

PAINTERS VEGGIE GARDEN SEMINAR 3-2-14

KEY CONCEPTS

- Make sure you start with nutrient rich, clean soil with good drainage.
- Try raised beds, containers and trellises to save space and add charm.
- Choose a site *close to your house* (when in a rush, you may not bother to harvest veggies and herbs from your garden if it isn't easily accessible), with *full sun* for 6-8 hours a day (cool season veggies, salad greens and herbs can manage with a little less sun but most warm-season crops like tomatoes, pepper and beans need lots), and *protected from intense wind*.
- Ovoid overcrowding (good air circulation reduces disease and mold risks) and avoid over fertilizing – too much can cause burn or excessive growth in foliage rather than fruits.
- For crops that are short-lived, practice successive planting (either reseeding or replacing with fresh young plants), and rotate all crops according to what time of year is best for each.
- Think of vegetables as ornamentals – they can add texture, height, color and even beautiful blooms to your garden.
- Interplant with herbs and flowers to add beauty and reduce pest issues.

PROPER SOIL, WATER & FOOD

- Veggies like nutrient-rich, loose soils with good drainage. A pH of about 6.5 is ideal for most veggies (eggplant and potatoes prefer slightly more acidic soils, and asparagus, beets and cabbage prefer slightly more alkaline, but they will do OK in pH 6.5 soils).
- Consistence is key in watering vegetables. If your veggies are continually allowed to dry out and you dose them with a really heavy watering to 'perk them back up', you can experience a range of problems such as bloom droop, poor root development, leaf curling, rot and overall weakening of the plant. If they plant's health is compromised, then it becomes more susceptible to pest and disease issues. If you know you won't be able to keep up with daily watering in the warmer months, it may be worth purchasing self-watering planters or installing a drip line system in your garden bed for consistent irrigation. You also don't want veggies to be sitting in continually wet soil; try sticking your finger tip about 1.5" down in the soil; if it is dry below the surface then you need to water it.
- Your plants can survive and produce vegetables without any supplemental feeding, but if you do fertilize and/or add compost regularly, you will have much healthier plants and much higher yields of produce. This is especially pertinent for container gardens, as the plants aren't naturally getting nutrients from the ground, frequent watering can deplete nutrients from the soil, and there are typically more plants in a smaller amount of soil. It is best to prep your garden beds or containers with compost or granular starter fertilizers before planting, then feed your vegetables as often as weekly with a water-soluble fertilizer or compost tea.
- Rotate your vegetable crops each year so that your veggies are in 'new' soil and aren't as likely to carry over pest or nutrition issues. Even switching crop locations that are only a few feet apart can make a difference.

CREATING A GARDEN BED

- If you choose to plant your garden directly in the ground, remove the top layer of grass and weeds and loosen the soil with a shovel to about 9" deep, make sure to remove large rocks, and ideally, mix in some potting soil and/or compost. Amending the existing (mostly clay) local soils helps create better drainage and aeration – allowing for worms and beneficial organisms to better the consistency and for the proper uptake of nutrients, water and air by plant roots.
- If you really want perfect veggies, send your soil to the local County Extension Office (or buy a home test kit offline) to test the pH and nutrient content. They can provide a chart showing how much lime or bone meal to add if you need to increase your soil pH/make it more alkaline (soils here are typically too acidic), or how much sulfur, leaf mold or peat moss you should add to lower your soil pH and make it more acidic. When adding soil for amendment, make sure you use clean potting soil and/or completed compost (humus). If compost (or manure) hasn't fully decomposed into humus, you may be introducing problems, so make sure it was properly decomposed (if it doesn't heat up enough, the weed seeds and diseases don't get killed from previous year).

