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NEBLINE, May 2014

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The NEBLINE

University of Nebraska–Lincoln Extension in Lancaster County

The Cost of Invasive Species

Barb Ogg

UNL Extension Educator

Asian carp. Burmese pythons. Formosan termites. Spotted wing drosophila (Asia). Emerald ash borer (Asia). Zebra mussels (Eurasia). These are only a few invasive pest species in the news. The United States seems to have been invaded by non-native (alien) pests, especially from Asian countries. Why? There is more trade with Asian countries, resulting in more possible ways species can enter the United States.

The term *invasive species* refers to non-native plants and animals which spread readily because they exploit resources, have a high reproductive rate and may not have many natural enemies. There are more than 50,000 alien invasive species in the United States.

Why Are Invasive Species Significant?

Invasive species harm native plants and wildlife in many ways. When a new and aggressive species is introduced into an established ecosystem, it may be able to breed rapidly because it has no natural enemies. Native wildlife, plants and agricultural crops can be seriously damaged by a species with no predators. Direct threats include:

- damage to agricultural or horticultural crops
- preying on native species

- outcompeting native species for resources
- causing or carrying diseases

Threatened or Endangered Species

Invasive species are one of the leading threats to native plants and wildlife. About 400 of the 958 threatened or endangered species (42 percent) are at risk because of direct competition with invasive species or from ecological changes they have caused.

Economic Damage

According to Pimentel et al. (2005), economic costs associated with invasive species in the United States is \$120 billion per year. This includes losses to agriculture, forestry, as well as, management costs.

How Do They Get Here?

Invasive species come into the United States in a multitude of ways, but introductions are often from human activities which can be accidental or deliberate.

Invasive weeds. Some invasive weedy plants were accidentally brought here in ship ballast, with crop seed or soil around live plants. But, there have been at least 5,000 plants deliberately introduced for food, fiber or ornamental purposes which have escaped. Some of these invasive plants are showy plants — a good

example is purple loosestrife, now designated a noxious weed in Nebraska. Purple loosestrife aggressively seeds in wetland areas and chokes out native vegetation — a problem for wildlife depending on native plants for food and nesting habitat.

In the 1880's kudzu, a perennial vine native to China, was marketed in southern states as an ornamental plant to shade porches. It has also been grown as a high-protein forage and for erosion control. Unfortunately, kudzu aggressively vines over plants and trees and kills plants by smothering them under a blanket of leaves. Now designated a *weed*, it has spread throughout the southeastern United States. It is found in southeast Nebraska.

Domesticated Animals or Pet Trade. Domesticated animals which have accidentally escaped captivity can seriously damage ecosystems. Wild pigs are among the most destructive invasive species in the United States. It is estimated 2–6 million feral pigs are wreaking havoc in 39 states. Half of them are Texas, where they do \$400 million in damages annually.

Unthinking owners have released unwanted pets which have been able to survive in the wild without human care. Because they are uncared for, these wild pets can carry diseases and parasites that threaten

see INVASIVES on page 5

Jim Kalisch, UNL Dept. of Entomology



Soybean aphids reduce yields of soybean plants. Yield losses of over 30 percent have been documented in northeast Nebraska and over 40 percent in other areas of the United States.

Brent Meyer, Lancaster County Weed Control Authority



Kudzu aggressively vines over plants and trees and kills plants by smothering them under a blanket of leaves. Pictured is kudzu in Otoe County, Nebraska.

Vicki Jedlicka, UNL Extension in Lancaster County



Multicolored Asian lady beetles (left — shown approximate size) were introduced as a predator of aphids, but it may be outcompeting native lady beetles (pink spotted lady beetle at right — shown magnified).



Japanese beetle (above: magnified) (right: approximate size)



Jim Kalisch, UNL Dept. of Entomology

Non-Native Pests in Nebraska? More Than You Might Think

Many insects and vertebrate animals we consider to be “pests” are non-native species, although some of them have been in North America such a long time we don’t really recognize them as foreign. Here are some of the more common non-native pests we deal with in Nebraska:

- The **house mouse** (*Mus musculus*) is native to Central Asia, but spread to European farmsteads and households hundreds of years ago. It undoubtedly stowed away on ships with early colonists, along with their cousins, the rats.

- **Norway rat**, also called the **black rat**, (*Rattus rattus*) (originally from Central Asia) was brought here on ships from Europe.
- **Pillbugs** (roly polies) and **sowbugs** arrived in ship ballast. Both are European in origin.
- Most, if not all, **domestic cockroaches** came to North America from more tropical locations. The German cockroach is not German at all, but originally came from Africa. It is thought Oriental cockroaches originated in the Middle East. Many cockroach species have traveled with

humans and are found worldwide and are much more abundant in more tropical locations.

- **Indian meal moths** and other pantry pests were introduced with imported, infested grain and food.
- **German yellowjackets** were first found in Ohio in 1975 and have become widely distributed. A species of paper wasp, they become increasingly aggressive at defending their colony as it expands throughout the summer. Yellow jackets nest in the soil or in wall voids.

see NEBRASKA on page 5

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Know how. Know now.

Satisfying Main Dish Salads for May – Salad Month

Alice Henneman, MS, RD
UNL Extension Educator

What could be simpler in spring or summertime than a main dish salad. With a little

planning, it's even possible to include all of the recommended MyPlate Food Groups in your salad.
Following are some salad recipes and tips to help you get the most from your spring

and summer salads! See how many food groups you can include in your salad! Go easy on the dressing (about 1 to 1-1/2 tablespoons per 2 cups of salad) to keep calories in check.

Fork

Knife

Spoon

HEALTHY EATING

ENJOY NEBRASKA FOODS!

Alice Henneman, MS, RD, UNL Extension Educator

Alice Henneman, UNL Extension in Lancaster County



SOUTHWESTERN BLACK BEAN SALAD

Makes 4 main-dish servings

Beans of all varieties are a natural as tasty additions to salads. This salad is substantial enough to serve as a light main dish.

1/2 cup light ranch dressing
1 large tomato, cut into bite-size wedges or about a cup of halved cherry tomatoes
1 (15 ounce) can black beans, drained and rinsed
1 cup frozen corn, thawed
1 red bell pepper, chopped or cut into strips
2 tablespoons chopped, sweet onion (such as red or Vidalia onions)
1 package (5 ounces) salad greens
1 cup sharp cheddar cheese, regular or reduced fat, coarsely shredded
Black pepper, to taste

In a large bowl, combine all salad ingredients (EXCEPT cheese and black pepper) with ranch dressing. Divide between large salad plates and top with cheese. Pass black pepper, preferably in a pepper grinder, so people can grind their own.

Alice's Notes:

- Approximately 8 cups of salad greens may be substituted for the package of salad greens.
- To thaw frozen corn quickly, place it in a colander, run cold water over it for about 30 seconds or until thawed and shake off the excess water.

Source: recipe by Alice Henneman

Alice Henneman, UNL Extension in Lancaster County



SUMMERTIME STEAK SALAD

Makes 4 servings

Total preparation and cooking time: 30 minutes

Marinating time: 6 hours or overnight

Grilled steak plus a salad is a summertime favorite. Here's a quick new idea for you to try: steak salad The shoulder cut used in this salad is one of 29 cuts of lean beef that meet government guidelines for "lean." A serving qualifies as "lean" if it has less than 10g total fat, 4.5g or less saturated fat and less than 95mg cholesterol per 3.5 ounce serving.

1 beef shoulder steak, cut 1 inch thick (about 1 pound)
1 can (5-1/2 ounces) spicy 100% vegetable juice

FOR SPICY TOMATO DRESSING:
1 can (5-1/2 ounces) spicy 100% vegetable juice
1/2 cup chopped tomato
1/4 cup finely chopped green bell pepper
1 tablespoon red wine vinegar
1 tablespoon chopped fresh cilantro
2 teaspoons olive oil
1 clove garlic, minced

FOR SALAD:
8 cups mixed greens or 1 package (10 ounces) romaine and leaf lettuce mixture
1 cup baby pear or grape tomatoes, halved
1 cup cucumber, cut in half lengthwise, then into thin slices
1 cup chopped green bell pepper
Salt and black pepper, as desired
Crunchy Tortilla Strips (recipe below)

Place beef steak and 1 can vegetable juice in food-safe plastic bag; turn steak to coat. Close bag securely and marinate in refrigerator 6 hours or as long as overnight. Whisk Spicy Tomato Dressing ingredients in small bowl until blended; refrigerate. Combine lettuce, baby pear tomatoes, cucumber and green bell pepper; refrigerate. Remove steak from marinade; discard marinade. Place steak on grid over medium, ash-covered coals. Grill steak, uncovered, 16–20 minutes for medium-rare to medium doneness, turning occasionally. Carve steak into thin slices. Season with salt and pepper, as desired. Meanwhile, prepare Crunchy Tortilla Strips (recipe below). Add steak to salad mixture. Drizzle with dressing and top with tortilla strips.

