

Companion Planting

A guide to poison-free gardening



Did you know that tomatoes and basil do great together in the garden as well as in the cooking pot? Many herbs are natural insect repellents that can help keep your garden bug-free and reduce or eliminate the need for potentially harmful pesticides. By using a technique called companion planting, many gardeners are discovering that they can discourage garden pests without harming helpful insects such as ladybugs and bees. Some herbs through their odors or root secretions will deter pests naturally. An added bonus are fragrant herbs that will season the fruits of your labors.



Basil - Plant with tomatoes to improve growth and flavor and to repel flies and mosquitoes. Do not plant near rue.	Chamomile - Improves flavor of cabbages and onions.	Horseradish - Plant in potato patch to keep away potato bugs.	Rue - Deters Japanese beetles in roses and raspberries.
Bay Leaf - A fresh bay leaf in each storage container of beans or grains will deter weevils and moths.	Chervil - Companion to radishes for improved growth and flavor	Hyssop - Companion plant to cabbage and grapes; deters cabbage moths. Do not plant near radishes.	Sage - Companion plant with rosemary, cabbage, and carrots to deter cabbage moths, beetles, and carrot flies. Do not plant near cucumbers.
Beet Balm - Plant with tomatoes to improve growth and flavor	Chives - Improves growth and flavor of carrots	Lavage - Improves flavor and health of most plants.	Summer Savory - Plant with beans and onions to improve growth and flavor. Discourages cabbage moths.
Borage - Companion plant for tomatoes, squash and strawberries. Deters tomato worms.	Dill - Improves growth and health of cabbage. Do not plant near carrots.	Marijuana - Improves flavor of all vegetables.	Fansy - Plant with fruit trees, roses, and raspberries. Deters flying insects, Japanese beetles, striped cucumber beetles, squash bugs, and ants.
Caraway - Good for loosening compacted soil.	Garlic - Plant near roses to repel aphids.	Mint - Deters white cabbage moths, and improves the health of cabbages and tomatoes.	Thyme - Deters cabbage worms.
Catnip - Deters flea beetles (and attracts LOVE it!)	Gopher Purge - Deters gophers and moles.	Rosemary - Companion plant to cabbage, beans, carrots, and sage. Deters cabbage moths, bean beetles and carrot flies.	Wormwood - Keeps animals out of the garden when planted as a border.

(Taken from Herbs for Your Kitchen by Taylor's Herb Gardens, Inc.)

Table 1. COMPANION PLANTING CHART FOR HOME & MARKET GARDENING (compiled from traditional literature on companion planting)

CROP	COMPANIONS	INCOMPATIBLE
Asparagus	Tomato, Parsley, Basil	
Beans	Most Vegetables & Herbs	
Beans, Bush	Irish Potato, Cucumber, Corn, Strawberry, Celery, Summer Savory	Onion
Beans, Pole	Corn, Summer Savory, Radish	Onion, Beets, Kohlrabi, Sunflower
Cabbage Family	Aromatic Herbs, Celery, Beets, Onion Family, Chammomile, Spinach, Chard	Dill, Strawberries, Pole Beans, Tomato
Carrots	English Pea, Lettuce, Rosemary, Onion Family, Sage, Tomato	Dill
Celery	Onion & Cabbage Families, Tomato, Bush Beans, Nasturtium	
Corn	Irish Potato, Beans, English Pea, Pumpkin, Cucumber, Squash	Tomato
Cucumber	Beans, Corn, English Pea, Sunflowers, Radish	Irish Potato, Aromatic Herbs
Eggplant	Beans, Marigold	
Lettuce	Carrot, Radish, Strawberry, Cucumber	
Onion Family	Beets, Carrot, Lettuce, Cabbage Family, Summer Savory	Beans, English Peas
Parsley	Tomato, Asparagus	
Pea, English	Carrots, Radish, Turnip, Cucumber, Corn, Beans	Onion Family, Gladiolus, Irish Potato
Potato, Irish	Beans, Corn, Cabbage Family, Marigolds, Horseradish	Pumpkin, Squash, Tomato, Cucumber, Sunflower
Pumpkins	Corn, Marigold	Irish Potato
Radish	English Pea, Nasturtium, Lettuce, Cucumber	Hyssop
Spinach	Strawberry, Faba Bean	
Squash	Nasturtium, Corn, Marigold	Irish Potato
Tomato	Onion Family, Nasturtium, Marigold, Asparagus, Carrot, Parsley,	Irish Potato, Fennel, Cabbage Family

	Cucumber	
Turnip	English Pea	
		Irish Potato

Useful Gardening Tips

Which manure for what plant?

