends. Anyone who feeds birds knows how easy it is for seed to turn moldy in feeders. Moisture from snow or rain can leak into feeders and turn bird seed into potential sources of illness for birds. You should keep feeders clean to help prevent the spread of disease to backyard birds.

Clean and disinfect feeders on a regular basis, taking care to scrape out old moldy seed that collects in corners. Wash feeders in warm water with dish soap and rinse. Disinfect with a solution of one part liquid chlorine bleach to nine parts warm water. Make sure feeders are completely dry before refilling with seeds.

It's important to keep feeding birds once you start so they don't become dependent on you as a food source, only to run out of food during periods of severe weather like we usually get some time over winter. You know, the kind of days you really don't want to go outside to fill the bird feeders.

### They Also Need Water

Also, if possible, provide water for birds. This is extremely important during the winter because other sources of water may not be available. It seems chilly, but birds regularly use our heated bird baths. Besides water to drink, they use it to help keep their feathers clean which makes them, for lack of a better term, fluffier, which gives them better insulation against bitter cold temperatures.

## [Great Backyard Bird Count \(http://gbbc.birdcount.org/\)](http://gbbc.birdcount.org/)

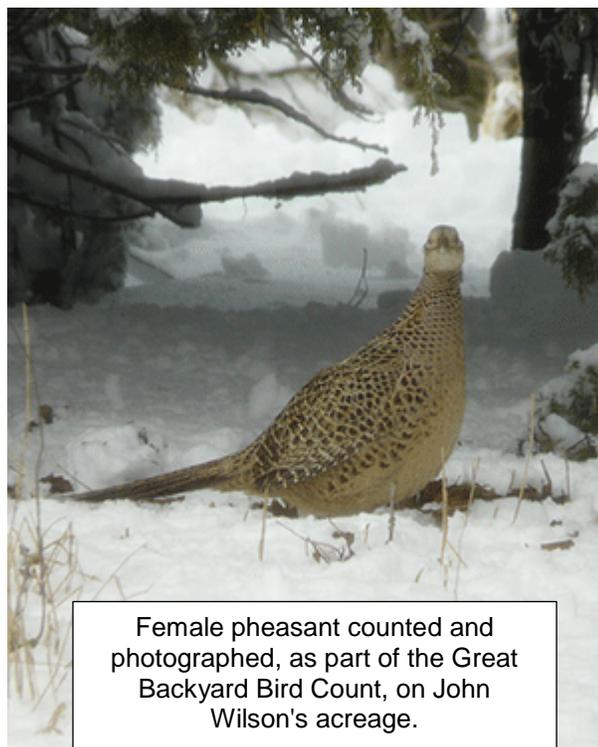
Now for anyone who really enjoys bird watching, there's an event in February you won't want to miss ...and you can take part from the comfort of your own home. The 20th annual Great Backyard Bird Count will be held on February 17–20. Participants are needed to count birds in their yards, neighborhoods, or other locations. Simply tally birds for at least 15 minutes on any day of the count, then go to [birdcount.org](http://birdcount.org) and enter the highest number of each species you observe at any one time.

This program is conducted across the United States and Canada. Coordinated by the Cornell Lab of Ornithology, Audubon, and Bird Studies Canada, the count provides an instant snapshot of birdlife around the world. Organizers hope to receive more than 160,000 checklists during the event. Also, you can watch as the tallies come in at [birdcount.org](http://birdcount.org).

Whether you observe birds in your backyard, a park, or a wilderness area, the Great Backyard Bird Count is an opportunity to share your results at [mbirdcount.org](http://mbirdcount.org). It's fun and rewarding for people of all ages and skill levels--and it gets people outside... or you can watch from inside, too!

Information from the Great Backyard Bird Count participants is even more valuable as scientists try to learn how birds are affected by environmental changes. The information you send in can provide the first sign that individual species may be increasing or declining from year to year. It shows how a species' range expands or shrinks over time. A big change, noted consistently over a period of years, is an indication that something is happening in the environment that is affecting the birds and that should be followed up on.

So, to take part in this activity for the birds, go to [birdcount.org](http://birdcount.org) for online instructions and tally sheets... then enjoy our feathered friends. My wife and I participated for many years... it's easy and it's fun! Just go to [birdcount.org](http://birdcount.org) for all the information you will need.



Female pheasant counted and photographed, as part of the Great Backyard Bird Count, on John Wilson's acreage.

### ***Limit Traffic on Frozen Turf***

#### ***frozen blades are damaged by foot or vehicle traffic***

It is best to minimize winter traffic on any turf area and especially when frost is present on green turf. If ice crystals (frost) have formed and foot or vehicle traffic occurs, the physical abrasion can damage turfgrass. Winter traffic can cause cosmetic damage, physical abrasion, and/or soil damage depending on the situation. Too much traffic on turfgrass at a time when it cannot recover also leads to winter injury. Winter golf or over-using soccer fields during winter are examples.