CRUNCHY TORTILLA STRIPS RECIPE
Cut 2 corn tortillas in half, then crosswise into 1/4-inch-wide strips. Place strips in single layer on baking sheet. Spray tortilla strips lightly with nonstick cooking spray. Bake 4–8 minutes at 400°F or until crisp.

Alice's Notes:

- This recipe is very easy to cut in half. If there are just two of you eating, don't feel this has to be a special company meal.

Recipe as seen in The Healthy Beef Cookbook, published by John Wiley & Sons; authored by Chef Richard Chamberlain and Betsy Hornick, MS, RD; reproduced with permission.

Nutrition information per serving: Calories: 242; Fat: 9g; Saturated fat: 2g; Monounsaturated fat: 4g; Cholesterol: 60mg; Sodium: 239mg; Carbohydrate: 16g; Fiber 4.0g; Protein: 25g; Niacin: 3.9mg; Vitamin B-6: 0.5mg; Vitamin B-12: 2.6mcg; Iron: 4.2mg; Selenium: 26.7mcg; Zinc: 5.9mg.

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Reading With Children Increases Literacy

**Maureen Burson and
Lorene Bartos**
UNL Extension Educators

The economic benefits of quality and affordable early childhood education have been topics of much public policy discussions locally, statewide and nationally. In addition to lack of early childhood education, many children living in poverty experience literacy gaps.

According to the U.S. Department of Education, reading to young children promotes language acquisition and literacy development and, later on, achievement in reading comprehension and overall success in school. The percentage of young children read aloud to daily by a family member is

one indicator of how well young children are prepared for school.

Ann O'Leary, vice president and director of the children and families program at Next Generation, estimates by the time low-income children reach 3 years of age, they have amassed a vocabulary of about 500 words. But by the same age, children from more affluent families have vocabularies more than twice as large, with about 1,100 words.¹

Dr. Tonia Durden, UNL Extension Early Childhood Specialist, says "Nebraska families, caregivers and early childhood professionals are provided strategies so young children have seamless educational connections between home and educational settings. Reading with children is vital in both of these settings."

¹ www.usnews.com/news/articles/2013/11/18/access-to-preschool-wont-end-the-literacy-problem-in-america-experts-say

FOR MORE INFORMATION

- Nebraska Department of Education's booklet "Ready for Success: What Families Want to Know About Starting School in Nebraska" online at <http://childcare.unl.edu/LPS.pdf>
- U.S. Department of Health and Human Services's federal initiative "Birth to 5: Watch Me Thrive!" resources www.acf.hhs.gov/programs/ecd/watch-me-thrive
- Reading is Fundamental (largest children's literacy nonprofit in the United States) literacy resources www.rif.org/us/literacy-resources

Reading With Your Child Start Young and Stay With It

At just a few months of age, an infant can look at pictures, listen to your voice and point to objects on cardboard pages. Guide your child by pointing to the pictures and say the names of the various objects. By drawing attention to pictures and associating words with both pictures and real-world objects, your child will learn the importance of language.

Children learn to love the sound of language before they even notice the existence of printed words on a page. Reading books aloud to children stimulates their imagination and expands their understanding of the world. It helps them develop language and listening skills and prepares them to understand the written word. When the rhythm and melody of language become a part of a child's life, learning to read will be as natural as learning to walk and talk.

Even after children learn to read by themselves, it's still important for you to read aloud together. By reading stories that are on their interest level, but beyond their reading level, you can stretch young readers' understanding and motivate them to improve their skills.

It's Part of Life

Although the life of a parent is often hectic, you should try to read with your child at least once a day at a regularly scheduled time. But don't be discouraged if you skip a day or don't always keep to your schedule. Just read to your child as often as you possibly can.

If you have more than one child, try to spend some time reading alone with each child, especially if they're more than two years apart. However, it's fine to read to children at different stages and ages at the same time. Most children enjoy listening to many types of stories. When

stories are complex, children can still get the idea and can be encouraged to ask questions. When stories are easy or familiar, youngsters enjoy these "old friends" and may even help in the reading.

Taking the time to read with your children on a regular basis sends an important message: Reading is worthwhile.

One More Time

You may go through a period when your child favors one book and wants it read night after night. It is not unusual for children to favor a particular story, and this can be boring for parents. Keep in mind, however, a favorite story may speak to your child's interests or emotional needs. Be patient. Continue to expose your children to a wealth of books and eventually they will be ready for more stories.

Talking About Stories

It's often a good idea to talk about a story you're reading, but you needn't feel compelled to talk about every story. Good stories will encourage a love for reading, with or without conversation. And sometimes children need time to think about stories they've read. A day or so later, don't be surprised if your child mentions something from a story you've read together.

Remember When You Were Very Young

It will help to consider some things adult readers tend to take for granted. It's easier to be patient with children when we remember how much they don't know. Here are a few concepts we adults know so well we forget sometimes we ever had to learn them:

- There's a difference between words and pictures. Point to the print as you read aloud.

- Words on a page have meaning and that is what we learn to read.
- Words go across the page from left to right. Follow with your finger as you read.
- Words on a page are made up of letters and are separated by a space.
- Each letter has at least two forms: one for capital letters and one for small letters.

Imagine how you would feel if you were trying to interpret a book full of such symbols. That's how young readers feel. But, a little patience (maybe by turning it into a puzzle you can solve together) is certain to build confidence.

Advertise the Joy of Reading!

Our goal is to motivate children to read so they will practice reading independently and become fluent readers. That happens when children enjoy reading. We parents can do for reading what fast food chains do for hamburgers ... ADVERTISE! And we advertise by reading great stories and poems to children.

We can help our children find the tools they need to succeed in life. Having access to information through the printed word is an absolute necessity. Knowledge is power and books are full of it. But reading is more than just a practical tool. Through books we can enrich our minds; we can relax and enjoy some precious leisure moments.

With your help, as your children begin a lifelong relationship with the printed word, they can grow into adults who read easily and frequently whether for business, knowledge, or pleasure.

Source: Bernice Cullinan and Brod Bagert, U.S. Department of Education.



ASK LORENE

FAMILY LIVING TIPS

Lorene Bartos, UNL Extension Educator

Q: Which compact fluorescent bulb (CFL) should I choose?

A: Energy Star gives the following tips for selecting and using CFL bulbs:

- Always read the packaging and choose the correct wattage or lumens for the light you need.
- Only bulbs marked "dimmable" or "three-way" will work on dimmers or three-way switches.
- Hold the base and not the glass to screw in the bulb.
- Read the packaging to see where each bulb should be used. Not all ENERGY STAR qualified CFLs are designed to work in every socket.
- Use ENERGY STAR qualified light bulbs in places where you will have the light on for at least 15 minutes at a time. Frequently turning a CFL on and off will shorten the bulb's lifetime.
- Most photocells and timers are not designed to work with CFLs. Check with your photocell or timer manufacturer for compatibility.
- Most photocells, motion sensors and electronic timers are not designed to work with CFLs. Check with the control manufacturer and the CFL packaging for compatibility.
- Choose bulbs made for three way switches if the switch is three-way.
- For ceiling fans, you have a variety of options. Spiral bulbs can be used but most people prefer the look of covered light bulbs such as "A"-shape, candles or small reflectors. For some ceiling fans, the size of the CFL will be important. A lot of manufacturers are developing other CFLs for use specifically in ceiling fans. Many bulbs do not hold up due to the vibration of the fan.

For more information go to the Energy Star website www.energystar.gov/index.cfm?c=cfls.cfls_choose_guide

"Ask Lorene" by mail: Attn. Lorene Bartos, UNL Extension in Lancaster County, 444 Cherrycreek Road, Suite A, Lincoln, NE 68528; email lbartos1@unl.edu; or phone 402-441-7180.

Local Example of Promoting Early Childhood Literacy



Lorene Bartos (left) reads to ExCITE preschoolers at Elliot.

UNL Extension Educator Lorene Bartos serves on the LPS/Community Action's Head Start Advisory Committee. A goal of the committee is to promote social and emotional growth and encourages family literacy.

