Happy Spring to Muscatine County!

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Upcoming Meeting & Event Highlights
Coordinated by Jane Hodge, Master Gardener

GENERAL MEETINGS
April 9 at 6:30pm at ISU Extension
“Plants That Have Changed History” — Plants and our symbiotic relationship with them made humankind what it is today. Dr. Rachel Horner Brackett is a professor of archaeology and anthropology. This talk will look at prehistoric evidence for the plants that made a powerful impact on both the earliest civilizations and the modern world.

MG Spotlight – Teri Hanson on Donation Gardens and Maryrose Peterschmidt on the Zoo Gardens

June 11 at 6:00pm Potluck at Jane Hodge’s home, 2095 Vail Avenue - Jessica Bolser, Port Louisa’s refuge biologist, will present on flora topics related to our Mississippi River as we eat with a river view.

September 10 at 6:00pm at the home and gardens of Ed Moreno, 1330 100 Street, West Liberty. Matt McAndrew’s topic will be watershed protection and water quality.

November 12 at 6:30pm at ISU Extension – Melissa Baker, Horticulturalist for Muscatine Parks and Recreation Department, will be presented about the hanging baskets she has planted and maintained throughout Muscatine.

GREENHOUSE TOURS and education programs — All programs start at 6:00pm. Please wear your MG badge for your 10% discount, also, please shop before the program.
1. Kellor & Kellor Landscaping, 1301 Washington, Muscatine, April 18 Thursday
2. Hilltop Greenhouses, 11606 233rd St., Illinois City, Illinois, April 25 Thursday. Maria’s topic will be herbs.
3. Iowa City Landscaping, 520 Highway 1 West, Iowa City, Iowa, May 9 Thursday

HOME GARDEN TOURS
1. Laura McGinnis, June 13, 4:00-6:30pm at her home 24708 124th Avenue W., Illinois City, IL
2. Bill Koellner & Gretchen Nollman will lead a tour of Muscatine Co. Fairgrounds, July 9, 6pm
3. Heather Harroun, July 13, 11723 239th St. W., Illinois City, Illinois. We are welcome throughout the day but she will give us a personalized tour at 11:00am.
4. Ed Moreno, September 10 at 6:00pm, 1330 100 Street, West Liberty

If anyone is interested in hosting a home garden tour this summer, please contact Jane Hodge.
We would love to add you to the list! SEE MORE EVENTS ON NEXT PAGE!
Additional Meeting & Event Highlights
Coordinated by Jane Hodge, Master Gardener

Muscatine Community College **Class on Pollinators and Beekeeping**  Class ID: 4682
Discover the world of bees. These fascinating insects are critical to our food chain and our environment. In this introductory class, you will learn to identify pollinators and plantings in your backyard that nurture them. You will also view an observation hive and discussion about the life cycle of bees. April 4, 2019; 2:00-3:30pm  Tuition: $0.00
Location : Muscatine, MCC Main Campus  Instructor : Phil Crandall

Become a **Tree Keeper Classes** — April 2, 9, 16, 23 — 6-9pm — Marion, Iowa — see page 8

**Bug University** — April 9; 1pm – 4pm at Muscatine Environmental Learning Center — Donald Lewis, professor and extension entomologist with ISU will provide insight into insect identification, beneficial insect diversity, and how to deal with the bad bugs — see page 9

We had to cancel the March 12th **Board Meeting** due to weather (imagine that!) and we will be meeting one hour prior to the April 9th meeting at 5:30pm at the Extension office.

**Gardening School** — April 11-12 at Iowa Arboretum, Madrid, Iowa — see page 10

**Building Neighbors with Community Gardens** — April 17, 1:30pm — Strawberry Farms B&B, 3402 Tipton Road, Muscatine — see page 11

Save the date for the **Day of Caring** April 24th Wednesday 8 am till noon at the Zoo Garden at Weed Park. Lunch provided by United Way. This will be the kick off for the start of summer season. Please come out and join us. This can count for your volunteer hours. The students have been valuable help in the past. Maryrose Peterschmidt for the Zoo Garden — see pg 12

**Annual Plant Sale** — May 11; 8:00am-12N at Environmental Learning Center — see page 13

Due to the horrible winter weather - MBO will be having their annual **Tree Care Workshop** in mid-May. Details will be in next month's newsletter.
Thanks, Kathy Chalupa for Muscatine Branching Out

