



Chichester Garden Club

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CGC Newsletter Apr 9, 2014, Vol 2

Words from the President:

"BACKYARD FARMING" LECTURE SERIES HAS SUCCESSFUL BEGINNING

Professor John Carroll launched the Chichester Garden Club (CGC) & Chichester Agricultural Commission's (ChiAgCom) **"Backyard Farming"** lecture series in March. Dr. Carroll's lecture covered topics such as: how our food supply is related to oil, food security and sufficiency, as well as farm sustainability in NH and NE. Also covered is the changing dynamics of farming; the human element has made a shift from large industrial farms to buying local at the farm or farmers markets. This nationwide change has been witnessed through urban rooftop and community gardens, suburban community supported agriculture (CSA) and farm-to-restaurant initiatives, as well as the vastly popular "Farmers' Market." According to NH Dept of Agriculture webpage and publications, there are more than 70 farmers' markets listed in the *Farmers Market Director*, and over 85 Merrimack Valley farms listed in *Taste of New Hampshire Agricultural Map*.

Attendees were from Barnstead, Chichester, Concord, Loudon, Northwood, Pembroke & Pittsfield. They read about it: SVS, Concord Monitor; Chichester Town Hall, Chichester Country Store & Epsom Library; thank you to everyone who spread the word. And we have new parties interested in both CGC & AgCom! **How cool is that?**

Thank you to Barbara Eggers for arranging for such a great speaker, thanks to all to help spread the word, set-up & clean-up, and to Teresa for all the beverages and everyone who brought goodies. And THANK YOU for Participating. YOU are making the CGC & AgCom outstanding organizations!



Integrated gardens

Where trees and flowers meet herbs and vegetables and get along beautifully. For those experienced gardeners, does any of the following sound familiar?

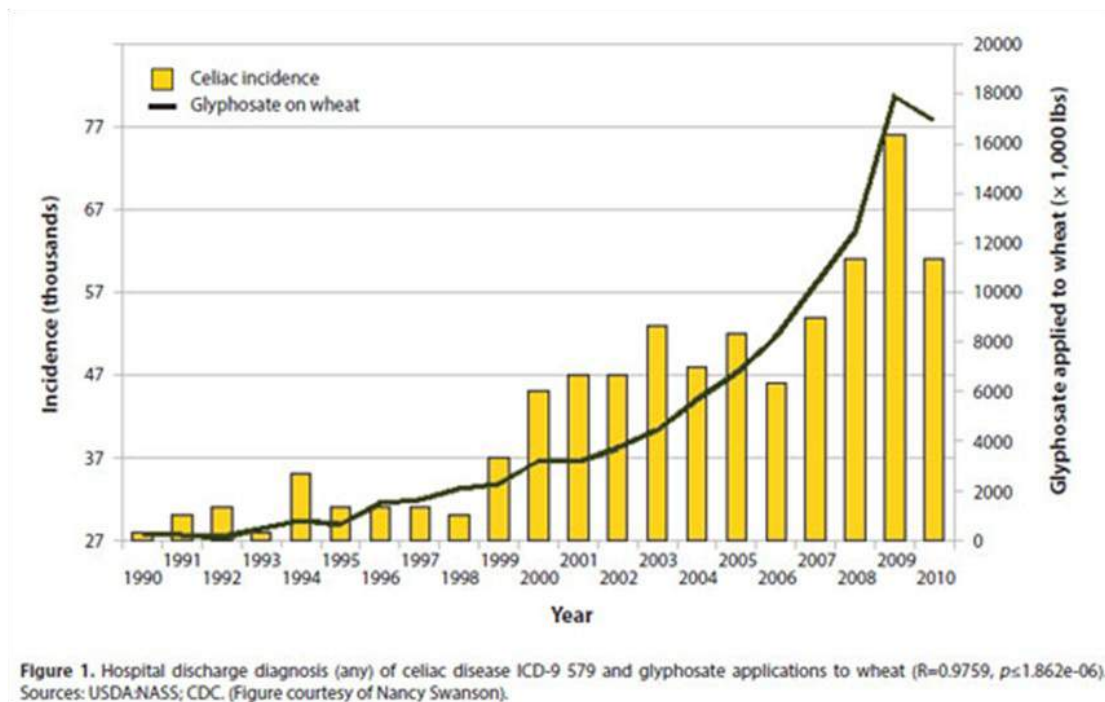
Who says certain plants belong in the yard and others have to be set apart in a fenced-in garden? The hottest new trend (and something most of the old timers already knew) in landscape design says they don't have to be. And while combining them makes all the sense in the world, to design an integrated landscape that combines the best of all worlds and looks great takes a practiced eye.



FOOD GARDENING

Is Roundup the Cause of 'Gluten Intolerance'?