Increasing family literacy is also a major goal of Lincoln Center Kiwanis members. Bartos coordinates the club's "Reading is Fundamental" program. Annually, Lincoln Center Kiwanis volunteers read three times each in 11 classrooms and donate approximately 600 books for the children to take home. Since 2005, Bartos has coordinated 264 classroom presentations and Kiwanis members have volunteered approximately 1,320 hours and donated more than 4,800 books (worth about \$20,000). LPS early childhood educators say parents indicate having brand new books in the home is a highlight for their family.

If you want information on how to get involved, contact Lorene at 402-441-7180 or lbartos1@unl.edu.

Healthy Trees – Avoiding Common Problems at Planting is Half the Battle

Sarah Browning
UNL Extension Educator

More than ever before, tree experts know half the battle in long-term tree success is addressing potential problems before the tree is in the ground. What problems, you ask? Isn't the tree I bought in perfect condition to be planted? Maybe. But increasingly the horticulture industry recognizes production methods we use to grow trees in containers or in the field can cause problems for trees down the road.

What's the Problem?

The two most common production-related tree problems are stem girdling roots (SGR) and planting depth. These problems can kill a tree but they do it slowly, sometimes over the course of many years. Stem girdling roots, in particular, are often a slow killer, due to the time needed for roots to grow in diameter and begin compressing the trunk.

Both problems, unfortunately, are very common and are serious contributors to general decline in tree health. Affected trees grow slowly and are often stunted. Trees planted too deeply often take several years to become firm in the ground, if they ever do. Affected trees are much more susceptible to secondary stressors, like drought or pest problems, and are often attacked by insect borers. Affected trees are killed by these secondary problems much more easily due to their lack of vigor. During 2012's severe drought, many trees with root problems died and the die off continued into 2013.

Stem Girdling Roots

What is a stem-girdling root? Roots grow together, or graft themselves, when one root grows up against another root, **IF** 1) the roots are both from the same tree or 2) between two separate trees of the same species. But, if a root grows up against or around the tree's trunk, the trunk and the root do not grow together. In this situation, the root begins to compress or constrict the trunk where they touch.

How do tree production methods contribute to stem girdling roots? Most trees, whether grown from seed or cuttings, are started in pots. Roots of young trees grow quickly and if they stay too long in a small pot, it's a recipe for trouble. When a root touches the side of a smooth plastic pot, it turns aside and begins to circle around the outside of the rootball. Often trees are "bumped up" from smaller pots to larger ones several times during their early years, and you have to investigate very closely to find stem girdling roots that developed when trees were young.

Believe it or not, for this reason pot

technology is a major concern for tree growers with the goal of eliminating the problems caused by stem girdling roots.

Tree Planting Depth

Planting depth was not commonly recognized as a major health problem for trees until the last 20–25 years. But foresters now know if a tree's root system is buried too deeply in the soil, overall root growth is reduced and tree health, for the rest of that tree's life, is compromised. Poor root growth can be due to several factors, including:

- lower oxygen penetration into deeper soil layers (tree roots must pull oxygen from the soil to grow properly),
- not enough moisture in deeper soil layers, or
- roots remain too wet in poorly drained soil.

How do tree production methods contribute to planting depth problems? When young tree whips are planted mechanically in fields, they often need to be placed deep in the soil for them to stand upright. So trees often start off too deep in the field. When they are dug and potted or balled for sale, gardeners don't realize that excess soil must be removed from the top of the root ball. Likewise, sometimes trees grown in pots are placed too deep in the soil, and if gardeners don't remove the excess soil, the tree is doomed to problems once it's in the ground. Ideally, when planted, the tree's first major root should be right at the soil surface.

Tree Buying Decisions

A good place to start is NOT buying trees in containers with a heavy mass of circling roots. If the outside of the root ball is completely matted with roots, look for another plant.

Look for trees grown in grow bags, RootMaker® pots or other containers designed to minimize circling roots.

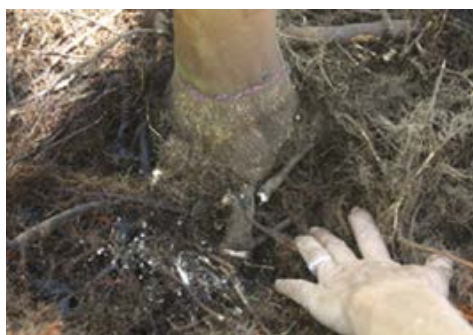
Consider choosing small trees, 2-inch trunk diameter or less; they are easier to handle and it's much easier to address stem girdling root problems in small trees. They also recover more quickly from transplanting than large trees, and typically catch up, then outgrow the larger tree due to increased vigor.

If You Plant the Tree Yourself

Start by digging a wide planting hole. It doesn't need to be very deep, but should be at least 2 feet wider than your expectation of the tree's root system. Putting extra effort into digging a wide planting hole now will definitely pay off in the future. Don't use any soil amendment in the planting hole or backfill — no compost, bagged garden soil, peat moss or fertilizer. Create a mound in the center of the planting hole, marking the tree's location.



Expose the roots by removing soil or media from the top of the root ball. All these circling and crossing roots should be removed.



Begin removing roots that circle and cross the top of the root ball.



When completed the main flare roots will be visible as shown above. The pink line was at the original soil level.

Next, remove the tree from its container. It's best to work with dormant trees, although this technique will work with leafed-out trees if you are very careful to keep the roots moist at all times.

Gently wash the root ball to completely remove all soil. Once the roots are exposed, carefully spread them out and prune away any that circle the trunk. Again, make absolutely sure the roots stay moist until the tree is planted.

Set the tree on top of the soil mound in the planting hole and spread the roots out. Don't bend the roots to make them fit. Either dig the planting hole wider to accommodate long roots, or make a clean cut to shorten the root to fit the hole. Add backfill soil in layers, and use water to help settle soil around the roots. Make sure the tree's first major root is just beneath the soil surface.

Stake the tree to hold it steady until the root system is established. Apply a 2–3 inch layer of wood chip mulch in a circle 3–4 feet from the tree's trunk to conserve soil moisture.



These roots should be removed because they are likely to strangle the trunk.



After removing the stem girdling roots the tree has a much better chance of thriving in the landscape.

If You Hire Someone to Plant

Before purchasing, ask about the nursery's planting techniques and explain how you would like the tree planted. You may need to pay more for extra time spent on planting, but rest assured, it will pay off in a healthier tree. Plan to be present when the nursery comes to plant your tree and make sure they follow your instructions.

The installers should begin by making sure excess soil atop the root ball is removed, on both container and balled & burlap (B&B) plants. Fold back the burlap on B&B trees and remove soil from the top of the ball until the first major root is found. This will determine the depth of the planting hole. The rootball should also be examined for girdling roots and they should be pruned out.

After the plant is set at the proper level in the planting hole and sufficient backfill is placed in the hole to prevent any movement of the ball, cut and remove all twine, strapping, burlap and wire basket.

Continue to add backfill soil and use water to settle soil around the roots. Once the planting hole has been completely filled, apply a 2–3 inch layer of wood chip mulch in a circle 3–4 feet from the tree's trunk. Stake the tree if necessary to provide stability, and provide a final deep watering.

Maintaining New Trees

Good care for newly planted trees is also critical for the tree's success. For complete instructions on post-planting care, refer to Nebraska Forest Service's publication, "Care of Newly Planted Trees" online at <http://go.unl.edu/dxse>.

Master Conservationist Entries Due June 1

The Master Conservationist program was established in 1983 to recognize those who have excelled in soil and/or water conservation. A winner will be selected from each of the three established categories: production agriculture, community and youth. Deadline for nominations is June 1. More information and submission forms can be found at <http://owh.com/community/master-conservationist-awards>.



Nebraska LEAD Program

Nebraska Agricultural Leadership Council

Application deadline for the Nebraska LEAD Group 34 is June 15. The Nebraska LEAD Program is specifically designed for both men and women involved in production agriculture or agribusiness. Nebraskans in the general age range of 25–55 who are intent in providing quality leadership for the future of Nebraska agriculture are encouraged to apply.

More information at <http://lead.unl.edu>

For application materials and/or further information, call 402-472-6810 or email amcandrew3@unl.edu.

Tractor Safety Courses for Youth 14–15

All youth 14 or 15 years of age who works on a farm or ranch other than his/her parents is required to be certified through a tractor safety course.