**International Master Gardener Conference** — June 17-21 — Valley Forge, PA
Hello Master Gardeners!

Spring has finally come! As I am sure all of you are, I am very happy to get outside and enjoy some sunshine. Things are gearing up for the summer here at the Extension Office. To us, that means lots of Pesticide Applicator Continuing Education courses; getting the Muscatine County Fair 4-H Fair book ready to roll; and planning 4-H Summer camps. We are topping it off with anticipation for our move this fall. Demolition is starting in April of our new building, I will be posting pictures to our Facebook page<https://www.facebook.com/MuscatineExtension/> if you want to follow our progress! Here are a few highlights of our non-Master Gardener programming this spring:

* Friday, April 5 is BLUE OUT DAY in the state of Iowa. Help show your support for Child Abuse Awareness and Prevention month by wearing blue and posting a picture on social media with #GreatChildhoodsMuscatine

* Growing Up Wild Early Childhood Professional Development training in conjunction with Muscatine County Conservation and Early Childhood Iowa - Muscatine County. 35 educators have signed up to participate!

* ServSafe Food Safety training on April 15 - did you know that Extension helps to train food establishments on food safety best practices?

* Talk With Me Baby is a training we are offering to nurses and in-home providers to help them teach families about "language nutrition" - cool huh!

* Women, Land & Legacy will host their April Share and Grow session at Gramma's Kitchen in Walcott, Friday, April 5 at 1 pm. This group is all about a place for women in ag to network and learn from each other.

And don’t forget about the Master Gardener events we have coming up - for those you will have to read the rest of the newsletter :)

Planning for this fall’s Master Gardener training is also underway! Thank you to Kathy Haltmeyer and Rachel Horner Brackett for serving on the planning committee. This year we will employ the "flipped classroom" approach with videos you watch at home and in-person, hands-on meetings. Watch for more details soon!

Happy Spring everyone, hope to see you all soon!

Krista

Amaryllis belladonna (or Naked Ladies) comes up early spring
Ready, set, GROW! Finally warm days to work outside are here. My advise-stretch those winter dormant muscles & pace yourself before a marathon weekend of pruning shrubs & picking up winter blown twigs in your yard and gardens-your back will thank you. The growing season comes on fast and furious and it can be overwhelming at times trying to get it all done and the weather can disrupt our plans without notice. Try to focus on the little positive moments that gardening is all about. That moment when a perennial you worried about when the temps dropped down to -30 this winter finally peeked through the mulch. The promise of all things new to come.

We have great quest speakers, tours & events scheduled soon, you won’t want to miss out. Get those CEUs under your belt, because if you are like me, when the weather turns, I’ll be outside every free moment I have. I look forward to seeing you all at the April 9th general meeting, and the MG Board will be meeting prior to that at 5:30pm to make up for the March 12th meeting that was cancelled due to weather. I think we can safely say winter is behind us!

Happy Gardening!
Mary Danner

News from the Chair
By Mary Danner
Master Gardener

Fruit Tree Pruning Demonstration
March 27 at Muscatine Arboretum
by Charles (Rick) Rickey, Life Time Master Gardener and Patrick O’Malley, ISU Outreach Field Specialist

Fruit Tree before Pruning

Fruit Tree after Pruning

Inserting Spreader Device
Excellent presentations, exhibits, entertainment, and personal interaction at Art of Gardening 2019
Many thanks to our AOG organizing committee and to MCC for the use of their excellent facilities and for their friendly cooperation!
Become a TreeKeeper!
And make a difference in your community
Four-class series is held on Tuesday evenings in April
April 2, 9, 16 & 23 - 6 - 9 p.m
Trees Forever Volunteer Training Center, 80 W 8th Avenue, Marion, Iowa
Cost is $30; includes dinner, TreeKeepers handbook and TreeKeepers t-shirt.

As a Trees Forever TreeKeeper, you will:
• Help plant trees in your community.
• Care for young trees along streets, in parks & at schools.
• Provide a voice for trees in your community.

