
COMPANION PLANTING MADE EASY

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Text: Susan McClure
Plant-by-Plant Guide: Sally Roth
Gardening editor: Nancy Ondra
Project editor: Linda Hager
Copy editor: Susan Fox
Cover and book designer: Judy Ross
Interior illustrations: Frank Fretz

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Introduction

Wouldn't it be great if you could just plant your garden and forget it? Your plants would grow lush and healthy—without you adding lots of fertilizer or worrying about pest problems. Well, any kind of garden will need some care, but you *can*

encourage your plants to work together, sharing water and nutrients and protecting each other from pesky insects. *Companion Planting Made Easy* is your guide to using time-tested techniques for healthier plants, bigger harvests, and fewer pest problems.

How Does Companion Planting Work?

In the simplest terms, companion planting is the technique of combining two plants for a particular purpose. If your crops are regularly attacked by insects, you can use companions to hide, repel, or trap pests. Other companions provide food and shelter to attract and protect beneficial insects. And some plants grow well together just because they don't compete for light or rooting space. Expanding the diversity of your garden plantings and incorporating plants with particularly useful characteristics are both part of successful companion planting.

Creating Diversity

In contrast to the wide diversity of natural systems—like forests and prairies—our gardens and farms tend to contain neat, identical plant-

ings of just a few different plant species. These large groups of similar plants, called monocultures, are prime targets for insect and disease attack. Increasing the diversity of your garden plantings is a natural and effective way to avoid a monoculture and minimize pest and disease problems.

Technically, adding diversity could be as simple as increasing the number of different plants in your garden. Sounds simple—until you realize that you have a limited amount of room in your garden, which is taken up by your favorite crops. But, if you create a *planned* diversity, you can still have good (or even better) yields from the same amount of space.

For instance, instead of growing the same vegetable cultivars in the

same beds every year, try changing their positions each year, or at least try different cultivars. To get even more diversity, try open-pollinated seeds instead of hybrids. The plants from open-pollinated seed are all just a little different genetically, so even if pests or diseases attack some of the plants, the rest of the crop may be spared.

An easy and pleasant way to add diversity to the vegetable garden is to add flowering plants. Mix annual flowers and herbs in the beds or rows of vegetables, or create permanent beds nearby for perennials and bulbs. Besides looking good, flowers provide a source of food and shelter for spiders and beneficial insects that eat or parasitize plant pests.

Enriching the Soil

All plants withdraw some nutrients from the soil as they grow, but some actually return more nutrients than they consume. Legumes—plants like peas, beans, and clover—have a mutually beneficial relationship with nitrogen-fixing *Rhizobium* bacteria. These bacteria colonize legume roots, absorbing up to 20 percent of the sugars the plants produce. The bacteria use this energy to capture atmospheric nitrogen (nitrogen gas) and convert it into nitrogen compounds that plants can use.

Some of this nitrogen goes directly back to the host plant. Another part of the nitrogen trapped by the *Rhizobium* bacteria is released into

the soil as the nodule-bearing roots die off and decompose. This nitrogen is available during the season to boost the growth of any companion plants growing nearby. The big bonus comes when you turn the foliage and roots of the legumes into the soil. When they decay, they can release enough nitrogen to feed the next crop you grow.

Repelling Pest Insects

A key part of creating effective crop combinations is using the natural abilities of the plant to attract, confuse, or deter insects. Some plants produce repellent or toxic compounds that chase pests away or stop them from feeding. In other cases, the aromatic compounds released by plants can mask the scent of companion crops. Summer savory, for example, may help hide your bush beans from pests, while tansy is said to repel Colorado potato beetles from a potato planting. Garlic releases deterrent aromas into the air that may chase away insects such as bean beetles and potato bugs. Mint may keep cabbage loopers off cabbage plants, while basil can discourage tomato hornworms on tomatoes.

Try pungent plants as an edging around garden beds, or mix them in among your crops. Or, if you can't grow the repellents close enough to your crops, try spreading clippings of the scented plants over garden beds for the same effect.

Luring Pests from Crops

Some plants have an almost irresistible appeal for certain pests.

Nasturtiums, for instance, are an excellent attractant plant because they're a favorite of aphids.

Colorado potato beetles find black nightshade (*Solanum nigrum*) more alluring than even your best potato plants.

Attractant plants can protect your crops in two ways. First, they act as decoys to lure pests away from your desirable crops. Second, they make it easier to control the pests since the insects are concentrated on a few plants. Once pests are "trapped," you can pull out the attractant plants (cover them with paper or plastic bags first, if the pests are small or fast-moving) and destroy them along with the pests,

or apply some other type of control measure to the infested plants.

Sheltering Beneficial Insects

Not all insects are garden enemies. Many actually help your garden grow by eating or parasitizing plant pests. You can encourage these beneficial creatures to make a home in your garden by planting their favorite flowering plants. Growing dill, for example, can attract pest-eating spiders, lacewings, and parasitic wasps, which will help control caterpillars on cabbage, beetles on cucumbers, and aphids on lettuce. Plants that produce large quantities of easily accessible pollen and nectar—like yarrow, fennel, and goldenrod—provide shelter and supplemental food for hungry beneficials.



Getting Started with Companions

With so many possible plant combinations, it can be hard to know where to start. To increase your chances of success, try a companion planting scheme that has been found effective in scientific studies or that has the confirmation of a wide variety of gardeners from varying climates. As you gain confidence, you can branch out to try less-proven combinations.

You may want to start by selecting a companion for one of your favorite crops—tomatoes, for example. If you look up the “Tomato” entry on page 38, you’ll find recommendations for allies and

compatible companions, as well as helpful growing information. Use these suggestions as the basis for your trials.

Also, keep your eyes open for existing garden plants that you can use in your own companion planting experiments. Look closely at flowers around your yard to see which harbor a wealth of beneficial insects; you may want to plant more of these attractant plants. If you find a quick-growing weed or vegetable that is crawling with a bumper crop of pests, take note—it could make a good trap crop to lure pests away from your other plants.

Growing a Companion Garden

Caring for companion plantings isn’t very different from how you normally care for your garden. You still need to prepare the soil well, plant at the proper time, and water and fertilize as necessary.

Throughout the season, observe the performance of the companion plantings you’re testing. Keep a notebook where you can record the setup and the results of the trials. To

get the most out of companion planting, it’s often wise to try a combination at least twice; three times is even better. Then you can look at the overall performance of the combination and make an informed decision on whether it’s worth trying again. You’ll soon build a list of plants and techniques that will make your garden more productive and even easier to maintain.

Plant-by-Plant Guide

Asparagus
Asparagus officinalis
LILIACEAE

ALLIES: According to companion gardening lore, planting parsley or tomatoes with asparagus will invigorate both crops. Interplantings of parsley, tomatoes, and basil may discourage asparagus beetles. Many companion gardeners find that asparagus grows well planted near basil.