University of Nebraska–Lincoln Extension Tractor Safety Trainings will be offered at seven locations in Nebraska during May and June. Dates and locations include:

- **June 16–17, Grand Island, College Park**
- **June 19–20, Mead, ARDC**

Pre-registration is strongly encouraged at least one week in advance. Cost is \$60. For more information, contact Sharry Nielsen at 308-832-0645.

2014: Year of the Echinacea

Echinacea was chosen as the perennial for the National Garden Bureau's 2014 Year of program because of the vast assortment of flower colors and shapes available to today's gardener but also because they are such an American staple. The classic flower shape continues to be a favorite in home and public gardens so it's time we highlight the history of the "tried and true" classics as well as some of the newer varieties sure to please any home gardener.

Echinacea in the Garden

You will find wild growing Echinacea in sunny, dry open woodlands and prairies. The plant prefers loamy, well-drained soil. Cultivated Echinacea offer reliable performance as a perennial plant under a wide variety of conditions.

Echinacea is attractive to birds, bees and butterflies making it a great choice for a pollinator-friendly garden. It is generally deer resistant. Because of their root structure, the plants are drought tolerant and can withstand heat and wind. For best visual impact plant in masses. Its seed heads can be left to dry on the plant to feed wild birds through the fall and winter. Echinacea plants will reseed in the fall, with new flowers growing the following season. Hardiness zones vary by variety, with a range from USDA Zone 4–9.

Starting from Seed

When growing from seed, Echinacea will flower in 11-15 weeks so if started indoors early enough, it is possible to get flowers in the first season. With most varieties, sow seeds indoors 8–10 weeks before outdoor planting date. Plant the seeds 1/8" deep in soilless growing medium. Cover lightly with 1/4" fine soil and keep moist at 65–70°F. Seedlings should emerge in approximately 10-20 days. As with most seedlings, you can transplant them to larger containers when seedlings have at least two pairs of true leaves.

How to Grow

Echinacea are generally low maintenance. Plant in full sun. No additional fertilizing is necessary as heavy fertilization leads to tall, leggy plants that flop. Echinacea prefer drier conditions once established.

Popular Varieties

'Cheyenne Spirit' is a seed grown hybrid Echinacea with excellent overwinter performance on drought tolerant plants. It is an All-America Selections winner, regarded for its brilliant segregated color range: red, orange, purple, scarlet, cream, yellow and white. It grows 18–30 inches tall and 10–20 inches wide.

'Magnus', a basally branching seed grown variety, grows 26–36 inches tall and produces large 4.5-inch blooms.



'Prairie Splendor' Echinacea

Petals are held flatter than other varieties in a pink-rose color with orange-brown center.

'PowWow Wild Berry' is an All-America Selections winner. This seed-raised Echinacea has intense rose coloring and produces many flowers in its first season. It is very drought tolerant and doesn't experience color fade. Remains compact at 16–20 inches tall and spreads 12–16 inches wide in the garden.

'Prairie Splendor' is an American Garden Award Prize Winner from 2010, as voted on by the gardening public. It offers non-stop blooms almost a full two weeks earlier than most Echinacea and blooms right through fall. It is 24 inches tall and available from seed.

'Primadonna White' is a white compact plant with nice, bright white flowers. It also has orange-green cones that stand up erect from the petals. Available from seed, it grows 28–36 inches tall and can also be used as a cut flower.

Source: National Garden Bureau



GARDEN GUIDE

THINGS TO DO THIS MONTH

Mary Jane Frogge, UNL Extension Associate

Grass clippings can be used as mulch in flower beds and vegetable gardens if allowed to dry well before use. Never use clippings from a lawn treated with a herbicide.

Mulch around newly planted trees and shrubs. This practice reduces weeds, controls fluctuations in soil temperature, retains moisture, prevents damage from lawn mowers and looks attractive.

When you visit botanical gardens and arboretums, take your camera and notepad with you. Plan now for changes you will make in your landscape.

Cabbage loopers and imported cabbage worms are green worms. They eat large holes in the leaves of plants in the cabbage family. For control, caterpillars can be picked off by hand or sprayed with *Bacillus thuringiensis* (Bt), a natural, non-toxic preparation available by various trade names.

Plan a landscaping project on paper first. Do not over plant. Be sure you know the mature size of each plant and allow for growth.

Grow your own dried flowers. Raise statice, globe amaranth, straw flowers and other everlastings to provide flowers for this year's arrangements.

Plant gladioli bulbs in mid-May.

Set out marigold, petunia, ageratum and fibrous begonia transplants. All are good border plants.

To grow annuals in containers on the patio, use a light weight soil mixture. Keep the plants well watered, because the soil dries out fast. Apply a water soluble fertilizer according to package directions every two weeks.

Lawns maintained at the correct height are less likely to have disease and weed infestation. Kentucky bluegrass and tall fescue should be mowed at approximately three inches in height. Mow frequently, removing no more than one third of the blade at each cutting.

Make successive plantings of beans and sweet corn to extend the harvest season.

Harvest rhubarb by cutting or by grasping the stalk and pulling up and gently to one side.

Invasive Species

continued from page 1

owned pets. In Florida, escaped pet snakes like boa constrictors and Burmese pythons, feed on native mammals and birds. There are an estimated 5,000 to 10,000 pythons in the Florida Everglades.

Asian carp were introduced into the southern states by fish farmers to help clean their commercial ponds. They escaped and are now threatening the Great Lakes. These voracious, bottom-feeding carp out-compete other fish.

West Nile virus was first discovered in New York City in 1999 after locals reported an unusual number of dead crows. It is thought imported caged birds were carrying West Nile virus, then local mosquitoes fed on the caged birds and began to spread the disease. West Nile virus has now spread across the continental United States.

Deliberate Introductions Gone Bad. European starlings were introduced into New York City in 1890 and quickly spread across the United States. People believed starlings would be beneficial because they fed on insects, but starlings are pests when they feed on seedling plants and fruit. In urban settings, starlings are a nuisance because their communal roosts are noisy and messy.

In the United States, the multicolored Asian lady beetle

was introduced as a predator of aphids. This lady beetle is an important predator of soybean aphids, but experts believe it may be outcompeting native lady beetles.

What We Can Do?

So many of these invaders seem to be related to commerce, is this really a losing battle? What can any of us do to stem the tide?

- Don't travel with fruit or vegetables. They can carry pests.
- Don't take seeds or plants with you when you travel or bring them home.
- Make sure plants in your garden are available locally, from a nursery and are well adapted for your area.
- Don't ever release pets in the wild.
- Don't transport firewood. Most firewood contains wood boring beetles living inside it.
- If you have a boat, make sure to clean it (inside and out) thoroughly before launching it into another body of water.
- Become educated about invasive species in our area. There are three Nebraska field guides which describe and show pictures of invasive insects, plants and aquatic species. They are free to download at <http://neinvasives.com/resources>.

Source: Pimentel et al. 2005. Update on the environmental and economic costs associated with alien-invasive species in the United States. *Ecological Economics* 52:273-288.

Non-Native Pests in Nebraska

continued from page 1

- **European starlings, pigeons and English (house) sparrows** are three bird species which are non-native introduced pests. All of them are communal, messy and like to live near people.
- Native to China, **soybean aphids** were first discovered in Wisconsin in 2000. Their feeding damage reduces yields of soybean plants. By 2003, soybean aphids had spread across the grain belt into eastern Nebraska.
- **Multicolored Asian lady beetle.** Native to China, it was a deliberate introduction into the United States. It has achieved pest status because it has the undesirable habit of invading homes in the fall of the year to overwinter.
- **Japanese beetle** is a handsome, metallic scarab beetle. Adults feed on leaves of rose, grape, crabapple and beans, but will feed on more than 300 plants. It is scattered throughout Nebraska.

Watch for These New Invasives!

- **Brown marmorated stink bug** is native to Asia and was first found in Pennsylvania in 2001. It damages apples and other fruits. It is also a household nuisance, yet another insect that likes to overwinter in cracks and crevices of homes. It spreads by being transported on vehicles or with objects.
- **Emerald ash borer**, a wood-boring beetle, is from Asia. It kills ash trees by tunneling under the bark. People move this insect by transporting ash wood products and



Jim Kalisch, UNL Dept. of Entomology

firewood. Found in Iowa, Kansas, Missouri and Colorado. Once it comes into Nebraska, homeowners will either have to treat ash trees or they will lose them.