CREATING A RAISED BED

- If you have limited space or don't feel like breaking ground, building a raised bed or using varied containers for your garden is very easy. You can also try using more vertical space – fences, deck or balcony walls and latticing can all serve as vertical garden space. Cucumbers, beans, peas and other vines can easily grow on trellises – you may occasionally need to add some ties.
- Raised beds can be made of a variety of materials – wood, stones, concrete blocks, bricks, and recycled corrugated metal are all easy and relatively inexpensive materials. You can purchase raised bed corners that allow you to simply slide or screw wood planks in place. You can also buy entire premade raised bed kits offline in a variety of designs, sizes and materials. Cedar is the best wood, as it holds up a long time to water and elements. If you have health restraints or would rather not bend down or kneel to garden, you can also build or buy an elevated raised bed so that the veggies are at waist height. (Gardener's Supply is a good resource.)
- When determining the depth of your raised bed, you need to consider what you will be planting. If you only plan on salad greens and a few herbs, you could get away with a bed of only 6-8" deep. Most vegetables require more depth for ideal growth and root health; a depth of 10-20" is ideal (especially for tomatoes).
- The size of your raised beds obviously depends on how much space you have, but another important factor is ease of use. You should be able to reach at least half way across your bed from the side, so that you don't have to walk inside to work in it (walking on the soil compacts it). For most people, a width of no more than 4 feet is ideal – you can make 4x4 square beds or rectangular sizes.
- Before building the walls of your raised bed, you should still start with a clean base. If you have grass beneath the area, either remove the top 2" of ground or cover it with a weed mat to prevent weeds from growing up into your raised bed. It is also a good idea to lay down some kind of hardware cloth or wire mesh to keep burrowing rodents away from your veggie roots.
- If you plan several larger raised beds and don't want to spend a lot on soil, then consider using some of your own dirt mixed with potting soil or compost to improve its drainage and nutrient value. Asheville Mulch Yard has several locations that offer a range of soil, mulch and compost mixes by the truckload. You can also find a link on our website 'Links' page with a soil calculator that will tell you how much soil is needed to fill your bed size.

CREATING CONTAINER GARDENS

- In general, the bigger the container the better. Smaller containers dry out faster and need daily or twice-daily watering in the heat. Depending on what you want to plant, you need to consider the depth of the pot to ensure that plants with deeper root systems will have the proper room to develop. You also want to consider weight – if you may be moving the pot after it has been planted, then consider the original weight plus plants and wet soil! Finally, you may want to consider appearance – maybe you want all of your containers to match in style/theme, or you prefer a mixing of sizes, shapes and colors. You can use a variety of shapes, materials and sizes as long as they have proper drainage. You can even buy self-watering planters that extend time in between waterings.
- Remember to place your pots in a protected area with lots of sun – wind can batter foliage and dry pots out faster. Placing large and small pots close together can help to protect them and also helps to raise humidity and keep plants happier.

EDIBLES THAT CAN GROW IN CONTAINERS (instructions generally apply to gardens too)

- Herbs: All herbs can grow in containers – some like fennel and dill can get pretty tall, but just make sure they have enough depth and provide support if needed. Cilantro needs part shade in the heat of the summer (does better in cooler temps.) and benefits from successive planting. Basil needs to have its flowers pinched off or they interfere with leaf production and flavor. Mint is best in a container because it spreads so aggressively – a wide shallow bowl works great. Sage should always be planted with its crown set slightly above the soil surface and both sage and lavender need exceptional drainage as they are prone to mildew and rot issues. Most herbs are also very attractive and often have lovely edible blooms – try mixing with veggies.
- Tomatoes: Some tomatoes are "determinate" types, which will stop bearing after a month. Most are "indeterminate" kinds, which will keep flowering and setting fruit until killed by frost, although colder weather will slow production. Determinate bush varieties (more compact, more fruit ripening at once) are easier to grow in containers as they are shorter and bushier, but indeterminate vining tomatoes can also be grown in pots. Staking is best for all varieties, but larger vining types will need a tall trellis (15'). Cherry

tomatoes tend to be smaller plants and work well in pots and hanging grow bags. When planting tomatoes, clip off the bottom branching stems & plant deep in the soil for more roots. 6 plants can provide enough tomatoes for a small family to eat both fresh & canned. Just 1-2 cherry or grape tomatoes can provide a large crop. Make sure you provide at least 2' between plants and give them lots of sun and regular water (if allowed to dry between waterings, cracking may occur.)