Garden Type	Type of Manure	When to Apply
Flower/Ornamental	Horse or Cow	Early Spring
Root Crops (carrot, potato etc)	Horse or Cow	Fall
Acid Lovers - azaleas, blueberry etc	Cow or Horse	Early Fall
Vegetes	Chicken, Horse, Cow	Spring, Fall

African violets: Use chamomile tea to produce the best blooms they have ever had! Another plus is the tannic acid in the tea helps the plants retain moisture making this a good choice for other plants too. This works almost as well as our Golden Harvest Natural Fertilizer does for violets.

- **To make:** Pour 2 cups boiling water over 1/4 cup chamomile blossoms. Let steep until cool and strain bottle. Use as needed. This keeps for about a week before going rancid. Chamomile blossoms can be purchased at health food stores and usually grocery stores. Use as you would any African violet fertilizer.

Brassicas: Keeping the soil pH around 7.0 to prevent club root disease.

Chapped hands: Make a very strong tea of spearmint leaves. Rub on your hands to heal them.

Cur flowers: To make them last longer try this: Combine 8 ounces of water with 8 ounces of gingerale or clear soda (7-Up) and 1/2 teaspoon bleach. The sugar in the soda provides the flowers with carbohydrates (energy) and the bleach acts to control bacteria.

Ferns Ailing? A bit of castor oil can help save your ferns: add 1 tablespoon of castor oil, 1 tablespoon of mild Shampoo to a quart of warm water. Treat each fern with a 4 ounces of the tonic.

Onions: To raise onions for winter storage grow them from seeds. For summer eating grow them from sets.

Plant Markers: If you write on your wooden or plastic plant markers with pencil instead of a permanent marker they will last much longer!

Potato scab: When planting your potato sets put some wilted comfrey leaves in with them to prevent scab. Also keeping the soil for your potato patch with a pH of 5 or below (acid) or a pH of 7 or above (alkaline) to prevent scab. As an alternative pine needles may be used instead of comfrey leaves.

Rhizome or tuber rot: When dividing perennials with rhizomes or tubers dust the freshly cut parts with sulfur to prevent rotting.

Natural Rooting Hormone:

Rooting hormones available as liquids or powders contain a synthetic form of indolebutyric acid (IBA). IBA in its natural state is a plant hormone or growth regulator. You can make your own rooting hormone from the ever versatile

willow tree. Willow contain a high concentration of IBA however the effectiveness can vary by the amount of twigs you use, the level of IBA that is present when you take your cuttings and the amount of time that you soak your mixture.

Any willow (salix) trees or shrub species will work.

Cut a good handful of willow twigs. Then cut them into two to three inch pieces. Put them in a glass or plastic container with a few inches of lukewarm water. Soak for 24-48 hours. You will then use the water to soak your cuttings in overnight. Another method is to water your soil with willow water into which you have placed your cuttings. Two applications should be sufficient. Other types of cuttings may be rooted directly in a jar of the water. You will need to make a fresh batch of willow water for each use.

Plant Willows: Why?

Willows consume carbon as they grow. This means they effectively reduce the amount of atmospheric carbon dioxide!

When the catkins open in early spring they provide an abundant food source for pollinating insects when little else is available to them.

Willows can be planted as a sound barrier, to filter waste and as a wild bird habitat.

Willows are also humus builders for the soil provided from their leaves falling at the end of the season. A good excuse not to rake them up.

Little Bits of Trivia

Monarch Butterflies and Milkweed Plants

The growing larvae (caterpillars) eat milkweed leaves. These leaves contain toxins- poisonous chemicals. These toxins don't hurt the caterpillar, but they do make the caterpillar poisonous to most predators. Because it eats milkweed leaves as a caterpillar, the monarch butterfly is also poisonous. The survival of the monarch butterfly depends on this self-defense system provided by the milkweed.

Sap from milkweed was used by pioneers as a cure for warts.

The airborne fluffly parachute of the seed was used by Native Americans to insulate moccasins.

The dried empty seed pods were used as Christmas tree decorations by early pioneers.

The boys and girls from Wisconsin schools collected 283,000 bags of milkweed fluff for use in military life jackets during World War II.

It is used as an indicator of ground-level ozone air pollution.

BIRDS!

Woodpeckers are voracious ant eaters. You may see them also pick up ants in their beaks and crush them on their feathers. What are they doing this for? Crushing the ants bodies releases formic acid which in turn protects the bird

from parasites!

Hummingbirds, those wonderful creatures, favor brilliant red and orange flowers the most. Following are some of their favorite flowers:

- **Perennials:** Coral Bells (Heuchera), Indian paintbrush, columbine, holyhock, jewelweed, bee Balm (monarda), phlox, daylilies, cardinal flower, lupines, penstemons, butterfly weed- which is very pretty and attracts butterflies too like it's name.
- **Annuals:** 4 O'Clocks, cleome, petunias, impatiens, scarlet runner bean, red salvia, verbena, zinnias, lantana
- **Shrubs and Vines:** Butterfly bushes, creeping trumpet vine, rose-of-sharon, flowering quince, trumpet honeysuckle

BEES!!

