

EXTENSION IS ON THE MOVE

What's Inside:

On the Ranch

- Is the Price Right?
- Beef Production Calendar

In the Field

- Management of Defoliating Insects in Nebraska Soybeans

Healthy Eating

- Salt Awareness Week
- Celebrate Frozen Food Month

Today's Future

- Making Mindfulness a Priority
- Engaging Children in Walking & Hiking
- 4 Ways to Teach Your Children Money Management
- Growing Beans on Cotton Balls

World of Work

- Tractor Safety Course Offered to Teens
- 4-H Enrollment is Open

Splash into Extension

- Gardens for Water & Pollinators
- Are You Concerned About your Water

In the Dirt

- Growing Onions – Set, Plants, Seeds
- Dahlia “City Lights Purple” Best of Show
- Pruning to Create Strength & Good Structure in Young Trees
- Prune Evergreen Shrubs in Winter?

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March, 2020

Volume 10, Number 2

Planting Seed Potatoes

Back before supermarkets, when gardens supplied the vegetables put on the table, the last of the potatoes in the storage bin were used for seed potatoes. Experienced gardeners set aside their blemish-free, healthiest potatoes for seed. Today you can go to the garden center and select from several varieties.

Seed potatoes can be planted whole, or cut into pieces with at least one eye per piece. Seed potatoes with more eyes will grow to produce a larger quantity of potatoes but the potatoes will generally be smaller. Seed potatoes with fewer eyes will produce fewer potatoes, but those potatoes will tend to be larger.

If you choose to cut your seed potatoes into smaller pieces, cut them two days prior to planting. This allows the cuts to callus or heal over slightly. This prevents soil-borne diseases from infecting your potato crop.

Plant your whole or cut seed potatoes two to three inches deep in the soil. Rows of potatoes should be about three feet apart and the potatoes within the row should be planted twelve inches apart.



If your potato crop suffered from scab disease in the past, move your potatoes to a different section of the garden. This will help prevent further scab infection. Potato scab appears as rough patches on the skin of the potatoes.

Depending on the warmth of the soil, potato plants will begin to emerge one to three weeks after planting. When the plants are about a foot tall, use your hoe to mound six to eight inches of soil continuously along the entire row of plants. This is called hilling and ensures that the potatoes will grow deeply under the soil, away from sunlight which would cause them to become green. Keep the potato plants evenly watered while they are growing.

Once your potato plants have bloomed, you can begin to harvest small "new" potatoes. This is usually about eight weeks after planting. In the fall, after the foliage has begun to dry and die back, the entire crop can be dug.

Before storing them in a cool, dry and dark place, make sure the surface of your freshly dug potatoes have dried a bit. Spread them out in a dry spot out of direct sun, such as a garage or shed, for a day or two before putting them in storage.

Freshly dug potatoes taste better than any you'll buy at a grocery store. Grow some yourself and discover how easy and fun it is to produce a crop of delicious potatoes for your family.

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

Beef Production Calendar

The beef production calendar is a management tool for producers to help them in scheduling practices pertaining to the cow herd over a twelve-month period. The calendar is based on a late March calving beef herd. The calendar addresses three categories:

- General Management Practices
- Feeding Management
- Herd Health

There are practices for producers to consider in these specific areas each month as the beef herd progresses through the production cycle for cows that give birth to calves in March.

Visit <https://beef.unl.edu/beef-production-calendar> for the detailed calendar.

Is The Price Right?

Ben Beckman, Beef Systems Asst. Extension Educator

With many producers utilizing annual forage/cover crops and prevent plant acres, the amount of “non-traditional” forage options on the market have increased this past year. As long as we keep an eye out for potential nitrate issues, sorghum/sudangrass, milo, or small grains like oats, rye, and wheat can all make great forage options as hay or silage. Whether you are looking to buy or sell these products, answering the question, “Is the price right?” can often be a difficult undertaking.

When pricing alfalfa or grass hay, a great resource to start with is the [USDA Nebraska Hay Summary](https://www.ams.usda.gov/mnreports/wh_gr310.txt) (https://www.ams.usda.gov/mnreports/wh_gr310.txt) which is published weekly and splits the state into three reporting regions. Sometimes you can get lucky and catch prices for “non-typical” hay, but that isn’t always the case. It may be worth calling local hay dealers to check values.

When the forage we are looking to price isn’t listed or we can’t find a good quote, we need to figure a way to compare our feeds equally, as either price per unit of protein or energy. To do this start by finding what the market price for protein or energy is in hay that we do have a price for. Because different feeds have different moisture levels that effect the weight, we need to figure the price of hay on a 100% dry matter basis so we can accurately compare.

This takes a bit of quick math. To begin, take the cost of a feed that we know the value of, (i.e. good large round alfalfa bales for \$110 per ton). We can figure hay being anywhere from 80-90% dry matter depending on storage. For our example, let’s split the difference and assume 85% dry matter. We then divide our feed

cost by percent dry matter to get cost per unit of dry matter. In our example, this is \$129.41 per ton of dry matter.

Equation:

$$\frac{\text{Cost of feed}}{\% \text{ Dry Matter (as a decimal)}} = \text{Cost per unit of dry matter}$$

Example:

$$\frac{\$110 \text{ per ton}}{0.85} = \$129.41 \text{ per ton of dry matter}$$

While most hay outside of alfalfa isn’t usually used for protein supplementation, we can still take a look at it and see if the price per unit of protein affects our decision. The USDA says good quality alfalfa is 18-20% crude protein, so we’ll use 19% for our example. We then take our price per unit of dry matter (\$129.41) and divide by percent crude protein (19%). So for this hay we are paying

\$681.11 per ton of protein on a dry matter basis. We can divide this by 2,000 pounds to get our cost per pound, which is \$0.34/lb.