Peppers: Most pepper varieties are naturally compact to start with, so they make easy container plants. Simply add a small support stake to the pot for larger varieties. They are also very ornamental – try growing several different colored peppers or an ornamental or hot pepper variety for contrasting sizes and shades. Peppers like consistently moist soil, but not wet, and lots of sun.

- Cucumbers: Compact bush varieties of cucumber are best for containers. Vining cucumbers probably work best in the ground or raised beds on trellises, but they can also be planted in larger containers with trellises.
- Salad greens: Salad greens/lettuces only require a half foot of soil, but make sure they don't dry out & keep them in part shade in the heat of the summer. Successive planting is key to having fresh greens all season – either sow or plant new starters every 3-4 weeks. Lettuce, arugula and spinach are all very fast-growing from seed and good successive crops for cooler temps in spring and fall. You can also cover rows with mesh or shade cloth to help extend harvests in warmer/sunny months.
- Cooking greens: Require deeper soil than lettuces. Swiss chard, mustard & kale are the easiest. Remember that they cook down a lot, so to grow enough for regular harvesting, you will need multiple large containers. Mustards grow very fast, so can be reseeded or planted several times in cooler months. Cooking greens can make fantastic ornamentals.
- Seed Potatoes: Fill container with 6+” soil, place small seed potatoes (or 2 oz. cuts of larger seed potatoes) about 3-4” apart & cover with 2-3” soil or compost. (Wait for the potatoes to start sprouting before planting, and if you are cutting up larger potatoes, make sure each piece has 2-3 eyes). When plants are 6” tall, mound a few more inches of soil or compost over the base of plants (cover about 1/3 of the bottom growth). Repeat this mounding process every 1-2 weeks until reaching the top of the container. Harvest potatoes any time after they start flowering (some wait until the plant yellows & dies). ½ whiskey barrels work well, giving a lot of space for potatoes to grow, and the blooms and foliage are quite attractive.
- Eggplant: Dwarf or patio varieties are easiest, but all types grow well in containers. They tend to fruit earlier than in the ground & have fewer disease issues. Keep well watered in the heat of the summer. Another great ornamental with bright color & unique shape.
- Summer squash: More compact than winter squash, but still needs a trellis or a large container that it can spill from (1/2 whiskey barrel). Harvest fruit between 7-12” for best flavor. Try stuffing and baking any that get overly large. Blooms are also great stuffed and fried or baked. 1-2 plants provide enough squash for 2-4 people.
- Beans: Beans are best direct sown – plant individual beans 4” apart and sow new ones every few weeks for continual harvest. Be careful not to plant beans too early as cold can cause rot. Bush beans (especially compact varieties) are easiest to grow in pots. Try Scarlet Runner Beans for small harvests & amazing blooms. Pole beans are more productive over the long run than bush beans, but they are a bit more involved when planted in a container. Train the 6- to 8-ft.-tall vines on a trellis or tepee made from bamboo poles.
- Okra: A bit challenging to grow in containers, as they need a lot of space/depth. Need a 5gal. bucket or larger for each individual plant. 4 plants produce enough pods for 2-3 people. A great ornamental mixed in pots or beds with other attractive veggies as it provides height and beautiful hibiscus-like blooms. Billy Bob Red has rich burgundy pods.
- Melons: Need trellises or larger containers like ½ whiskey barrel to allow for cascading over sides. 1-2 plants can provide enough fruit for 2-4 people.
- Blueberries: Dwarf or compact varieties are easiest to grow in containers, but most any blueberry can grow in a pot if it is large enough (20+”). The good thing about growing blueberries in containers is you can easily amend the soil to their preferred acidity. Remember that you need to plant 2-3 close together for cross pollination. If in the ground or in a large container, make sure you don't plant other plants around the base of the blueberry, and cover the crown with a few inches of mulch to retain moisture.
- Strawberries: Very easy to grow in containers of all kinds (not just the traditional 'strawberry pot') as well as in the ground. Does not require very deep soil & there are several ornamental varieties with tasty fruit and bright pink blooms. ~10 plants can provide 5-10 quarts of berries once established (typically more/faster in beds).
- Radishes: Easy to grow even in small pots – keep in part shade in the heat of the summer. Don't transplant well – direct sow.
- Sweet potatoes: A big benefit of growing them in pots as that they aren't as likely to suffer slug damage. Ornamental sweet potato vines actually produce tasty potatoes as well! They look great cascading out of ½ whiskey barrels, which give them plenty of room.
- Peas: Shelling Peas, Sugar Snap & Snow Peas all grow well in containers with a trellis. Plant in early spring or early fall as they don't produce well in the heat. Peas are best direct sown, spaced 5”. Try successive sowings every other week for more continual harvests. They appreciate occasional fertilizer.