Did you know that the flowers bees love usually close at night? The reason is bees only fly during the daytime. Bees are attracted to flowers that are bright in color and have strong fragrance.

Bees are responsible for the existence of many flowers without bees over 100,000 plant species would cease to exist!

Bees, feeling the rise in humidity, will usually go back in their hive to avoid a coming rainfall.

FLOWERS!!!

The largest rose in the world resides in Tombstone, Arizona. Rosa Banklax planted in 1855 at the Rose Tree Inn now covers over 8,000 square feet on a massive trellis. If you are ever in Tombstone this would be worth seeing.

The most expensive flowers: a hyacinth bulb from a variety called "King of Great Britain" sold in 1774 for L100. This equates to over 200,000 dollars in today's economy!

A scarlet and white tipped tulip (Semper augustus) sold for the amount of 5,500 florins. This would give it a current value of 70,000 dollars today!

TREES!!!!

The oldest living tree is the bristlecone pine (pinus aristata). The oldest one found is 4,900 years old. What an amazing specimen to have survived through so many eras! It resides in the Wheeler Peak area of Nevada.

The ginkgo tree dates back to the Mesozoic era. The same tree today closely resembles its' ancestor and is also known as the "maidenhair" tree. Possibly one of the first fruit trees the ginkgo produces an edible fruit that is similar to a persimmon.

The fastest growing tree in the world is the acacia. Certain varieties can grow as much as 2 1/2 feet a month, which translates into a little over an inch a day! Fast and furious the acacia does not live much longer than 30 years.

Ever wonder where that cork in the wine bottle comes from? It comes from the cork oak which is the only tree that can survive "bark harvesting" as it has two layers of bark.

BEEFY TOMATO

The biggest tomato on record weighed in at a hefty 7 pounds 12 ounces. It was grown by Gordon Graham of Oklahoma.

Did you know?

Slugs are hermaphrodites: they all have male and female reproductive systems. Yes, they can mate with themselves!! They can stretch to 20 times their normal length enabling them to squeeze through openings to get at food.

Cinch bugs overwinter by producing an antifreeze chemical that protects their innards from becoming frozen. A plant that everyone detests was found in an area where several feet of rock and plastic sheeting were removed. This area had been untouched for at least 20 years. At the bottom was pure white bindweed, quite alive!

Tall grass: The giant bamboo originating from Asia can reach heights of 50 feet! It is a true grass.

Earth Worms: Have the power to move stones that weigh 50 times their own weight. They also ingest soil and organic matter equal to the amount of their body weight each day.

COMPANION PLANTING



Many plants have natural substances in their roots, flowers, leaves etc. that can alternately repel (anti-feedents) and/or attract insects depending on your needs. In some situations they can also help enhance the growth rate and flavor of other varieties. Experience shows us that using companion planting through out the landscape is an important part of integrated pest management. In essence companion planting helps bring a balanced eco-system to your landscape, allowing nature to do its job. Nature integrates a diversity of plants, so there is no waste. The death of one organism can create food for another, meaning symbiotic relationships all around.

By using companion planting, many gardeners find that they can discourage harmful pests without losing the beneficial allies. There are many varieties of herbs, flowers, etc. that can be used for companion plants. Be open to experimenting and find what works for you. Some possibilities would be using certain plants as a border, backdrop or interplanting in your flower or vegetable beds where you have specific needs. Use plants that are native to your area so the insects you want to attract already know what to look for! Plants with open cup shaped flowers are the most popular with beneficial insects.

Companion planting can combine beauty and purpose to give you an enjoyable, healthy environment. Have fun, let your imagination soar. There are many ways you can find to incorporate these useful plants in your garden, orchard, flower beds etc.

Following is a basic plant guide (with some tips) to help you "work in harmony" with nature."

Note: this guide is not intended to solve garden problems as the suggestions may work differently in various situations or not at all. Don't let that discourage you from giving the ideas a try! What works for some may not work for others and vice versa. Experimenting is the only way we can gain new insight for our own individual gardens.

PLANT GUIDE

ALFALFA: Perennial that roots deeply. Fixes the soil with nitrogen, accumulates iron, magnesium, phosphorous and potassium. Withstands droughts with it's long taproot and can improve just about any soil! Alfalfa has the ability to break up hard clay soil and even send its roots through rocks! Now that is a tenacious plant! Alfalfa is practically pest and disease free. It needs only natural rainfall to survive.