Equation:

$$\frac{\text{Cost per unit of dry matter}}{\% \text{ Protein (as a decimal)}} = \text{Cost per unit of protein}$$

Example:

$$\frac{\$129.41 \text{ per ton}}{0.19} = \$681.11 \text{ per ton of protein}$$

For energy, we do the same thing, just substituting % TDN for % protein. Again, we go to our USDA survey and see that good quality alfalfa is 58-60% TDN at 100% dry matter. For our example, we'll use 59%. We then take our price per unit of dry matter (\$129.41) and divide by percent TDN (59%). So for this hay, we are paying \$219.34 per ton of energy on a dry matter basis. We can divide this by 2,000 pounds to get our cost per pound, which is \$0.11/lb of TDN.

Equation:

$$\frac{\text{Cost per unit of dry matter}}{\% \text{ Energy (TDN) as a decimal}} = \text{Cost per unit of energy}$$

Example:

$$\frac{\$129.41 \text{ per ton}}{0.59} = \$219.34 \text{ per ton of energy}$$

To compare other forages, say some sorghum/sudangrass hay that the neighbor wants to sell to us, we need to know the price and the 100% dry matter crude protein and TDN numbers from a forage test. The sorghum/sudangrass hay is priced at \$90 per ton, and the forage analysis showed 87% dry matter, 11% crude protein, and 55% TDN at 100% dry matter. If we do our math like before, we come up with the numbers below:

	Cost/ton DM	Protein/ton DM	Protein/lb. DM	Energy/ton DM	Energy/lb. DM
Alfalfa Hay	\$129.41	\$681.11	\$0.34	\$219.34	\$0.11
Sorghum/Sudangrass Hay	\$103.45	\$940.45	\$0.47	\$188.09	\$0.09
Difference	\$25.96	-\$259.34	-\$0.13	\$31.25	\$0.02

Like we expected, if we are planning on feeding the sorghum/sudangrass hay for protein, alfalfa is a better option as we'd be paying \$0.13/lb. more. However, if we want to feed the sorghum/sudangrass hay as an energy supplement, we are saving \$0.02/lb. of TDN provided.

If you don't want to take the time to make these comparisons long hand and don't mind a computer spreadsheet, Nebraska Extension has developed a great tool, [the Feed Cost Cow-Q-Lator \(https://extension.unl.edu/statewide/westcentral/ag-economics/\)](https://extension.unl.edu/statewide/westcentral/ag-economics/), which does most of the math for you. The Cow-Q-Lator even adds a few additional layers of cost to consider, delivery charges, storage, and feeding, as well as a generic feed library to help with rough comparisons.

While it takes a bit of extra effort to do these sorts of comparisons, evaluating feedstuffs on a cost per unit basis is beneficial for everyone. Those feeding can develop rations that don't break the bank and those selling can be certain their asking price is fair. Whether you do it long hand or using a spreadsheet, figuring out the true value of a forage makes answering the question, "Is the price right?" manageable.

IN THE FIELD

Last Private Applicator Certification in Knox County

<https://go.unl.edu/2020pat>

March 12
1:30 pm
Walter Larsen Senior Center
Creighton

Management of Defoliating Insects in Nebraska Soybeans

Many defoliating insects may be found in Nebraska soybeans. Estimating defoliation levels in fields is the best way to decide whether it will pay to treat for these insects.

We saw several different insects in parts of Nebraska causing defoliation in soybeans in 2019. These included:

- woolly bear caterpillars
- green cloverworms
- grasshoppers
- bean leaf beetles
- painted lady/thistle caterpillars
- silver-spotted skipper caterpillar
- Japanese beetles

Most of these insects are sporadic pests whose numbers vary from

Estimating Insect Defoliation in Soybeans

- 1 Remove leaves from top, middle and bottom of plant.
- 2 Remove the highest and lowest defoliated trifoliolate. Keep other leaflet.
- 3 Repeat for the middle and bottom leaves on the same plant.
- 4 Repeat 1 - 3 on 10 more plants.
- 5 Repeat at 4 more locations and take average defoliation of all 40 leaves.

10 plants/location
4 locations

Top
Highest
Lowest
Middle
Bottom

Levels of soybean defoliation. Injury is often over-estimated.
NebGuide G2259

Thresholds: Vegetative Stage: 30%
Reproductive Stage: 20%

EXTENSION

Process for sampling soybean leaves to assess defoliation. (Figure by Justin McMechan)

year to year and field to field. Some are migratory insects which do not overwinter in Nebraska, such as the thistle caterpillars and green cloverworms. Some are expanding their range in Nebraska, such as the Japanese beetle.

Regardless, when we have a mix of different insects feeding on soybean leaves, the best way to assess the need for insecticide treatment is to estimate the defoliation level from all insects present. In soybeans insecticide treatment is recommended when insects are present and damage is expected to exceed 30% defoliation in vegetative stage and 20% in reproductive stage soybeans. For more information see [Managing Soybean Defoliators](#), NebGuide G2259. In addition to defoliation levels it is also important to identify which insect species are present, their size and abundance. This information will help you decide which insecticide product and rate should be used if treatment is needed.

Estimating defoliation can be difficult without practice. The chart above provides guidance on how to more accurately estimate defoliation in soybeans.

Colon Cancer Awareness Month

Colon cancer is the second leading cause of cancer-related death for both men and women. When should you get screened for colon cancer? Encourage everyone over the age of 50 to get screened regularly for colon cancer.