- Beets: Grow easily in containers or ground, harvest beets at 2" diameter for sweet flavor (get woodier when bigger), and beet tops make great cooking greens.
- Carrots: Grow easily (and faster) in pots than in ground. Don't transplant well – direct sow early spring, harvest August-October (or mulch with hay/leaves & harvest through winter).
- Green Onions: Easier to grow than regular onions and require less spacing – only 1" between plants. You can actually harvest the tops of the green onions (when 6-8" tall) and leave an inch above the bulb, then replant it for several more harvests!

MINIMUM SOIL DEPTH FOR VEGGIES IN CONTAINERS OR RAISED BEDS

5-6"	Chives, lettuce, radishes, other salad greens, basil, coriander
7-9"	Bush beans, garlic, kohlrabi, onions, Asian greens, peas, mint, thyme
9-10"	Pole beans, carrots, chard, cucumber, eggplant, fennel, leeks, peppers, spinach, parsley, rosemary
10-12"	Beets, broccoli, okra, potatoes, corn, summer squash, dill, lemongrass

VEGGIES THAT DO BETTER IN RAISED OR REGULAR GARDEN BEDS (NEED MORE SPACE)

- Vining Cucumbers: Easier when in a raised bed or the ground where you can use a trellis. Plant in 6" tall hills of soil, space 3+ feet apart and weed frequently. Make sure you wait until temperatures are consistently warm.
- Sweet Potatoes: When in beds rather than containers, plant 6-12" apart in rows of soil mounded 6" high. Keep control of weeds (the roots don't like competition). Can be harvested at any point – best before hard frost.
- Corn: Easy to do from seed (3 seeds every 10") or vegetable start. Plant starts 8-10" apart in several rows (if using seed, plant several about an inch apart and thin later on). Allow 2.5-3' in between rows to walk. You typically need to protect young plants from crows with netting, and mature plants are prone to deer, horse, raccoon and crow damage. Try a scarecrow or a CD hung from fishing line over the crop to deter crows; electric fencing is the only way to keep 4-legged pests out.
- Summer & Winter Squash: Allow a lot of room for each plant (only need a few of each variety for 2-4 people) - space summer squashes ~2' apart and winter squashes 3-5'. Try to water around plant base without getting the stems and leaves soaked – all squash are prone to molds. Powdery mildew can be a big problem in our area, especially during wet summers – a spray made of 1 part milk and 6 parts water can help suppress mildew if applied every two weeks in mid-late summer. Winter squash in particular face not only mold challenges but many pests. Damage by squash bugs, vine borers and cucumber beetles can be minimized by shielding rows with staked mesh covers until plants begin to bloom (this is their most delicate time).
- Brussels Sprouts: If planted in early spring (heat-resistant varieties are best) you may get a decent summer harvest before things heat up too much. In our climate, planting in early-mid summer for a fall harvest is ideal. Need at least 2' space around each plant.
- Asparagus: A little more involved to plant, but once established, they are low maintenance and provide years of harvest! Dig trenches in weed-free, compost enhanced soil 12" deep & wide. Place asparagus crowns in trenches spaced 1-2' apart and cover with 3-4" soil/compost. Mound with several more inches every week until the trenches are full. Mulch, water and weed regularly the first two years until established. Allow attractive foliage to remain until early winter after heavy frost damage, then cut back and mulch. Harvest sparingly the first year when stalks are 5-7" tall. Once established, harvest for 4-6 weeks; when begin to get spindly, allow the rest to mature to tall plumes and don't cut back until late fall/early spring.
- Broccoli & Cauliflower: Plant in early spring or late summer for harvests in cooler temps (at 75+ deg. they start to bolt). Can be grown in large containers (3g pot for *each plant*), but grow best in raised or garden beds with more space
- Onions: Can sometimes be a bit tricky. Require more space than green onions, with plants 4" apart and rows divided by 15". Onions do best in long days of full sun, with consistently moist, good draining soil. They prefer softer soil texture (not clay!) and high nutrition, so use a hummus base or add fertilizer regularly.

