

Vegetable Gardening Basics

How to Plant and Grow Your Own Vegetable Garden

There are few things that are as satisfying to a home gardener, than to wander out to the vegetable garden, harvest and consume the fruits of their labor. Successful vegetable gardening involves far more than just popping a few seeds into the ground and waiting for a tomato to appear. Planting is only the third step of the three 'P's. Planning your garden, Preparing the soil, and then... Planting your vegetables!

Planning your garden

As you sit down to plan your garden, please consider adding a few extra plants and donate a little of your bounty to your local food bank or *second harvest* organization. Give a helping hand to those who may not have the opportunity to grow their own food.

For the best success, a vegetable garden should be well planned out in advance. The site location is of the utmost importance. A spot near the house in *full sunlight* is the normally the most convenient spot, however, drainage, soil quality, and shade from buildings or trees may mean the garden must be located in an area farther from the house. A good vegetable garden must have at least six hours of full sun each day in order for your food crops to mature properly. No amount of fertilizer, water, or care can replace needed sunshine. The soil should be very fertile and well draining so that water never puddles after a rainstorm. While good air movement around a garden is important, windy areas should be avoided because winds can dry out or break plants. Choose a spot close to a water supply for convenience, and to avoid having to use long lengths of hoses. Planting a vegetable garden where it can be visited frequently will allow you to monitor plant pests and the general health of the garden more easily.

Your choice of vegetables will be largely determined by the likes and dislikes of your family. If you expect to consume large quantities of a type of vegetable, it is usually more cost effective to start your plants from seeds indoors. Some types of plants resent transplanting and must be sown directly into the garden where they are to be grown. In other instances it is best to purchase bedding plant starts to extend the growing season long enough to insure the maturity of the crop. As you plan and map out your vegetable garden, be sure to consider the information found on Vegetable Growing tips in your criteria of what and where to plant.

In planning your garden, consider what and how much you will plant. It is better to have a well-maintained, small garden than a large one neglected and full of weeds. Usually, a sufficiently high fence with close mesh to keep out dogs, rabbits, and other animals should surround the garden. A fence also can serve as a trellis for beans, peas, tomatoes, and other crops that need support. It is helpful to draw a diagram of your prospective garden, mapping out each row according to height, plant requirements and other criteria. The direction of the rows isn't necessarily critical, but often it is a good idea to have them running east-west, thereby allowing you to plant your tallest crops on the north end of the plot, and successively shorter crops in front. This prevents shading of the shorter plants.

If you must plant your garden on a hill, cut your furrows on a contour *with* the land, so that the water won't run quickly down the hill, taking with it the valuable topsoil, and the nutrients needed for your plants. Perennial vegetables such as rhubarb and asparagus should be planted off to the side where they won't interfere with future plowing. Early producing crops (radishes, lettuce, spinach, carrots, beets, onions, etc.) should be grouped together with extra space for successive plantings. After they are finished for the season, this will allow you to easily rework the area for later season crops.

Preparing the soil

Fertile, well-drained soil is necessary for a successful garden. The exact type of soil is not so important as that it be well drained, well supplied with organic matter, reasonably free of stones, and moisture retentive. The subsoil also is very important. Hard shale, rock ledges, gravel beds, deep sand, or hardpan under the surface may make the development of garden soil extremely difficult or impossible. On the other hand, infertile soil that has *good physical properties* can be made productive by using organic matter, lime, commercial fertilizer, and other soil improving materials. Soils should not be plowed or worked while it is very wet unless the work will certainly be followed by severe freezing weather. If the soil sticks together in a ball and does not readily crumble under slight pressure by the thumb and finger, it is too wet for plowing or working, because in this condition it will *cake* as it dries, making it unsuitable for young plants.

If your garden has already been cultivated and used in past years, there is little to do other than to plow in additional organic material, and fertilizers. The fertilizer may be in the form of composted manure or any good commercial *complete* plant food distributed at a rate of 3 or 4 pounds for every thousand square feet of vegetable garden. Infertile soil will often benefit from even larger proportions of chemical fertilization, but care must be taken not to add too much because of the danger of fertilizer burn. When manure is added to the soil, it must be composted prior to planting, because fresh, *hot* manure will also burn your plants.