AMARANTH: A tropical annual that needs hot conditions to flourish. Good with sweet corn, it's leaves provide shade giving the corn a rich, moist root run. Host to predatory ground beetles. Eat the young leaves in salads.

ANISE: Licorice flavored herb, good host for predatory wasps which prey on aphids and it is also said to repel aphids. Deters pests from brassicas by camouflaging their odor.

Improves the vigor of any plants growing near it. Used in ointments to protect against bug stings and bites. Good to plant with coriander.

ARTEMISIAS: See Wormwood

BASIL: Plant with tomatoes to improve growth and flavor. Basil can be helpful in repelling thrips. It is said to repel flies and mosquitoes. Do not plant near rue.

BAY LEAF: A fresh leaf bay leaf in each storage container of beans or grains will deter weevils and moths. Sprinkle dried leaves with other deterrent herbs in garden as natural insecticide dust. A good combo: Bay leaves, cayenne pepper, tansy and peppermint.

- For ladybug invasions try spreading bay leaves around in your house anywhere they are getting in and they should leave.

BEANS: All bean enrich the soil with nitrogen fixed from the air. In general they are good company for carrots, brassicas, beets, and cucumbers. Great for heavy nitrogen users like corn and grain plants: French Haricot beans, sweet corn and melons are a good combo. Keep beans away from the alliums.

BEE BALM (Oswego, Monarda): Plant with tomatoes to improve growth and flavor. Great for attracting beneficials and bees of course. Pretty perennial that tends to get powdery mildew.

BEET: Good for adding minerals to the soil. The leaves are composed of 23% magnesium making them a valuable addition to the compost pile if you don't care to eat them. Companions are lettuce, kohlrabi, onions and brassicas. They are also beneficial to beans with the exception of runner beans.

BORAGE: Companion plant for tomatoes, squash, strawberries and most plants. Deters tomato hornworms and cabbage worms. One of the best bee and wasp attracting plants. Adds trace minerals to the soil and a good addition to the compost pile. The leaves contain vitamin C and are rich in calcium, potassium and mineral salts. Borage may benefit any plant it is growing next to via increasing resistance to pests and disease. It also makes a nice mulch for most plants. Borage and strawberries help each other and strawberry farmers always set a few plants in their beds to enhance the fruits flavor and yield. Plant near tomatoes to improve growth and disease resistance. After you have planned this annual once it will self seed. Borage flowers are edible.

BRASSICA: Benefit from chamomile, peppermint, dill, sage, and rosemary. They need rich soil with plenty of lime to flourish.

BUCKWHEAT: Accumulates calcium and can be grown as an excellent cover crop. Attracts hoverflies in droves. (Member of the brassica family.)

CARAWAY: Good for loosening compacted soil with it's deep roots so it's also compatible next to shallow rooted crops. Tricky to establish. The flowers attract a number of beneficial insects especially the tiny parasitic wasps. Keep it away from dill and fennel.

CATNIP: Deters flea beetles, aphids, Japanese beetles, squash bugs, ants and weevils. We have found it repels mice quite well: mice were wreaking havoc in our outbuildings, we spread sprigs of mint throughout and the mice split! Use sprigs of mint anywhere in the house you want deter mice and ants. Smells good and very safe.

CHAMOMILE, GERMAN: Annual. Improves flavor of cabbages, cucumbers and

onions. Host to hoverflies and wasps. Accumulates calcium, potassium and sulfur, later returning them to the soil. Increases oil production from herbs. Leave some flowers unpicked and German chamomile will reseed itself. Roman chamomile is a low growing perennial that will tolerate almost any soil conditions. Both like full sun. Growing chamomile of any type is considered a tonic for anything you grow in the garden.

CHERVIL: Companion to radishes for improved growth and flavor. Keeps aphids off lettuce. Said to deter slugs. Likes shade.

CHIVES: Improves growth and flavor of carrots and tomatoes. Keeps aphids help to keep aphids away from tomatoes, mums and sunflowers. Chives may drive away Japanese beetles and carrot rust fly. Planted among apple trees it helps prevent scab and among roses it prevents black spot. You will need patience as it takes about 3 years for plantings of chives to prevent the 2 diseases. A tea of chives may be used on cucumbers and gooseberries to prevent downy and powdery mildews. See chive tea on disease page.

CHRYSAANTHEMUMS: *C. coccineum* kills root nematodes; (the bad ones) It's flowers along with those of *C. cinerariaefolium* have been used as botanical pesticides for centuries. (i.e. pyrethrum) White flowering chrysanthemums

repel Japanese beetles. To the right is a picture of the painted daisy from which pyrethrum is extracted.



CLOVER: Long used as a green manure and plant companion. Attracts many beneficials. Useful planted around apple trees to attract predators of the woolly aphid.