COMPANIONS: Interplant early crops, such as lettuce, beets, or spinach, between the rows in spring. In summer, add a late planting of lettuce and spinach where the ferny asparagus plants will provide some needed shade. In Colonial times,

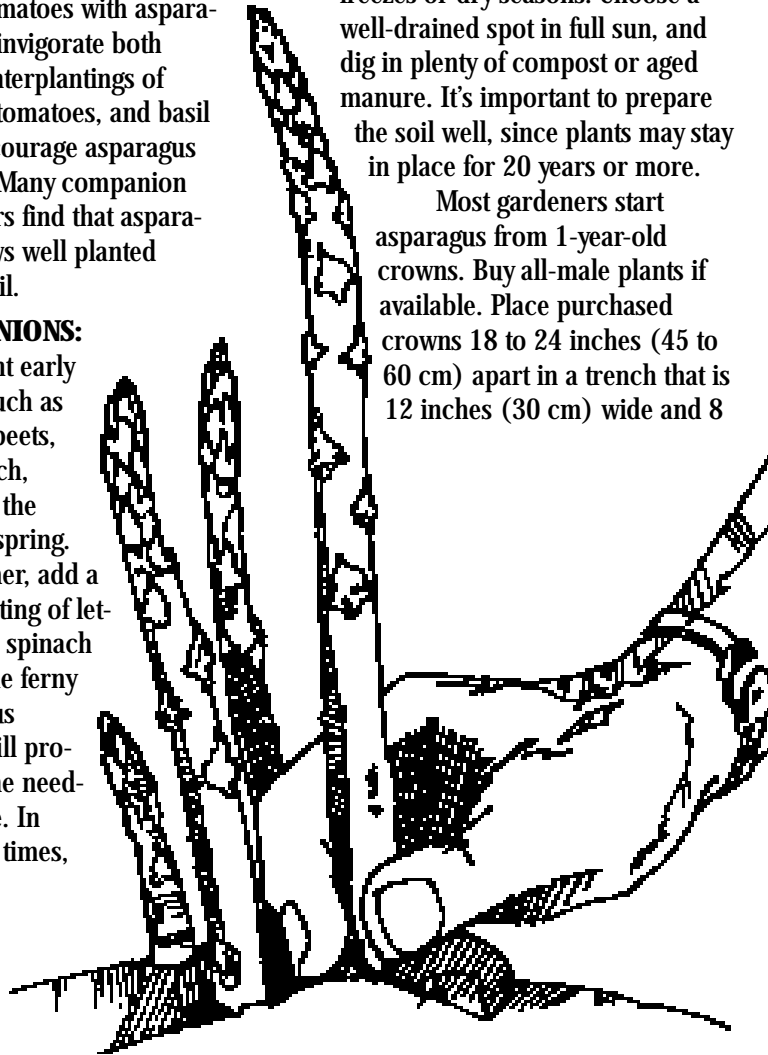
grapes were sometimes trellised between the asparagus rows.

ENEMIES: None known.

GROWING GUIDELINES:

Asparagus grows well in most areas that have either winter ground freezes or dry seasons. Choose a well-drained spot in full sun, and dig in plenty of compost or aged manure. It's important to prepare the soil well, since plants may stay in place for 20 years or more.

Most gardeners start asparagus from 1-year-old crowns. Buy all-male plants if available. Place purchased crowns 18 to 24 inches (45 to 60 cm) apart in a trench that is 12 inches (30 cm) wide and 8



inches (20 cm) deep. Allow 4 to 5 feet (1.2 to 1.5 m) between rows. Cover with 2 inches (5 cm) of soil. Add another 2 inches (5 cm) of soil every 2 weeks until the trench is filled. Mulch well and water regularly during the first 2 years after planting, and side-dress with compost or aged manure. Remove and destroy old foliage each spring to control pests and diseases. Wait to harvest your asparagus until the third spring after planting. Break spears off at soil level.

Basil
Ocimum basilicum
LABIATAE

ALLIES: Companion gardeners believe that basil improves the flavor and growth of tomatoes, perhaps because the plants are such good companions on the table. Some are also convinced that basil or basil sprays protect tomatoes from insects and disease, although this remains unproven by scientific research.

COMPANIONS: Basil is available in a variety of shapes and sizes, from neat, small mounds to large, branching plants. Low-growing, compact cultivars like 'Spicy Globe'

make a neat edging along flower borders. Purple-leaved cultivars like 'Purple Ruffles' are great in flower beds as well as in vegetable and herb gardens.

ENEMIES: Even in the 1600s, gardeners observed that rue and basil did not appear to be good neighbors. "Something is the matter," noted Nicholas Culpeper, in his *English Physitian and Complete Herball*. "This herb and rue will never grow together, no, nor near one another."

GROWING GUIDELINES: Basil is very sensitive to cold; wait until the weather and soil are warm before planting outdoors. Sow seed 1/8 inch (3 mm) deep in full sun, or set out transplants after all danger of frost has passed. Space plants 6 to 12 inches (15 to 30 cm) apart for small-leaved types such as 'Minimum' or 'Spicy Globe'; allow up to 1 1/2 feet (45 cm) between plants for larger cultivars such as 'Genova' or 'Piccolo Verde Fino'. Water and mulch to keep the soil evenly moist. Pinch or cut back flowering stems to keep the plant producing more leaves.

COMMENTS: Garden lore suggests that basil repels flies and mosquitoes: Try tucking a few stems into a bouquet on the patio table.

Bean
Phaseolus spp.
and other genera
LEGUMINOSAE

ALLIES: Companion gardeners maintain that interplanting tomatoes or corn with beans improves the growth and yields of both crops. Some recommend marigolds with beans to repel Mexican bean beetles. Scientific studies with marigolds show reduced beetle populations, but a border planting of French marigolds (*Tagetes patula*) negatively affected the beans' growth. Companion gardeners also suggest planting aromatic herbs such as winter or summer savory and rosemary to deter bean beetles.

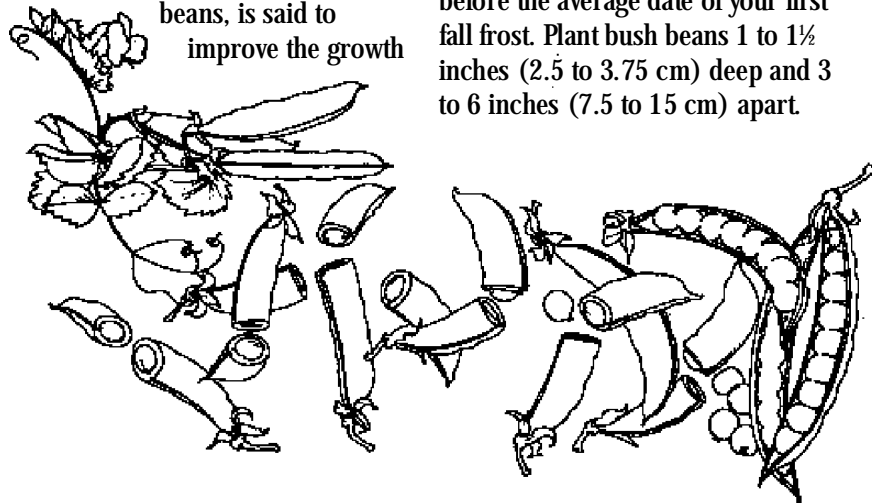
To help repel black aphids from beans, try intercropping bush beans with garlic, or grow nasturtiums as a trap crop. Summer savory, which goes well with cooked beans, is said to improve the growth

and flavor of growing beans as well. The beans provide food and shelter for many predatory and parasitic insects.

COMPANIONS: Climbing pole beans are good companions for corn; they help anchor the corn against wind and add nitrogen to the soil. Celery and cucumbers are a few good companions for interplanting.

ENEMIES: While some companion gardeners recommend interplanting garlic with beans to repel insects, others say that any member of the onion family, including garlic, shallots, and chives, will be detrimental to growth and yield.

GROWING GUIDELINES: Sow seed in average to fertile, well-drained soil in full sun. Start planting around 2 weeks after the last spring frost date, when the soil is warm (seeds will rot in cold, wet soil). Make successive plantings at 2- to 3-week intervals until 2 months before the average date of your first fall frost. Plant bush beans 1 to 1½ inches (2.5 to 3.75 cm) deep and 3 to 6 inches (7.5 to 15 cm) apart.



Sow pole beans 2 inches (5 cm) deep and 10 inches (25 cm) apart. Pick green beans while young; pick fresh shell beans when plump but tender. Leave dry beans on the plants until they rattle in the pod.

Beet
Beta vulgaris
CHENOPODIACEAE

ALLIES: Companion gardening lore holds that beets thrive in the company of cabbage and its relatives, as well as with onions; alternate beets in a row with onions or kohlrabi. Try companion plantings of mints (*Mentha* spp.) or catnip (*Nepeta cataria*) to ward off flea beetles.