Different types of vegetables require varying degrees of soil acidity. The acidity or alkalinity of the soil is measured by pH, and must be adjusted according to which crop will occupy that area. Generally, soils in moist climates are acid and those in dry climates are alkaline. A soil with a pH lower than 7.0 is an acid soil and one with a pH higher than 7.0 is alkaline. You can buy an inexpensive pH test kit at most nurseries, and many good garden centers will gladly test a soil sample for you. Once you have determined the pH you can amend the soil as needed. The pH requirements of different garden vegetables will determine what steps must be taken next.

Only after the site has been prepared, and the soil and conditioners mixed, watered well and settled should you test the pH of the soil. The tested soil should be dry. If a soil test reveals that you need to make corrections to your soil pH, you can use materials commonly available at your local garden center. If your soil needs to be more acidic, sulfur may be used to lower the pH. For raising the pH, lime is most commonly used. The amount of either material used will depend on the amount of change you need to make. The recommendations provided on the product label will help you determine how much to use. A general rule of thumb is to add 4 lbs. of lime per 100 sq. ft. of garden for every pH point *below* 6.5, or 1 lb. of sulfur per 100 sq. ft. for every pH point *above* 7.5. Sawdust, composted oak leaves, wood chips, peat moss, cottonseed meal, and leaf mold *lower* the pH, while ashes of hardwoods, bone meal, crushed marble, and crushed oyster shells *raise* the pH. The best way to adjust pH is gradually, over several seasons. Most garden vegetables do best on soils that are slightly acid and may be injured by the application of excess lime. For this reason lime should be applied only when tests show it to be necessary. If the soil is *excessively* alkaline, you may find that you are better off to build a raised bed using topsoil purchased from a nursery. Once your soil structure, fertility and pH have been established, the soil should be tilled one last time, and then raked smooth.

Planting vegetables

Using your garden layout map, which you created in the planning stages, use stakes to mark out where different rows will be planted. Build your trellises or set in stout stakes for climbing plants such as peas and beans. Create mounds on which you will put in the vining plants such as cucumbers, pumpkins and melons. Don't forget to establish your pathways early so that you won't be walking across areas which will be planted. You don't want to be compacting the soil that you have worked so hard to *fluff* up.

You are now ready to sow your seeds, and to put in your vegetable bedding plants. Planting depths and spacing are critical, so don't crowd too many plants into the allotted space or you may end up with spindly plants and no food. Be sure to place a tag or marker on each row or area so that you will know what to expect will sprout there and *when!* Water your garden thoroughly the day before you intend to plant.

Sowing your seeds

Stretch a string between the two stakes you set to mark the row, or use a straight piece of lumber, and use it as a guide to open a 'V' shaped furrow with the corner of your hoe. Set the depth to the recommended requirements on the seed packet. Tear the corner of the seed package off and use your finger to tap the package lightly as you move down the row, carefully distributing the seeds evenly. Larger type seeds may be placed individually in the row. You will want to plant extra seeds in each row to allow for failed germination, and for thinning. Cover the seeds with fine soil (no clods or rocks). Firm the soil over the seeds to insure good moisture contact, and to help retain the moisture in the soil. Water thoroughly using a gentle spray so that you don't disturb or uncover the seeds. Seeds need moisture to germinate, so it is important to keep the soil moist until the seedlings are up.

When the seedlings have emerged and developed their second or third set of *true* leaves, thin them as needed so that you keep the strongest plants, leaving the remaining ones spaced as directed on the seed package. It is best to thin while the seedlings are still small, so that you aren't disturbing the roots of the plants which will remain.

Setting in vegetable starts

If you purchased bedding plants, or started your seeds indoors in pots dig a small hole which is slightly wider and deeper than the root ball of the new plant. Water the plant thoroughly prior to planting it out in the garden to lessen the shock of transplant. Gently tap the pot to loosen the roots and remove the new plant. If the root ball is tangled and compacted, use your fingertips to gently loosen the outer roots. Set the plant into the hole *slightly* deeper than it was growing in the pot, and firm the soil in around it, making certain that there is good soil/root contact.

Maintain as your garden grows...