The 2015-2020 Dietary Guidelines recommends eating less than 2,300 milligrams (mg) per day of sodium. Most Americans eat too much sodium with the average sodium intake being 3,440 mg per day. A further reduction to 1,500 mg per day among adults who have prehypertension and hypertension can result in even greater blood pressure reduction. Remember to use the Nutrition Facts label to check for sodium, especially in processed foods like pizza, pasta dishes, sauces, and soups.

HEALTHY EATING

Salt Awareness Week – March 9-15, 2020



American Heart Association
life is why™
heart.org/sodium

7 SALTY MYTHS BUSTED

- 1 ELIMINATE sodium COMPLETELY for GOOD HEALTH**



SODIUM is an **ESSENTIAL NUTRIENT** that **CONTROLS BLOOD PRESSURE** and is needed to make nerves and muscles work properly, but you need the **RIGHT AMOUNT**.

Institute of Medicine 2004. Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate. Washington, DC: The National Academies Press.
- 2 SEA SALT has LESS SODIUM than TABLE SALT**



about 40% SODIUM

Sea salt has boomed in popularity, but it usually isn't any **less salty**. Just like table salt, it typically **contains 40% sodium**.

Institute of Medicine. 2010. Strategies to Reduce Sodium Intake in the United States. Washington, DC: The National Academies Press.
- 3 I usually don't SALT my FOOD, so I DON'T EAT too MUCH SODIUM**



MORE THAN 75% of SODIUM Americans consume is estimated to come from **processed foods** – not the salt shaker.

*That's why it's so important to compare **NUTRITION FACTS** labels and serving sizes.*

Mattes, R. D., and D. Donnelly. 1991. Journal of the American College of Nutrition 10(4):383-393.
- 4 HIGH levels of SODIUM are FOUND only in FOOD**



Some over-the-counter medications contain high levels of sodium. Carefully read drug labels, and remember that some companies produce low-sodium, over-the-counter products.
- 5 LOWER SODIUM foods have NO TASTE**



There is a rich world of creative and flavorful alternatives to salt. Experiment with **spices, herbs** and **citrus** to enhance the natural **flavor** of your food!
- 6 My BLOOD PRESSURE is NORMAL, so I don't NEED to WORRY about how much SODIUM I eat**



THE AMERICAN HEART ASSOCIATION recommends **CONSUMING LESS THAN 1500mg** daily

Even for people who don't have high blood pressure, less **sodium** will significantly blunt the rise in blood pressure that occurs as we age and will also reduce the risk developing other conditions, such as **kidney disease**, associated with eating too much **sodium**.

Appel LJ, Frohlich ED, Hall JE, Pearson TA, Sacco RL, Seals DR, Sacks FM, Smith SC, Valsaridis DK, Van Horn LV. Circulation. 2011;123:1138–1143.
- 7 I don't EAT a lot of SALTY FOOD so I DON'T EAT too much SODIUM**

WATCH OUT FOR:



POULTRY CHEESE BREAD

These foods can have excess sodium that can increase your risk for heart disease and stroke.

Centers for Disease Control and Prevention. 2012. Vital Signs: Food Categories Contributing the Most to Sodium Consumption — United States, 2007–2008. Morbidity and Mortality Weekly Report (61), February 7, 2012.

©2013, American Heart Association 9/13DS7223

Celebrate Frozen Food Month in March

Frozen foods are convenient to enjoy all year round. Celebrate Frozen Food Month by stocking up on frozen broccoli and making these recipes from Choose MyPlate. Broccoli helps brighten your plate and provides nutrients such as dietary fiber, folate (folic acid) and vitamin C.

MAGIC CRUST QUICHE

(Makes 6 servings)

- 1 tablespoon vegetable oil
- 1/2 cup onion (chopped)
- 2 cups vegetables* (frozen or fresh)
- 1 cup cheddar cheese, low-fat (shredded)
- 3 eggs
- 1-1/2 cup milk, 1%
- 3/4 cup baking mix (like Bisquick)

1. Cook onion in oil (or cook with vegetables).
2. Cook vegetables (or use leftovers). Drain well.
3. Grease round pie pan or 8 x 8 inch baking dish.
4. Spread cooked vegetables in pan. Spread cheese on top of vegetables.
5. Mix milk, eggs and baking mix. Pour over vegetables and cheese.
6. Bake at 350°F for 35 minutes, until a safe internal temperature of 160°F has been reached and a knife inserted into the middle comes out clean.

*Notes: Suggest preparing with frozen broccoli (shown) or spinach

Nutrition Information: Calories 215, Total Fat 8g, Saturated Fat 3g, Sodium 407mg, Total Carbohydrates 22g, Fiber 4g, Total Sugars 8g, Protein 13g



CREAM OF BROCCOLI SOUP

(Makes 4 servings)

- 1-1/2 cups chicken broth
- 1/2 cups onion (chopped)
- 2 cups broccoli (cut, frozen or fresh)
- 1/2 teaspoon thyme (dried, crushed)
- 2 bay leaves (small)
- 2 tablespoons vegetable oil
- 2 tablespoons flour
- 1/4 teaspoon salt
- 1/8 teaspoon pepper (optional)
- 1 cup non-fat milk
- 1/8 teaspoon garlic powder (optional)

1. In a saucepan combine chicken broth, chopped onion, broccoli, thyme, bay leaf and garlic powder. Bring mixture to boiling. Reduce heat; cover and simmer for 10 minutes or until vegetables are tender. Remove bay leaf.
2. Place half of the mixture in a blender or food processor, cover and blend 30–60 seconds or until smooth. Pour into a bowl; repeat with remaining vegetable mixture, set all aside.
3. In the same saucepan warm the oil. Stir in flour, salt and pepper. Add the milk all at once, stirring rapidly with a wire whisk. Cook and stir until mixture is thickened and bubbly. Stir in the blended broccoli mixture. Cook and stir until soup is heated through. Season to taste with additional salt and pepper.