- **Spotted wing drosophila** (a type of fruit fly) is native to Asia. The females lay eggs by slitting the skin of undamaged fruit. It has a wide food preference: grapes, strawberries, blackberries, raspberries, blueberries and tomatoes are only a few hosts. A trap survey in 2013 by Jim Kalisch, UNL Entomologist, found this fruit fly in 20 Nebraska counties, including Lancaster. It is a potential threat in commercial fruit production, vineyards and home gardens.
- **Zebra mussel.** Native to Southern Russia, this small freshwater mussel was found Lake St. Clair between Lake Huron and Lake Erie in 1988. Since then, it has spread through all five Great Lakes and is present in many lakes and river systems. It has few predators and populations grow quickly becoming tightly attached to rocks, boats, docks and water pipes of water treatment plants. This species out-competes native mussels. This spread is preventable if boaters would thoroughly clean and dry their boats and equipment before transporting them to new bodies of water.



Native clam (*Amblema plicata*) with zebra mussels attached to it.

Randy Westbrooks, U.S. Geological Survey, Bugwood.org



4-H/FFA Sheep & Meat Goat Weigh-In, May 1

4-H/FFA members planning to exhibit market sheep or meat goats need to have their lambs and goats officially tagged and weighed on Thursday, May 1, 6–8 p.m. at the Lancaster Event Center – Pavilion 2. For more information, call Cole at 402-441-7180.

4-H Pre-Fair Leader Training, May 13

New leaders, experienced leaders, 4-H members and parents are invited to a Leaders Training on Tuesday, May 13, 9:30 a.m. or 6:30 p.m. (you choose which time to attend) at the Lancaster Extension Education Center, 444 Cherrycreek Road. Meeting will focus on static exhibits, opportunities for 4-H members and more. Learn about fair entry, contests and important Super Fair information. It is a great opportunity to connect with other parents and leaders. MUST preregister by May 9 by calling 402-441-7180.

4-H Interview Judging Regional Contest, May 22

4-H youth ages 10 and up are invited to participate in the new Interview Judging Contest. This contest will give youth the opportunity to practice the real-life skill of applying for a job. Youth will use their 4-H and life experiences to write a résumé and cover letter for one of three job descriptions and participate in a live interview.

This regional contest will be held Thursday, May 22, 1–7 p.m. at UNL East Campus. Registrations are due to the Lancaster Extension office by May 2. The \$5 registration fee will be paid by 4-H Council. Contact Tracy at 402-441-7180 or tracy.anderson@unl.edu to learn more about the contest. More details at <http://4h.unl.edu/interviewjudgingcontest>.

TSC Paper Clover Fundraiser, April 23–May 4

Shoppers at TSC stores will have the opportunity April 23–May 4 to support 4-H by purchasing paper clovers for just \$1 at checkout. All funds raised will be donated to 4-H.

4-H Special Garden Project

4-H families are invited to participate in a special garden project, growing Love-Lies-Bleeding Amaranth. The project will give youth the opportunity to learn about growing and exhibiting this unique flower at county fair. Fifteen seed packets are available on a first-come, first-served basis, starting April 21. The cost is 50¢ for one seed packet per family. Please stop by the Lancaster County Extension Office front desk to register, pay for and pick up your seeds. Office hours are 8 a.m.–4:30 p.m.

Life Challenge Contests

4-H Life Challenge judging contests help youth learn more about issues related to family and consumer science and entrepreneurship. Contests are open to all 4-H'ers, need not be enrolled in a specific project. Contact Tracy at 402-441-7180 for more information.

- **County-level Junior (for ages 8–11) AND Senior Life Challenge (for ages 12 and up)** will be held Saturday, May 31, 9 a.m. at the Lancaster Extension Education Center. Preregister by May 29 by calling 402-441-7180 (there is no entry form). Contact Tracy for a study packet for the Junior Life Challenge.
- **Statewide Life Challenge (for ages 12 and up)** will be held June 30 & July 1 on UNL East Campus. To participate, contact Tracy at 402-441-7180 by June 3. Information will be online at <http://pase.unl.edu>.

4-H Design Camp, June 4 & 5

The 4-H Design Camp held June 4 & 5 at the Lancaster Education Extension Center will be a great opportunity to take the next step in clothing and design. 4-H'ers will plan and design their own fabric, learn pattern alteration and manipulation, sew a skirt with designed fabric and participate in a runway show. 4-H Design Camp is open to all 4-H'ers ages 12 and up. Participants must have completed at least one garment in Clothing Level 2. For more information and registration form, go to <http://go.unl.edu/6v2j> or call Tracy at 402-441-7180.

4-H/FFA Animal ID's Due June 15

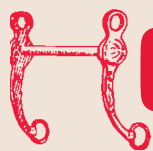
All 4-H/FFA sheep, goats, swine, breeding beef, bucket calves, feeder calves, dairy cattle, llamas/alpacas and rabbits which will be exhibited at county fair, State Fair and/or Ak-Sar-Ben 4-H Stock Show must have Identification/Ownership Affidavits submitted to the Extension office by June 15.

Forms are available online at <http://lancaster.unl.edu/4h/fair> and the Extension office. If you plan on showing market sheep, market hogs or feeder calves at state fair or Ak-Sar-Ben, you will need to have DNA collected by this deadline also.

Livestock Quality Assurance Must be Done by June 15

All 4-H/FFA members wanting to show market beef, market sheep, market swine, meat and dairy goats, dairy cattle, poultry and rabbits at county fair, State Fair, or the Ak-Sar-Ben 4-H Stock Show must complete Quality Assurance training. Horse exhibitors and livestock exhibitors showing only breeding animals do not have to complete it.

Again this year, the Quality Assurance certification is online. As always, this must be done by June 15. Instructions are online at <http://4h.unl.edu/qualityassurance>. If you have any questions regarding this new format, contact Cole at cmeador2@unl.edu or 402-441-7180.



Dressage Schooling Show, May 3 & 4

The Lancaster Horse VIPS Committee is sponsoring a Middle Cross Dressage Schooling Show as a fundraiser/clinic. It will be held Saturday, May 3 and Sunday, May 4 at Middle Cross Stables (Lowell Boomer's historic facility), 500 Sprague Road, Roca. Open to youth and adults. Information and forms are at <http://lancaster.unl.edu/4h/horsenews.shtml> or call Jennifer at 402-560-3319. Rain dates are May 10 & 11.

Pre-District Show/Clinic/Fundraiser, June 7

The Lancaster County 4-H Horse VIPS Committee is sponsoring a 4-H Pre-District Show/Clinic/Fundraiser on Saturday, June 7, 9 a.m. at the Lancaster Event Center – Pavilion 3. Pre-registration is not required. Riders must be in 4-H attire.

Although districts are only for the junior and senior age groups, elementary riders are encouraged to ride in this show to help them prepare for the years to come.

Stalls are available for \$15 a day. Stall arrangements must be made through the Event Center at 402-441-6545. Event Center shavings must be used (\$8 a bag).

Show flyer will be available at <http://unl.edu/4h/horsenews.shtml>. A tack swap is also planned for the day. For more information, call Marty at 402-441-7180.

4-H District/State Entries Due May 9

4-H'ers competing in 4-H district and state horse shows must be 10 years of age by Jan. 1 and have at least a horsemanship level II. All Lancaster County 4-H'ers participating in district/state horse shows must submit entries, horse identifications and completed horsemanship levels to the UNL Extension in Lancaster County office by Friday, May 9. No late entries will be accepted! Entry forms, entry guidelines, entry procedures and the 2 & 3 year old western pleasure affidavits are available at the Extension office and online at <http://animalscience.unl.edu/anscdistrictandstate4hshows>. For more information, contact Marty at 402-441-7180 or mcruckshank2@unl.edu.

4-H Horse Course Challenge, June 27

The 4-H Horse Course Challenge will be held Friday, June 27, 9:30 a.m. at the Lancaster Extension Education Center, 444 Cherrycreek Road. Study material is based on the online Horse Course. To sign up for the course, email Marty at mcruckshank2@unl.edu. No preregistration is required for the Challenge.

CLOVER COLLEGE REGISTRATION FORM

SEE NEXT PAGE FOR CLOVER COLLEGE WORKSHOP INFORMATION

For current class availability, go to <http://lancaster.unl.edu/4h/programs/clovercollege>

Classes fill up quickly!

To register, complete the registration form (one person per form) and return with payment (make check payable to Lancaster County Extension). Registrations are handled on a "first come" basis and will only be accepted upon receipt of fees. **No telephone or online registration.** No refunds unless class is already filled or canceled. Photocopy completed form for your reference.

Confirmation letters and schedules will not be sent. Assume your registration is confirmed unless we contact you about filled classes.