Hands-on & classroom training includes:
• Tree identification
• Best planting methods
• Tree maintenance

Register online: www.TreesForever.org/TreeKeepers by March 26

Questions: Contact Aaron Brewer by email at abrewer@treesforever.org or by phone at 319-350-1903

Partners:

Cedar Rapids
City of Five Seasons

DNR
Iowa Department of Natural Resources

City of Marion
Iowa

BUG UNIVERSITY WORKSHOP

RANDALL CASS
VIRGIL SCHMITT

2 Hour workshop
2 CEUs for agronomists
1 free training

April 9, 2019
1.00pm - 3.00pm
Environmental Learning Center
@ Discovery Park
3300 Cedar Street
Muscatine, IA 52761

Training is offered at no cost thanks to Soil & Water Conservation District supporters.

What are some topics we will cover?
- Honeybee and Native Bee Health
- Impact of Bees on Soybean Production
  - Forage for Bees
- Thresholds for Insect Pest Management
  - Field Scouting Tips
- Minimizing Dust off from Insecticide Seed Treatments
  - Beneficial VS. Detrimental Insects

"The United States Department of Agriculture- Natural Resources Conservation Service, Soil and Water Conservation District are equal opportunity providers, employers and lenders."
National Garden Clubs, Inc., GARDENING SCHOOL, Course 1—Series 13
Sponsored by Federated Garden Clubs of Iowa
IOWA ARBORETUM, 1875 PEACH AVENUE, MADRID, IOWA
Located in the rural area between Madrid and Boone, IA
Open to the public

APRIL 11, 2019 (Thursday)
8:00-8:20 A.M. Coffee and Registration
8:20-8:30 Introductions, announcements and questions
8:30 –11:00 *BASIC BOTANY 2.5 hr
   Aaron Steil, Assistant Director
   Reiman Gardens, Iowa State University
11:00-11:15 BREAK
11:15 AM–12:45 P.M. *TECHNIQUES FOR GROWING OUTDOOR FLOWERS 1.5 hr
   Yvonne McCormick, Extension Horticulturist
   ISU Extension and Outreach Region 7
12:45-1:15 LUNCH (Please bring sack lunch. Refrigerator & microwave available)
1:15 – 3:15 *SOILS 2.0
   Lee Burrs, PhD, Professor of Agronomy, Soil Scientist,
   Agronomy Dept., Iowa State University
3:15-3:30 BREAK
3:30 –4:30 BUTTERFLIES OF IOWA 1.0
   Anita Westphal, Butterfly Wing Assistant
   Reiman Gardens, Iowa State University

APRIL 12, 2019 (Friday)
8:15-8:30 A.M. Coffee and Registration
8:30 – 11:45 PLANT PROPAGATION 1.5 hr
   Jessie Liebenguth, Landscape Horticulturist
   Reiman Gardens, Iowa State University
   BREAK
   PLANT PROPAGATION WORKSHOP 1.5 hr
   Jessie Liebenguth, Landscape Horticulturist
   Reiman Gardens, Iowa State University
11:45 AM-12:15 PM LUNCH (Please bring sack lunch if testing)
12:15 -3:15 EXAM
*TESTED TOPIC, ALL OPEN BOOK TESTS
RECOMMENDED READING: The National Gardener magazine. Order on-line or by phone: 1-800-550-6007
Master Gardeners may be awarded 1 hour CEU for each 1 hour class time.

FGCI Registration – Gardening Study School Course I, Session 13, April 11-12, 2019. Iowa Arboretum, 1875 Peach Avenue, Madrid IA, in the Hughes Education Center. Coffee and tea provided.

REGISTRATIONS ACCEPTED UNTIL NOON, April 8, 2019, NO REFUNDS AFTER April 8.
WALK-INS ALWAYS WELCOME, BUT HANDOUTS NOT AVAILABLE.
NAME (only 1 person per form)___________________________________________
ADDRESS______________________________________________________________
Your FGCI Garden Club______________________________________________ Master Gardener (Y/N)
TELEPHONE____________________ E-MAIL ADDRESS_________________________
Unless checked, we will use your e-mail to contact you with National Garden Clubs information, including future Gardening Study Schools. _____ Class $55 _____ Class + test $60 _____ Refresher
$60 (Refresher available only for Gardening Study Consultants.)MAKE CHECKS PAYABLE TO;
Gardening School & mail to AdaMae Lewis, 122 N. Russell Avenue, Ames IA 50010.
acamae@gmail.com Phone 515-232-0608 and leave a message.
Building Neighborhoods
with Community Gardens

Join in on a conversation with Sister MacCanon Brown, Director of MacCanon Brown Homeless Sanctuary of Milwaukee, Wisconsin, on the benefits of urban agriculture and community gardens.