Nutrition Information: Calories 123, Total Fat 7g, Saturated Fat 1g, Sodium 509mg, Total Carbohydrates 11g, Fiber 2g, Total Sugars 5g, Protein 4g



BRAG ABOUT IT BREAD BAKE

(Makes 6 servings)

- 6 slices bread (cubed, approximately 6 cups)
- 1-1/2 cups broccoli (frozen, chopped and cooked)
- 1 cup cheddar cheese, low-fat shredded
- 1 tablespoon onion minced, optional (used in analysis)
- 1 cup chicken, skinless (diced, cooked)
- 3 eggs
- 4 egg whites
- 2 cup milk, non-fat

1. Place half the bread in a well-greased 9x9 inch pan.
2. Top with broccoli, cheese, onion and meat.
3. Place remaining bread on top.
4. In a bowl, mix eggs and milk.
5. Pour egg mixture over bread in pan.
6. Cover. Refrigerate overnight or at least 1 hour.
7. Bake uncovered at 325°F for 1 to 1-1/4 hours or until center is firm and lightly browned.

Nutrition Information: Calories 220, Total Fat 6g, Saturated Fat 2g, Sodium 467mg, Total Carbohydrates 19g, Fiber 1g, Total Sugars 6g, Protein 23g



BROCCOLI AND CORN BAKE

(Makes 6 servings)

- 1 can cream-style corn (14.75 ounce)
- 3-3/4 cup broccoli (frozen, cooked)
- 1 egg (beaten)
- 1/2 cup cracker crumbs (crushed)
- 1/4 cup vegetable oil
- 6 saltine crackers (crushed)
- 1 tablespoon tub margarine (or butter) (melted)

1. Mix corn, broccoli, egg, cracker crumbs and oil together in greased 1-1/2 quart casserole.
2. Mix topping ingredients together in small bowl. Sprinkle over corn mixture.
3. Bake at 350°F for 40 minutes.

Nutrition Information: Calories 214, Total Fat 13g, Saturated Fat 2g, Sodium 135mg, Total Carbohydrates 23g, Fiber 3g, Total Sugars 3g, Protein 5g



Source: RECIPES OF THE MONTH, Kayla Colgrove, MS, RDN, ACSM-CPT, Extension Educator, Lancaster Co.

Pecan Day is March 25

Pecans are a source of protein, potassium, zinc, vitamin E, magnesium, carbohydrates, and folic acid. They contain mainly polyunsaturated and monounsaturated fat -- the type considered "heart healthy." A handful of nuts a day, such as pecans, can help you stay on a diet by contributing to satiety. This means they will help you feel full longer.



TODAY'S FUTURE

Growing Beans on Cotton Balls

This is a really easy, visual way to teach children about root systems and is something to do with children each Spring time.

For directions visit <https://theimaginationtree.com/growing-beans-on-cotton-balls/>



Making Mindfulness a Priority

LaDonna Werth, Extension Educator | The Learning Child

In the last decade, practicing mindfulness has been acknowledged more since people have been recognizing the benefits of it. Being mindful can be beneficial to everyone, but we are going to focus on how it can help your child. But first, let's start with the basics.

So, what exactly is mindfulness?

It is simply being present in the moment, which is different from thinking about the present moment. Mindfulness means being aware of what is going on around you, openly accepting one's thoughts and feelings without thinking about the pressures of life. It requires some effort and intentionality.

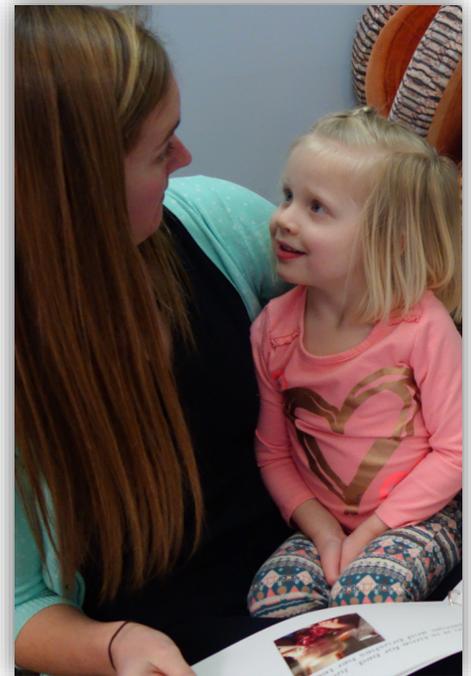
Why is mindfulness helpful for kids?

Since children are naturally curious, they are more apt to learn, live in the moment, and be attentive. However, they are often too busy just like adults. This causes children to be tired, distracted easily, and restless. Practicing mindfulness helps kids learn to pause for a moment and be present. Mindfulness helps with attention, patience, and trust which will help your child to grow up and be themselves.

Do certain kids benefit more? Yes, actually they do! Although mindfulness exercises are great for all children five years and older who want to calm

their busy minds, feel and understand their emotions, and strengthen their concentration, they suit specific children even more so. Children who have low self-esteem truly benefit from practicing mindfulness because it helps them realize it is okay to be themselves. Other children who are diagnosed with ADHD, dyslexia, and autism spectrum disorders also gain from these exercises. Now, these cannot cure the disorders and it is not considered a form of therapy, but it can help children approach the very real issues they're dealing with in a different, calmer way.

Since mindfulness exercises are great for parents as well, practicing them with your child is a perfect way to spend time together!