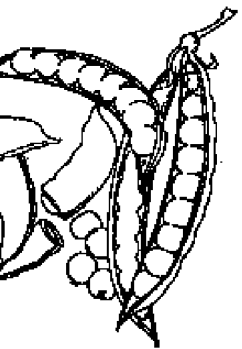
COMPANIONS: Plant in alternate rows with other crops, even those that grow tall. (Although beets prefer full sun, they also tolerate partial shade.) Beets have attractive red-veined leaves that also make a nice addition to ornamental plantings.

ENEMIES: Some companion gardeners believe that beets do poorly

when planted near pole beans or field mustard.

GROWING GUIDELINES: For best root development, beets need a sunny site with loose, fertile, well-drained soil that is free of rocks and stones. Sow seed 1 inch (2.5 cm) deep and 2 inches apart about a month before the last spring frost. Seedlings often come up in clumps; thin to stand 2 inches (5 cm) apart. Transplant the thinnings to fill bare spots, or enjoy them in salads. Harvest roots when small; pick tender leaves for cooked greens. Sow a fall crop in late summer.

COMMENTS: Leafminers and flea beetles are common pests, but usually cause only cosmetic damage and do not affect root yields. (If you are growing beets for their greens, floating row covers can help keep foliage pests away.) Larvae of beet moths have been controlled on sugar beets with a watered-down extract of the leaves of chestnut trees (*Castanea sativa*). Scientists believe the extract masks the chemical aura that attracts the moth to lay her eggs on the beet plants.



Broccoli
Brassica oleracea,
Botrytis group
CRUCIFERAE

ALLIES: Many companion gardeners believe that beans, celery, potatoes, and onions improve broccoli's growth and flavor. Aromatic herbs, including chamomile, dill, peppermint, rosemary, and sage, are also supposed to be beneficial to broccoli and its relatives by discouraging pests.

COMPANIONS: Broccoli needs a lot of calcium, so plant it with low-calcium feeders like beets, nasturtiums, marigolds, or sage. In rich, fertile soil, interplant broccoli with other cabbage-family members such as cabbage, cauliflower, collards, and kohlrabi, which share its heavy feeding habits. Underplant late-season broccoli with hairy vetch, a winter-hardy green manure that will live on to protect the soil after you harvest the broccoli.

ENEMIES: Many companion gardeners believe that broccoli and other cabbage-family plants are negatively affected by tomatoes. Some would add pole beans to that list, and others disagree about whether strawberries are good or bad neighbors. In scientific studies, decomposing residues of broccoli were found to have a toxic effect on lettuce seedlings. It's probably a good idea to remove and compost

decaying broccoli plants instead of turning them under.

GROWING GUIDELINES: Sow seed indoors, ½ inch (12 mm) deep and 2 inches (5 cm) apart, about 2 months before the last spring frost date. Set out seedlings or nursery-grown transplants about a month before the last frost date. Give them a site with fertile, well-drained soil and full sun. Space the young plants 12 to 24 inches (30 to 60 cm) apart. Sow a fall crop directly in the garden in July through August. Harvest the terminal bud while the florets are tightly budded and green. If you leave the stem in the ground, you can harvest smaller side buds as they develop. Broccoli and other cabbage-family plants are heavy feeders, so top-dress with compost or feed with fish emulsion every few weeks.

Cabbage
Brassica oleracea,
Capitata group
CRUCIFERAE

ALLIES: Many companion gardeners say cabbage grows better when planted with celery, onions, and potatoes, although no research has yet been done to prove or disprove the idea. Aromatic plants, including marigolds, nasturtiums, pennyroyal, peppermint, sage, and thyme, are a favorite in garden lore for their reputed insect-repellent powers;

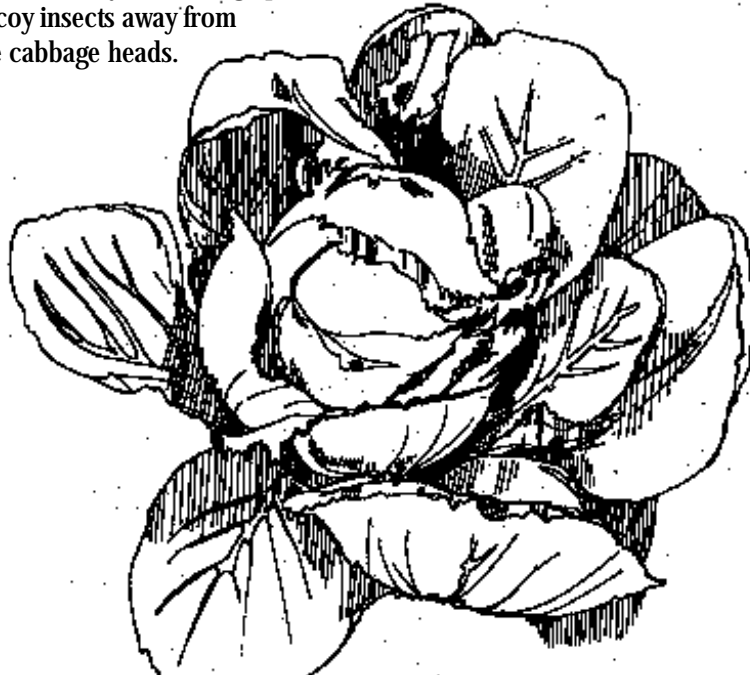
except for marigolds, however, they have shown no significant effects in scientific trials with cabbage. In fact, nasturtiums have been shown to actually attract cabbage flea beetles. Studies have shown that while marigolds do reduce flea beetles, they also apparently cause an allelopathic reaction that inhibits the growth of the cabbage.

Interplanting tomato rows with cabbage rows provided some protection from whiteflies and cabbage flea beetles in one study; researchers theorized that the smell of the tomatoes hid the smell of the cabbage. Clover, lettuce, and weeds also help protect from infestations by making the cabbage hard to find.

COMPANIONS: Try a border of kale around your cabbage patch to decoy insects away from the cabbage heads.

ENEMIES: Companion gardeners disagree about strawberries and cabbage as companions; some say the relationship is beneficial while others say it affects cabbage negatively.

GROWING GUIDELINES: Cabbage does best in cool weather. For the spring crop, sow seed indoors, ¼ inch (6 mm) deep, 8 to 10 weeks before the last spring frost date, or buy nursery-grown seedlings. Transplant to fertile, well-drained soil in full sun as soon as the soil can be worked, spacing plants 12 to 18 inches (30 to 45 cm) apart. Side-dress monthly with compost or rotted manure. Water evenly to prevent splitting. Harvest the heads when they are round and full.



Calendula
Calendula officinalis
COMPOSITAE

ALLIES: Some companion gardeners believe a border or interplanting of calendula protects plants against asparagus beetles, tomato hornworms, and other insects; this may be due to a masking effect or a repellent created by the pungent scent of its foliage. The brightly colored flowers attract beneficial insects, but the plant itself is beset by aphids, whiteflies, caterpillars, leafhoppers, and other pests; it may hold some as a trap crop. It is reputed to repel dogs when planted around shrubs and trees.

COMPANIONS: The cheerful flowers of calendula are a great accent for herb gardens and flower borders. This compact annual fits in easily with vegetable garden plantings.

ENEMIES: None known.

GROWING GUIDELINES: Calendula is easy to grow. Sow seed in early spring in average well-drained soil in full sun. Cut plants back to 3 inches (7.5 cm) after the first flush of bloom for color until frost, or sow again for fall blooms. Calendulas thrive in cool weather and keep blooming through the first light frosts. Let a few seed

heads stand for self-sown plants next spring.

COMMENTS: In olden days, gold-orange calendula petals were popular in cooking, and their inclusion in certain concoctions supposedly allowed the consumer to see fairies. On a more practical note, you can use the crushed, dried petals as a substitute for the coloring effect of saffron.



Carrot
Daucus carota
var. *sativa*
UMBELLIFERAE

ALLIES: Companion gardeners say that interplanted radishes, peas, or sage can improve the flavor of carrots. Some believe that onions, leeks, and rosemary, perhaps because of their strong scent, repel root maggot flies. Interplanting with onions may also help repel carrot rust flies, a problem in Northwest gardens.