COMFREY: Accumulates calcium, phosphorous and potassium. Likes wet spots to grow in. Traditional medicinal plant. Good trap crop for slugs. Make an ointment.

CORIANDER: Repels aphids, spider mites and potato beetle. A tea from this can be used as a spray for spider mites. A partner for anise.

COSTMARRY: This 2-3 foot tall perennial of the chrysanthemum family helps to repel moths.

CUCUMBERS: Cucumbers are great to plant with corn and beans. The three plants like the same conditions warm, rich soil and plenty of moisture. Let the cucumbers grow up and over your corn plants. A great deterrent to plant cukes with sunflowers. The sunflowers provide a strong support for the vines. Cukes also do well with peas, beets and carrots. Dill planted with cucumbers by attracting beneficial predators.

DAHLIAS: These beautiful, tuberous annuals that can have up to dinner plate size flowers repels nematodes!

DILL: Improves growth and health of cabbage. Do not plant near carrots or caraway. Best friend for lettuce. Attracts hoverflies and predatory wasps. Repels aphids and spider mites to some degree. Also may repel the dreaded squash bug! (scatter some good size dill leaves on plants that are suspect to squash bugs; like squash plants, yeh that's the trick!) Dill goes well with onions, cabbage, sweet corn and cucumbers. Dill does attract the tomato horn worm so it would be useful to plant it somewhere away from your tomato plants to keep the destructive horn worm away from them. We like to plant it for the swallowtail butterfly caterpillars to feed on. Even their caterpillars are beautiful.

ELDERBERRY: A spray (see insect treatments) made from the leaves can be used

against aphids, carrot root fly, cuke beetles and peach tree borers. Put branches and leaves in mole runs to banish them. Yes, it works!

FLAX: Plant with carrots, and potatoes. Flax contains tannin and linseed oils which may offend the Colorado potato bug. Flax is an annual from 1-4 feet tall with blue or white flowers that readily self sows.

FOUR-O'CLOCKS: Draw Japanese beetles like a magnet which then dine on the foliage. The foliage is pure poison to them and they won't live to have dessert! It is important to mention that Four O'clock are also poisonous to humans. Please be careful where you plant them if you have children. They are a beautiful annual plant growing from 2-3 feet high with a bushy growth form.

GARLIC: Plant near roses to repel aphids. Accumulates sulfur- a naturally occurring fungicide which will help in the garden with disease prevention. Garlic is systemic in action as it is taken up by the plants through their pores and when used as a soil drench is also taken up by the roots. Has value in offending cooling moths, Japanese beetles, root maggots, slugs, and carrot root fly. Researchers have observed that time-released garlic capsules planted at the bases of fruit trees actually kept deer away! Hey, worth a try! Concentrated garlic sprays have been observed to repel and kill whiteflies, aphids and fungus gnats among others with as little as a 6-8% concentration! It is safe for use on orchids too.

- **Try concentrated Garlic Barrier Insect Repellent:**

Geranium: -Repels cabbage worms and Japanese beetles, plant around grapes, roses, corn, and cabbage.

GOPHER PURGE: Deters gophers, and moles.

GRAPES: Hyssop is beneficial to grapes as are beans, peas, or blackberries. Keep radishes and cabbage away from grapes. Planting clover increases the soil fertility for grapes. Chives with grapes help repel aphids. Plant your vines under Elm or Mulberry trees!

HORSERADISH: Plant in containers in the potato patch to keep away Colorado potato bugs. There are some very effective insect sprays that can be made with the root. Use the bottomless pot method to keep horseradish contained. Also repels blister beetles. We have observed that the root can yield anti-fungal properties when a tea is made from it. (See: Horseradish: Disease)

HOREHOUND: (Marrubium Vulgare) like many varieties in the mint family, the many tiny flowers attract Braconid and Ichneumonid wasps, and Tachnid and Syrph flies. The larval forms of these insects parasitize or otherwise consume many other insects pests. It grows where many others fail to thrive and can survive harsh winters. Blooms over a long season, attracting beneficial insects almost as long as you are likely to need them. For best results use horehound directly as a companion plant. Stimulates and aids fruiting in tomatoes and peppers.

HYSSOP: Companion plant to cabbage and grapes, deters cabbage moths and flea beetles. Do not plant near radishes. Hyssop may be the number one preference among bees and some beekeepers rub the hive with it to encourage the bees to keep to their home. It is not as invasive as other members of the mint family making it safer for interplanting.

KELP: When used in a powder mixture or tea as a spray, this versatile sea herb will not only repel insects but feed the vegetables. In particular we have observed that kelp foliar sprays keep aphids and Japanese beetles away when used as a spray every 8 days before and during infestation times. If you have access to seaweed, use it as a mulch to keep slugs away.