COMPANION PLANTING

Try to follow the guide below when planting to ensure the success of your edibles. Most of these plants can still survive when planted with the others to 'avoid', but they do best with their 'good' counterparts. This is most important when planting in smaller spaces like raised beds and containers. Using large containers to create attractive and useful combinations can be a lot fun - try making "theme" containers (an Italian pot, a salsa pot, a pickles pot, a salad pot), or plant them for maximum production through rotation planting (lettuce followed by beans, followed by broccoli, followed by winter greens).

Good Companions

- Beans, carrots, squash
- Eggplant, beans
- Tomatoes, basil, onions
- Lettuce, herbs
- Spinach, chard, onions

Combinations to Avoid

- Beans with onions and garlic
- Carrots with dill or fennel
- Tomatoes or squash with potatoes
- Onions with beans and peas

Try combining vegetables with edible flowers or herbs to create beautiful combo pots or garden beds and help deter garden pests (check out the list of pest deterring plants later in this document). Make sure you account for similar water and light needs when adding flowers or other plants to your combos (rosemary likes hot and dry conditions so may not go well with water-hungry cucumbers or tomatoes). A great way to add physical appeal is to combine taller plants with shorter and trailing items, such as sweet potatoes, squashes, cucumbers or scarlet runner bean.

FLOWERS THAT MIX WELL WITH VEGGIES (share the same general light, sun & soil needs)

Ageratum, Celosia, Cosmos, Gomphrena, Rudbeckia, Sunflowers, Zinnias & Ornamental Grasses

PLANTS WITH EDIBLE BLOOMS

Nasturtium, Borage, Arugula, Calendula, Basil, Anise Hyssop, Bee Balm, Chamomile, Chives, Cornflower/Bachelors Button, Daylily, Dill, Fennel, Fuchsia, Gardenia, Hibiscus, Hollyhock, Honeysuckle, Viola, Pansy, Lavender, Lemon Verbena, Lilac, Marigold, Oregano/Marjoram, Mints, Mustards, Okra, Rosemary, Runner Bean, Sage, Savory, Scented Geranium (not Citronella), Snapdragon, Squash, Sunflower, Thyme, Tuberous Begonia

* All edible blooms should be tried in small quantity as individual reactions can vary.