Registration opens May 5 for currently enrolled 4-H members. Registration opens May 12 for non-4-H members.

| | |
|--|-------------------------------|
| Is youth currently enrolled in 4-H? <input type="checkbox"/> yes <input type="checkbox"/> no | |
| Name _____ | Age _____ |
| Parents Name(s) _____ | |
| Address _____ | |
| City _____ | State _____ Zip _____ |
| Daytime Phone _____ Email _____ | |
| Special Needs (allergies, etc.) _____ | |
| _____ | |
| Workshop(s) | # _____ Title _____ Fee _____ |
| | # _____ Title _____ Fee _____ |
| | # _____ Title _____ Fee _____ |
| | # _____ Title _____ Fee _____ |
| | # _____ Title _____ Fee _____ |
| Use additional sheet of paper if needed | |
| Total _____ | |
| I give permission to use my child's image in photographs taken at Clover College in publications, news articles, advertisements or websites pertaining to 4-H. <input type="checkbox"/> yes <input type="checkbox"/> no | |
| I give permission for my child to complete workshop evaluations to assess educational impact and life skill development. All information is obtained and reported as aggregated data. <input type="checkbox"/> yes <input type="checkbox"/> no | |
| Parent/Guardian Signature: _____ Date: _____ | |

Mail or bring registration form and payment to:
UNL Extension Lancaster County, 444 Cherrycreek Rd., Ste. A, Lincoln, NE 68528
EARLY REGISTRATION NOT ACCEPTED!

Clover College

Tue., June 17–Fri., June 20

Lancaster Extension Education Center, 444 Cherrycreek Road

Open to youth ages 6 & up

Four days of “hands-on” workshops full of fun and learning!

Youth may attend as many workshops as they wish.

All supplies will be provided unless otherwise noted.



Youth attending workshops that overlap the lunch period should bring a sack lunch. Food will not be available (unless otherwise stated in the workshop description). If you have questions, contact Tracy at 402-441-7180.

WORKSHOP DESCRIPTIONS

4-Day Workshops

1 Clover Kids Day Camp

Clover Kids will participate in hands-on activities while learning about animals, food fun, science, the outdoors and more. Refreshments provided for this workshop. TUE–FRI, JUNE 17–20; 8AM–12:15PM AGES 6 & 7 • FEE \$25

2 Rocketry

Build your own rocket and launch it. Receive a rocket kit and one engine. TUE–FRI, JUNE 17–20; 8–10AM AGES 8–12 • FEE \$15 Instructor: Ron Suing, 4-H Volunteer

3 Clover Chess Tourney

Play in a unique chess tournament. Children play 2 rounds per day all four days, alternating colors. Time controls Game/20, Swiss system. Boards, sets and clocks provided. TUE–FRI, JUNE 17–20; 8-10AM AGES 8–12 • FEE \$10 Instructor: James Walla, 4-H Volunteer

4 Electronic Textiles

Use special thread and miniature computers to create electronic fabrics such as a bracelet, bookmark and other items. Sewing machines will not be used. TUE–FRI, JUNE 17–20; 10:15AM–12:15PM AGES 8–12 • FEE \$8 Instructor: Extension Staff

2-Day Workshop

5 Photography Fun

Learn the basics of photography and how to use fun apps to get the most out of your smart device images. Bring your camera and/or smart device (phone or tablet). TUE & THU, JUNE 17 & 19; 12:45-2:45PM AGES 12 & up • FEE \$4 Instructor: Michelle Huber, 4-H Volunteer

1 Workshop - 2 Time Slots in a Row

6 Fishing Fun

Bring your fishing pole, line, hook and bobber for fishing fun at a nearby lake. Extra tackle is optional. Bait provided. Wear closed toe shoes and sun protection. Only for youth who have not taken class previously. WED, JUN 18; 8AM–12:15PM AGES 9 & up • FEE \$5 Instructors: David Smith, Extension Technologist & Soni Cochran, Extension Associate

7 “Dress” Up Old Jeans

Bring an old pair of jeans (upper portion in good condition, working zipper) 1 or 2 yards of prewashed, cotton fabric based on how long you want the skirt, and working sewing machine. Must have completed Clothing Level I and know how to use and thread your machine. WED, JUNE 18; 12:45–5PM AGES 10 & up • FEE \$3 Instructor: Janet Anderson, 4-H Volunteer

1-Day Workshops

8 Chickens, Chickens!

Clucking chickens will help show you why they are so cool. TUE, JUNE 17; 8-10AM AGES 8 & up • FEE \$4 INSTRUCTOR: Erica Peterson, Extension Intern

9 Primitive Rope Making

Learn rope making as it was done by the indigenous cultures. Learn techniques using natural fibers found in the woods or prairie. TUE, JUNE 17; 8–10AM AGES 8 & up • FEE \$3 INSTRUCTOR: BJ Spring, owner, Nyakuwalk, Primitive Survival Skills

10 Basketball Basics

Learn the basic skills needed to be a successful basketball player. Basketball included to take home. TUE, JUNE 17; 10:15AM–12:15PM AGES 8 & up • FEE \$10 Instructor: Evan Kucera, Former College Basketball Player

11 Sensational Crafts

Create your masterpiece in this fun hands-on workshop. TUE, JUNE 17; 10:15AM–12:15PM AGES: 8 & up • FEE: \$5 INSTRUCTORS: Lianne and Elizabeth Garza, 4-H Volunteers

12 Outdoor Cooking

Everything tastes better when cooked outside! Join us for some cooking fun. Only for youth who have not taken class previously. TUE, JUNE 17; 10:15AM–12:15PM AGES 10 & up • FEE \$8 Instructor: Soni Cochran, Extension Associate

13 Amazing Engineering 1

Explore the amazing world of engineering! Design and build exciting engineering projects. Projects will differ from Amazing Engineering 2. TUE, JUNE 17; 12:45–2:45PM AGES 8 & up • FEE \$3 INSTRUCTORS: UNL Engineering Dept.

14 Food Adventure

Explore amazingly great healthy foods spiced up with interactive fun! TUE, JUNE 17; 12:45–2:45PM AGES 8 & up • FEE \$5 Instructors: Kylee Plager & Sheridan Swotek, 4-H Volunteers

15 Wild Science Experiments

Have fun learning the science behind several crazy experiments. Take home a science experiment! TUE, JUNE 17; 12:45–2:45PM AGES 8 & up • FEE \$10 Instructor: Evan Kucera, 4-H Volunteer

16 Button Bonanza

Use buttons to create a one of a kind wall hanging. Bring larger, buttons (with no shank) if you have them. TUE, JUNE 17; 3–5PM AGES 8 & up • FEE \$5 Instructor: Rachel Pickrel, Extension Intern

17 Celebrate Crafts

Celebrate crafts as you create your masterpiece. TUE, JUNE 17; 3–5PM AGES 8 & up • FEE \$5 Instructor: Kari Price, 4-H Volunteer

18 Pizza Party!

Create your own unique pizza and make homemade ice cream! TUE, JUNE 17; 3-5PM AGES 8 & up • FEE \$5 Instructor: Cole Meador, Extension Assistant

19 Wired 4 Wind

Build a Wind Turbine that generates electricity! Experiment with turbine designs. Take it home and experiment more! It will be Watts of fun! TUE, JUNE 17; 3–5PM AGES 8 & up • FEE \$10 Instructor: F. John Hay, Extension Educator - Energy

20 Modeling Madness

Be a styling diva and learn the ins and outs of modeling. Perfect preparation for 4-H Style Revue. WED, JUNE 18; 8–10AM AGES 8 & up • FEE \$2 Instructor: Sheridan Swotek, 4-H Volunteer

21 Happily Helping Others

Help others by participating in a fun hands-on community service project. WED, JUNE 18; 8–10AM AGES 8 & up • FEE \$5 Instructors: Jen Smith, Paige Roach and KayCee Wanser, 4-H Volunteers