Thursday, April 17, 2019

1:30 pm: Meet and greet with light refreshments.
2:00 pm: Program

Strawberry Farm Bed and Breakfast
3402 Tipton Road Muscatine, IA

RSVP: Duffy De France 563.607.3213 or Facebook
DON’T JUST WEAR THE SHIRT,

LIVE IT!

DAY OF CARING  04.24.2019

United Way of Muscatine (UWM) invites you to participate in our Student Day of Caring on April 24, 2019!

On this day, we hope to have a student team complete a meaningful project for your agency or a client in need.

Day of Caring exemplifies Living United when business partners join with local civic and community groups to connect with others in the Muscatine community who need our help.

There are so many benefits to your agency uniting with our community on Day of Caring. Prior to April, we will strive to match your organization with volunteers that will be able to complete a project of your choosing. We encourage you to submit as many projects as needed. There are no guarantees on every project being matched. We will try to accommodate your preferences. This spring’s Day of Caring is with the students in Muscatine.

See the attached forms to:

- Request a project(s)

All entries must be submitted to: United Way of Muscatine, 208 W. 2nd St. Ste. 201, Muscatine, IA 52761 or fax (563) 263-8572 or e-mailed no later than March 15, 2019. All forms must be completed in their entirety. Contact Nichole Sorgenfrey at (563) 263-5963 or e-mail nichole@unitedwaymuscatine.org for more information.

Together, united, we can inspire hope and create opportunities for a better tomorrow. That’s what it means to LIVE UNITED.
Don’t forget the Spring Plant Sale taking place on May 11th at the pavilion by the Environmental Learning Center in Discovery Park.

Set up at 8am sale starts at 9am.

As you are clearing off your flower beds, take note of what is needing divided or what you have enough of to share at the plant sale.

Please have your plants labeled with the plant name, cultivar name (if known) and some basic culture information such as light requirements, hardiness, plant height, bloom time, etc. Photos to accompany the plants really help sell the plant.

DO NOT leave your plants the night before!!

We will need volunteers to set up before the sale, work during the sale, and clean up after the sale.

There may also be some help needed collecting plants from some who can contribute but can’t make the sale.

If you would like to help with the sale, please let me know. Details about the sale will be provided at the April general meeting.

Thanks,

Heather Harroun
Plant Sale Chairperson
563-554-0028
jhsharroun@outlook.com
Community Growing Season Kickoff

March 30 at Environmental Learning Center

Presentations:
Coordination and Announcements by Krista Regennitter, ISU Extension
Donation Gardening in Muscatine by Nicole Sorgenfrey, United Way
Tips for Growing Healthy Tomatoes by Mary Danner, Master Gardener
Sustainable Soils by Lynn Pruitt, Master Gardener
In the previous article we learned that George Washington Carver was born as a slave in southern Missouri; had early interest and aptitude in plants and their health; got his high school diploma in Kansas; studied art and music at Simpson College; receive master degree in botany from what would become Iowa State University; and then worked with Booker T. Washington at Tuskegee Institute in Alabama. He helped poor southern farmers remedy the problem of cotton poor soil through crop diversity and natural farming.

The Tuskegee students of Carver were very appreciative of his teaching style which usually resulting in them discovering the answers to their own questions through his relaxed interaction rather than lecturing. His true love however was research and working with local farmers. He invented the Jesup wagon (named after New York financier and Tuskegee donor Morris Ketchum Jesup) which was a horse-drawn mobile classroom and laboratory that Carver could take to the field to demonstrate soil chemistry. During the early part of World War II he worked to replace the textile dyes formerly imported from Europe, and in all he produced dyes of 500 different shades.

**Honors and Awards** -- George Washington Carver received many honors for his scientific discoveries and his assistance to the poor farmers of the South. In 1916 he was elected to Britain's Society for the Encouragement of Arts, Manufactures, and Commerce (London), and in 1923 he received the Spingarn Medal. Carver was called to present testimony for the peanut industry to the Ways and Means Committee of Congress in 1921. As a result the committee approved a highly protective tariff on imported peanuts after Carver described the many and varied derivates of the common plant. A year earlier he had addressed the Peanut Growers Association and was dubbed with the moniker of Mr. Peanut.