VEGETABLE & HERB PLANTING SCHEDULES

Early Spring (Leave plants outside for several days to acclimate before planting.)	Lettuce, Arugula, Spinach, Broccoli, Cauliflower, Cabbage, Brussels Sprouts, Snow Peas & Sugar Snap Peas, Dill, Cilantro, Borage, Chives, Parsley, Swiss chard, Mustard, Collards, Kale, Beets (highlighted plants can be sensitive to frost until established)
Spring	Radicchio, Asian Greens (Mizuna, Tatsoi, Pac Choi), Potatoes, Radishes (direct sow), Corn, Beans
Late Spring-Summer (night temps above 50 °)	Tomatoes, Peppers, Cucumbers, Eggplant, Okra, Summer Squash, Winter Squash, Basil
Late Summer/Early Fall	Lettuce, Mustard, Asian Greens, Swiss chard, Collards, Kale, Spinach, Arugula, Broccoli, Cauliflower, Radicchio, Turnips, Carrots, Squash, Beets, Radishes, Parsley, Cilantro, Garlic (harvest bulbs next year)
Hardy to 30°	Arugula, Beets, Chinese Cabbage, Cauliflower, Lettuce, Mustard, Spinach, Swiss chard, Parsnips, Green Onions, Chives
Hardy to 20°	Cabbage, Broccoli, Brussels Sprouts, Carrots, Kale, Collards, Leeks, Turnips

** Hot weather can cause many greens to go to seed or taste bitter. To lengthen your harvest time, make successive plantings, harvest the young leaves frequently, give them some protection from the sun, keep them well watered, pull some to avoid overcrowding and try heat-resistant varieties*

HARVEST TIMES

Peppers. Peppers are ready to harvest when large and of correct color (green peppers should be harvested when green, before turning orange or red and losing crispness, red peppers should be harvested after they ripen from green to red). Hot peppers left to change color will get hotter. As with tomatoes, the first few you pick will teach you to gauge ripeness.

Lettuce. Pick lettuce before hot weather encourages the plant to bolt, which makes the leaves taste bitter. With lettuce and most other greens you can continually harvest from the same plant – use scissors to cut the largest leaves (5” or less is ideal) and leave the smaller ones to mature. Harvest from the same plant every few days until it stops producing new leaves.

Green beans. Pick the pods when they are a little less than full grown to ensure tenderness (you may have to experiment with a few to see how big they get). If pods get too big they can be tough and stringy. Pick beans when vines are dry (wait for dew to evaporate) to avoid spreading disease. Harvest regularly to encourage continual production.

Peas. With garden peas, test the first pods to see how large they need to be before peas are fully developed inside. Pick them immediately before shelling and cooking – they are best fresh. For snow peas and sugar snaps, taste a pod when it nears full size. You want a crisp, crunchy, fresh-tasting pod, in which the seeds have started developing but are nowhere near round. Pods left too long on the vine get tough and stringy.

Cantaloupes and honeydews: Melons can be tricky. You can knock on the melon to listen for a dull, hollow sound or see if it smells sweet. A ripe cantaloupe will begin to show tan or yellow coloring underneath the netting on the skin. A honeydew will feel smooth, not hairy. Cut the stem rather than breaking the fruit off, which creates a wound that may cause the fruit to rot. Let the fruit ripen for another day or two at room temperature before cutting into it.

Watermelons. When the spot beneath the melon where it sits on the ground turns yellowish, rather than white or green, the melon is close to ripe. The rind also gets tougher, so test it with your thumbnail to how easily it dents. For old-fashioned full-sized watermelons, the traditional ripeness test is to thump and listen for a dull, hollow sound, but this may not work as well with the smaller varieties. Ultimately, you'll have to cut one open and decide if it's ripe, and use that as a standard for the rest of the crop.

Cucumbers. Research your exact variety to see how large the cucumber is expected to get and how long till maturity, but keep in mind that you can pick them at any stage. Smaller ones will be more tender, with thinner skins and few or immature seeds. Too-old cucumbers get dry and woody. Like melons, cucumbers should be cut from the vine, not pulled.

