NEBLINE, May 2014
The Cost of Invasive Species

Barb Ogg
UNL Extension Educator

Asian carp, Burmese pythons, Formosan termites. Spotted wing drosophilas (Asia), Emerald ash borers (Asia), Zebra mussels (Europe). 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 species 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.

- 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 invades Pennsylvania, New Jersey and Virginia by sending rhizomes under a blanket of leaves. Now designated a weed, it has spread throughout the southeastern United States. It is found in 41 states. Half of them are Texas, Florida, Georgia, and Alabama.

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 pets that threaten see INVASIVES on page 5

Kudzu aggressively invades Pennsylvania, New Jersey and Virginia by sending rhizomes under a blanket of leaves. Pictured is kudzu in Otoe County, Nebraska.

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 farmlands and households hundreds of years ago. It undoubtedly stowed away on ships with early colonists, along with their cousins, the rats.
- Norway rats, 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 the world, 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 increas- ingly aggressive at defending their colony as it expands throughout the summer.
- 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.
- In the 1940’s, the multicolored Asian lady beetle was introduced as a predator of aphids, but it may be outcompeting native lady beetles (pink spotted lady beetle at right).
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.

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 (15 ounce) can black beans, drained and rinsed
1 large tomato, cut into bite-size wedges or strips
1 (15 ounce) package (5 ounces) salad greens
1 cup baby pear or grape tomatoes, halved
1/2 cup chopped green bell pepper
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

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 4.5g total fat, 4.5g or less saturated fat and less than 95mg cholesterol per 3.3 ounce serving.

1 beef shoulder steak, cut 1 inch thick
1 can (5-1/2 ounces) spicy 100% vegetable juice
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 large tomato, cut into bite-size wedges or strips
1 cup chopped green bell pepper
Salt and black pepper, as desired


Crunchy Tortilla Strips (recipe below) to be notified by email when The Nebline is posted online.

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

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444 Cherrycreek Road, Ste. A, Lincoln, NE 68528
402-441-7180
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Lancaster Extension Education Center Conference Facilities 444 Cherrycreek Road, Lincoln
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 nationwide, particularly in view of the 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 heard 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 Durdin, 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.”

Stories are complex, children can still get the idea and can be encouraged to ask questions. When stories are easy or familiar, younger children 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 favours 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 adults 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 with adults that we may well 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.

• A word on a page is made up of letters and are separated by a space.

• Each letter has at least two forms: one for capital letters and one for lowercase.

Imagine how you would feel if you were trying to interpret a book full of slang 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 succeed in life. Having access to books can help our children develop social and emotional skills and frequently whether for business, education or pleasure.

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

¹ “Reading is Fundamental” www.childcare.unl.edu/ecd/watch-me-thrive

Local Example of Promoting Early Childhood Literacy

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.

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.

Lorene Bartos (left) reads to ExCITE preschoolers at Elliot.
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 slow, 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 compacting 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 more quickly 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) 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 tree will die. In this situation, the tree begins to constrict 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 disaster. Young trees grow quickly and if they stay too long in a small pot, it's a recipe for disaster. Root growth is reduced and tree health, for the rest of that tree's life, is compromised.

How to guard against problems caused by stem girdling roots. Roots of young trees are rooted in containers. Stem girdling roots are commonly found. This will determine the depth of planting the hole. The rootball should also be examined for girdling roots and they should be pruned out. Root problems at planting is half the battle.

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

Tree Planting Depth

Planting depth was not commonly valued as a major health problem for trees the tree 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 restricted to the part of the system that is in the ground. 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 grown in containers, in both field and greenhouse, 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. Sometimes, 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 trees 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.

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 the 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.

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

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. If not satisfied, 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 & burlapped (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.
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 mediums. Cover lightly with 1/4" fine soil and keep moist at 65–70°F. Seedlings should emerge in approximately 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 of 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.

‘Magna’, a basally branching seed grown variety, grows 26–36 inches tall and produces large orange blooms.