- During dry periods, vegetable gardens need extra watering. Most vegetables benefit from an inch or more water each week, especially when they are fruiting.
- Mulching between the rows will help to control weeds, conserve moisture in the soil, and provide you with pathways to access your plants. Black plastic may be used, or you can utilize grass clippings, straw, wood chips, or garden debris.
- Throughout the growing season be vigilante against insect pests. Discovering a bug problem early will make it much easier to take appropriate action and eliminate the pests. Do not use pesticides once the plants have fruited unless it becomes an absolute necessity, and be sure to follow the manufacturers recommendations.
- Weeds rob your vegetables of water, light and root space. Keep them pulled out regularly (*try to get the entire root*) and the job isn't too bad. If they are allowed to go to seed, you may be dealing with thousands of weeds instead of a few.
- Once you have harvested your crop, put the spent plant and other vegetable matter into your compost pile so that it can be recycled into your garden again, next spring.

Source: <http://www.thegardenhelper.com/vegetables.html>

Organic Garden Pest Control

A garden seethes with life — after all it is a food source. Organic garden pest control is a safe and easy way to control those critters that think your food is their food!

As with all things in nature, there is a balance. Organic garden pest control doesn't upset that sensitive arrangement too much. We've got to eat of course, and we're not hunter-gathers now, so we sow, plant and harvest on cleared land. Even if we practice organic gardening, pest control is still necessary. Garden pests just love the concentrated gatherings of their favorite foods. Enlightened farmers now use what they call *integrated pest management*. It's about striking that crucial balance between protecting their crops and protecting the environment... as well as protecting their bank balance by reducing their use of chemical sprays. You will have some advantage in managing garden pests if you are gardening organically as you will be encouraging natural biological control. Still it's wise to be prepared for action should your plants come under attack.

Essential information about controlling garden pests organically

Before we get to a specific A-Z list of pests, here is a summary of what exactly organic garden pest control mixtures consists of and how they work:

- **Smell:** Garlic, tobacco, rhubarb, fish and other strong smelling substances that are used to *repel* pests.
- **Gases and odor molecules:** Many plants give off natural odors or have volatile oils which some bugs find unpleasant. Often these odors or oils are a warning to bugs that the plant contains its own built in insecticide. Concoctions made from these plants will *deter* pests.
- **Heat or fumes:** Chilies, kerosene, methylated spirits, salt etc, will *burn, harm or kill* pests.
- **Oil:** Mineral oil, vegetable oils and proprietary oils, such as those made with cottonseed oil, will *suffocate* soft-bodied pests.
- **Soap:** Natural vegetable based soaps or detergents are added to sprays in small amounts to make them *stick* to plants. Many insects dislike and are harmed by soap also.
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Never use spray on plants during hot sunny weather as it may cause the leaves to burn. Natural soap is tolerated by plants better than detergent (which may have other ingredients such as surfactants, enzymes and softeners added). A small dash of detergent is okay to give a spray some 'stickiness.'

Decide what you need to do and do no more. For example, do you want to kill the wretched caterpillars that are making a mess of your cabbages? Right, get the biggies by hand and/or make up a strong killer mix and stop them in their munchy tracks! From then on you should be able to keep an eye out and use only a mixture that deters or repels the butterflies or moths from landing to lay eggs.

Always remember you want a garden teeming with life with the many insects and creatures keeping each other in check without you rocking the boat too much. Yes you want wonderful vegetables, flowers and trees to eat and enjoy; so practice diversity and don't aim for perfection and neatness. Even when using natural sprays, do as little harm as possible and don't try to outgun nature.

Here are the best non-toxic organic garden pest control solutions

Garlic fire spray is the stuff of legend. There are many recipes, but they consist of some or all of the following: garlic, chilli peppers, soap, vegetable oil, kerosene and water. Don't leave home without a concoction of this. Depending on its strength it will slay dragons and ants (must have dragons if we mention legends)!

The brew I use at the moment is very effective and goes like this:

- 2-3 garlic bulbs (about 6-10 cloves per bulb)
- 6 large or 12 smaller hot chili peppers (any variety will do, or if unavailable try 1-2 tablespoon hot chili powder)
- 1 tablespoon vegetable oil
- 3 squirts of liquid detergent (approximately 1 dessertspoonful)
- 7 cups water. (Use about 2-3 cups in the blender, and top up with the rest later)

Put the whole lot into a blender and blend well, then strain through muslin, a coffee filter or similar. Pour what you need into a spray bottle for use and keep the rest in jars with lids on in a cupboard or on a shelf somewhere, well labeled.

Experiment with it if necessary and check for results or any damage to young plants. If it fixes the problem and your plants are happy, you've got the perfect mix, but if there's still a few biggie pests, albeit struggling, then lower the water dilution rate or change the ingredient quantities slightly.