A compelling new peer-reviewed report from two U.S. scientists argues that increased use of Monsanto's glyphosate herbicide (trade name Roundup) could be the cause of the epidemic of symptoms labeled as "gluten intolerance." From the Journal of Interdisciplinary Toxicology, Feb. 25, 2014



This chart shows the increased rate of hospital discharge diagnosis of celiac disease in correlation to the increased application of glyphosate to wheat. - Courtesy of the Journal of Interdisciplinary Toxicology

Increased use of Monsanto's glyphosate herbicide (trade name Roundup) could be the cause of the epidemic of "gluten intolerance", according to a compelling new peer-reviewed report from two U.S. scientists. Farmers are now using glyphosate not only to control weeds but also to dry down wheat, rice, sugarcane and other crops just before harvest, resulting in higher residues in the foods we eat. The abstract from the paper "Glyphosate, Pathways to Modern Diseases II: Celiac Sprue and Gluten Intolerance" is below. You can [read the full report here](#) and view graphs in the Slideshow connecting increased use of glyphosate with growing rates of celiac incidence, deaths from intestinal infections, acute kidney disease and deaths due to Parkinson's.

Abstract:

Celiac disease, and more generally, gluten intolerance, is a growing problem worldwide, but especially in North America and Europe, where an estimated 5 percent of the population now suffers from it. Symptoms include nausea, diarrhea, skin rashes, macrocytic anemia and depression. It is a multifactorial disease associated with numerous nutritional deficiencies as well as reproductive issues and increased risk to thyroid disease, kidney failure and cancer. Here, we propose that glyphosate, the active ingredient in the herbicide, Roundup, is the most important causal factor of this epidemic. Fish exposed to glyphosate develop digestive problems that are reminiscent of celiac disease. Celiac disease is associated with imbalances of gut bacteria that can be fully explained by the known effects of glyphosate on gut bacteria. Characteristics of celiac disease point to impairment in many cytochrome P450 enzymes, which are involved with detoxifying environmental toxins, activating vitamin D3, catabolizing vitamin A, and maintaining bile acid production (cont'd pg 3)

(cont'd from pg 2)

and sulfate supplies to the gut. Glyphosate is known to inhibit cytochrome P450 enzymes. Deficiencies in iron, cobalt, molybdenum, copper and other rare metals associated with celiac disease can be attributed to glyphosate's strong ability to chelate these elements. Deficiencies in tryptophan, tyrosine, methionine, and selenomethionine associated with celiac disease match glyphosate's known depletion of these amino acids. Celiac disease patients have an increased risk to non-Hodgkin's lymphoma, which has been implicated in glyphosate exposure. Glyphosate residues in wheat and other crops are likely increasing recently due to the growing practice of crop desiccation just prior to harvest. We argue that the practice of "ripening" sugar cane with glyphosate may explain the recent surge in kidney failure among agricultural workers in Central America. We conclude with a plea to governments to reconsider policies regarding the safety of glyphosate residues in foods. ##

Announcements & Events

CGC 2014 Meetings:

Mar 26 (speaker), Apr 23 (speaker), May 28 (speaker), Jun 25 (speaker); Jul 23, Aug 27, Sep 24, Oct 22; there will be no Nov & Dec meetings due to busy Holiday Season schedules and anticipated weather conditions.

Other Events:

June 20 & 21 "Out of this World" NHFGC's State Flower Show, McAuliffe-Shepard Discovery Center, Concord.

This state flower show is open to all members of NHFGC, the NH Judges' Council and the NH Designers' Guild. (The only exceptions are specific sections in the Special Exhibits Division for Youth and Invitational Exhibits).

Everyone is encouraged to participate in some way. Being a state flower show, our goal is to have all clubs involved in some way, with at least one member from every club contributing to this state garden club project. Suggestions are, but are not limited to: Individuals entering in the Horticulture, Design and/or Special Exhibits Divisions, and/or volunteering to serve on one of the committees (please refer to the schedule). Member garden clubs and/or individual members can also help out by contributing to "The Friends of the Flower Show Fund".

Entries will be accepted and set-up time will be on Thursday, June 19th between 1 and 5 PM. Judging will take place on Friday, June 20th at 10 AM. The flower show will be open to the public on Friday, June 20th from 1 to 5 PM. and Saturday, June 21st, 2014 from 10 to 4 PM.

Members have until April 15, 2014, to enter their floral designs with the Design Entries Chairman. Please review the attached "Working Schedule" and consider entering one of the Divisions. In regard to Horticulture, you may wish to review the plant and seed catalogs you receive this winter to help you determine which horticulture class/classes you may wish to enter in the flower show this summer: Perennials/Annuals that can be entered are: Hosta; branches, bulbs, tubers, rhizomes, corms; Containers grown for foliage; Flowering or fruiting branches; Containers; Vegetables. See the schedule for additional information on entering horticulture, such as quantity, size, length, number of items, etc.