Pets are held flatter than others in a pine-kiss color with orange-brown center.

Prairie Splendor’ Echinacea

Non-Native Pests in Nebraska

Starting from page 1
• European starlings, pigeons and English 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 that feeds on leaves of rose, grape, crabapple and beans, and 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 2011. 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 beetle) is native to Asia. It kills ash trees by tunneling under the bark. People move this insect by transporting ash wood products and 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 on 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 28 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.
4-H/FFA Sheep & Meat Goat Weigh-In, May 1

4-H/FFA Sheep & Meat Goat Weigh-In is an opportunity to exhibit market sheep or meat goats to have their lambs and meat goats weighed on the morning of 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 4-H leaders, and parents are invited to a Leaders Training on Thursday, May 13, 9:30 a.m. or 6:30 p.m. (you choose which time to attend) at the Lancaster Extension Education Center, 444 Cherry Creek Road. Meeting will focus on static exhibits 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. Call Cole by May 9 by calling 402-441-7180.

Dressage Schooling Show, May 3 & 4

The Lancaster Horse VIPS Committee is sponsoring a Middle Cross Dressage Schooling Show as a fund-raiser and 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. Registration and information forms are at http://lancaster.unl.edu/4h/dressage.html or call Jennifer at 402-560-3319. Rain dates are May 11 & 13.

4-H District/State Entries Due May 9

4-Hers competing in a 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 affiliates are available at the Extension office and online at http://animalscience.unl.edu/4h/sanctionedhorseshows. For more information, contact Marty at 402-441-7180 or mcruickshank2@unl.edu.

4-H Special Garden Project

4-H families are invited to participate in a special garden project, growing Love-Lies-Bleeding Amaranthus. 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 $0.50 for one seed packet per family. Please step 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.

4-H Design Camp, June 4 & 5

The 4-H Design Camp held June 4 & 5 at the Lancaster Extension Education Center will be a great opportunity to take the next step in clothing and design. 4-Hers 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 to Clothing Level 2. For more information and registration form, go to http://go.unl.edu/6zfj or call Tracy at 402-441-7180.

4-H Bicycle Contest, June 3

The 4-H Bicycle Safety Contest will be held Saturday, June 7, 9 a.m. at the Lancaster Extension Education Center, 444 Cherry Creek Road. The contest is open to all 4-H'ers ages 8 and up. Participants must provide their own bicycle. Helmets must be worn. Register by June 2 by calling 402-441-7180 (there is no entry form).

There are two parts of the contest. In the bicycle skills events, 4-H’ers maneuver through several designated courses to test their riding skills and safety. 4-H’ers also take a multiple choice quiz. A bicycle inspection reinforces the importance of bicycle maintenance and safety features. This is a county contest only — there is no state contest.

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 Cherry Creek Road. Study material is based on the online Horse Course. To sign up for the course, email Marty at mcruickshank2@unl.edu. No preregistration is required for the Challenge.

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 or at http://lancaster.unl.edu/4h/fair and the Extension office. If you plan on showing 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, please contact your local 4-H 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 13. Instructions are online at http://4h.unl.edu/qualityassurance. If you have any questions regarding this new format, contact Cole at cneadar2@unl.edu or 402-441-7180.

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 the Statewide Level 1 Quality Assurance training. Horse exhibitors and livestock exhibitors showing only breeding animals do not have to complete it.

Contact Marty at 402-441-7180 for more information.

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

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

To register, complete the registration form (one person per form) and return with payment (make check payable to Lancaster County Extension). Registration forms are handout or a “first come, first served” basis and will only be accepted upon receipt of fees. No telephone or online registration.

Confirmation letter and schedule will not be sent. Photocopy completed form for your reference. Confirmation letter and schedule will not be sent. Photocopy completed form for your reference.

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Mail or bring registration form and payment to: UNL Extension Lancaster County, 444 Cherry Creek Rd., Ste. A, Lincoln, NE 68528

EARLY REGISTRATION NOT ACCEPTED!
Four Days of "Hands-on" Workshops full of fun and learning! You may attend as many workshops as you wish! All of the workshops will be held indoors (unless otherwise stated in the workshop description). If you have questions, contact Tracy at 402-441-7180.