LANTERN: This will repel potato bugs-- a big problem for many gardeners!

LARKSPUR: An annual member of the Delphinium family, larkspur will attract Japanese beetles. They dine and die! Larkspur is poisonous to humans too!

LAVENDER: Repels fleas and moths. Prolific flowering lavender nourishes many nectar feeding and beneficial insects. Use dried sprigs of lavender to repel moths. Start plants in winter from cuttings, setting out in spring.

LEEKS: Use leeks near carrots, celery and onions which will improve their growth. Leeks also repel carrot flies.

LEMON BALM: Sprinkle throughout the garden in an herbal powder mixture to deter many bugs. Lemon balm has citronella compounds that make this work: crush and rub the leaves on your skin to keep mosquitoes away! Use to ward off squash bugs!

LOVAGE: Improves flavor and health of most plants. Good habitat for ground beetles. A large plant, use one planted as a backdrop. Similar to celery in flavor.

MARGOLDS: (Calendula). Given a lot of credit as a pest deterrent. Keeps soil free of bad nematodes, supposed to discourage many insects. Plant freely throughout the garden. The margolds you choose must be a scented variety for them to work. One down side is that margolds do attract spider mites and slugs.

- French Marigold (*T. patula*) has roots that exude a substance which spreads in their immediate vicinity killing nematodes. For nematode control you want to plant dense areas of them. There have been some studies done that proved this nematode killing effect lasted for several years after the plants were! These marigolds also help to deter whiteflies when planted around tomatoes and can be used in greenhouses for the same purpose. Whiteflies hate the smell of marigolds.

- Mexican marigold (*T. minuta*) is the most powerful of the insect repelling marigolds and may also overwhelm weed roots such as bind weed! It is said to repel the Mexican bean beetle and wild bunnies! Be careful! It can have an herbicidal effect on some plants like beans and bhage.

MARJORAM: As a companion plant it improves the flavor of vegetables and herbs. Sweet marjoram is the most commonly grown type.

MELONS: Companions: Corn, pumpkin, radish and squash. Other suggested helpers for melons are as follows: Marigold deters beetles, nasturtium deters bugs and beetles.

Oregano provides general pest protection.

MINT: Deters white cabbage moths, ants, rodents, flea beetles, fleas, aphids and improves the health of cabbage and tomatoes. Use cuttings as a mulch around members of the brassica family. It attracts hoverflies and predatory wasps. Earthworms are quite attracted to mint plantings. Be careful where you plant it as mint is an incredibly invasive perennial. We have found that placing mint (fresh or dried) where mice are a problem is very effective in driving them off!

MOLE PLANTS: (castor bean plant) Deter moles and mice if planted here and there throughout the garden. Drop a seed of this in mole runs to drive them away. This is a poisonous plant. See *Moles*; *Critter Trouble*

MORNING GLORIES: They attract hoverflies. Plus if you want a fast growing annual vine to cover something up morning glory is an excellent choice.

Nasturtiums: Plant as a barrier around tomatoes, radishes, cabbage, cucumbers, and under fruit trees. Deters woolly aphids, whiteflies, squash bug, cucumber beetles and other pests of the cruciferbit family. Great trap crop for aphids (in particular the black aphids) which it does attract, especially the yellow flowering varieties. Likes poor soil with low moisture and no fertilizer. It has been the practice of some fruit growers that planting nasturtiums every year in the root zone of fruit trees allow the trees to take up the pungent odor of the plants and repel bugs. It has no taste effect on the fruit. A nice variety to grow is Alaska which has attractive green and white variegated leaves. The leaves, flowers and seeds are all edible and wonderful in salads!

Try our recipe for: Nasturtium Salad

NETTLES, STINGING: The flowers attract bees. Sprays made from these are rich in silica and calcium. Invigorating for plants and improves their disease resistance. Leaving the mixture to rot, it then makes an excellent liquid feed. Comfrey improves the liquid feed even more. Hairs on the nettles' leaves contain formic acid which "stings" you.

ONIONS: Planting chamomile with onions improves their flavor. Other companions are savory, carrot, leek, beets, kohlrabi, strawberries, brassicas, dill, lettuce and tomatoes. Inter cropping onions and leeks with your carrots confuses the carrot and onion flies! Onions planted with strawberries help the berries fight disease. Keep onions away from summer savory and peas.

OPAL BASIL: An annual herb that is pretty, tasty and said to repel hornworms!

OREGANO: Can be used with most crops but especially good for cabbage. Plant near broccoli, cabbage and cauliflower to repel cabbage butterfly and near cucumbers to repel cucumber beetle. Also benefits grapes.