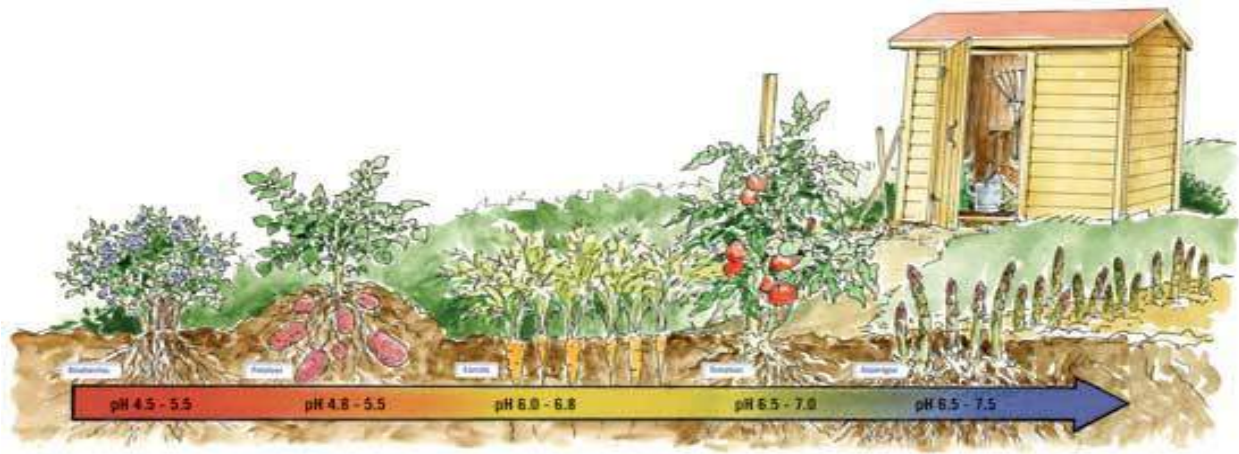
This flower show schedule is also posted on the NHFGC website. Visit www.nhfgc.org. User name: *nhfgc*; Password: *peony* - "Calendar of Events".



Continued on p 8

Your Garden's Soil pH Matters

Learn what causes acidic soil and alkaline soil, plus how to apply the results of a soil pH test in your organic garden. By [Barbara Pleasant](#) April/May 2014, motherearthnews.com



Blueberries and potatoes prefer acidic soil (low pH). Asparagus likes alkaline conditions (high pH). Illustration by Elayne Sears

To ensure that your garden crops make the most of the rich, organic soil you create, you need to understand your soil's pH. The pH describes the relative acidity or alkalinity of your soil's makeup, and it has important implications for plant health and growth. Soil pH impacts beneficial fungi and bacteria in the soil and influences whether essential minerals are available for uptake by plant roots.

What Is Soil pH? A solution's pH is a numerical rating of its acidity or alkalinity. All pH is measured on a logarithmic scale from zero (most acidic) to 14 (most alkaline, or basic); 7.0 is neutral. The pH scale is used by chemists to measure the concentration of reactive hydrogen ions (H⁺) in a solution.

Most food crops prefer a pH of 6.0 to 6.5, but you can have a productive food garden as long as your pH is about 5.5 to 7.5 (see chart in slideshow). A difference of just 0.5 may not seem like much, but the pH scale is logarithmic, which means, for example, a pH of 7.0 is actually *10 times* less acidic than a pH of 6.0. Potatoes and most berries, which grow best in more acidic soil, are the main exceptions to the average preferred pH range.

A soil's pH results from interactions among native rocks, plants and weather conditions over many years, and it varies with climate and physical surroundings. In moist climates that support dense forests, such as those east of the Mississippi River and along the Pacific Coast, soil tends to be acidic, with pH ratings usually between 4.0 and 5.5. The grasslands of the comparatively dry Midwest often have *slightly* acidic soil (6.0 to 6.5), while most arid regions, such as the Rocky Mountains, are dominated by alkaline soil (7.0 to 7.8). Local differences in rock can cause huge variations within these general patterns, however — for example, when weathered limestone creates alkaline patches in otherwise acidic landscapes, or when elevation leads to more or less rainfall. Plus, soil is often severely disturbed during construction, and sometimes native topsoil is completely lost.

(cont'd pg 5)

Some synthetic chemical fertilizers — mainly those high in ammonium or sulfur — can make soil more acidic, as can tillage methods that reduce soil's levels of organic matter. Acid rain caused by air pollution from coal combustion began to acidify streams and soil during the late 1800s, and continues to push soil in some regions into the acidic range every time it rains. In addition to outside influences, some types of organic matter, such as peat moss and pine needles, acidify naturally during decomposition.