Lovely garlicky, pongy stuff, but the smell dissipates quickly once it's been sprayed around. This garlic fire mixture needs to be re-sprayed frequently, such as after rain and dew. It's best to spray every few days until there's no sign of pests, then about every week to 10 days for any eggs or larvae that may have hatched out.

Uses for this natural garden pest control are unlimited. Because it has oil and dishwashing liquid in it, it sticks to plants as well as suffocating pests such as scale and mealy bug. It will kill ants, aphids, caterpillars, grubs, bugs and just about anything small. **SO BE VERY SELECTIVE — MIND THE LADYBUGS, LACEWINGS, BEES AND OTHER BENEFICIAL FRIENDS.**

Spraying this mixture around the edge of your garden will deter pets. Rabbits, gophers, woodchucks and other garden gatecrashers will also be discouraged.

Here's another version, if you don't have a blender (really!). Put a whole garlic bulb through a garlic press and let it sit in a glass jar with several ounces of mineral or salad oil. Mix a few spoonfuls with dishwashing liquid, hot pepper sauce and water in a spray bottle.

You can make a pure smothering oily mixture. Blend together ½ cup of liquid or grated pure soap in 1 cup of vegetable oil. Any cheap salad oil from supermarket is fine. Use a blender or beat by hand and it will become a thick white consistency. To use, mix 1 tablespoon with 1 liter of warm water and spray every bit of plant where you find the pests you're after.

Fish Fertilizer is another useful jack-of-all trades deterrent for unwanted, such as mites, caterpillars and even nematodes. It seems some gardeners, orchardists and farmers noticed that when they sprayed their plants with fish fertilizer, the pests held their noses, packed up and left, spreading the word as they did so. Exactly why it works is not yet clear but there are a couple of possibilities:

Firstly, because fish fertilizer is oily, this smothers nematodes and mites. Secondly butterflies and moths find their host plants by their acute sense of smell. So they are not going to hang around breeding caterpillars when fish masks the smell of cauliflowers or apples!

Be considerate of your neighbors though, as they might not like the fishy aroma that lingers around for a day or so.

Here are some more organic garden pest control alternatives...

A-Z of Garden Pests

Ants: Studying ants is a lesson in survival. If ants encounter a substance that kills them or forms a barrier, they set to work and pile up enough of each other, dead or alive, to make a bridge to cross.

There are over 14,000 ant species worldwide. Some are useful as biological control in farming, many have painful bites and some eat crops. Controlling ants in the garden is the focus here, so whether you have brown coastal ants, bull ants or tiny black ants, most of them continually scout around searching for food and if you see one, it's probably left a scent trail and in a flash the rest of the team will be on their way.

In your vegetable garden ants 'farm' aphids, even moving aphids to put them on better plants. The ants collect the sweet honeydew that aphids secrete after sucking plant sap. Mealy bugs and scale are other soft-bodied insects that secrete honeydew which ants collect. The ants make tunnels and nests in your soil and undermine roots and really roughshod it over everything in your garden if they get out of hand. You have to be crafty to totally get rid of ants. Some instant ant ammunition...

Borax can be used as a natural insecticide, although must be kept away from children, pets and protect yourself too. Watch your eyes, nose, use gloves and wash hands afterwards. Borax mixed with peanut butter or something sweet, such as honey, means the ants eat it and take it back to their nest to share with other ants, hopefully poisoning all in the nest.

Diatomaceous earth sprinkled on ants' trails kills ants by dehydration when they're back in their nest.

Garlic fire spray will kill ants on contact... but there's plenty more on their way!

There are lots of organic garden pest control deterrent for ants, but keep applying and changing them because they are determined little blighters indeed. When ants are under attack, some ants will gather a few eggs and move to another location, so often all you achieve is for them to move their nest somewhere else, in which case unless they become a pest again, leave them in peace.

Some more ant strategies...

Dab some jam, honey or sugar water (and borax if you wish) on the base of aphid-infested plants. That will hold the ants back whilst you set some ladybugs on the aphids. You can spray the aphids and ants, but the ants will have a store of eggs underground and will soon move back to start farming again.

Cucumber peels on ant routes will send them away for a while.

If you find the ants' nest, make them disappear by sprinkling in or near their entrance one or more of these: black pepper, cayenne pepper, cinnamon or chili powder. Likewise salt sends them into a frenzy.