COMPANIONS: These light feeders grow well in company with most other garden vegetables.

ENEMIES: Folklore suggests that dill and anise cause poor growth in carrots.

GROWING GUIDELINES: Plant in full sun in deep, loose soil free of rocks. Start sowing about 3 weeks before the average date of the last spring frost. Sow about six of the

tiny seeds to each inch (2.5 cm), in rows 1 foot (30 cm) apart, and cover lightly with fine soil or a sprinkling of sand. Water gently with a fine mist to avoid washing out seeds. Carrots germinate in about 2 to 3 weeks. When tops reach 1 to 2 inches (2.5 to 5 cm), thin plants to stand 1 inch (2.5 cm) apart. Thin again to 4 inches (10 cm) apart in another 2 weeks, so that roots have plenty of room to grow. Make successive sowings every 3 weeks through the season until 3 months before the first fall frost for a continuous crop of young, tender carrots. Water before harvesting to soften the soil, and pull by hand to avoid damaging the roots.

COMMENTS: If nematodes are a problem in your patch, causing little knots along roots and a stunted crop, plant the bed with French marigolds (*Tagetes patula*) the year before sowing carrots. Till the marigolds into the soil at the end of the growing season.

Chives
Allium schoenoprasum
AMARYLLIDACEAE

ALLIES: Companion gardeners recommend chives to improve growth and flavor of carrots, grapes, roses, and tomatoes. Some suggest that a ring of chives around an apple tree may inhibit the growth of apple scab (possibly by affecting the spores carried on dropped leaves); others say chives ward off Japanese beetles or black spot in roses. No scientific studies have been conducted to confirm these reports.

COMPANIONS: Chives are too pretty to keep in the vegetable garden alone. Use them for a neat and attractive border planting, punctuate the corners or centers of herb beds with their spiky form, or weave a few clumps into the perennial border.

ENEMIES: Some companion gardeners believe that chives inhibit the growth of beans or peas.

GROWING GUIDELINES: Seeds require darkness to germinate. Sow a generous amount of seeds in each peat pot indoors. Cover the tray of pots with a piece of newspaper or cardboard, then be patient—they are slow to sprout. Transplant the young clumps, pot and all, to a sunny spot in average, well-drained soil. Space clumps 18 inches (45 cm) apart. Harvest leaves by cutting them off at ground level when they

reach 6 inches (15 cm) tall. Pinch off spent flowers to prevent plants from reseeding.

COMMENTS: Some companion gardeners recommend a spray of chives processed with water in a blender to deter mildew on cucurbits and gooseberries or black spot on roses. In the kitchen, snip fresh leaves into pieces and freeze in zippered plastic bags for a ready source of seasoning in the winter.

Corn
Zea mays
GRAMINEAE

ALLIES: The benefit of planting corn with beans has been upheld by scientific research, which showed increased yields when corn was grown with a legume. Beans and corn are mutually beneficial: Beans help keep fall armyworms in check on corn, while corn minimizes leafhoppers on bean plants. Alternate rows of corn and bush beans, two rows of corn to one of beans. Or plant pole beans to climb corn stalks.

COMPANIONS: Sunflower borders were a tradition in American Indian gardens. British research indicates that strips of sunflowers alternated with corn will increase yields and decrease infestations of fall armyworms. Squash and pumpkins do well in the shade of the corn rows.



ENEMIES: The weed quack grass (*Agropyron repens*) appears to make nitrogen and potassium unavailable to corn, even when the area is heavily fertilized. Leached toxins from wheat-straw mulch reduced corn yields in farm research by 44 to 94 percent.

GROWING GUIDELINES: Plan your rotations so that heavy-feeding corn follows a nitrogen-boosting crop of beans, alfalfa, or clover. Sow seed after all danger of frost has passed and soil is warm. Plant in blocks to assure good pollination, interplanting with single rows of beans if desired.

Plant four seeds at a time: “One for the blackbird, one for the crow, and that leaves just two to grow,” in the words of an old prairie homily. Sow seed 1 inch (2.5 cm) deep, and space the groups 12 to 15 inches (30 to 37.5 cm) apart, in rows or in hills of soil. Thin to two plants per group if needed. Side-dress with organic fertilizer when plants are 6 inches (15 cm) tall and again when they are knee-high. Start checking your corn for ripeness about three weeks after the silks appear. Press a fingernail against one of the kernels; if the sap looks milky, it’s time to harvest.

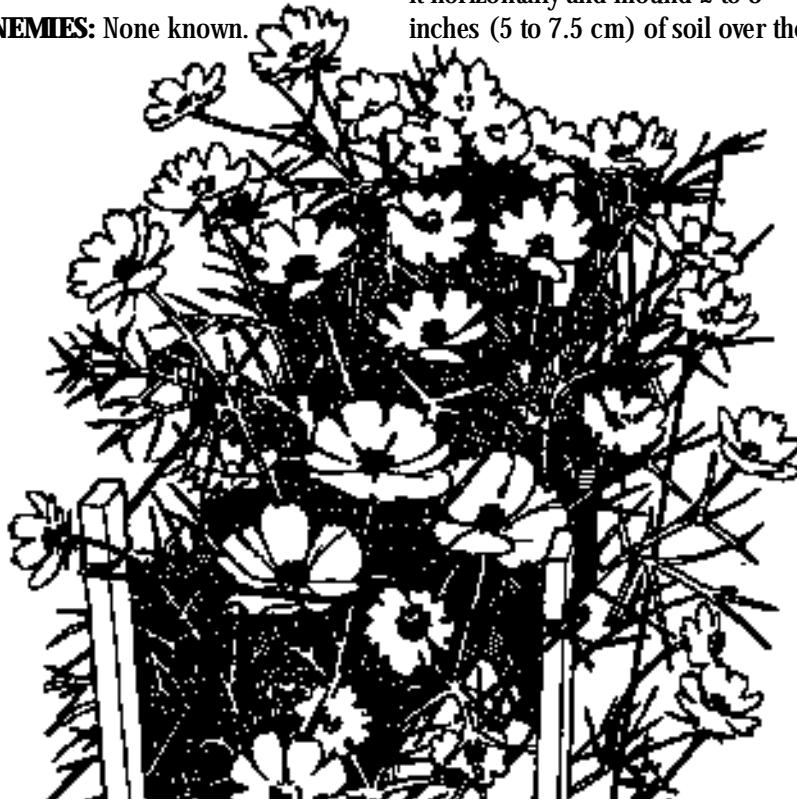
Cosmos
Cosmos spp.
COMPOSITAE

ALLIES: None known.

COMPANIONS: The flat daisy-like flowers of cosmos make a good landing platform for honeybees and beneficial insects seeking nectar or pollen. Plant either *Cosmos bipinnatus*, the old-fashioned, ferny-foliaged plant with pink, red, and white flowers, or *C. sulphureus*, the hot-colored, shorter type. The abundant foliage offers shelter to predatory insects.

ENEMIES: None known.

GROWING GUIDELINES: Cosmos are easy to grow from seed and easy to transplant, even when quite large. After danger of frost has passed, direct-sow seed $\frac{1}{4}$ inch (6 mm) deep in average, well-drained soil in full sun. Thin seedlings to stand about 3 inches (7.5 cm) apart, and pinch them when young and single-stemmed to encourage bushiness and branching. *C. bipinnatus* grows fast and lush, and it occasionally falls over from its own weight, snapping a heavy branch of buds or bloom. To salvage the plant, stick the broken end of the branch into the ground a few inches deep, or lay it horizontally and mound 2 to 3 inches (5 to 7.5 cm) of soil over the



stem. Keep the soil wet while new roots form from the stem. It will recover in less than a week.

COMMENTS: Both types of cosmos are beautiful in bouquets. Try a few stems of orange 'Klondike' blooms, buds, and spiky seed heads in a green vase for an arrangement of almost oriental simplicity.