Alkaline soil occurs naturally in places where soil is formed from limestone or other calcium-rich minerals, and high water-evaporation rates common in arid climates aggravate the problem by loading the topsoil with accumulated salts. Many garden plants can still thrive when grown in alkaline soil that has been generously enriched with organic matter, which also improves the soil's ability to retain water. Mulches also will slow the buildup of salts in plants' root zones by reducing the amount of surface evaporation.

How to Test Soil pH Soil chemistry is complex, so how can we boil it down to help you in your garden? If your crops seem to be thriving, then you probably don't need to worry much about your pH. But if you find that plants just don't seem to be growing as well for you as they do for your neighbors, then the problem could be related to pH and you should probably have your soil checked with a pH test. The cost for basic soil evaluation done by a state soil-testing lab ranges from free to \$25, depending on the state in which you live, and typically includes a pH test along with results for major and sometimes minor nutrients. Soil-test kits with detailed instructions are usually available at extension service offices, or you can order them by mail.

If one bed or small section of your garden goes wonky, you might try a home pH test kit rather than waiting on lab results. When a team of Missouri extension experts submitted soil samples to 82 soil-testing laboratories and compared the lab's results with those from do-it-yourself pH-measuring kits, the \$20 LaMotte home color kit (available at [Peaceful Valley Farm & Garden Supply](#)) earned high accuracy ratings. Personally, I like pH color kits because they are fun to use, and a practiced eye can detect the small changes in color between shades of orange (acid) and green (neutral to alkaline) in the test results.

Start by Adding Compost

Raising the organic matter content of soil will usually move the pH of both acidic and alkaline soils toward the neutral range. This is because organic matter plays a buffering role, protecting soil from becoming overly acidic or alkaline. Finished compost usually has a near-neutral pH, so regular infusions of compost should be the primary method you use to improve soil with extreme pH issues. If your pH readings are only slightly acidic or slightly alkaline, compost and organic mulches may be the only amendments you need to keep your crops happy and your garden growing well.

Raising the pH of Acidic Soil The standard intervention for overly acidic soil is to amend it with lime, an inexpensive soil amendment made from ground limestone that slowly raises the pH over a period of months. Products labeled "dolomitic lime" are usually preferred because they contain both calcium and magnesium. But if you have dense soil and a soil test indicates excess magnesium (which can tie up nitrogen), you should use low-magnesium, calcium-rich powdered crab or oyster shells as your liming material. Read and follow the label, because products differ in application rates, which, in turn, vary with soil type. You can't apply a correct amount of lime unless you know your soil's pH first, and if you apply too much, it will be extremely difficult to correct. Err on the cautious side by applying too little lime at first.

After the pH of acidic soil is raised above 6.0 using organic amendments and dolomitic lime, I've found it can be maintained with a light, yearly application of alkaline woodstove ashes. In addition to containing enough calcium and magnesium to have a liming effect, wood ashes contain an array of micronutrients, (cont'd pg 9)

How to Help Save the Monarch Butterfly

As their population declines by alarming numbers, monarch butterflies need your help. Planting milkweeds — the only host plant used by monarchs — provides much-needed habitat. By Gary P. Nabhan, April/May 2014, MotherEarthNews on-line

How can one not be enthralled by a fluttering flock of monarch butterflies landing in a hedgerow full of flowering milkweeds nestled on the edge of a farm or garden? But these butterflies' annual migration — one of the greatest spectacles in nature — has become an endangered phenomenon.



The number of monarchs reaching their overwintering grounds high in the oyamel fir forests of central Mexico has hit a record low. One of several factors that has contributed to the monarch's steep, decade-long population plummet is the loss of milkweeds — the monarch's host plant — as a result of herbicides used on fields of genetically modified crops. Some scientists suspect the largest contributor to the milkweed die-off is the herbicide glyphosate (the active ingredient in Monsanto's Roundup brand, among other products). This problem, along with drought and habitat lost to farmland, is a perfect storm of natural and human-caused factors that has spurred the loss of many milkweed species, numerous monarch butterflies, and an estimated 130 other insects common to milkweed patches.

Milkweeds are the *only* host plants monarchs use. Without milkweeds, there are no monarchs — and throughout Midwestern farmscapes, milkweeds declined by 58 percent from 1999 to 2010. Fortunately, some farmers and gardeners have found ways to manage weeds and pests — as well as maintain soil tilth and pollinator abundance — without using herbicides, or by employing minimal, targeted use of weedkillers. Beginning with the 2014 spring equinox and continuing through National Pollinator Week in June, thousands of people will be participating in events to get Moving for Monarchs (M4M). The M4M initiative will also host an event at the National Mall in Washington, D.C., in June. Colleges and garden clubs will advocate for the recovery of monarchs and will also host workshops on how to grow milkweed. A valuable perk of monarch protection is that schoolchildren across North America will be able to continue to study and enjoy the stunning monarch migration.

Make Way for Monarchs (makewayformonarchs.org) is a milkweed-butterfly recovery alliance whose goals include restoring viable milkweed populations, and ramping up public and private partnerships that work to restore populations of North American milkweeds.