Source: Sitting Still Like a Frog by Eline Snel and Photo source: The Learning Child

Engaging Children in Walking and Hiking



A wonderful adventure for a child can begin with simply going on a walk or a hike. Children will not only have fun enjoying the outdoors but experience a wealth of exciting learning opportunities. Listed below are some great ideas that can be used alone or as a springboard to another idea that will engage children of all ages in walking or hiking.

1. **Go on a critter hunt:** When you are on a walk or hike, stop a few times to turn over logs, rocks or pieces of bark to see what's hiding underneath. You might discover beetles, spiders, worms and roly pollies. A magnifying glass is a great tool to bring along to get a closer look.
2. **Animal walks:** This is a fun game of taking turns to decide how to walk until reaching the next landmark (e.g. fence, tree, house). For example: walk like a duck by squatting legs and flapping arms or hop like a rabbit with arms tucked into chest and hopping forward. Sound effects can be added but be careful of other walkers and wildlife which may like a slightly more peaceful environment.
3. **Can you find it?** A player chooses an object they see on the walk and says, "First one to find a ____". The player fills the blank with the object (e.g. green leaf). Other players try to find the object first and the winner then chooses the next object to find.
4. **Follow me:** The goal of this game is to follow a partner as close as possible, without running into them, or anyone else. Take turns who gets to be the leader.
5. **Go on a scavenger hunt:** Before beginning a walk, brainstorm a list of objects you think you might find. For example: a feather, animal tracks, a flower, an acorn, a large rock, moss, a pine cone, etc. Add to the list during the walk.

Source: <https://food.unl.edu/free-resources/newsletters/family-fun-run/engaging-children-walking-and-hiking>

4 Ways to Teach Your Children Money Management

Don't give in to "I wants". As soon as they began feasting their bright eyes on colorful trinkets at the checkout, we began to divert their attention. If they do not expect something each time we shop, it makes errands much easier.

Teach that money comes from effort. Examples of our commissioned chores are: water the flowers, vacuum, fold towels, and the like. Our non-commissioned chores are: keep your things picked up, help with dinner, care for the animals, and so on.

Encourage wise use of money. Saving towards a big, but attainable goal is encouraged (such as the guitar my seven-year-old is working toward.) The remainder of the gift funds they receive is put towards sports and other activities.

Teach the fun in frugality. Lessons learned? Time management, spirituality, creativity, and resourcefulness, to name a few.

Source: <https://moneysavingmom.com/teaching-your-children-money-management/>

WORLD OF WORK

4-H Enrollment is Open

Enrollment is now open for the 2020 4-H program year. Go to <https://ne.4honline.com>.

Please use Google Chrome web browser to enroll in 4-H On-line.

Passwords – If you have forgotten your password, use the “I forgot my password” option or contact the extension office. **DO NOT** set up a new profile.

Clubs and projects will need to be added back into profiles as they were cleared out at the state level.

Tractor Safety Course Offered to Teens

The most common cause of agricultural-related death in Nebraska is overturned tractors and all-terrain vehicles (ATVs). Employing anyone uncertified under age 16 is a liability risk for farmers if those children operate such equipment.

Federal law prohibits youth under 16 years of age from using specific equipment on a farm unless parents or legal guardians own the farm. Certification received after a course provided by Nebraska Extension grants an exemption to the law, allowing 14- and 15-year-olds to drive a tractor and to do field work with certain mechanized equipment.

Members of the Central States Center for Agricultural Safety and Health in the University of Nebraska Medical Center College of Public Health will provide a tractor safety course in May and June of 2020 in 11 towns across Nebraska in partnership with Nebraska Extension. The course provides extensive training on tractor and

all-terrain vehicle safety with a variety of hands-on activities. Making safety a priority and respecting agricultural equipment are primary goals of the course.

Teens 14 years of age or older, who work on farms, are encouraged to **register** for the Nebraska Extension Tractor Safety & Hazardous Occupations Course. Anyone under age 14 is not eligible to take the class.

Location	Date	Site Coordinator
Ord, fairgrounds	May 26 & 27	(308) 728-5071
Wayne, fairgrounds	May 28 & 29	(402) 375-3310
O’Neill, Plains Equipment	June 1 & 2	(402) 336-2760
Ainsworth, Evangelical Free	June 4 & 5	(402) 387-2213
Geneva, fairgrounds	June 9 & 10	(402) 759-3712

Cost of the course is \$60 and includes educational materials, instruction, supplies, and lunch. Classes begin at 8 a.m. or 9 a.m., depending on location, and end times vary depending on the number of

participants. If classes do not fill to the minimum of 10 participants, an option will be offered to do Day 1 training online and Day 2 in person.

The first day of class will cover the required elements of the National Safe Tractor and Machinery Operation Program, hands-on participation, concluding with a written test which students must pass to attend the second day of training. The second day of training will include a driving test and equipment operation and ATV safety lessons. Students must demonstrate competence in hitching and unhitching equipment and driving a tractor and trailer through a standardized course. Instructors will also offer education about safe behaviors and laws for ATVs, utility-task vehicles (UTVs), and other off-road vehicles (ORVs).

Instructors for the course are members of the Central States Center for Agricultural Safety and Health: Aaron Yoder, Ph.D., Ellen Duysen; UNMC graduate student Alyssa Damke; and Nebraska Extension educators Troy Ingram, Randy Saner, Chandra Giles, and John Thomas.