Boiling water can then be poured on as many ants as you can reach (as long as it's safe and away from plants). Boiling water can of course be poured down an ant nest to kill the queen — if you are lucky enough to find an easy to reach nest, but usually they are very deep and constructed to stop rain and flooded water going in.

Aphids: Rhubarb leaves are semi-poisonous to us, and a tea brewed from rhubarb leaves poisons smaller critters, such as aphids, mites, white fly, caterpillars etc. Pour boiling water over crushed rhubarb leaves then leave to soak for several days. Strain, add a good squirt of detergent and dilute enough so that it looks like weak tea and spray over pest infested plants. Repeat every 10 days or so. Also try the garlic/chili sprays above.

Caterpillars: To discourage moths and grubs on corn, fruit, brassicas (includes broccoli, spinach, cabbage, cauliflower, Brussels sprouts, kale, collard greens, pak choi and kohlrabi) simply spray with a molasses blend. Mix one tablespoon of molasses with a liter of hot water. Then add a teaspoon of liquid detergent and put in a spray bottle. Spray the leaves, top and bottom, about once a week.

An alternative to the molasses spray is a blend of 1 part vinegar to 3 parts water. Add a teaspoon of liquid detergent and put in a spray bottle. Spray the leaves, top and bottom to kill off grubs and bugs. Also see Garlic fire spray at the top and Rhubarb spray under Aphids.

Deer: Tips on how to repel deer – get a deer fence – period!!!!

Earwigs: Eeeewahh... If earwigs are eating your plants, crumple some newspaper in old flowerpots and leave them in the garden. The earwigs will hide in the paper once they're done eating. In the morning, shake the paper out where they can have a new home or into a bucket of hot water if earwigs aren't your cup of tea.

Gophers: Here are a few tricks to try to deter gophers:

- * Encourage birds of prey by putting water bird baths in garden and keeping foliage around the garden edge down so the birds can spot any such rodents.
- * Lay mesh around your garden edge at least 45cm (18") deep. Some gardeners even lay it on the bottom of a garden bed.
- * Have some pets, such as a dog or even a cat, and make sure they are out and about during dawn and dusk at the same time as gophers get active. Gophers and other burrowing creatures will avoid trespassing where there are family pets in sight.
- * Spraying with Garlic fire works but depending on garden size it may be too big a task and too expensive to make enough and keep using it.
- * If you already have a few gopher holes, put the hose down them and flood their tunnels.

Mealy bugs: Treat these soft pale pink, white or gray sucking insects the same way as scale. Indoor plants are susceptible to mealy bugs because of the sheltered environment, so in your garden mealy bugs love glass houses and plants growing near or under weather protection.

Mealy bugs multiply rapidly and will soon sap the life of a plant, causing distortion and stunted growth first. They are easy to squish with fingers or dab with a cotton bud dipped in methylated spirits. They have a slight waxy coating so anything that burns this off, such as meths, causes death by dehydration. Smothering with oil is also effective.

Mildew, mould and fungus: Plants that are susceptible to mildew, such as peas, pumpkin, zucchini and cucumber can benefit from a milk spray. Use full-cream milk and spray every few days on the leaves until the mildew is under control.

If the small white patches of mildew are just starting, you should be able to catch it early and stop further spreading by using a diluted milk solution of equal parts water and milk.

If the situation is out of control, either remove the affected leaves or the whole plant and destroy it. "Damping off" is caused by fungi such as *Phytophthora* and *Pythium*. Seedlings, like lettuce, suddenly collapse with the rot. Soggy conditions, overcrowding or too much peat in the mix can be the cause. Try letting the soil dry out on the surface in-between waterings, and even sprinkling a layer of sand on the surface.

Sand and a dry surface will also control "Fungus gnats." They are tiny little black midget type flies that crawl and fly around the surface of the soil. They lay their eggs and the larvae will damage seedling by eating their roots.

Chamomile tea is a fungicide. Prepare a cup of chamomile tea and allow it to steep for 10 minutes. Once cool it can be sprayed on the affected leaves, top and bottom. Cinnamon powder sprinkled around plants and soil also controls fungus. If you can make or buy good quality Compost tea, this is extremely beneficial. Compost tea balances the microbes and bacteria in the soil, thus fighting the disease organisms and providing active healthy organisms and fertilizer to strengthen plants and make them resistant to problems.