**WORKSHOP DESCRIPTIONS**

**Basketball Basics** Learn the basics that are needed to be a successful basketball player. This workshop is for 4-H/FFA members. TUE, JUNE 18; 10:15-12:15PM AGES 8 & 9 $15 Instructor: Jhoni Kucera, 4-H Volunteer

**Rocketry** Build your own rocket and launch it. Requires a baseball bat, one engine. TUE-FRI, JUNE 17-20; 10-AMAGES 8-12 $15 Fee $5 Instructor: Ron Sung, 4-H Volunteer

**Clover Chess Tourney** Play in a unique chess tournament where you will compete against all four days, alternating colors. Time controls and notations will be taught. Brackets, sets and clocks provided. TUE-FRI, JUNE 17-20; 10-AM AGES 8-12 $15 Fee $5 Instructor: James Walla, 4-H Volunteer

**Electronic Textiles** Use special thread and miniature computers to computerize clothing, form garments, make up Lace, aprons, pockets, clothes and much more. Sewing machines will not be used. TUE, JUNE 18; 10:15-12:15PM AGES 8-12 $6 Fee $8 Instructor: Karol Swotek, 4-H Volunteer

**1 Workshop - 2 Time Slots in a Row**

**Fishing Fun** Bring your fishing pole, line, hook and tackle for fishing fun at a nearby lake. Extra tackle is optional. Basic and advanced techniques will be taught. Wear sneakers and sun protection. Only for your age group. MON, JUNE 17; 8-10AM 10-12AM AGES 8 & up $5 Fee $5 Instructor: David Swift, Extension Technician - Corn & Cattle

**Basketball Basics** Learn the basics that are needed to be a successful basketball player. TUE, JUNE 18; 10:15-12:15PM AGES 8 & 9 $15 Instructor: Jhoni Kucera, 4-H Volunteer

**Wild Science Experiments** Have fun learning the science behind several crazy experiments. Take home a science kit! TUE, JUNE 18; 10:15-12:15PM AGES 8 & 9 $5 Instructor: Evana Kucera, 4-H Volunteer

**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 $5 Instructor: Rachel Pickel, Extension Assistant

**Celebrate Crafts** Create crafts as you celebrate the 4th of July! TUE, JUNE 17, 3-5PM AGES 8 & 9 $5 Instructor: Kari Price, 4-H Volunteer

**Pizza Party** Come and enjoy unique pizza and make homemade ice cream! TUE, JUNE 17; 3-5PM AGES 8 & 9 $5 Instructor: Cole Meador, Extension Assistant

**Wire 4 Wires** Build a Wind Turbine that generates enough electricity to run a small light bulb design, build and experiment with turbines. TUE, JUNE 17; 3-5PM AGES 8 & 9 $5 Instructor: F. John Hay, Extension Educator - Energy

**Animal First Aid** Be a styling diva and learn the ins and outs of modeling. Perfect preparation for 4-H Style Revue. WED, JUNE 18, 10-AMAGES 8 & 9 $5 Fee $5 Instructor: Sheldon Swotek, 4-H Volunteer

**Pop Tab Bracelet** Learn a fun new craft by making a pop tab bracelet! Bring 4-6 pop tabs to make. FRI, JUNE 20, 10-12AM AGES 8 & 9 $5 Instructor: Anna Stroud, 4-H Volunteer

**Superhero Selfie** Superhero Selfie will be present to help you look like your favorite superhero! TUE, JUNE 18, 9-10AM AGES 8 & 9 $5 Instructor: Ericha Peterson, Extension Intern

**Beginning Gardening** Learn how to select and start plants. TUE, JUNE 18, 10-12AM AGES 8 & 9 $5 Fee $5 Instructor: Karol Swotek, 4-H Volunteer