You can join in: Grow native milkweeds in your garden (you can collect the fluffy seeds from roadsides in fall), count caterpillars on milkweeds in or near your yard, record monarch migration dates, and turn your data into monarchwatch.org. ****

In February and March, the final generation of hibernating monarch butterflies comes out of hibernation to find a mate. They then migrate north and east in order to find a place to lay their eggs. This starts stage one and generation one of the new year for the monarch butterfly.

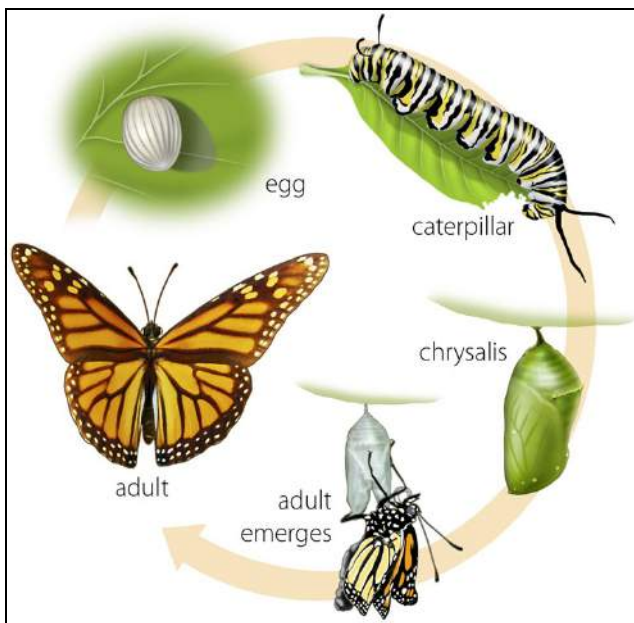
Miracle of the Monarch Butterfly



Monarch butterflies go through four stages during one life cycle, and through four generations in one year. It's a little confusing but keep reading and you will understand. The four stages of the monarch butterfly life cycle are the egg, the larvae (caterpillar), the pupa (chrysalis), and the adult butterfly. The four generations are actually four different butterflies going through these four stages during one year until it is time to start over again with stage one and generation one.

In March and April the eggs are laid on milkweed plants. They hatch into baby caterpillars, also called the larvae. It takes about four days for the eggs to hatch. Then the baby caterpillar doesn't do much more than eat the milkweed in order to

grow. After about two weeks, the caterpillar will be fully-grown and find a place to attach itself so that it can start the process of metamorphosis. It will attach itself to a stem or a leaf using silk and transform into a chrysalis. Although, from the outside, the 10 days of the chrysalis phase seems to be a time when nothing is happening, it is really a time of rapid change. Within the chrysalis the old body parts of the caterpillar are undergoing a remarkable transformation, called metamorphosis, to become the beautiful parts that make up the butterfly that will emerge. The monarch butterfly will emerge from the pupa and fly away, feeding on flowers and just enjoying the short life it has left, which is only about two to six weeks. This first generation monarch butterfly will then die after laying eggs for generation number two.



The second generation of monarch butterflies is born in May and June, and then the third generation will be born in July and August. These monarch butterflies will go through exactly the same four stage life cycle as the first generation did, dying two to six weeks after it becomes a beautiful monarch butterfly.

The fourth generation of monarch butterflies is a little bit different than the first three generations. The fourth generation is born in September and October and goes through exactly the same process as the first, second and third generations except for one part. The fourth generation of monarch butterflies does not die after two to six weeks. Instead, this generation of monarch butterflies migrates to warmer climates like Mexico and California and will live for six to eight months until it is time to start the whole process over again. #####

Announcements & Notices (continued)

BACKYARD FARMING Lecture Series

The CGC & ChiAgCom's "Backyard Farming" lecture series began in March of this year. To better accommodate attendees, our second lecture will be held at the Grange Hall, 54 Main Street, Chichester, April 23, 2014, 7pm.

NH Speakers Bureau Member Donna Miller will talk about "A Garden for Wildlife: Natural Landscaping for a Backyard."

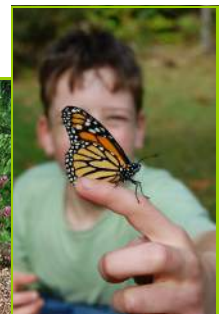
Master Gardener Donna Miller of Canterbury is a life-long gardener whose passion for growing plants started as a young girl. Her parents gave her a space to plant a flower garden in their yard and she has been growing flowers and gardening ever since.

Donna set down "permanent roots" in Canterbury in 1994 and started building her dream business of a backyard garden operation on 7 1/2 acres. Since 2002 she and her husband Jim have converted a wooded area into beautiful theme gardens including children's, butterfly, heritage, fairy and Halloween gardens. In 2010 they opened Petals in the Pines to the public and have since become certified by the Arbor Day Foundation as a Nature Explore Outdoor Classroom.