22 Corn Toss

Build your own corn-toss game. WED, JUNE 18; 10:15AM–12:15PM AGES 8 & up • \$10 Instructors: Karol Swotek, 4-H Volunteer

| | TUE, JUNE 17 | WED, JUNE 18 | THU, JUNE 19 | FRI, JUNE 20 |
|-------------|--|---|--|--|
| 8:00–10:00 | CLOVER KIDS ROCKETRY CLOVER CHESS TOURNEY CHICKENS, CHICKENS! PRIMITIVE ROPE MAKING | CLOVER KIDS ROCKETRY CLOVER CHESS TOURNEY FISHING MODELING MADNESS HAPPILY HELPING OTHERS | CLOVER KIDS ROCKETRY CLOVER CHESS TOURNEY SUPERSTAR SHEEP PLANT BABIES | CLOVER KIDS ROCKETRY CLOVER CHESS TOURNEY MONEY BASICS TERRIFIC TABLE SETTING |
| 10:15–12:15 | CLOVER KIDS ELECTRONIC TEXTILES BASKETBALL SENSATIONAL CRAFTS OUTDOOR COOKING | CLOVER KIDS ELECTRONIC TEXTILES FISHING FUN ¡VIVA EL ESPAÑOL! CORN TOSS | CLOVER KIDS ELECTRONIC TEXTILES ARCHERY – A AMERICA’S ROSE WONDERFUL WILDLIFE | CLOVER KIDS ELECTRONIC TEXTILES SOCCER HABITAT DISCOVERY WONDERFUL WALL ART |
| 12:45–2:45 | PHOTOGRAPHY FUN AMAZING ENGINEERING 1 FOOD ADVENTURE WILD SCIENCE EXPERIMENTS | EXPRESS YOURSELF AMAZING ENGINEERING 2 RAINBOW IN A JAR “DRESS” UP OLD JEANS | PHOTOGRAPHY FUN CITY CAMPUS ENGINEERING ARCHERY – B RABBITS, RABBITS! BOUNTIFUL BRACELETS CONTAINER GARDENING | EAST CAMPUS ENGINEERING FANTASTIC FELTING FLORAL FUN FOOD FUN CONTROL THE FLOW |
| 3:00–5:00 | BUTTON BONANZA CELEBRATE CRAFTS PIZZA PARTY WIRED FOR WIND | FLASHLIGHT IN A FLASH BABYSITTING BASICS CANDYLAND COTTAGES “DRESS” UP OLD JEANS | NAIL NEWS POP TAB BRACELET ANIMAL FIRST AID DOUGH FUN COOL UPCYCLED CRAFTS | NO CLASSES |

23 ¡Viva el Español!

An action-packed class filled with authentic food, craft, language and dances of Spanish-speaking cultures. WED, JUNE 18; 10:15AM–12:15PM AGES 8 & up • FEE \$5 Instructors: Nancy Smith and Paige Roach, 4-H Volunteers

24 Express Yourself

Express yourself through card creation. WED, JUNE 18; 12:45–2:45PM AGES 8 & up • FEE \$2 INSTRUCTOR: Teri Hlava, Extension Assistant

25 Amazing Engineering 2

Explore the amazing world of engineering! Design and build exciting engineering projects. Projects will differ from Amazing Engineering 1. WED, JUNE 18; 12:45–2:45PM AGES 8 & up • FEE \$3 INSTRUCTORS: UNL Engineering Dept.

26 Rainbow in a Jar

Ever seen a rainbow in a jar? These are beautiful and delicious! WED, JUNE 18; 12:45-2:45PM AGES 8 & up • FEE \$10 Instructor: Jhoni Kucera, 4-H Volunteer

27 Flashlight in a Flash

Build your own flashlight in a flash you can enter in the Super Fair. WED, JUNE 18; 3–5PM AGES 8 & up • FEE \$5 Instructor: Rachel Pickrel, Extension Intern

28 Babysitting Basics

Learn the basic skills needed to be a responsible and creative babysitter. Focus is on activities, making snacks and toys. WED, JUNE 18; 3–5PM AGES 11 & up • FEE \$5 Instructor: Lorene Bartos, Extension Educator

29 Candyland Cottage

Assemble a gingerbread house and adorn it with candy. Bring leftover candy to add to the supplies. WED, JUNE 18; 3–5PM AGE 8 & up • FEE \$4 Instructor: Sheridan Swotek, 4-H Volunteer

30 Superstar Sheep

Sheep will be present to help you find out why they are superstars! THU, JUNE 19; 8–10AM AGES 8 & up • FEE \$4 Instructor: Erica Peterson, Extension Intern

31 Plant Babies

Learn all about planting, propagating and growing your own flowers. Have a potted plant ready for the Super Fair. THU, JUNE 19; 8–10AM AGES 8 & up • FEE \$5 Instructor: Jean Pedersen, Master Gardener and 4-H Volunteer

32 Archery – A

Learn the basic skills to be a successful archer. Equipment provided. THU, JUNE 19; 10:15AM–12:15PM AGES 8 & up • FEE \$2 Instructor: Christy Christiansen, Nebraska Game and Parks

33 America’s Rose

Learn how to plant, care, grow and show roses. THU, JUNE 19; 10:15AM–12:15PM AGES 10 & up • FEE \$5 Instructors: Lincoln Rose Society Members

34 Wonderful Wildlife

Birds, snakes, turtles, oh, my! Come and explore wildlife and nature. THU, JUNE 19; 10:15AM–12:15PM AGES 8 & up • FEE \$2 Instructors: Lower Platte South NRD and Pioneers Park Nature Center

35 City Campus Engineering

Tour the University of Nebraska–Lincoln Engineering Department on UNL City Campus. Participate in hands-on projects. Transportation provided. THU, JUNE 19; 12:45–2:45PM AGES 10 & up • FEE \$3 INSTRUCTORS: UNL Engineering Dept.

36 Archery – B

Same description as #32. THU, JUNE 19; 12:45–2:45PM AGES 8 & up • FEE \$2 Instructor: Christy Christiansen, Nebraska Game and Parks

37 Rabbits, Rabbits!

Learn to care for rabbits and about rabbit showmanship with live rabbits. THU, JUNE 19; 12:45–2:45PM AGES 8 & up • FEE \$3 Instructors: Cindy & Alyssa Zimmer, 4-H Volunteers

38 Bountiful Bracelets

We’ll twist and turn, braid and knot to make fabulous bracelets, anklets & necklaces. Boys and girls will love these. THU, JUNE 19; 12:45–2:45PM AGES 8 & up • FEE \$10 Instructor: Jhoni Kucera, 4-H Volunteer

39 Container Gardening

Have fun creating your own container garden. THU, JUNE 19; 12:45–2:45PM AGES 8 & up • FEE \$8 Instructors: Vicki Cunningham, 4-H Volunteer

40 Nail News

Design your own nail polish. Learn how to blend colors. Come with clean finger and toe nails. THU, JUNE 19; 3–5PM AGES 9 & up • FEE \$10 Instructor: Jhoni Kucera, 4-H Volunteer

41 Pop Tab Bracelet

Lean how to up-cycle your pop tabs into a custom bracelet! Bring 4-6 flat buttons with 4 holes in each. THU, JUNE 19; 3–5PM AGES 10 & up • FEE \$3 Instructor: Anita Stougard, 4-H Volunteer

42 Animal First Aid

Learn about your pet while making a fun and usable first aid kit. THU, JUNE 19; 3–5PM AGES 8 & up • FEE \$10 Instructors: Kylee Plager, 4-H Volunteer

43 Dough Fun

It’s easier than it looks to mix and shape bread and rolls. Participants learn techniques and bring home samples they have made. THU, JUNE 19; 3–5PM AGES 10 & up • FEE \$5 Instructor: Lorene Bartos, Extension Educator

44 Cool Upcycled Crafts

Create marshmallow blasters, cars, bird feeders, etc. by upcycling. THU, JUNE 19; 3–5PM AGES 8 & up • FEE \$3 Instructor: Karen Wedding, Extension Staff

45 Money Basics

Learn about money management — from how to spend money wisely to opening a checking account. FRI, JUNE 20; 8–10 AM AGES 8 & up • NO FEE Instructors: Union Bank and Trust, Fallbrook Branch

46 Terrific Table Setting

Create an awesome centerpiece and learn all you need to know to participate in the 4-H Table Setting contest at the Super Fair. FRI, JUNE 20; 8–10AM AGES 8 & up • FEE \$5 Instructor: Rachel Pickrel, Extension Intern

47 Beginning Soccer Skills

Learn a few moves and fancy footwork. Wear closed toe shoes, shin guards and bring your own soccer ball. FRI, JUNE 20; 10:15AM–12:15PM AGES 8 & up • FEE \$3 Instructors: Bailey and Kayla Johnson, 4-H Volunteers

48 Habitat Discovery

Learn about pollinators, make a nature field journal & explore the new pollinator habitat. Wear closed toe shoes & sun protection. FRI, JUNE 20; 10:15AM–12:15PM Age: 10 & up, Fee \$5 INSTRUCTORS: Soni Cochran and Mary Jane Frogge, Extension Associates

49 Wonderful Wall Art

Create one of a kind wall art. FRI, JUNE 20; 10:15AM-12:15PM AGES 8 & up • FEE \$5 INSTRUCTOR: Kari Price, 4-H Volunteer

50 East Campus Engineering

Tour the UNL Engineering Department on UNL East Campus. While there, participate in hands-on projects. Transportation provided. FRI, JUNE 20; 12:45–2:45PM AGES 10 & up • FEE \$3 INSTRUCTORS: UNL Engineering Dept.