For more information or to register, contact the appropriate Extension office above for guidance on where to send the [registration form](https://extension.unl.edu/statewide/kearney/Tractor%20Safety%20Flier%202020.pdf). (<https://extension.unl.edu/statewide/kearney/Tractor%20Safety%20Flier%202020.pdf>)

Chemigation Trainings

<https://edmedia.wufoo.com/reports/2020-chemigation-training-dates/>

March 3, 2020 - 1:30 PM
O'Neill, Holt County
Courthouse Annex

March 5, 2020 - 9:00 AM
Neligh, Courthouse
Basement Meeting Room

March 12, 2020 - 1:30 PM
O'Neill, Holt County
Courthouse Annex

March 19, 2020 - 9:00 AM
Norfolk, Madison County
Extension Office

April 14, 2020 - 9:30 AM
O'Neill, Holt County
Courthouse Annex

SPLASH INTO EXTENSION

Gardens for Water & Pollinators

Kelly Feehan - Extension Educator

When planning gardens, people may think about pollinators and select plants to benefit them. Another trend is using rain gardens to catch and hold rainwater. Water and pollinator conservation are two goals achieved with rain gardens.

Rain gardens reduce irrigation needs and can decrease the amount of rainwater running off of a property and carrying pollutants to surface water. Rainwater is a valuable resource. Consider collecting some of it with a rain garden that is filled with plants to benefit pollinators.

To the average person, most rain gardens look similar to regular flower gardens. What makes them a rain garden is they are located and designed where they will collect and hold rainwater, typically from a roof downspout or sloped area of a lawn.

Rain gardens are shallow depressions with low berms on three sides to prevent rainwater flowing out. They need to be located not only where rainwater can be directed into them, but where soil is well drained.

A correctly installed rain garden will hold water for about 24 hours after rainfall, 48 hours at the most. If a rain garden is not designed and installed correctly, and water does not drain away in 48 hours or less, there would be a risk of losing plants and possibly breeding

mosquitoes.

Rain gardens conserve water because rainfall is used in place of irrigation. Instead of rainwater from roofs or slopes being directed into streets and storm drains, more flows into the garden to soak into soil.

By selecting the right plants, and focusing on good root establishment the first season, rain gardens should not need irrigation thereafter except during drought. To learn more about rain gardens, go to www.extensionpubs.unl.edu and search for stormwater or rain gardens.

With loss of habitat, pollinators benefit from residential gardens for nectar, pollen and larval food sources. There are many perennials, ornamental grasses and shrubs to plant in rain gardens that will benefit pollinators.

With rain gardens, there are different zones to select plants for. The bottom of a rain garden can remain wet and plants tolerant of inundation for 24 to 48 hours and wet soils need to be used. Good examples are Carex, Chelone or turtlehead, swamp milkweed, Joe-pye weed, Helonium, and switchgrass.

Most plants can be used on the sides of a rain garden. For the tops of the low berms, drought tolerant plants are best since berms shed water. Good plants for the tops of rain gardens include hardy geranium, black-eyed Susan, Coreopsis, low growing asters, blanket flower, and butterfly milkweed.

As you decide what to plant, think about flowering succession. Ideally, something should be blooming from early spring to late fall for pollinators. This includes trees and shrubs as well as perennials, sedges and grasses.

If there is a time when you have less blooming in your yard, look for plants to fill the gap for pollinators. Mid-May through June can be a time with few blooms. Perennials that bloom at this time include Baptisia, columbine, Penstemon, prairie smoke, Salvia, baby's breath, blue flax, and prairie phlox. These would do well on the sides or tops of rain gardens.

Source: water.unl.edu

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March 10

6:30PM – 8:30PM
Orchard, NE
Rex Theatre
225 Windom St

March 17

1:00PM – 3:00PM
Creighton, NE
Creighton Golf Course
87190 Hwy 13

March 19

6:30PM – 8:30PM
Osmond, NE
St. Mary's Elementary
School Basement
302 E 5th St

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ARE YOU CONCERNED ABOUT YOUR WATER? SHOULD YOU BE?

How Does Water Quality Impact:

- ◆ Individual Health Risks
- ◆ Family Budgets
- ◆ Community Costs
- ◆ Regulations



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IN THE DIRT

Bagworm

Now is the time to remove last year's bags from high value small trees

Take time now to scout plants affected last year. Remove and destroy bags on high value, smaller evergreen trees will help reduce next year's bagworm population. Bags can be removed from now until insects hatch next year, approximately mid-May. Destroy bagworm eggs by removing bags from the plant and crushing or immersing them in soapy water. If bags containing eggs are discarded on the ground, eggs may survive winter fine then hatch and larvae return to the surrounding plants next summer. As many as 500 to 1000 eggs can overwinter in one female bagworm's bag.



Growing Onions – Set, Plants or Seeds?

Planting onions from small bulbs or “sets” is not the best way to grow large onions for storage. Plants grown

from sets often begin blooming in mid-summer and stubbornly refuse to stop. Once that happens, onion bulbs don't increase much in size.

Onion Sets - This happens because onions are biennials. They grow foliage and a bulb the first season, then bloom and set seed in their second growing season. Growing the sets counts as one growing season – although it is definitely a short one! But it leaves the sets primed to begin reproducing by setting flowers after you plant them in the garden. This makes onion sets a great way to grow green onions, but not the best way to grow onions for long term storage.



Because of onion's biennial nature, plants grown from seed or transplants don't bloom the first year and so have more growing time to develop larger bulbs. Many mail-order companies and garden centers now carry onion transplants in spring, but you can also grow your own.



Growing Onion Transplants - Onion transplants can be grown in approximately 10-12 weeks. Sow seeds in late February or early March for planting outdoors in early May. Plant seeds $\frac{3}{4}$ inches deep in a seed-starting soil blend and keep them evenly moist. Once they sprout, provide the seedlings with bright light from a sunny, south-facing window, or better yet, provide supplemental light with fluorescent fixtures placed a few inches above them for 12-14 hours each day.