In 2010 and 2011 Donna completed the Master Gardener and Natural Resource Stewards courses respectively, both offered by Cooperative Extension. She loves being around gardeners and those who like to work the land because there is so much to share and learn from one another.

*Because the two groups have similar goals, to promote gardening and farming in Chichester and educate the two groups agreed to partner for the purpose of this **Backyard Farming** lecture series.*

The Chichester Garden Club's objective is to encourage more flower and vegetable gardens in Chichester, to promote the love of gardening, civic beautification and environmental responsibility through education and example. The purpose of an agricultural commission is to protect farmland, support the local agricultural economy, preserve rural character and promote local agriculture to community members and visitors. As ambassadors of the farming community, agricultural commissions act as educators, advisers and promoters to help keep agriculture viable in New Hampshire.



(Soil pH, continued from p5)

too. The key is to use them *sparingly*, in small, dispersed amounts, and to never add wood ashes or lime to soil with a pH higher than 6.5. A quart of wood ashes (1 pound) is about right for 50 square feet of cultivated space. When you have a lot of ashes to spread, apply no more than 20 pounds of ashes per 1,000 square feet of garden bed.

If you are not using acidic chemical fertilizers, a normally acidic soil may not require liming again for several years, if ever. Then again, if your soil is porous sand in a high-rainfall area, pH testing may show a need for liming every other year. Just be careful to never apply lime unless a pH test shows it is needed, and never use it where you are growing plants that prefer acidic soil conditions, such as blueberries and azaleas.

Lowering the pH of Alkaline Soil

If you have exceptionally alkaline, high-pH soil, you can often tame it by adding organic matter and powdered sulfur. However, sulfur may do little good in alkaline soil that is rich in free lime, also known as calcium carbonate. You can test for free lime by covering a soil sample with vinegar; if it bubbles, you have free lime and should consider gardening in beds filled with non-native soil.

Extension experts in places where alkaline soil predominates emphasize that most plants will grow well in organically improved soil with a pH as high as 7.5, and improving soil quality with organic matter — rather than lowering the pH — should be your primary goal. Alkaline soil can be stubborn about releasing its valuable phosphorus to plants, so amend it every chance you get with composted manure, which has been found to solve several problems associated with high pH levels. The humic acids in both composted manure and vermicompost help make phosphorus available to plants grown in alkaline soil, as does the presence of rotted plant tissues from both regular compost and cover crops. Acidic mulches, such as pine needles, can help lower soil pH slightly, but other mulches, such as bark or wood chips, have little effect on soil pH.



Persistent Herbicides and their Effects on Gardens

<http://www.motherearthnews.com/organic-gardening/herbicide-carryover-toxic-compost-zw0z1306zsto.aspx?PageId=3#ArticleContent>

<http://www.greenmountaincompost.com/all-about-compost/compost-persistent-herbicides-fact-sheet/>

How to Grow Your Own Vegetable Garden

By *This Old House Magazine* | *At Home* – Tue, Mar 11, 2014 3:37 PM EDT

There's nothing like the earthy crunch of a just-picked carrot or the sweetness of a juicy tomato still warm from the sun. And the taste is even sweeter when it's one you've grown on your own. - *The editors of thisoldhouse.com*

Go Small or Go Home



For parents like Phil Nolan and Michele Rast, backyard vegetable gardening has intangible benefits. "We want our kids to appreciate the way things grow and to understand the value of food," Nolan says when asked why he dug up part of the family's New Jersey lawn to put in a formal 18-by-32-foot veggie garden. The 576-square-foot plot produces veggies all summer for a family of four, with plenty left over to share. Tidy raised beds and gravel paths make it easy to care for, and evoke an English country garden. Nolan's garden, now in its third season, has thrived, but not every homeowner is so lucky. Why do some fail where others succeed? At least one aspect of soil preparation, plant selection, or growing wasn't right.

"Often, just a few tips can make all the difference," says Katie Pencke, who teaches vegetable gardening for the Seattle Tilth gardening education program. Her first tip to

newbies: Don't attempt too big a garden. "If you start small, you make small mistakes," she says, "and it's a lot easier to achieve success when you're tweaking small problems as you learn."