Cosmos is also an excellent plant for attracting birds to the garden. Goldfinches are particularly fond of the seeds and often hang upside down, feasting on them from the tips of branches bowed beneath their weight.

Cucumber

Cucumis sativus
CUCURBITACEAE

ALLIES: Cucumbers are reputed to grow better and yield more when planted with beans, cabbage, corn, peas, or radishes. Some companion gardeners believe that radishes lure away cucumber beetles or that pungent-smelling marigolds repel them. Radishes and onions are supposed to keep away root maggots. Research has shown that cucumbers interplanted with broccoli or corn are less likely to be ravaged by cucumber beetles or affected by the bacterial wilt the beetles carry. Some studies show that some types of cucumber inhibit weed growth. Spiny amaranth (*Amaranthus spinosus*) plants standing among

cucumbers will serve as a trap crop for black cutworms.

COMPANIONS: Interplant trellised cucumbers with lettuce, celery, or Chinese cabbage, all of which grow well in the light shade of the vines. Or grow cucumbers with cabbage, broccoli, or cauliflower; by the time the cucumbers begin to sprawl, the earlier crops should be ready for harvesting.

ENEMIES: Potatoes growing near cucumbers are reputed to be more susceptible to Phytophthora blight. Companion gardeners also warn that aromatic herbs and cucumbers do not make good neighbors.

GROWING GUIDELINES: Grow cucumbers in hills or rows in fertile, well-drained soil in full sun. Sow seed ½ inch deep, or set out transplants 3 weeks after the last spring frost date, when soil has warmed. Thin or space plants to stand 12 inches (30 cm) apart. Water regularly to keep the soil evenly moist and help prevent bitter fruit. Apply an organic fertilizer, like fish emulsion, monthly.

Grow cucumbers on vertical trellises to save precious gardening space and make harvesting easier. Keep cucumbers picked regularly, before they yellow, to encourage the vines to keep producing.

COMMENTS: If diseases are a problem in your area, select disease-resistant cultivars such as 'Marketmore 76' or 'Sweet Slice'.

Dill
Anethum graveolens
UMBELLIFERAE

ALLIES: Dill is a useful plant in the companion garden, thanks to its big, airy umbels of many tiny flowers. Mud daubers and other large predatory wasps, as well as many smaller beneficials, visit the flowers regularly and may return to your garden when they need caterpillars to feed their young. Companion gardeners say that dill improves the growth and health of cabbage and related crops. It's also reputed to repel aphids and spider mites, most likely because of its aroma. Dill may be effective as a trap crop for thick, green tomato hornworms. Handpick the pests, or pull and destroy infested crops. (Don't destroy caterpillars with little white cocoons on their backs, though; these have been parasitized by beneficial wasps.)

COMPANIONS: Sow dill with lettuce, onions, or cucumbers; the plants' habits complement each other well.

ENEMIES: Many growers are convinced that dill reduces the yield of carrots. This belief may be rooted in the fact that both plants are susceptible to some of the same diseases. Some companion gardeners believe that

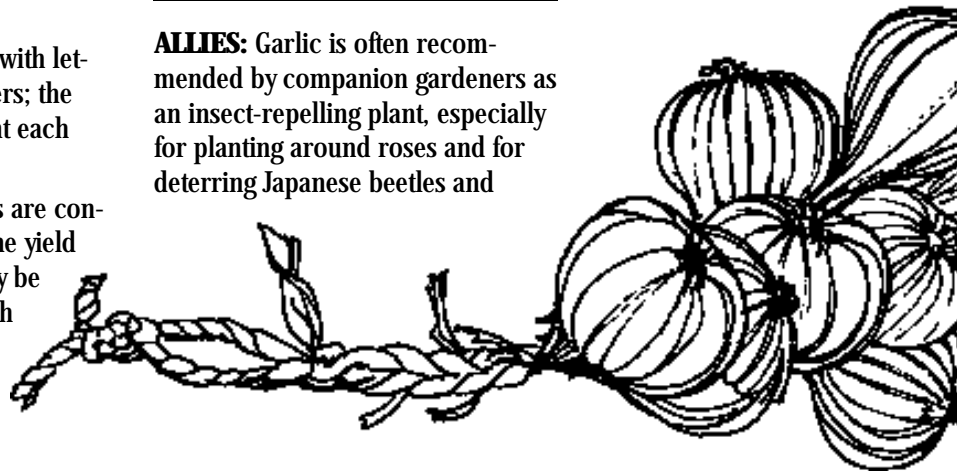
tomatoes planted near dill will fail to thrive.

GROWING GUIDELINES: Dill can be temperamental about germinating. It sprouts better in cool rather than hot weather. Sow seed ¼ inch (6 mm) deep and 4 inches (10 cm) apart in spring in average, well-drained soil in full sun. Thin seedlings to stand 8 to 12 inches (20 to 30 cm) apart. Sow every 2 weeks for a continuous supply. Once you have a thriving dill patch, chances are you'll have it for years; it self-sows liberally.

COMMENTS: Don't be alarmed by an infestation of green-black-and-yellow caterpillars on your dill. Let the creatures feed; they'll turn into graceful black swallowtail butterflies.

Garlic
Allium sativum
AMARYLLIDACEAE

ALLIES: Garlic is often recommended by companion gardeners as an insect-repelling plant, especially for planting around roses and for deterring Japanese beetles and



aphids. Science has proven insecticidal qualities of garlic sprays, but its effectiveness as a companion plant in the garden is unconfirmed.

COMPANIONS: Plant garlic between tomatoes, eggplants, or cabbage plants, or use as a border planting.

ENEMIES: Garlic, like onions, is said to have a negative effect on peas, beans, and other legumes.

GROWING GUIDELINES: Plant garlic in fall, around Columbus Day, for a vigorous crop. Garlic needs a chilling period for best growth, and fall-planted bulbs will benefit from the winter cold. The bulbs will put out a few roots before winter, but green shoots usually won't appear until spring.

Some supermarket bulbs are treated with antisprouting chemicals, but others will yield a perfectly acceptable garlic crop. Each bulb

contains a number of individual cloves; plant them one by one to mature into fat bulbs. Give garlic a site with loose, rich soil in full sun. Plant cloves 2 inches (5 cm) deep and 4 inches (10 cm) apart. Mulch to keep weeds down, and water during dry spells.

A 20-foot (6 m) row will yield 5 to 10 pounds (2.5 to 5 kg) of garlic. Timing the harvest is a little tricky: too early and bulbs will be small; too late and the outer skin may tear, making the bulbs store poorly. Wait until leaves begin to turn brown, then check the status of one head before you harvest the whole crop. Hang bulbs by the leaves to dry, or weave them into a braid.

COMMENTS: Garlic oil is a proven insecticide and may have some effect on fungal or bacterial diseases.



Geranium
Pelargonium spp.
GERANIACEAE

ALLIES: The pungent foliage of flowering and scented geraniums is appealing to companion gardeners but not to garden pests. The showy flowering types of geranium are reputed to repel cabbageworms, corn earworms, and Japanese beetles. The scented ones are thought to deter red spider mites and cotton aphids. Some companion gardeners believe that white-flowered scented geraniums are effective as a trap crop for Japanese beetles; handpick the beetles from the leaves.

COMPANIONS: Interplant flowering or scented geraniums with vegetables—especially among cabbage and its relatives—or use as a border to the vegetable garden. Plant white- or pink-flowering geraniums around roses for a pretty (and possibly pest-controlling) combination.

ENEMIES: None known.

GROWING GUIDELINES: Geraniums are easy to start from cuttings; some types will also grow from seed. Grow plants in full sun in lean to average, well-drained soil. Remove spent flowers on seed-grown plants to encourage more blooms. In frost-free climates, geraniums are perennial; elsewhere, take cuttings in late summer or pot up plants when frost threatens and bring indoors to overwinter. Plants

grow tall and crooked with age, an appealing look to some companion gardeners but not to others. To reclaim an old plant, cut the stems back to short stubs; this will encourage vigorous new growth. Pot up the cuttings to get more plants.