Transplant the little, grass-like seedlings outdoors as soon as garden soil is dry enough to work thoroughly and daytime temperatures reach 50° F. Onion transplants will tolerate light frosts. Planting as early as possible is important because more leaf growth equals bigger bulbs. Each leaf will develop one layer in the onion bulb and the more layers, the bigger the bulb at harvest.

Place the seedlings 4 inches apart in wide row plantings. When using “wide” rows plants are not placed single file on one long row, but spaced through a row ranging from 6 to 36 inches across. Use a row width that is convenient for you to reach from both sides, to make harvesting and weed control easier.

Direct Seeding - Onions can also be direct seeded. This is a good option if you can't find your favorite cultivar as a transplant. Plant seeds as soon as the soil can be worked, usually from mid to late March. Wide row spacing also works well when planting onion seeds. Plant the seeds 1/4 – 1/2 inch deep in the soil. Space rows 12-18 inches apart. Once the plants have 5-10 leaves, they can be thinned so the remaining plants are spaced 3-4 inches apart, and the harvested plants used as green onions.

Growing On - Onions grow best in well-drained soil, 6.5 pH, with a high level of organic matter. Raised beds, 4-6 inches high, work well to provide good soil drainage if the native soil is heavy. They also need plenty of sunlight, and regular watering. The installation of drip irrigation the length of the rows makes watering easier and more uniform. Don't be concerned if a large portion of the bulb develops above ground; that's normal for onions.

Source: <https://communityenvironment.unl.edu/jan-2014#Onions>

[Dahlia 'City Lights Purple' Best of Show](#)

One of the most enjoyable ways for gardeners to get through the dark, cold days of winter is to begin planning next summer's gardens. Over the next few weeks, we'll look at plants – annuals, perennials, edibles, trees and shrubs – to consider for addition to your gardens this summer.



First, we'll take a look at the top performers in Colorado State University's 2019 flower trials. The purpose of CSU's trial gardens is to evaluate the performance of annuals and perennials under stressful Rocky Mountain growing conditions, which include intense sun, drying winds, severe hailstorms, large fluctuations between day and night temperatures and dry growing conditions. Sounds a lot like Nebraska! Plants are evaluated on vigor, abundance of flowers, tolerance to environmental stress, and disease resistance.

The trial gardens, located on CSU's Fort Collins campus, are open to the public and are definitely worth a visit. The gardens are beautiful and plants are labeled, allowing visitors to stroll at will and decide which plants they like best.

Top Perennial Performers - One section of the CSU trial program focusses on newly released perennial cultivars (cultivated variety) – three years or less. Each cultivar is allowed to overwinter twice and is evaluated for the characteristics mentioned above. One of this year's top picks is 'Millenium' ornamental onion.

'Millenium' plants develop a uniform mounded growth habit with the long linear leaves typical of alliums. Flowers are rosy-purple and long



lasting, very attractive to bees and butterflies. Flower stems are strong and upright. In the CSU trials, flower stems did not lodge (fall over), even under continued overhead irrigation. Plants reach a height of 15-20 inches, with a spread of 10-15 inches.

Millenium is easy to grow in full or partial sun, with average soil. It's available from several mail order nurseries, such as White Flower Farms, High Country Gardens, Walters Gardens and Proven Winners.

“Best Of” Annuals - Several annual selections were chosen with great characteristics worthy of consideration.

Best of Show – Dahlia ‘City Lights Purple’ (pictured on page 14) has deep burgundy, double flowers darkening almost to black toward the center of the flower. Foliage is a dark greenish-purple. Plants are compact with multiple branches, blooming from July to October. Plant height is 18-24 inches with a spread of 15-18 inches. Dahlias are not winter hardy in Nebraska, but their tubers can be dug up in fall and overwintered indoors for planting again the following year. Available from White Flower Farms.

Begonia T Rex ‘Ruby Slippers’

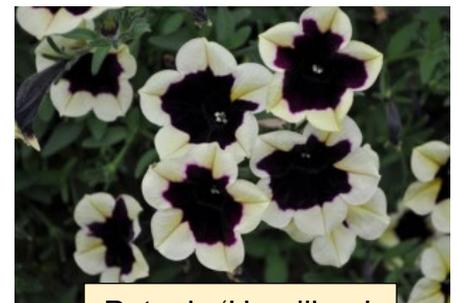


Best Novelty – Begonia T Rex ‘Ruby Slippers’ has very large red leaves with nearly black markings along the main veins and silvery edges. Rex begonias are grown primarily for their striking foliage, although they do produce small flowers. Plants are vigorous with a uniform growth habit and will add great color to shaded areas of the landscape. Provide plants with some protection from the wind to protect the large leaves from physical damage. Plant height is 16 inches with a spread of 16 inches. Find retail location from Terra Nova Nurseries.

Best New Varieties - Several great new cultivars were identified among common annual flower species. For pictures and more information, visit <http://www.flowertrials.colostate.edu/>.

- Angelonia ‘Carita Purple’ – deep purple flowers are very prolific on showy plants. Plants have a superior overall appearance even during the hottest part of summer.
- Begonia ‘Tophat Pink’ – this vigorous begonia grows well in sun, looking great in ground beds or containers. Plants are covered with flowers in rosy-pink.
- Bidens ‘Campfire Flame’ – flowers in beautiful shades of orange, red and yellow from early summer into September. Growth habit is very uniform and plants provide a very striking effect in containers.
- Petunia ‘Headliner’ – flowers have bold coloration with soft creamy yellow and a very dark purple star-shaped eye. Plants grow vigorously and hold up well in heat.