Moles: See Voles and Gophers. Moles eat insects and worms; they don't harm plants except by their earthworks.

Scale: It can be a shock to peer at a plant and realize that it's covered in black, brown or green scale. More of a shock will be when in a short while your plant starts turning up its toes in a stunted sort of way, so tackle scale as soon as you find it. Scale gathers on leaves and stems, sucking the life out of plants.

A black fungus called sooty mould grows on the sweet honeydew secretions from scale. This does the plants no good and looks awful. Ants also love scale honeydew and will aggressively farm scale to obtain as much as they can.

The odd scale can be scraped off with your nail, blunt knife or toothbrush. Always check a week or so later for any new ones. Garlic fire spray also works, because it kills the crawling nymphs as well as smothering the waxy-coated adults which permanently attach themselves to the plant. Also mix 1/4 teaspoon of oil, 2 tablespoons baking soda and 1 tablespoon mild liquid soap in two gallons of water. Spray or wipe on plants once a week for 3 weeks or until gone.

Slugs: Do a night patrol as for snails. The best time is dusk especially when it's damp or raining. Don't use your hand to pick them up — it's horrendous trying to get that sticky stuff off. Scoop them up with an old spoon, dump them in a bucket and scrape them out somewhere where they won't be a pest.

If there's nowhere else for them but kapow... give them a quick stamp with your shoe, or salt sprinkled on snails and slugs will kill them instantly. Go out in the evening with a flashlight and protect your plants! Sprinkle crushed eggshells around vulnerable plants. Slugs and snails will avoid crossing the sharp shells and it will enrich your soil with calcium. Children like to help here, they love crushing eggshells. Keep them in a jar until you have enough to use.

Another dislike of snails is sand, which they do not like to cross. Put a band of fine sand about 1cm (1/4") high around the garden edge or base of plants. Sprays like Garlic fire don't work with slugs and snails — they are mollusks, not insects.

Snails: As for slugs mostly. Also put beer in a shallow pan in the garden to trap snails and slugs overnight. Vinegar in a shallow pan will do the same thing. Orange or grapefruit halves hollowed and turned upside down placed around the garden will also attract snails and slugs. Go out in the morning to remove or deliver the coup de grace on those hiding under the peel.

Spider mites: There are unknown millions of mite species, many similar to thrips. In the garden the two-spotted mite is commonly called red spider mite because in the cold weather it changes from pale green with two red spots to orange/red, looking like a miniature red spider.

Like thrips, spider mites suck the chlorophyll from the leaves of plants. Spider mites leave white translucent spots of damage and no dark droppings. In heavier infestations a silky web is obvious, which is secreted by the mites to protect themselves from enemies and poisons. These webs can cover a whole plant.

Natural predatory mites are the best control, so having compost and mulch to encourage beneficial mites will keep the right balance. Spiders, parasitic wasps, ladybugs and lacewings also feed on red spider mites. Use a soap spray to eradicate these critters. Spray plants weekly until mites are gone, then monthly to stop them from returning. Also see other sprays under Caterpillars.

Thrips: There is no singular word for thrips — such as a thrip. And look at one of their names *Heliothrips haemorrhoidalis*! So these horribly named beasties come by the gang load. Microscopic greenhouse thrips rasp away on the surface cells of leaves and suck out their chlorophyll contents. The hollowed, air-filled cells then take on a silvery, tissue paper look. This later turns brownish and crinkly and there are dark spots of thrips droppings seen. Some thrips also spread viruses, such as the tomato spotted wilt virus. Not nice.

Keep weeds down if troubled with thrips, as thrips overwinter in nearby ground foliage waiting for their favorite plants the next season. Garlic fire spray trips thrips up and there are a number of predatory bugs native to different countries. Lacewing larvae are a good biological control also.

Voles: (Also see Gophers) Unlike Moles, Voles only eat roots and bark rather than insects and worms. Electronic gadgets were popular once for organic garden pest control, but apparently have little success on Voles, so you might have to resort to mouse traps if you're desperate. Bait traps with bread or stiff porridge, then lay the traps on the vole trails, cover each trap with a box with a hole (to stop birds and possibly other animals, and kids) and keep checking and moving and replacing until you win!

Whitefly: Windy conditions keep whitefly away temporarily, and also a strongish hose down will move them on. Detergent or oil coats their wings and stops them flying, so mix up approximately 1-2 teaspoons detergent to 1 liter (15oz) water, or half a cup of cheap salad oil to 1 liter water, with a dash of detergent. Spray all over infected plants, including underside of leaves if possible.