51 Fantastic Felting

Use wool and the dry felting method to create fun shapes and designs. FRI, JUNE 20; 12:45–2:45PM AGES 8 & up • \$10 Instructors: Cindy Zimmer, 4-H Volunteer

52 Floral Fun

Explore floral fun and learn floral design elements. Take home your floral creation. FRI, JUNE 20; 12:45–2:45PM AGES 8 & up • FEE \$10 Instructor: Jo Lynn Brown, 4-H Volunteer

53 Food Fun

Make fun, healthy snacks that are tasty and learn nutrition fun facts! FRI, JUNE 20; 12:45–2:45PM AGES 8 & up • FEE \$5 Instructor: Kat Howard, UNL Dietetic Intern

54 Control the Flow

Explore the “Magic of Electricity” by creating a light switch you can enter in the Super Fair! FRI, JUNE 20; 12:45–2:45PM AGES 8 & up • FEE \$5 Instructor: Erica Peterson, Extension Intern

Registration opens May 5 for currently enrolled 4-H members; May 12 for non-4-H members.

To register, use form on previous page

Early registrations will NOT be accepted!
No telephone or online registration.

No refunds unless class is already filled or canceled.
Confirmation letters and schedules will not be sent.

For current class availability, go to
<http://lancaster.unl.edu/4h/programs/clovercollege>



EXTENSION CALENDAR

All events will be held at the Lancaster Extension Education Center, 444 Cherrycreek Road, Lincoln, unless otherwise noted.

April

- 26 **Spring Affair Plant Sale, Lancaster Event Center - Pav. 1** 9 a.m.–4 p.m.
- 29 **4-H Horse Level Testing, Lancaster Event Center - Amy Countryman Arena** 5:30 p.m.

May

- 1 **4-H Council Camp Scholarship Entries Due to Extension**
- 1 **4-H/FFA Sheep & Meat Goat Weigh-In, Lancaster Event Center - Pav. 2** 6–8 p.m.
- 3-4 **4-H Horse VIPS Middle Cross Dressage Schooling Show, Middle Cross Stables, 500 W. Sprague Road, Roca**
- 6 **Gardening at Lunch Webinar: Gardening for Pollinators, online only**..... 12:05–12:55 p.m.
- 6 **4-H Council Meeting** 7 p.m.
- 8 **Co-Parenting for Successful Kids Class** 9 a.m.–12:30 p.m.
- 9 **Extension Board Meeting**..... 8 a.m.
- 9 **Lancaster County 4-H Deadline for District/State Horse Show Entries, ID, Level Tests**
- 10 **Composting Demonstration, Pioneers Park Nature Center's backyard composting demonstration area** 10 a.m.
- 13 **4-H Pre-Fair Leader Training** 9:30 a.m. & 6:30 p.m.
- 20 **Guardian/Conservator Training** 1:30–4:30 p.m.
- 31 **4-H Life Challenge Contest – Junior & County-Level Senior Divisions**..... 9 a.m.

20th Earth Wellness Festival 60,000 5th Graders Have Participated

Approximately 3,200 Lancaster County fifth graders from 46 schools attended the 20th annual Earth Wellness Festival (EWF) on March 26 and 27 at Southeast Community College. EWF started in 1994 and more than 60,000 students have participated since the beginning.

Classrooms attending the festival received pre-festival learning kits in October. Students discover and explore the relationships and interdependency of land, water, air and living resources through hands-on activities.

Hundreds of volunteers, area educators, environmentalists, government representatives, as well as donations from local businesses, make this educational experience possible. The festival is organized by 10 local agencies, including University of Nebraska–Lincoln Extension in Lancaster County.

More photos are online at <http://lancaster.unl.edu/ewf>.



UNL Extension Master Gardeners presented “Do the Rot Thing,” teaching students about composting and looking at soil organisms that contribute to decomposition.



James Newman of the Lincoln Lancaster County Health Department and member of the Lancaster County Extension Board, presented “Dirt!” in which students compared how long it took for water to drain through three different types of soil.



A prehensile-tailed porcupine was one of the animals in the “Endangered” session presented by Lincoln Children’s Zoo.



UNL Extension Technologist Dave Smith presented “Build a Beaver.”



UNIVERSITY OF NEBRASKA–LINCOLN

EXTENSION

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100 Years Young and Just Getting Started

The first 100 years of Cooperative Extension in Nebraska and the nation are no dry, dusty history lesson.

And you can be assured the next 100 won’t be either, says Chuck Hibberd, dean and director of University of Nebraska–Lincoln Extension. Indeed, the history of Extension is the history of the last 100 years of the nation — born via the Smith-Lever Act shortly before World War I, it took on as one of its first tasks helping American farmers boost food production and conservation during that conflict. Later, it was a key tool in pulling U.S. farmers through drought and depression before playing a role in yet another world war.

Through war and peace and over 100 years, Extension in Nebraska and the nation has helped American agriculture become the most efficient in the world; helped build young people into responsible adults through 4-H; helped people focus on their health and wellness; helped people be effective parents to raise great kids; and helped communities large and small, families and businesses deal with a host of challenges.

Some constants run through Extension’s history, though, says Hibberd. He calls them “core values,” and their constancy is critical to under-

standing why Extension has endured, and why it will continue to be relevant.

- Research-based, unbiased and part of a national land-grant university system. “That’s what differentiates us from everyone else,” he said. Transferring unbiased, research-based knowledge as quickly as possible to users is essential.
- “It’s about people, it’s about relationships, it’s about trust,” Hibberd said. UNL Extension, throughout its history, has been, and will continue to be community based. Educators live in 83 of the state’s 93 counties. They know the people, they know the issues, they know the challenges and the opportunities in their communities.

- Extension measures its success by its real-world impact. “The work that we do makes a difference in the lives and/ or livelihoods of the people we engage. It has to be useful and valuable and applicable,” Hibberd said.

Internet technology is changing how Extension delivers its research-based, unbiased information to provide just-in-time solutions to real-world issues, but these core values remain intact, Hibberd emphasized. As proud as Extension is of its centennial in 2014, our primary focus is on the future, he added.

4th Graders Gain Understanding of Agriculture at Ag Awareness Festival

More than 500 fourth graders from nine Lincoln area schools attended the Ag Awareness Festival held April 1–3 at the Lancaster Event Center. Students gained a greater understanding of agriculture and how it impacts their daily lives. They rotated between the following eight interactive stations: Beef, Pigs, Dairy, Poultry, Corn & Soybeans, Water, Farm Technology, By-products and “Ask a Farmer.”

Eagle Elementary teacher Annetta Davidson said, “We enjoy bringing our students to this event because it provides a strong connection with our study of Nebraska and reinforces the importance of agriculture in their daily lives. Students always enjoy the various activities.”

The Ag Awareness Coalition, led by University of Nebraska–Lincoln Extension, organizes the festival with the help of agriculture businesses, commodity associations and food industry companies. This is the 14th year the festival has been held in Lincoln.

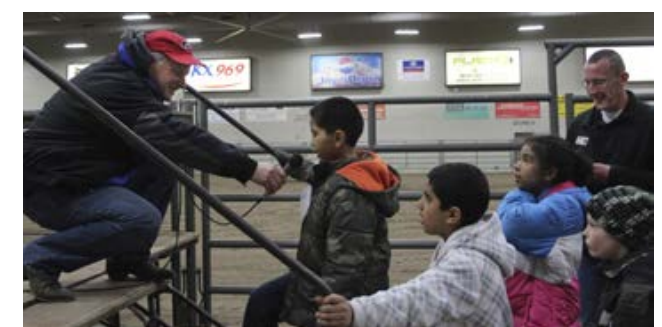
More photos are online at www.flickr.com/photos/unlxtlanco/collections.



Students learned about farming technology with a close-up view of a tractor, combine and sprayer.



Students got a hands-on look at three-month-old pigs.



New this year, was an “Ask a Farmer” session in which fourth graders asked questions to local farmers Dave Nielsen and Paula Peterson.