Sweet corn. Timing is critical with corn. The kernels begin to lose sweetness and flavor as soon as they are picked, so you should harvest and shuck them as close to cooking as possible. Sweet corn is ready to harvest when you can feel full, rounded kernels beneath the husk, the silk at the top is getting dry and brown, and when a squished kernel produces a milky sap.

Potatoes. Potato plants die back as they finish making their crop. Begin digging when the foliage starts to yellow and wither. Gently knock off dirt and allow the tubers to dry indoors, covered with dry towels, for a day or two. Protect the tubers from sunlight at all times to prevent greening that may result in bitterness. Eat the “less than perfect” potatoes first, but keep in mind that they won’t store forever. Some people will store them layered with sawdust or hay or in milk crates – just avoid piling on top of one another.

Root vegetables. Read the seed packet to see how long it should take before you start checking to see if your variety of carrots, beets, turnips, radishes or parsnips is ready. When it’s about time, loosen the soil gently and pull one up to see how big it is. Root vegetables are more tender and delicate in flavor if eaten younger and smaller; as they get older and larger, they get tougher, woodier and more pungent. If you don’t mind eating larger ones, you can store some root crops right in the cold ground after the tops die. Spread a thick layer of leaves, straw or other mulch to keep the ground from freezing so you can still dig them up, and you may be able to harvest carrots, turnips or parsnips into the late fall.

Winter Squashes. Fruits are ripe if you cannot easily pierce the rind with your fingernail. Never rush to harvest winter squash because immature fruits won’t store well. Unless pests or freezing weather threaten them, allow fruits to ripen until the vines begin to die back. Expect to harvest three to five squash per plant. Use pruning shears to cut fruits from the vine, leaving 1 inch of stem attached. Clean away dirt with a soft, damp cloth, and allow fruits to cure for two weeks in a spot that’s 70 to 80 degrees Fahrenheit. Store cured squash in a cool, dry place, such as your basement, a cool closet or even under your bed. Check every two weeks for signs of spoilage.

CONTROLLING GARDEN PESTS

The key to controlling pest and disease damage is preventative action. Educate yourself on the most common garden pests and know how to recognize the signs of damage and where to look for those responsible. Practice regular pest checks, make sure you thin plants to avoid issues associated with overcrowding, and make sure plants have adequate, consistent water and sun.

HERBS AS PEST REPELLANTS – they’re beautiful, scented & edible!

Rosemary: A hearty long-lived plant. It can help ward off cabbage moths, bean beetles, carrot flies and destructive nematodes & slugs. Put it on the grill in summer to keep mosquitos away.

Mint: Its strong smell is unappealing to a number of critters, including ants, aphids, rodents, cabbage worms and cabbage moths. Pennyroyal Mint has been historically used as a pest deterrent & is very effective, but not meant for eating.

Basil: This delicious, leafy herb repels aphids, flies, thrips, mosquitoes, tomato worms and mites. Cinnamon & Christmas Basils are especially effective & have beautiful blooms.

Catnip: It may attract cats, but it is also a natural flea repellent. Additionally, it can ward off mosquitoes, rodents, Japanese beetle, flea beetles, aphids, weevils, ants & cucumber beetles.

Chives: Great for cooking and can also deter spider mites, Japanese beetles, Japanese rust flies and aphids.

Lavender: The sweet smell helps keep slugs at bay. It also looks beautiful and can attract friendly butterflies while deterring pesky moths and fleas.

Nasturtium: This flowering plant is pretty and may also deter aphids, whiteflies and squash bugs.

Onion: Onions can scare away bean leaf beetles, flea beetles, harlequin bugs, Mexican bean beetles, mice, spider mites, squash vine borers and ants! Ornamental Onions have exceptionally beautiful blooms and the same pest deterring properties.

Petunia: These beautiful flowers are also great for pest control. They can work for aphids, leaf hoppers, Mexican bean beetles, asparagus beetles and tomato worms.