Whiteflies are attracted to yellow. Get some sticky stuff, such as Vaseline, castor oil, natural gum resin, or vegetable wax. Tie bright yellow plastic bag bits coated with sticky stuff to stakes, or smear a yellow plastic bucket, or paint a nearby board the brightest yellow you can buy. If necessary shake the whitefly off the plants then watch as they land on the yellow traps and get stuck.

See how simple organic garden pest control is?

You're the owner of those veggies doggone it, not those garden pests. So mix up a batch of whatever you need now and may the luck be with you. Even with natural ingredients, don't get sprays in your eyes, or even touch your eyes with your hands after mixing up concoctions. Label sprays well and keep out of reach of children. Always remember your community spirit towards those that co-share your garden and surrounds. Sometimes you may have to learn to live with a little wastage for you and the planet to stay healthy.

Source: <http://www.no-dig-vegetablegarden.com/organic-garden-pest-control.html>

Companion Planting Chart for Vegetables

Companion planting means putting plants together in the garden that like each other, or help each other out. Companion planting can have a real impact on the health and yield of your plants.

Vegetable	Really likes to be with...	Really dislikes to be with...
Asparagus	Basil, Tomato, Nasturtium, Parsley	Onion, garlic, potato
Beans	Carrot, cabbage, cauliflower, cucumber, marigold	Chives, leek, garlic
Broad Beans	Brassicac, carrot, celery, corn, lettuce, potato	Fennel
Beets	Brassicac, lettuce, onion, sage	Bean (pole)
Broccoli	Celery, chamomile, dill, rosemary	Oregano, Strawberry
Brussel Sprouts	Potato, Thyme	Strawberry
Cabbage	Beetroot, potato, oregano, sage	Strawberry, tomato
Carrot	Bush beans, pole beans, lettuce, onion, pea, radish, tomato	Chives, dill, parsnip, radish
Cauliflower	Beans, celery, oregano	Nasturtium, peas, potato, strawberry, tomato
Celery	Cabbage, leek, onion, spinach, tomato	Parsnip, potato
Corn	Bean, cucumber, melon, pea, pumpkin, potato, radish	Tomato
Cucumber	Bean, celery, lettuce, pea, radish	Cauliflower, potato, basil
Eggplant	Bean, capsicum, potato, spinach	
Leek	Carrot, celery, strawberry	
Lettuce	Carrots, radishes, strawberry	Beans, beetroot, parsley
Melon	Corn, radish	Potato
Onion	Bean sprout, broccoli, cabbage, lettuce, strawberry tomato	Bean, pea
Pea	Beans, Carrot, corn, cucumber, radish	Onion family
Potato	Bean, corn, cabbage, pea, eggplant	Cucumber, pumpkin, squash, sunflower
Pumpkin	Corn	Potato
Spinach	Celery, cauliflower, eggplant	
Tomato	Asparagus, celery, carrot, parsley, marigold	Corn, fennel, potato
Zucchini	Nasturtium	

Beneficial Garden Insects

Here is a guide to the many beneficial garden insects, bugs, birds and animals that you can leave be in your garden.

The ecosystem is shared by all species, good and bad. Beneficial garden insects or downright rotten cheeky pests, they all have a right to their place and a role to play in the dynamic relationship to keep nature balanced. Sometimes it's just being in the wrong place at the wrong time. Good garden bugs in your garden can overwhelm a different area if they are taken out of their natural environment. Loveable rabbits in the wild or zoo are naughty bunnies on your land and butterflies are beautiful but not their killer caterpillar kids!

What are the beneficial garden insects birds and animals?

Who are we to say... as a writer once said: "It may be that frogs, ducks, hedgehogs and moles are good because they eat slugs. Or it may be that slugs are good because they feed frogs, ducks, hedgehogs and moles. More likely, there's no morality in nature at all." So in praise of good garden bugs and creatures here we go:

Green lacewing: Lacewings should be called *race* wings — they work fast, going flat-out eating (or rather sucking dry) hundreds of bugs and their eggs. It is the lacewing larvae that are most predatory, and their favorite targets are aphids, whitefly, leafhoppers, mites, mealybugs, scale insects and some moths and caterpillars.