# Poinsettia

By: Kelly Feehan, UNL Extension Horticulture Educator

Have you heard about the large weed that, despite the fact the plants flowers have no colorful petals, has become the most popular blooming plant at Christmas? You have since the plant is poinsettia. How did this plant become such a marketing success and why is Johnny Carson mentioned in the story?

## History

A native plant of Mexico, poinsettia's history in the United States begins in the 1800s when the first United States Ambassador to Mexico was appointed by John Quincy Adams. His name was Joel Roberts Poinsett.

A hobby of Poinsett's was to wander the countryside looking for new plants. In 1828, he noticed a shrubby plant with large red leafy bracts growing next to a road. He took cuttings from the plant to grow in his South Carolina greenhouse. This is how poinsettia came by its common name.

Prior to this, poinsettia had been assigned its botanical name by a German botanist Wilenow. He was impressed by the plants color when it grew through a crack in his greenhouse. Wilenow gave the plant the botanical name, *Euphorbia pulcherrima*, meaning "very beautiful."



## Introduction as a Holiday Plant

How poinsettia became the number one Christmas plant may best be credited to the Paul Ecke Ranch in California. Poinsettia grew wild in the area near the ranch. The tall, leggy plant bloomed during winter, giving Ecke the idea it would make a good holiday flowering plant. In the early 1920s, Ecke grew field grown plants and marketed them at roadside stands in the Beverly Hills and Hollywood area.

From 1923 to the 1960s, his main business was producing field-grown plants which were spring harvested and shipped by rail to greenhouse growers across the country. Ecke traveled the country, promoting the plant to greenhouse growers, teaching them what he had learned and encouraging them to market the plant as a holiday flower.

In 1963, poinsettia breeding developments yielded the first commercial quality cultivars that grew well as potted plants. At this time, Paul Ecke Jr. joined his father in the business. With formal training in horticulture, he encouraged his dad to move toward greenhouse culture. Ecke Sr. was skeptical but by the mid-1960s most of their operation had changed from field grown to greenhouse grown plants.

With a vision of what the poinsettia could become, Ecke Jr. used the media to promote poinsettias as a necessary part of any holiday experience. The business worked with television, such as The Tonight Show and Bob Hope Christmas Specials, to make certain poinsettias were always a part of holiday sets.

This story goes to show that with vision and a lot of persistence even a weed can become a success. Just be careful about introducing wild plants into the landscape. Some of them can become invasive weeds.

And are poinsettia flowers really without petals? The colorful parts of poinsettias are modified leaf bracts. The yellow button-like, petal-less objects in the center of the leaf bracts are the true flowers. The colorful bracts last longest if the plant is provided bright, but indirect light; the potting mix is kept moist but not saturated; and the plant is located away from air drafts and heat sources.

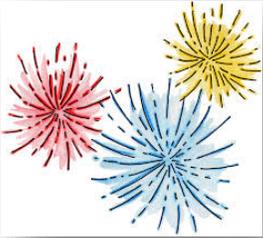
Sources: University of Illinois Poinsettia History Page and the Paul Ecke Ranch website



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The earliest known New Year celebrations were in Mesopotamia and date back to 2000 BC.

- The early Romans used March 1 as New Year's Day. Other cultures used the autumn equinox or the winter solstice to mark the new year.
- January is named after Janus, the god with two faces, one looking forward and one looking backward.
- Ancient Persians gave New Year's gifts of eggs, which symbolized productivity.
- Most New Year's traditions are believed to ensure good luck for the coming year. Many parts of the United States observe the tradition of eating black-eyed peas on New Year's Day for good luck.
- The first rooftop celebration atop One Times Square, a fireworks display, took place in 1904 and was produced by The New York Times to inaugurate their new headquarters in Times Square and celebrate the remaining of Longacre Square to Times Square.
- The first ball dropping celebration atop One Times Square was held on December 31, 1907.
- In 1942 and 1943 the ball lowering was suspended due to the wartime restrictions. The crowds who still gathered in Times Square celebrated with a minute of silence followed by chimes ringing out from an amplifier truck parked at One Times Square.
- The original New Year's Eve Ball weighed 700 pounds and was five feet in diameter. It was made of iron and wood and was decorated with 100 25-watt light bulbs. November 11, 2008 - A "new" New Year's Eve ball is introduced. The ball is a geodesic sphere, 12 feet in diameter and weighing 11,875 pounds. It is built to withstand high winds and fluctuating temperatures. Watford Crystal introduces a different pattern for each New Year's celebration.
- The 8th most common New Year's resolution is to improve a relationship. Only around 40% of us will even make a resolution. While nearly all of those vows err on the side of improvement (e.g. start exercising, improve your finances, quit smoking), the 8th most common resolution is to get along better with someone else, according to a 2012 Harris poll. So what's the number one New Year's resolution? Weight loss! Sources: cnn.com and thrillist.com

Happy New Year!