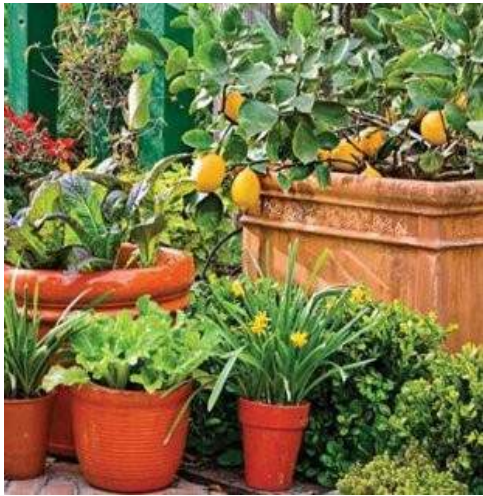
Gather Inspiration and Use All Available Space



Design inspiration for the once-lackluster lot came not from a high-priced consultant but from garden tours and clippings from magazines like *This Old House*. Through these, the homeowner came to realize that high-style gardens with a limited array of plants and materials don't appeal to her nearly as much as gardens with more going on. "I love romantic gardens that have a lot of stuff," she says, meaning yards with distinct garden rooms furnished with architectural accents and a wide range of plants. "I figure, you have a yard. A lot of people don't. Use every bit of it." So she set out to create the rich jumble of an English country garden, mixing cottage-style informality with formal statuary and trellis-work. The south-facing vegetable garden (shown above)

is terraced into the hillside with a Hass avocado tree towering over it and Italian cypresses standing like sentinels at the back.

Low on Space? Consider Containers



Even where outdoor space is severely limited - just a small deck or patio, a bright front stoop, or a patch of concrete along the drive - you can grow your own fruits and veggies. Just do your homework and plant them in pots. Growing in containers actually makes some crops, such as strawberries and spinach, less vulnerable to snails and other ground-cruising predators. Others, including peppers, seem to relish confinement and produce more abundantly. Blueberries like more-acidic soil than other edibles, so they are easier to accommodate in pots. And container crops have fewer problems with weeds because they're raised off the ground and grown in weed-free potting mix. Shown above are container-grown lemons, mustard greens, and lettuce rub shoulders with pots of flowering plants.

Create a Vertical Veggie Garden



In another smart, space-saving move, you aren't limited to what can sprawl along the ground. Trained up a trellis, pole peas and beans, cucumbers, small melons, and vining squash all have a small footprint in the garden. A full or half cage made of field fencing is easy to anchor to a container for supporting tomatoes. For a garden bed, Creasy favors 4x4 posts and hog- or cattle-wire panels, which come in sturdy, flat sections and can support even the heaviest fruit. For either style, get material with 4-inch openings so that you can reach through at harvest time. You can also grow pole beans or cherry tomatoes on a garden arch, which makes harvesting especially easy-just walk through and pluck. Here, Tepees of bamboo stakes allow squash to clamber up in a mixed border.

Q&A CORNER

Q: What's the white stuff on my squash leaves?

A: It's powdery mildew, a fungus that thrives when humidity is high. Minimize the risk of infection by watering early in the day so that soil and leaves dry by nightfall. If it appears early in the season (unusual), control the spread by clipping off infected leaves. Late in the season, it doesn't reduce harvest, so it's mostly a cosmetic issue. Don't compost infected plants at home; send them to a municipal operation, where the compost piles get hot enough to kill spores

Do Your Homework Before Ordering Mason Bees

- Everyday Gardener, On [February 23, 2012](#), By [Meleah](#)

With honeybee populations declining in recent years, gardeners have been searching for ways to encourage other pollinators to stop by and help out. One pollinator I



hear mentioned more and more often is mason bees, and seed catalogs are increasingly offering all kinds of mason bee nesting boxes. They're cute, these little bee condo things with all those little round holes. So I got to thinking I should buy one.

But then I stopped myself, wondering if it was okay to just introduce mason bees to my garden, my neighborhood, Minnesota? I emailed Jeff Hahn, a helpful entomologist with the University of Minnesota Extension Service, and he said he didn't know a lot about mason bees. But he recommended I talk with Joel Gardner, a grad student who is studying them.

Joel didn't have a lot to say, but what he did tell me made me think I need to do more research before ordering up some bees and a box. (Bees are sold separately.) Native bees, including mason bees, Joel says, are "always a good thing to invite into the garden." Describing mason bees as "efficient" and "unobtrusive", he told me that they don't sting unless

you really act like a whack job and grab and squeeze them. Don't do that, and you can pretty much rest easy while gardening in their presence, even if you get close to their home.

What you do need to be concerned about is disease buildup, Joel says. Nests must be periodically cleaned or else fungus spores and mite populations can increase to the point where the nest can be harmful to the bees.

If you want to purchase mason bees, you need to be aware of the species you're ordering since many bees are offered by out-of-state sources. Basically, the mason bee (*Osmia lignaria*) has two subspecies: *Osmia lignaria lignaria* and *Osmia lignaria propinqua*. "*Lignaria* lives east of the Rockies and *propinqua* lives west, and introducing them outside their native range should be avoided," Joel advises. Otherwise, you run the risk of spreading outside pests or diseases to local bee populations. And there could be other problems too.