COMMENTS: The dense, leafy growth provides welcome hiding places for insect predators, especially spiders. Scented types add appealing texture to ornamental beds. Try the rose-scented 'Grey Lady Plymouth', with lacy, gray-green leaves delicately edged in white and pink, or peppermint geranium, with large, wide velvety leaves. Keep a pot of scented geraniums near walkways, where passers-by will brush against the foliage and release the fragrance.

Lettuce
Lactuca sativa
COMPOSITAE

ALLIES: Many companion gardeners maintain that lettuce grows best when planted near or with strawberries, carrots, cucumbers, cabbage-family crops, and beets. Companion gardening tradition recommends planting lettuce with radishes for the mutual benefit of both crops.

COMPANIONS: Plant lettuce below and around taller vegetables, such as cabbage, broccoli, and beans, or edge a bed with it. Interplant rows



of leaf lettuce with rows of beans, peas, and tomatoes.

ENEMIES: None known.

GROWING GUIDELINES: Lettuce thrives in fertile, well-drained but moisture-retentive soil with plenty of organic matter. Sow seed in full sun as early as you can work the soil. Plant lettuce in rows, or broadcast the tiny seeds over a small patch. Sow as evenly as possible. Thin ruthlessly; you can always eat the thinnings. Allow 12 to 16 inches (30 to 40 cm) between plants for heading types; space plants 6 to 8 inches (15 to 20 cm) apart for leafy types. Water regularly to keep plants growing well, and side-dress with manure tea for rapid growth. Make a second and third planting 2 weeks apart to extend your lettuce harvest

well into the summer. In areas with hot summers, look for heat-resistant cultivars such as 'Mantilia', 'Grand Rapids', and 'Summer Bibb'. Plant summer lettuce in the shade of bean trellises or other tall plants.

Harvest lettuce in the morning, when it is the most juicy and crispy. Pick leaf lettuce as needed. Press down on heading types to check for the springy firmness that indicates the head is ready to harvest. When plants start to elongate and send up a flowering stalk, the leaves become too bitter to enjoy.

COMMENTS: If you have the space, leave a row of lettuce to flower and set seed. Lettuce flowers attract a multitude of insects, including beneficials; birds relish the seeds.

Marigold
Tagetes spp.
COMPOSITAE

ALLIES: Marigolds have acquired a large body of companion gardening lore surrounding their reputed insect-repelling qualities.

Companion gardeners suggest planting them with cabbage, potatoes, tomatoes, and roses, insisting that the pungently scented plants control aphids, cabbage loopers, imported cabbageworms, Mexican bean beetles, and nematodes. Only a few of the claims are backed up by scientific research, and sometimes the results are contradictory. In addition, marigolds appear to have an allelopathic effect on some neighbors. In one study, French marigolds (*Tagetes patula*) repelled Mexican bean beetles, but the growth of the beans was stunted, apparently by the presence of the marigolds. Nematode studies are more definitive, showing a decrease in population in at least five species of nematodes. Spectacular nematode control resulted when marigolds were interplanted with tomatoes.

COMPANIONS: Due to the possible allelopathic effects, it's probably best to plant marigolds and vegetables in separate beds. Grow the marigolds as a cover crop and turn them into the soil at the end of the season.

ENEMIES: Marigolds appear to be allelopathic to beans and vegetables of the cabbage family.

GROWING GUIDELINES: Sow seed in lean to average soil with full sun after the last frost, or start with purchased plants. Space them 12 to 24 inches (30 to 60 cm) apart. Pinch off spent flowers to promote bushy growth and more flowers. At the end of the season, let a few seed heads mature and save the seed for next year.

COMMENTS: Mulches of marigold leaves have been effective in suppressing nematodes; root mulches are also repellent. These findings suggest that you might be better off tossing pulled-up marigolds on the garden rather than on the compost pile.

Mint
Mentha spp.
LABIATAE

ALLIES: These strong-smelling plants are favorites with companion gardeners who believe that the sharp fragrance repels insect pests. Some believe that mint also improves the vigor and flavor of cabbage and tomatoes.

COMPANIONS: Mint is notoriously invasive, so don't allow it free rein in your garden. If you want to grow mint around your crops, plant it in pots and set the pots near the plants

you want to protect. Place a saucer beneath the pot to prevent the roots from creeping into the garden soil. Some low-growing mints, such as pennyroyal, are not as rampant as taller apple mint, spearmint, and other species.

ENEMIES: None known.

GROWING GUIDELINES: Grow mint in average soil in full sun or partial shade. Extra moisture will encourage more vigorous growth. Buy plants or beg a cutting from a friend or neighbor to start your patch; mint cuttings are extremely easy to root. Lay the clipping horizontally on the surface of average to lean soil in full sun,

and cover it in a few places with about ½ inch (12 mm) of patted-down soil. Keep the soil moist until vigorous new growth appears, usually in just a few weeks. Seed-grown mint may or may not have a strong scent; rub a leaf and sniff before buying potted garden-center mints to make sure you are getting what you want. Even a young seedling should have a strong, distinctive smell of peppermint, spearmint, or whatever it is being sold as.

COMMENTS: Spearmint and peppermint, some say, will repel ants on plants or in the kitchen. Lay a fresh sprig in drawers and on shelves. Mints may also help protect woolens from moth damage.



Nasturtium
Tropaeolum majus
TROPAEOLACEAE

ALLIES: Companion gardeners recommend nasturtiums as a trap crop for aphids; pull up and destroy the infested plants. Nasturtiums are also said to deter pests—including whiteflies—from beans, cabbage and its relatives, and cucumbers. Some companion gardeners plant nasturtiums where they will later plant their squash, hoping to keep squash bugs away. Scientific trials show conflicting evidence. In some tests, pests are reduced; in others, the nasturtiums had no effect, or worse, appeared to draw pests to the garden. It's worth conducting your own field trials.

COMPANIONS: Nasturtiums are available in compact or trailing forms. They flower well in poor soil and tend to produce more leaves than flowers if you plant them in the rich soil of the vegetable garden. Trailing types are pretty in a window box with marigolds and other annuals.

ENEMIES: None known.

GROWING GUIDELINES: Nasturtiums grow and flower best in average to poor soil. Plant seed ½ inch (12 mm) deep in full sun in well-drained soil after danger of frost has passed. Thin or space plants to stand 6 to 12 inches (15 to 30 cm) apart. Mulching and watering will

encourage blooms during hot weather.

COMMENTS: The colorful, spurred flowers attract hummingbirds. They are also a charming and flavorful garnish for salads.

Onion
Allium cepa
AMARYLLIDACEAE

ALLIES: Some gardeners believe that onions thrive with cabbage, beets, strawberries, and lettuce. Summer savory planted nearby is said to improve their flavor. Onions interplanted with potatoes are believed to deter Colorado potato beetles. Some companion gardeners plant onions with carrots to fend off carrot rust flies that cause root maggots, and many plant onions around rose bushes to deter pests.

COMPANIONS: Shallow-rooted, narrow-growing onions are easy to squeeze in anywhere in the garden. Interplant them with annual or perennial vegetables or use as borders to edge a bed.

ENEMIES: Peas, beans, and sage are the traditional bad neighbors for onions.

GROWING GUIDELINES: Use bulbs, or “sets”, for interplanting—they are easy to pop into the ground, singly or in handfuls, wherever you want them. Many companion gardeners plant sets one by one,

pointed-side up, but if you are sowing a lot of onions for eating green and don't mind crooked stems, you can simply pour the sets from the bag into the row. Cover them with 1 inch (2.5 cm) of soil and firm the surface; the new shoots will right themselves.

When onion tops yellow, knock them over. Dig the bulbs when the tops turn brown. Dry them in the sun in rows, laying the first row in one direction and the next row in the opposite direction. Lay the tops of the second row over the bulbs of the first row to prevent sunscald. When skins are completely dry, wipe off the soil, remove the tops, and store the bulbs in a cool, airy spot. You can also keep the dried tops on and braid the onions for storage.