PARSLEY: Plant among and sprinkle the leaves on tomatoes, and asparagus. Use as a tea to ward off asparagus beetles. Attracts hoverflies. Let some go to seed to attract the tiny parasitic wasps and hoverflies. Parsley increases the fragrance of roses when planted around their base. Rose problems? See *Rose Rx for answers*.

PEAS: Peas fix nitrogen in the soil. Plant next to corn and they will provide extra nitrogen. Corn is a heavy feeder so this is a great combination! Companions for peas are bush beans, Pole Beans, Carrots, Celery, Chicory, Corn Cucumber, Eggplant, Parsley, Early Potato, Radish, Spinach, Strawberry, Sweet pepper and Turnips. Do not plant peas with onions.

PEPPERMINT: Repels white cabbage moths, aphids and flea beetles. It is the menthol content in mints that acts as an insect repellent. Bees and other good guys love it.

PEPPERS, BELL (Sweet Peppers): Plant peppers near tomatoes, parsley, basil, and carrots. Onions make an excellent companion plant for peppers. They do quite well with okra as it shields them and protects the brittle stems from wind. Don't plant them near fennel or kohlrabi. They should also not be grown near apricot trees because a fungus that the pepper is prone to can cause a lot of harm to the apricot tree. Peppers can double as ornamentals, so tuck some into flowerbeds and borders. Harvesting tip: The traditional

bell pepper, for example, is harvested green, even though most varieties will mature red, orange, or yellow. Peppers can be harvested at any stage of growth, but their flavor doesn't fully develop until maturity.

PEPPERS, HOT: Chili peppers have root exudates that prevent root rot and other Fusarium diseases. Plant anywhere you have these problems. Teas made from hot peppers can be useful as insect sprays. Hot peppers like to be grouped with cucumbers, eggplant, escarole, tomato, okra, Swiss chard and squash. Herbs to plant near them include: basil, oregano, parsley and rosemary.

PENNYROYAL: Repels fleas. Many people are now using pennyroyal as an alternative lawn. The leaves when crushed and rubbed onto your skin will repel chiggers, flies, gnats, mosquitoes and ticks. Smells nice too!

PETUNIAS: They repel the asparagus beetle, leafhoppers, certain aphids, tomato worms, Mexican bean beetles and general garden pests. A good companion to tomatoes, but plant everywhere. The leaves can be used in a tea to make a potent bug spray.

POACHED EGG PLANT: Grow poached egg plant with tomatoes, they will attract hover flies and hover flies eat aphids.

POTATO: Companions for potatoes are bush bean, members of the cabbage family, carrot, celery, corn, dead nettle, flax, horseradish, marigold, peas, peonias, onion and Tagetes marigold. Protect them from scab by putting comfrey leaves in with your potato sets at planting time. Don't plant these around potatoes: cucumber, kohlrabi, parsnip, pumpkin, rutabaga, squash family, sunflower, turnip and fennel. Keep potatoes and tomatoes apart as they both can get early and late blight contaminating each other.

PURSPLANE: This edible weed makes good ground cover in the corn patch. Use the stems, leaves and seeds in stir-frys. Pickle the green seed pod for caper substitutes. If purslane is growing in your garden it means you have healthy, fertile soil!



RADISH: Companions for radishes are: radish beet, bush beans, pole beans, carrots, dill, cucumber, lettuce, melons, nasturtium, parsnip, peas, spinach and members of the squash family. Why plant radishes with your squash plants? Radishes may protect them from squash borers! Anything that will help keep them away is worth a try. Planting them around corn and letting them go to seed will also help.

fight corn borers. Chinese Dalkon and Snow Belle are favorites of flea beetles. Plant these at 6 to 12 inch intervals among cole crops. In one trial, this measurably reduced damage to broccoli. Keep radishes away from hyssop plants. **Planting an early row of radishes may lure flea beetles away from susceptible plants. For some good eating radishes try our delicious Purple Plum Radishes**

ROSEMARY: Companion plant to cabbage, beans, carrots and sage. Deters cabbage moths, bean beetles, and carrot flies. Use cuttings to place by the crowns of carrots for carrot flies. Zones 6 and colder can overwinter rosemary as houseplants or take cuttings.

RUE: Deters aphids, fish moths, flea beetle, onion maggot, slugs, snails, flies and Japanese beetles in roses and raspberries. Companions for rue are roses, fruits (in particular figs), raspberries and lavender. To make it even more effective with Japanese beetles: crush a few leaves to release the smell. Has helped repel cats for us. You should not plant rue near cucumbers, cabbage, basil or sage. A pretty perennial with bluish-gray leaves. May be grown indoors in a sunny window. Rue may cause skin irritation in some

individuals. **Kennedy:** See cats and dogs. **Rue spray.**

RYE: An excellent use of plant allelopathy is the use of mow-killed grain rye as a mulch. The allelochemicals that leach from the rye residue prevent weed germination but do not harm transplanted tomatoes, broccoli, or many other vegetables.