After doing only a little bit more research on mason bees, I found that there is currently a lot of debate about the risks associated with the willy-nilly, nationwide shipment of these popular bees. From what I can tell, it's just fine to get some. Just be sure to buy the right ones for your zip code. You'll know you're dealing with a reputable seller when they offer bees in this way. ****



How To Raise Mason Bees 101

Mason bees are a gentle, solitary bee that is easy to raise. ...just how easy is it? by [Dave Hunter](#) · December 16, 2011
Dave is involved with all things "mason bee". Mason bee raiser, website owner, wholesale shipper, and president of the Orchard Bee Association.

Most gardeners can name all five "bees" of the world: Honey bees, Bumble bees, all Hornets, all Wasps and, lastly, everything else.

In North America, "everything else" is close to 4,000 species of bees, hornets, and wasps! There are multitudes of bee species that don't sting, and if encouraged, can nest in your yard. One of the easiest bees to start with is the spring mason bee. Both the gentle blue orchard and horn-faced mason bees are easily bought or found in the wild.

First, why do we say that the mason bee is gentle?

Some bees live in hives (honey bees and bumble bees for example) and others live by themselves as a solitary bee. A solitary bee does all of the work by herself. She gathers the pollen, lays her eggs, seals the egg/pollen chamber, and continues to do this until she's dead. She has no time to defend a nest. If she were to do this, she couldn't do anything else. As a result, they only sting if they're about to be squashed... and the venom is similar to a mosquito bite. It is VERY hard to be stung by a mason bee!!!

Raising mason bees is extremely simple. If you're a gardener, you have most requirements already in your backyard.

- Pollen
- A hole to nest in
- A house to keep the holes dry
- Mud
- A good location
- Extremely reduced pesticides/insecticides
- A little time to harvest cocoons in the fall

A bit of reminding when to do what...



Food (a pollen source)

Spring mason bees, like the blue orchard or horn-faced bee, are bees that emerge from their cocoons when fruit trees begin to bud. (Around 55 degrees F.) These bees are general pollinators and will gather pollen from most sources. Open blossoms like a fruit tree or dandelion (gasp!) are preferable. They are amazing pollinators!



Spring mason bees naturally nest in holes in trees leftover from boring beetles or large fissure/cracks in trees. The optimal hole size for spring mason bees is about 5/16 (8mm). The depth can be about 4-8" deep.

Natural nesting material is preferred. **Paper tubes, lake bed reeds, or wood trays are perfect.** Please DO NOT use drilled blocks of wood or bamboo which are commonly sold on websites. These wind up becoming mason bee cemeteries after a few years due to pest buildup. ...and thus, are not good for raising mason bees!



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Mason bee tubes/reeds/trays need to be kept dry for the mason bees. Any simple shelter can suffice. ...an opened pop bottle, or a beautiful piece of art can equally hold mason bee tubes in place.

The mason bee tubes/reeds should be held down so they don't blow in the wind and should be positioned "helter-skelter". Mason bees prefer to easily find their hole. Place sticks between the tubes/reeds and pull some out to create a more 3-D look!

A mason bee house with a cocoon emergence drawer is a bonus. (Your harvested cocoons are now loose and the cocoons need to be placed in a container for their spring emergence.)



Mud is surprisingly important. Dry and/or sandy dirt can't be picked up and used by these spring mason bees. Rather, moist and clayey mud is best. The mud should be located near the mason bee house. Read more about mud for mason bees.

Locate your mason bee house so that it catches morning sun, stays relatively dry (under an overhang), and within 100' (30m) of the pollen and mud.

Broad spectrum insecticides kill everything. Including lady bugs, bees, and other beneficial insects. Even organic insecticides kill everything... just organically.

Learn how to balance your yard with organic and natural methods to eliminate any need for chemicals in your yard. Read the labels on your cans. You'll find that some actually tell you to not spray on open flowers or by water. In a healthy garden, this is next to impossible! There are some parasitic wasps that use 1/8" holes to stuff every aphid they find. A perfect, non-stinging wasp that strips your roses of aphids for no charge!



If you were given a car, but never told to change the oil, how long would the engine last?

Similarly, if you don't **harvest a portion of your mason bees** in the fall to observe pest activity, you'll soon lose most of your mason bees! If you can't open a hole, then you're unable to harvest. This is why drilled blocks of wood and bamboo are poor mason bee hotels!

Harvesting mason bees is relatively easy. We have many pictures and simple steps on our website. Lastly, for your success, it's easy to forget when to do what. Crown Bees has a reminder program called "**Bee-Mail**" that tells you when to do what.. Our newsletter is precise and helps you know:

- * What you should be doing that month
- * Remedies to certain problems
- * What your bees should be doing
- * What to prepare for next month

And some news about science studies relevant to mason bees. Raising mason bees is easy. Start small with just a few bees. Make mistakes and ask questions. We have most of your questions answered in our web-site.

Happy Pollinating!