COMMENTS: Select a cultivar best suited to your gardening climate and season length; check seed catalogs for recommendations.



Parsley
Petroselinum crispum
UMBELLIFERAE

ALLIES: Many companion gardeners are convinced that parsley repels asparagus beetles. Others believe that parsley reduces carrot rust flies and beetles on roses. Interplanted parsley may also help invigorate tomatoes.

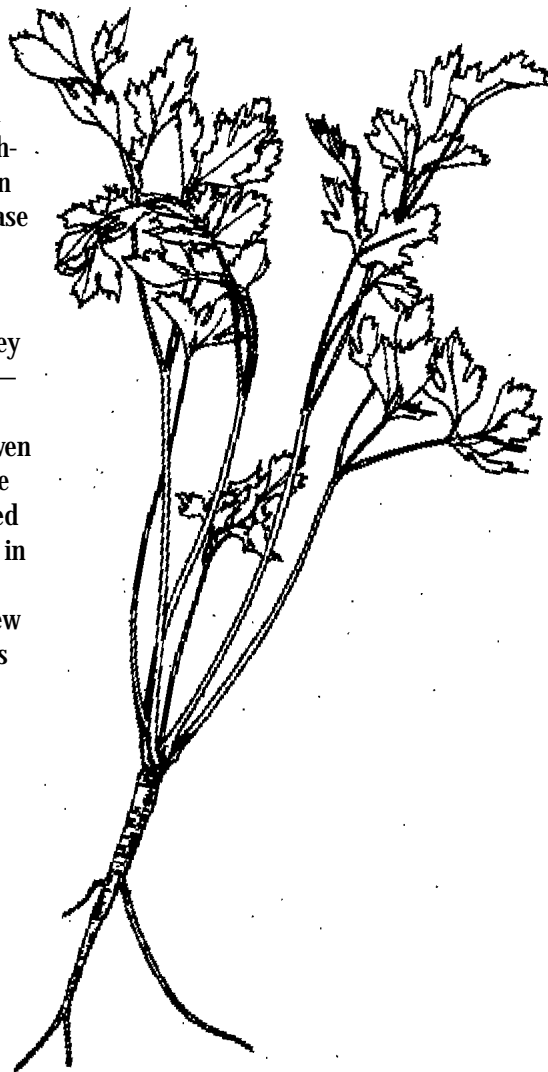
COMPANIONS: Rosettes of dark green parsley add a neat, old-fashioned touch to all kinds of garden beds. Plant parsley around the base of roses.

ENEMIES: None known.

GROWING GUIDELINES: Parsley is notoriously slow to germinate—according to an old homily, the seeds go to the devil and back seven times before breaking through the soil. Buy young plants, or sow seed shallowly in spring. Grow parsley in full sun or light shade in well-drained, average soil. After the new plant is established, harvest sprigs as needed. Parsley blooms in its second year and sometimes self-sows if you let a few seed heads stand.

COMMENTS: Dried parsley quickly loses flavor. Save a

winter's worth of this versatile herb by chopping and freezing in zippered plastic bags. In order to attract beneficial insects to the garden, let a few plants flower and go to seed. Tiny parasitic wasps are especially fond of the very small flowers, which are clustered together in umbels.



Pea
Pisum sativum
LEGUMINOSAE

ALLIES: Companion gardeners believe this nitrogen-fixing legume stimulates the growth of corn, beans, potatoes, tomatoes, radishes, carrots, turnips, and cucumbers. Scientific research indicates that exudates from the roots of cabbage-family crops may help prevent pea root rot.

COMPANIONS: Grow tomatoes, eggplants, lettuce, or spinach in the shade of trellised pea plants. The pea vines also protect these tender crops from wind damage. Alternate rows of peas with shade-tolerant Chinese cabbage.

ENEMIES: Onions and garlic are reputed to have a negative effect on the growth of peas.

GROWING GUIDELINES: Peas thrive in average, well-drained soil

in full sun. Sow seed 1 inch (2.5 cm) deep in early spring, up to 2 months before the last expected frost. Some gardeners start peas indoors in individual peat pots. Thin or space plants to stand 3 inches (7.5 cm) apart. Mulch to control weeds and keep the soil evenly moist. Give plants a trellis to climb, or let short-vining cultivars trail on the ground. After you harvest an early crop of peas, remove the vines and plant squash, beans, or other crops to utilize the space.

COMMENTS: A weedy garden may improve your pea crop. Researchers found that white mustard shelters a parasite of pea aphids, and weeds also provide an egg-laying site for hover flies, which parasitize aphids and other soft-bodied pests.

Pea greens are an oriental delicacy. Plant an extra row of peas and leave them unthinned to supply your kitchen with these tasty, delicate greens.



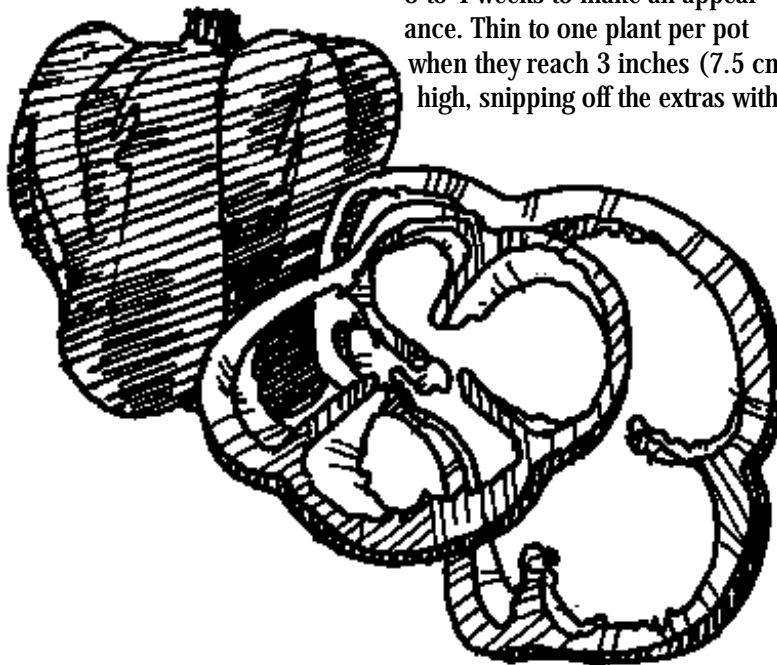
Pepper
Capsicum frutescens,
Grossum group
SOLANACEAE

ALLIES: Companion gardeners recommend planting peppers with carrots and onions for vigorous growth and good flavor. Basil, lovage, marjoram, and oregano are also said to stimulate their growth. Gardeners in India use marigolds to protect peppers and other crops from nematodes. Scientific studies indicate marigolds are effective in reducing aphids on peppers; other strong-smelling plants, such as coriander, catnip, onions, nasturtiums, and tansy, may have the same effect.

COMPANIONS: Plant peppers with okra for protection from sun and wind damage. They often drop their blossoms in temperatures over 90°F (32°C); keep them cool by growing with taller plants that will provide some shade during the hottest part of the day.

ENEMIES: Some companion gardeners keep kohlrabi and fennel away from pepper plants. It's best to keep peppers away from beans; both are susceptible to anthracnose, a disease that causes dark, soft spots on fruits.

GROWING GUIDELINES: Buy nursery-grown seedlings, or start seed indoors in peat pots 8 weeks before the last spring frost. Seeds are slow to germinate, often waiting 3 to 4 weeks to make an appearance. Thin to one plant per pot when they reach 3 inches (7.5 cm) high, snipping off the extras with a



pair of small scissors. Transplant to fertile, well-drained soil in full sun, 2 to 3 weeks after the last spring frost. Space plants 1½ to 2 feet (45 to 60 cm) apart; hot peppers tolerate closer spacing than sweet peppers. Mulch to maintain even moisture, and water during dry spells to prevent bitterness. A dose of fish emulsion when plants are in flower can help increase yields. Sweet peppers turn from green to red, yellow, or purple as they mature, getting sweeter with the color change; pick at any stage. Hot peppers also change color when it's time to pick.