**Conclusion to a Life Well Lived** -- Near the end of his life, Carver lived somewhat as a celebrity but his focus was always on helping people. He authored a syndicated newspaper column focusing on the importance of agricultural innovation. He traveled the South to spread his agriculture message and also to promote racial harmony. Carver traveled to India to discuss his innovative
agricultural practices and to promote nutrition in developing nations with Mahatma Gandhi. He continued to release practical bulletins (44 in all) on his research findings which were aimed to assist farmers, teachers and even housewives.

Like Carver, Henry Ford was deeply interested in the regenerative properties of soil and the potential of alternative crops such as peanuts and soybeans to produce plastics, paint, fuel and other products. Ford had long believed that the world would eventually need a substitute for gasoline, and supported the production of ethanol (or grain alcohol) as an alternative fuel. In 1942, he would showcase a car with a lightweight plastic body made from soybeans. Ford and Carver began corresponding via letter in 1934, and their mutual admiration deepened after Carver made a visit to Michigan in 1937.

From 1923 to 1933, Carver toured white Southern colleges for the Commission on Interracial Cooperation promoting the possibilities for racial harmony in the United States. However, he largely remained outside of the political sphere and declined to criticize prevailing social norms outright. As a result, the politics of accommodation championed by both Carver and Booker T. Washington seemed too docile for activists who sought more radical change. Carver's scholarship and research, nevertheless, contributed to improved quality of life for many poor farming families, making Carver an icon for African Americans and white Americans alike.

Carver died on January 5, 1943, at Tuskegee Institute from injuries from a fall down the stairs at his home. He was buried on the Tuskegee campus next to Booker T. Washington. Carver's epitaph reads: "He could have added fortune to fame, but caring for neither, he found happiness and honor in being helpful to the world."

President Franklin D. Roosevelt signed a bill which permitted a monument, previously reserved for presidents, to be erected for Carver. As a result the George Washington Carver National Monument was dedicated and now exists in Diamond, Missouri. This 210-acre complex includes a statue of Carver as well as a nature trail, museum and cemetery. Carver was also inducted into the National Inventors Hall of Fame after his death.

Carver was a frugal man who used his savings to establish the Carver Research Foundation at Tuskegee for continuing research in agriculture; and the George Washington Carver Museum, Cultural and Genealogy Center in Austin, Texas. The latter was devoted to his work, including some of his own paintings and drawings. However, a fire in the museum destroyed much of this collection in December 1947.

Many of Carver’s agricultural practices can still be applied to farming and gardening in Iowa and beyond.
We all think about the nutrition we need in our own diets to sustain healthy lifestyles. Your backyard and garden companions are living things like you that are also needing nutrition and sustenance to survive. All living things, such as plants require air, food and water and in return plants provide beauty and food.

As an example, every good gardener knows to fertilize their garden with a well-balanced application of plant food and compost when need it. However, experienced gardeners and farmers learn the exact nutrients needed at any stage of growth, for health, beauty, and even tastiness. Further, they can pick up on what plants need through various signs and indicators, diagnosing illnesses, pest issues, and nutrient deficiencies.

Appearance, discoloration, growth development and other symptoms each send a message about vegetation health and how it can be balanced by using nutrients, which is not unlike managing our own health in some ways.

You don’t have to be an expert farmer, or even a gardener to learn these signs, and what they indicate. What nutrients are you supposed to be paying attention to in your fertilizers? What do your plants really need? So many choices for what to feed your plants! What are they exactly, and what can they achieve? Actually, some of them are the same ones that animals and humans need.

**NITROGEN (N)**

The main nutrient is nitrogen, as it achieves similar benefits as protein in animals. Protein releases nitrogen for use in humans. Vital for good stalk and stem growth, though excess nitrogen decreases immunity and ability to fruit or flower.

**PHOSPHORUS (P)**

Phosphorus strengthens the root systems, increases the capacity for seed creation, provides disease resistance, and pest prevention. Phosphorus improves flowers size and proliferation and blooming. Phosphorus strengthens plant tissues and improves flavors in edibles and vegetables.

**POTASSIUM (K)**

Potassium is important for roots and seed production. Sometimes potassium is called potash, this further supports the ability to tolerate extreme temperatures. Excess potassium prevents absorption of other minerals, particularly magnesium and calcium which are also critical for healthy plants. Potassium increases vigor and disease resistance of plants, helps form and move starches, sugars and oils in plants, and can improve fruit quality. Potassium is low or deficient on many of the sandier soils. Also, heavy potassium removal can occur on soils used for intensive grazing and intensive horticultural crops.