Radish: Radishes can ward off cowpea curculios, cucumber beetles, harlequin bugs, Mexican bean beetles, squash bugs, stink bugs and rust flies.

Borage: Deters the tomato hornworm and has incredibly blue flowers that taste like cucumber. Also great for an ornamental addition to salads!

Calendula: Beautiful bright orange or yellow daisy-like blooms, helps deter pests above and below ground. Good to plant near asparagus as it helps deter asparagus beetle.

Marigold: While they are said to deter various pests that bother tomatoes, beans and more, there are mixed reviews of this. They do have a strong smell that some rabbits don't like.

Sage & Parsley: As strong-smelling herbs, they help deter deer when planted in perimeter.

ADDITIONAL NATURAL/ORGANIC-SAFE TREATMENTS

- Deer, rabbits, squirrels & groundhogs: For deer, try placing a transistor radio in your garden and keeping it on at night, or set up a basic motion detector light. Electric fences are more expensive and not as attractive, but do help control deer damage. Deer, squirrels and groundhogs can be deterred by scattering dog or human hair around the perimeters of your gardens. Try sprinkling your garden with smelly soaps (try to use natural ones) or pureed garlic bulbs. Eco-friendly products such as **Green Screen** repellent use blood meal to deter deer and rabbits (it is also one of the least smelly on the market), and can be applied as a powder or by hanging bags of the product throughout the garden. (If you own dogs, they may actually be attracted by the bone meal.)

If deer are your biggest issue, you can also try planting gardens mainly consisting of 'deer-resistant' plants. If rabbits or groundhogs are the problem, try planting lots of onions and garlic in perimeters or putting up fencing (buy small mesh and bury 4" for rabbits and 10" for groundhogs with a height of 4 ft.). Rabbits may also be deterred by spraying a mixture of 1 t. Lysol per gallon of water.

- Rodents - Deter rodents such as voles and gophers (they can literally eat the roots out from under everything from irises to full-grown shrubs) by adding a handful of sharp gravel to the planting hole or by planting bulbs in a mesh cage or bag. For moles, try combining equal parts castor oil and dish detergent and mix 4 T. per gallon of water to soak the tunnels and entrances.
- Slugs - Try non-toxic Sluggo or remove by hand. Lay boards or cardboard on soil around plants and remove slugs from underneath each morning (freeze or place in saltwater). Also try spreading wood ash, diatomaceous earth or crushed eggshells around plants.
- Squash Vine Borers - Try weekly applications of Bt (a naturally soil-dwelling bacterium).
- Fungal Diseases (Tomato Blight) – Try weekly application of **Serenade** (coat the leaves).
- Aphids – If plants aren't delicate, try squirting with strong blasts of water. You can also spray leaves with insecticidal soap or oil (or make your own mixture with water and a few drops of dish soap). Apply oil/soap on overcast days to avoid burning leaves.
- Cutworms – Encircle plant stems with cardboard or stiff paper, diatomaceous earth, coffee grounds or crushed eggshells. Keep your surrounding grass cut and yard tidy.

- Bean Beetles/Larvae – Most effectively removed by picking them off by hand and smashing or dropping in bucket of soapy water.
- Japanese Beetles – Again, most effectively removed by handpicking and disposing of them – try laying down a drop cloth and shaking beetles off the plants, then dumping cloths in soap water. You can also spray plants with Neem or other oil or add parasitic nematodes to your garden.

We now carry Green Screen, Serenade and Bonide (oil for treating aphids, spider mites, whiteflies, mealy bugs, scale insects and more on houseplants, edibles, ornamentals, shrubs & trees).

This information has been collected from a variety of sources and through personal experience: www.gardenerssupply.com, www.naturalgardening.blogspot.com, www.ufseeds.com/Garden-Planting-Guide.html, www.motherearthnews.com/crop-guide-growing-organic-vegetables-fruits-zl0z1211zsto.aspx.