**Fashion Show** Learn how to style your own nail polish. Learn how to blend colors. Come with clean finger and toe nails. WED, JUNE 19, 10:15-12:15PM AGES 8 & 9 $10 Instructor: Jhoni Kucera, 4-H Volunteer

**Plant Babies** Learn all about planting, propagating and caring for your plants. WED, JUNE 19, 10-12AM AGES 8 & 9 $5 Instructor: Loren Baftos, Extension Educator - Horticulture

**Plant Babies** Learn the basic skills needed to be a successful gardener. Equipment provided for this workshop. THU, JUNE 20, 10-12AM AGES 8 & 9 $5 Instructor: Christy Christiansen, Extension Intern

**Dough Fun** Have fun creating different doughs that will show roses. THU, JUNE 20, 9-10AM AGES 8 & 9 $5 Fee $5 Instructor: Karol Swotek, 4-H Volunteer

**Cozy Cupcakes** Create marshmallow blasters, cars, a candy race track, candy to add to the supplies. FRI, JUNE 21, 10:15-12:15PM AGES 8 & 9 $5 Instructor: Jhoni Kucera, 4-H Volunteer

**Birds, snakes, turtles, oh, my! Come explore the amazing world of wild animals, food fun, science, the outdoors and more. Refreshments provided. TUE, JUNE 17; 10:15-12:15PM AGES 8 & 9 $15 Fee $5 Instructor: Karol Swotek, 4-H Volunteer

**Build Your Own Flashlight in a Flash** Learn the basic skills needed to be a camping and outdoor expert. Equipment provided for this workshop. THU, JUNE 19, 10:15-12:15PM AGES 8 & 9 $5 Instructor: Jhoni Kucera, 4-H Volunteer

**Learn the basic skills needed to be a successful gardener. Equipment provided for this workshop. THU, JUNE 19, 10:15-12:15PM AGES 8 & 9 $5 Instructor: Christy Christiansen, Extension Intern

**Basketball Basics** Learn the basics that are needed to be a successful basketball player. THU, JUNE 18, 10:15-12:15PM AGES 8 & 9 $15 Fee $10 Instructor: Bill Hunter, Former College Basketball Player

**Sensational Crafts** Create dyed eggs in this fun hands-on workshop. THU, JUNE 18, 10:15-12:15PM AGES 8 & 9 $5 Fee $5 Instructor: Soni Cochran, Extension Assistant

**Amazing Engineering 1** Explore the amazing world of engineering and design and build exciting engineering projects. Projects will differ from Amazing Engineering 2. TUE, JUNE 17, 2-4:30PM AGES 8 & 9 $15 Fee $10 Instructor: Jhoni Kucera, 4-H Volunteer

**Amazing Engineering 2** Explore the amazing world of engineering and design and build exciting engineering projects. Projects will differ from Amazing Engineering 1. THU, JUNE 19, 2-4:30PM AGES 8 & 9 $15 Fee $10 Instructor: Jhoni Kucera, 4-H Volunteer

**Food Adventure** Explore amazing healthy foods, spices with interactive fun! WED, JUNE 19, 10:15-12:15PM AGES 8 & 9 $5 Instructor: Kylee Plager & Sheldon Swotek, 4-H Volunteers

**Candyland Cottage** Let students choose what candy to add to the supplies. Bring leftover candy to adorn it with candy. Bring leftover candy to add to the supplies. THU, JUNE 20, 10:15-12:15PM AGES 8 & 9 $5 Fee $5 Instructor: Jhoni Kucera, 4-H Volunteer

**Candyland Cottage** Let students choose what candy to add to the supplies. Bring leftover candy to adorn it with candy. Bring leftover candy to add to the supplies. THU, JUNE 20, 10:15-12:15PM AGES 8 & 9 $5 Fee $5 Instructor: Jhoni Kucera, 4-H Volunteer

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 refunds unless class is already filled or cancelled. Confirmation letters and schedules will not be sent.

For current class availability, go to https://lancaster.unl.edu/edl/4-programs/clovercollege
The 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.

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.”

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

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

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.