**CALCIUM**

Calcium strengthens and fortifies overall tissues everywhere. Calcium helps neutralize acidity, both within the plant and in its surrounding soil, for optimal health of all plants. Calcium is essential for root health, growth of new roots and root hairs, and the development of leaves. It is generally in short supply in some fields and gardens.

(Cont’d next page, NUTRIENTS)
lime, gypsum, dolomite and superphosphate all supply calcium. Lime is the cheapest and most suitable option; dolomite is useful for magnesium and calcium deficiencies, but if used over a long period will unbalance the calcium/magnesium ratio. Superphosphate is useful where calcium and phosphorus are needed.

**MAGNESIUM**

Magnesium helps increase intake of phosphorus and boosts production of chlorophyll, giving a healthy green color and encouraging absorption of carbon dioxide. A lack of magnesium can contribute to poor coloring and an anemic appearance of the plant structure. Deficiencies occur mainly on sandy acid soils in high rainfall areas, especially if used for intensive horticulture. Heavy applications of potassium in fertilizers can also produce magnesium deficiency. Magnesium deficiency can be overcome with dolomite.

An array of fertilizers and amendments may be needed in varying amounts to give your vegetables, shrubs, crops and trees a balance of these nutrients is crucial. You can purchase different fertilizers with assorted levels and types of nutrients.

The majority of fertilizers you buy have a set, healthy balance of these nutrients built right in particular nitrogen, phosphorus, and potassium, labeled as an “N-P-K” ratio on packaging, and made up of three numbers. These three minerals make up the most important micronutrients that most species and varieties in your garden need.

When considering feeding, ratio numbers on the packaging may vary, depending on their specific blends: The N-P-K amount of most foods will have three identical numbers – such as 6-6-6, indicating a fertilizer containing 6% each of nitrogen, potassium, and phosphorus for general nutrition. Other common kinds tend to have a higher ratio of nitrogen compared to the rest, such as 20-6-6. This is because plants typically need more nitrogen than other nutrients – just like humans need more protein, versus other vitamins and minerals.

These can come in the form of synthetic, pre-packaged, and often chemical fertilizers that provide these nutrients for immediate, available use or all-natural, organic, pre-packaged alternatives as well as an entire world of natural materials, composts, and mulches. They may not act or provide nutrition as fast or as intensely as commercially made fertilizers, but evidence shows they are much healthier and better for your garden in the long run, even if they do require more patience.

Synthetic or chemical fertilizers may be made up of nitrates, sulfates, phosphates, or other man-made constituents to provide nutrition. These come in powdered, granular, or liquid forms to be sprayed, and can have negative environmental impacts. While organic fertilizers are created with plant or animal byproducts like fish, bone, blood meal, manure, and others. These may come in powdered, granular or liquid spray.

Natural fertilizers may include compost, mulch, wood ash, lime, and other generally natural additions that enhance nutrient use and availability. These don’t have a designated N-P-K amount, sometimes not even containing any of these three nutrients at all.

As a result, organic methods of gardening are becoming quite popular, and are considered wholly safe and guilt-free. Here are some options for a chemical-free environment and clean food:

**Fish emulsion** – Typically a byproduct from fisheries, this provides an organic N-P-K ratio, tending to be higher in nitrogen than P or K.

**Bone meal** – Another byproduct, this gives greater amounts of phosphorus and nitrogen – especially helpful for bulb, root, and transplant development.

**Blood meal** – This byproduct boasts high levels of nitrogen comes in dried or powdered form.

*(Con’d from previous page, NUTRIENTS)*
(Cont’d from previous page, NUTRIENTS)

Manure – Fertilizers of this type are sourced from many animals including chickens, rabbits, sheep, cattle, horses, pigs, and even seabirds or bats.

Biofertilizers – These are made of soil bacteria that boost natural production of nutrients in the soil around roots, particularly nitrogen, through the process of nitrogen fixation.

Cover crops – Available as purchasable seed, these are temporarily cultivated to boost presence of soil bacteria for nearby plants, or to act as green manure and increasing nutrient levels, and soil health overall.

A lack or imbalance of nutrients can be determined according to a few universal, fairly easy-to-interpret signs and symptoms when it comes to appearance and color.