Bidens ‘Campfire Flame’



Petunia ‘Headliner’

Source: <https://acreagenebraska.org/2020/02/04/dahlia-city-lights-purple-best-of-show/>

Pruning to Create Strength and Good Structure in Young Trees

Sarah Browning, *Extension Educator, Lancaster County*

Trees are an essential part of any landscape, providing a wealth of benefits. However, there is also risk associated with trees either from a large tree falling, splitting, or branches breaking. When trees are located near homes, businesses or in areas with a lot of human activity, the potential for damage or injury when a tree fails or branches break is high.

Unfortunately, risk of branch or tree failure is often increased by improper pruning — or no pruning at all — starting when trees are young. Left unpruned, trees often don't create good structure on their own; some tree species have more inherent problems with poor structure than others.

We can minimize risk with regular pruning, using proper pruning techniques, throughout a tree's life. The ultimate goal is to create good tree structure and strong branch-to-trunk connections. And now — late winter — is an excellent time to prune shade trees. Branches are easier to remove when not weighed down by leaves and the tree's branching structure is easy to see.

Structural Defects to Avoid - Several common problems occur in trees and can easily be corrected through pruning, especially if you address them when the tree is young. These problems are:

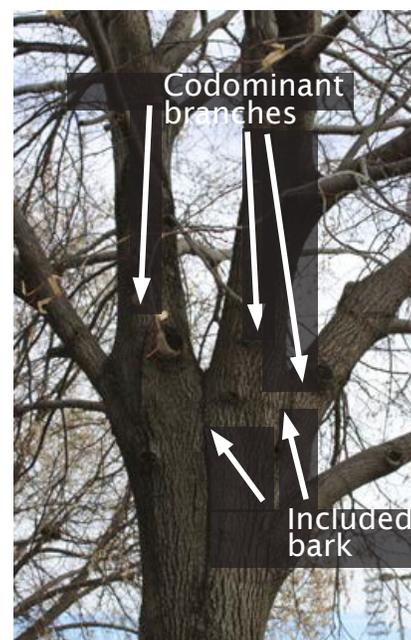
- Codominant branches.
- Included bark.
- Lack of pruning in young trees requiring removal of large branches later on.

Looking for these problems in your trees and developing a management plan is the best thing you can do to maintain the health and strength of your trees as they get large and mature.

Codominant branches are stems of approximately equal girth and height that originate from the same location on the tree. They create a weak union at that point on the trunk, because the branches do not develop a proper branch collar. A branch collar is an area at the base of a branch where new growth of trunk wood wraps around that year's new branch wood. This creates an interconnected, overlapping pattern of growth and creates a strong branch/trunk union.

A frequent problem resulting from codominant branches is splitting of the trunk when the tree is older and under extreme load, such as a heavy snow or ice, or during very high winds. This type of failure is very common in older Bradford pears due to their strong natural tendency to form codominant branching. Almost any shade tree can develop codominant branches and, unfortunately, many homeowners unknowingly create codominant branching in their trees by pruning young trees incorrectly.

What can be done to manage codominant branches? Ideally they are pruned out when their branches and foliage make up only a small percent of the tree's total canopy. Shortening is another method that works well, especially if the branch has been allowed to get large and makes up a higher percentage of the tree's canopy. Remove some of the codominant branch's



Ideally, lower branches should be removed gradually during the first 25 years of a tree's life to prevent the need for removal of very large branches.

height, making it several feet shorter than the main leader, cutting back to a secondary branch or shoot to redirect growth.

Why does shortening work? Growth hormone movement in trees is determined by shoot height. The main leader should always be the tallest shoot in the tree so it continues to receive the most growth hormones. Once you've shortened it, over the next few years, the shortened codominant branch will receive fewer growth hormones than the main leader, growing slower and allowing the main leader to develop. Eventually the codominant branch can be removed completely, or left in the tree as a secondary branch.

Included bark often develops at the junction of codominant branches. Bark is pinched between these competing branches, so there is no physical connection between them. Instead, at their base, is bark pressed against more bark. Often a trunk split will begin at this weak union point and once a split or crack begins to develop, it only gets worse over time.

Lower branches in trees are commonly removed to create better clearance beneath the tree for equipment and people. Removal of large limbs usually happens when tree pruning maintenance is not done on a regular basis, allowing branches to get very large before they are removed. The resulting large wound creates a perfect opening for wood rot fungi, since the wound is slow to close. Ideally, lower branches should be removed gradually during the first 25 years of a tree's life to prevent the need for removal of very large branches. Ideally, if a branch needs to be removed, it should be done before the branch diameter is more than 2–3 inches, especially on decay-prone trees like silver maple, red maple, willow, apple, cherry and hackberry.

Pruning Young Trees - Focus on creating good structure in your trees with the following strategies.

Develop and maintain a central trunk by shortening or removing any secondary leaders, which are branches originating from the trunk, grow very upright and approach the height of the main trunk.

Shorten or remove competing codominant branches so that only one main branch originates from any point on the trunk. Long-term structural branches should be spaced around the trunk like spokes in a wheel and up the trunk at alternating levels.

Slow the growth of lower, temporary branches by shortening them and remove them completely before they reach more than 1/3 the trunk's diameter.

How Much Can Be Removed? - One method used to determine how much live wood can be removed safely during one annual pruning is based on the tree's growth rate. Examine 6–12 twigs randomly around the tree's canopy to determine an average growth rate. Keep in mind if a large amount of pruning is needed, it may need to be spaced out over the course of several years. For trees putting on very little growth, limit pruning to address codominant branches.

For trees putting on an average of 6–12 inches of new growth, 10% of the canopy can be removed. For trees putting on an average of 12–24 inches of new growth, 10–15% of the canopy can be removed.

Trees putting on higher amounts of growth, on average, may tolerate 25% or more canopy removal. But, ideally, trees should be pruned annually, removing smaller amounts of live growth each time.

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