Native to Australia, and now found worldwide, lacewings can be bought from bug suppliers in quantity. It helps to encourage them to stay around by providing a varied diet. For a start, they also like nectar, so grow flowering plants nearby. Have a variety of plants so they get a variety of bugs. They're more faithful than ladybugs, but the adult lacewings fly around at night, and are attracted to nearby lights.

Ladybugs: Often called Ladybirds or Ladybeetles, ladybugs look just the dearest ladies, waddling along in their pretty spots. But they have a roving eye and will desert you for another. Even if you buy them, don't always expect to find many around when you need them. Green lacewings are a safer buy.

Any faithful ladybugs you have are true beneficial insects and devour aphids, scale, mealybugs and other small soft-bodied insects. They soon clean up the aphids on a plant... if fact you can carefully move ladybugs around your garden if you wish. As long as they are well fed, they will stay true to you.

If a ladybug sees you coming, it will curl up and fall off the edge of the leaf, so hold your hand to catch it. Soon it will stop hiding under its shell and you can place it where you want it — say on a badly infested plant at the other side of the garden. Ladybug larvae are about 4mm long with similar markings to adults. They are very hungry and not so likely to leave the scene than their parents.

There are many different ladybugs all with their own markings and habits. Not all are red with black spots; they come in yellow with stripes even. There is one variety that attacks the pupae of native ladybugs. Called the Asiatic harlequin ladybird, it has only recently been accidentally introduced into some countries.

Parasite Wasps: These are tiny wasps quite unlike big yellow-striped bullies that sting. Parasitic wasps are divided into many species and the adults feed on nectar and pollen, therefore planting flowers near your vegetables encourages these little winged creatures.

The family of **Chalcid** wasps include: **Trichogramma** which kill the eggs of the moth species Lepidoptera, such as codling moth and others which turn into ravenous caterpillar pests. Trichogramma lay their eggs inside the larger eggs of Lepidoptera, and then hatch out into larvae and no guesses what they feed on. Instead of a pesky caterpillar emerging from a lepidoptera moth egg, there is an adult Trichogramma wasp, ready to find a mate and start the good cycle again.

Other Chalcid wasps and wasps from the **Ichneumon and Braconid** family kill many of the pests that eat or suck plants. The likes of the tomato hornworm, cut worm, cabbage worm and cabbage looper, corn earworm and corn borer, cutworm, armyworm, aphids, leaf roller, codling moth and various other caterpillars and grubs, all fall prey to parasitic wasps. As well as invading the eggs of their host, parasitic wasps can also inject their eggs into live hosts, usually a caterpillar or pest worm. Still other wasps lay their minute white eggs on the outside of a pest. The eggs turn into larvae and burrow and pupate inside the host or form a cocoon on the outside. Trichogramma and a few of the other wasps can be usually be bought and posted to you from suppliers.

Slaters: Talk about community living, their abundance knows no bounds. Slaters, also known as woodlice, sowbugs or pill bugs, generally ignore green plants, preferring decayed damp material. They are sensitive to hot, dry conditions and will die of dehydration if exposed too long, especially in their young molting stages.

Slaters are beneficial insects in that they help breakdown organic matter, but if there is a population explosion, they have been known to dine on ripe, soft fruits touching the soil, such as strawberries, and very occasionally plant roots, and even young growth shoots.

Control slaters by keeping areas where you don't want them well swept, dry and free of any organic material. If they love your watered, mulched and composted garden and become overcrowded, follow the ideas here: [Organic Garden Pest Control](#).

Slugs: Slimy, slippery slugs seem to create havoc wherever they go, but some praise must go to them. They are stars in your compost; in fact they help with any rotting vegetation anywhere. Interestingly, they will also break down animal fat – if you put that in your compost. The smallest slugs are the worst for fresh green leaves, but the adults prefer rotten old stuff which they nicely turn in compost.

Spiders: It would be rare to find anyone that holds spiders in deep affection... more like fear and loathing. Respect would be the best way to look at spiders and avoid them if you can but benefit from their predatory insect feasting in your garden and house. Their value as natural pest control providers is mammoth and calculations have shown unbelievable amounts of insects are trapped and killed by spiders. Along with birds, spiders are the main controllers of cicadas that damage plants where they lay eggs and suck tree roots when in their nymph stage underground.

By attracting beneficial garden insects and encouraging wildlife, it means these helpful bugs and creatures multiply and invite a few more of their mates into your garden.