However, do take care to know exactly what healthy plants should look like before reading into any abnormal appearances! The following are excellent symptoms to use in looking for certain nutrient deficiencies:

- Yellowed leaves (old growth) – Indicates a nitrogen deficiency.
- Yellow-edged leaves (old growth) – Indicates a magnesium deficiency.
- Warped, misshaped new leaves – Reveals a calcium deficiency.
- Purple/reddish leaves – Lack of phosphorus.
- Deformed fruits – Typically due to potassium, though nitrogen excess can contribute.
- Blossom end rot (tomatoes) – Widespread cause is from lack of calcium.
- No flowering/dropped flowers – Can point to lack of phosphorus.
- Light green foliage (rather than dark green) – An “anemic” appearance could be nitrogen deficiency.

“Burnt” leaf-tip appearance – Points to depletion of phosphorus.

Abnormally dark green old foliage – Another sign of not enough phosphorus.

Dark black or scorched leaf appearance – Potassium deficiency.

Wilted old growth – Potassium deficiency.

Besides abnormal appearances, you can learn whether or not to give specific nutrients to a plant depending on what stage of growth it is in, and even what variety or species of plant it is.

On new growth, nitrogen is especially helpful to give, though adequate levels of all nutrients are critical at this phase. On newly transplanted plants, they will benefit especially from higher amounts of root-supporting nutrients, like phosphorus and potassium. On plants that are blossoming, benefits from phosphorus, potassium, and calcium to support growth and development. During the fruiting stage it’s important to include decent amounts of phosphorus and potassium, while not overdoing it with nitrogen.

Here are some specific plant species and nutrients that are important for their proper growth and development of these vegetables:

Garlic – Benefits from phosphorus and potassium for good bulb and root development.

Lettuce – Flourishes with adequate nitrogen and magnesium levels for healthy, attractive greens.

Carrots – Roots grow stronger and tastier with adequate phosphorus and potassium.

Squash – Adequate phosphorus, calcium, and potassium protect against flower failure and promote healthy fruiting.

Tomatoes – Need nitrogen for strong vine growth, phosphorus for good blooms, and potassium and calcium for strong, healthy fruits.

(Con’d next page, NUTRIENTS)
(Cont’d from previous page, NUTRIENTS)

Skilled farmers and gardeners know that there is a correct time and setting for adding specific nutrients to bring plant and soil health back into balance. To get acquainted with this subtle art, they learn what signs, symptoms, pests, diseases, soil states, and even stages of growth in a plant’s life to look for before deciding what nutrients to add. Choosing between adding the right nutrient and simply dumping on a lot of everything is like the difference between night and day. Make sure to take note of the important insights and tips ahead before selecting what plant nutrients you need. Whether it is your garden, lawn, trees, shrubs or the fields for your crops, nutrients are essential for the growth, production of crop or food, or the development and beauty of your flower garden.

Signs of Spring in Iowa

*Daffodils, Hyacinth, and Tulips*
**Muscatine County Extension Office**
1514 Isett Avenue  
Muscatine, IA  52761-4629  
563-263-5701 or 800-992-0894  
Krista Regennitter  
Muscatine County Extension Director  
Master Gardener Liaison  
. . and justice for all  
Iowa State University Extension programs are available to all without regard to race, color, national origin, religion, sex, age, or disability.  
Iowa State University and U.S. Department of Agriculture cooperating.

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**Current Emails and Addresses**
As a reminder – keep both the Extension Office and Lynn Pruitt current on any changes of e-mail addresses, phone numbers, or mailing addresses. These need to be current to keep you — our members — informed.

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**April 9 General Meeting**
*Be sure to get this on your calendar: “Plants That Have Changed History”*

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**2019 Muscatine County Master Gardener Board**

**Board Members**
- Mary Danner (2019) Chair
- Heather Haroun (2020) Vice Chair
- Rachel Horner Brackett (2020)* Sec/Treas
- Kathy Haltmeyer (2020)
- Jane Hodge (2019)
- Ron Jensen (2019)*
- Ed Moreno (2020)
- Maryrose Peterschmidt (2020)

Gretchen Nollman (Intern)

( ) Year term expires as of Dec. 31  
* Going off Board Dec 31, 2019/2020 but eligible for re-election

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**Editorial Comments:**
Please remember, this is YOUR newsletter. Your articles, photographs and other tidbits are welcome. Send them by the end of each month to pruitt.lynn@gmail.com or call 563.260.0234

— Lynn Pruitt, Editor —