SAGE: Use as a companion plant with broccoli, cauliflower, rosemary, cabbage, and carrots to deter cabbage moths, beetles, black flea beetles and carrot flies. Do not plant near cucumbers, onions or rue. Sage repels cabbage moths and black flea beetles.

Allowing sage to flower will also attract many beneficial insects and the flowers are pretty. There are some very striking varieties of sage with variegated foliage that can be used for their ornamental as well as practical qualities. **More on sage.**

SOUTHERNWOOD: Plant with cabbage, and here and there in the garden. Wonderful lemony scent when crushed or brushed in passing. Roots easily from cuttings. Does not like fertilizer! It is a perennial that can get quite bushy. We have started to cut it back every spring and it comes back in not time. A delightful plant that is virtually pest free.

SOYBEANS: They add nitrogen to the soil making them a good companion to corn. They repel chinch bugs and Japanese beetles. Soybeans are so good for you! They are many ways to prepare them.

SOYASH: Companions: Corn, melon and pumpkin. Helpers: Borage deters worms, improves growth and flavor. Marigolds deters beetle. Nasturtium deters squash bugs and beetles. Oregano provides general pest protection

SUMMER SAVORY: Plant with beans and onions to improve growth and flavor. Discourages cabbage moths, Mexican bean beetles and black aphids. Honey bees love it.

SUNFLOWERS: Planting sunflowers with corn is said by some to increase the yield. Aphids a problem? Definitely plant a few sunflowers here and there in the garden. Step back and watch the ants herd the aphids onto them! We have been doing this for years and it is remarkable. The sunflowers are so tough that the aphids cause very little damage and we have nice seed heads for our birds to enjoy! Talk about a symbiotic relationship!



TANSY: Plant with fruit trees, roses and raspberries keeping in mind that it can be invasive and is not the most attractive of plants. Tansy which is often recommended as an ant repellent may only work on sugar type ants. These are the ones that you see on peonies and marching into the kitchen. At least for us placing tansy clippings by the greenhouse door has kept them out. Deters flying insects, Japanese beetles, striped cucumber beetles, squash bugs, ants and mice! Tie up and hang a bunch of tansy leaves indoors as a fly repellent. Use clippings as a mulch as needed. Don't be afraid to cut the plant up as tansy will bounce back from any abuse heaped on it! It is also a helpful addition to the compost pile with its high potassium content.

- **Tansy Warning:** You do not want to plant Tansy anywhere that livestock can feed on it as it is toxic to many animals. Do not let it go to seed either as it may germinate in livestock fields.

TARRAGON: Plant throughout the garden, not many pests like this one. Recommended to enhance growth and flavor of vegetables.

THYME: Deters cabbage worms. Woolly thyme makes a wonderful groundcover. You may want to use the upright form of thyme in the garden rather than the groundcover types. Thyme is easy to grow from seeds or cuttings. Older woody plants should be divided in spring.

TOMATOES: Tomato allies are: asparagus, basil, bean, members of the cabbage family, carrots, celery, chive, cucumber, garlic, head lettuce, marigold, mint, nasturtium, onion, parsley, pepper, marigold, pot marigold and sow thistle. Basil repels flies and mosquitoes, improves growth and flavor. Bee balm, chives and mint improve health and flavor. Borage deters tomato worm, improves growth and flavor. Dill, until mature, improves growth and health, mature dill retards tomato growth. Enemies: corn and tomato are attacked by the same worm. Kohlrabi stunts tomato growth. Keep potatoes and tomatoes apart as they both can get early and late blight contaminating each other.

WHITE GERANIUMS: These members of the pelargonium family draw Japanese beetles to feast on the foliage which in turn kills them.



WORMWOOD: Keeps animals out of the garden when planted as a border. An excellent deterrent to most insects. A tea made from wormwood will repel cabbage moths, slugs, snails, black flea beetles and fleas effectively. The two best varieties for making insect spray are Silver King and Powis Castle. Adversely Powis castle attracts ladybugs which in turn breed directly on the plant. Silver Mound is great as a border plant and the most toxic wormwood. Note: As wormwood actually produces a botanical poison do not use it directly on food crops.

See More on wormwood, for more details.
For insect spray: See wormwood spray

YARROW: Yarrow has insect repelling qualities and is an excellent natural fertilizer. A handful of yarrow leaves added to the compost pile really speeds things up. Try it! It also attracts predatory wasps and ladybugs to name just two. It may increase the essential oil content of herbs when planted among them. Yarrow has so many wonderful properties to it and is an ingredient in our own Golden Harvest Fertilizer.