Potato
Solanum tuberosum
SOLANACEAE

ALLIES: Many companion gardeners recommend planting potatoes with beans, cabbage, corn, or horseradish for improved growth and flavor. They also often recommend marigolds to ward off pests and sometimes plant eggplants as a trap crop for Colorado potato beetles. Tests at the Rodale Research Center in Pennsylvania with plantings of catnip, coriander, nasturtium, and tansy resulted in a slightly reduced infestation of beetle larvae. According to one study, tomato-family weeds such as jimson weed and nightshade attract female Colorado potato

beetles away from the crop to lay their eggs on the weeds, especially when the weeds are growing upwind.

COMPANIONS: Plant lettuce, radishes, and green onions with potatoes; they mature long before the tuber crop is ready to dig.

ENEMIES: Companion gardeners say potatoes may be more susceptible to blight if grown near raspberries, pumpkins, tomatoes, squash, cucumbers, and sunflowers.

GROWING GUIDELINES: Potatoes thrive in loose, fertile, well-drained soil in full sun. Cut whole potatoes into pieces, each with two or three “eyes” (growing points), and let them dry for a day before planting. Plant the pieces as soon as you can work the soil, spacing them 6 to 12 inches (15 to 30 cm) apart and 4 inches (10 cm) deep. As the vines grow, pull soil over the developing tubers to prevent them from turning green, or cover them with compost, leaves, or straw. Some companion gardeners grow potatoes in cages; fill the cage with straw as the plants grow, leaving only 3 to 4 inches (7.5 to 10 cm) of leaves exposed.

Blossoms are a sign that new potatoes are ready to harvest. Uncover a layer and pluck off tubers that are big enough to eat; cover the rest. When the tops of the plants begin to die back, it's harvest time.

Rose
Rosa spp.
ROSACEAE

ALLIES: Alliums—including garlic, onions, leeks, and chives—are reputed to protect roses against black spot, mildew, and aphids. Parsley is said to repel rose beetles. Some companion gardeners suggest that strongly aromatic herbs may also repel aphids.

COMPANIONS: You can grow roses in a bed of their own, or weave them into perennial beds and borders. Use shrub types, such as disease-resistant rugosa roses (*Rosa rugosa*), for hedges or barriers or to provide food and shelter for wildlife. Low-growing plants, such as creeping thyme or sweet alyssum, make attractive ground-covers beneath rose bushes; these small-flowered plants may also attract beneficials to protect roses.

ENEMIES: As with all members of the rose family, never plant a new

rose in an old rose's "grave": Disease pathogens or allelopathic substances that hinder the growth of a new plant of the same genus may be lurking in the soil.

GROWING GUIDELINES: Roses need at least 6 hours of sun each day, and they must have excellent drainage. They do best in fertile soil enriched with humus or other organic material. In most climates, fall is the best time for planting bareroot roses. (You can plant bareroot roses in winter in very mild climates; spring is a better time in areas with very cold winters.) Plant container-grown roses anytime during the growing season. Dig the hole deep enough so the graft union—the scar on the stem that indicates where the rose has been budded onto its rootstock—is at or just below the soil surface. Trim canes back to 8 inches (20 cm), and mulch plants with compost. After the first hard frost, prune roses back halfway, and mulch deeply with loose leaves or coarse



compost, mounding it around the canes. Prune off and destroy any diseased leaves or branches.

Rosemary
Rosmarinus officinalis
LABIATAE

ALLIES: Rosemary is popular as a companion for cabbage, broccoli, and related crops, as well as carrots and onions. Its fragrance is said to repel insects; companion gardeners use it for cabbage flies, root maggot flies, and other flying pests.

COMPANIONS: Gardeners in warm climates—especially the Pacific Southwest, where rosemary reaches shrub proportions—can enjoy this attractive, aromatic plant as a hedge or border. Prostrate types make beautiful groundcovers for stony banks or streetside rock gardens. Rosemary is a natural addition to

herb gardens. The small flowers will attract many bees.

ENEMIES: None known.

GROWING GUIDELINES: Grow from cuttings or buy a started plant. This tender perennial often won't survive the winter in areas colder than Zone 7. Use as a pot plant in Northern gardens, or plant it out during summer and pot up cuttings for overwintering. In containers or in the garden, rosemary thrives on heat. Plant in full sun in average, well-drained soil. Never allow container plantings to dry out; rosemary does not recover from severe wilting.

COMMENTS: Rosemary has also won favor as a defense against clothes moths. Banckes wrote in his *Herbal*: "Take the flowers and put them in thy chest among thy clothes or among thy Bookes and Mothes shall not destroy them."

Sage
Salvia officinalis
LABIATAE

ALLIES: Many companion gardeners believe that sage improves the growth and flavor of cabbage, carrots, strawberries, and tomatoes. They also believe that it deters cabbage-family pests such as imported cabbageworms and root maggot flies. In one study, cabbageworms were not reduced by companion plantings with sage; another study of sage spray revealed some effectiveness in controlling the pest. Sage is also thought to grow well with marjoram.

COMPANIONS: The plentiful, usually blue, flowers of this perennial herb are attractive to bees and other insects, including beneficials. Use sage as a border planting, or dot the plants among annual or perennial vegetables; they grow to an appreciable size in just one season. Sage is an attractive plant for a steep, dry bank. Purple-leaved or tricolored cultivars work well in combination with the usual gray-leaved sage.

ENEMIES: Sage is thought to stunt the growth of cucumbers. Many companion gardeners believe that sage and rue make poor neighbors. Long ago, people believed that sage and onions had a negative effect on each other in the garden.

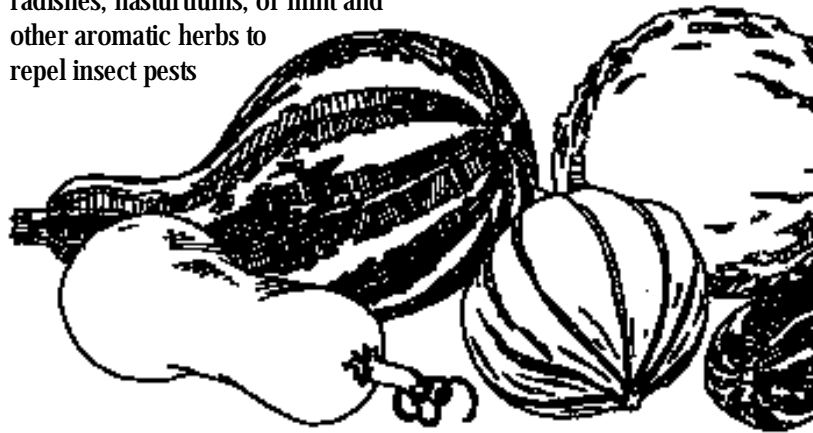
GROWING GUIDELINES: Sage needs full sun and average, well-

drained soil. Sow seed shallowly indoors in late winter or outdoors in late spring. Space plants about 24 inches (60 cm) apart. Trim back drastically in early spring to encourage vigorous, bushy new growth. Plants may decline after several years; take cuttings or divide in spring or fall to have a steady supply.

COMMENTS: A branch of strongly aromatic sage is a fragrant addition to a sweater drawer or blanket chest, and it may help keep clothes moths away. Herbalists recommend the herb for increasing longevity—and for keeping your mind sharp.

Squash
Cucurbita spp.
CUCURBITACEAE

ALLIES: Squash, one of the American Indians' "three sisters," is traditionally grown with corn and beans. Some companion gardeners recommend a nearby planting of radishes, nasturtiums, or mint and other aromatic herbs to repel insect pests



such as squash bugs. Studies at the Rodale test gardens have shown a possible reduction of squash bugs on zucchini paired with catnip or tansy.

COMPANIONS: Summer squash, such as crookneck and zucchini, grow on bushy, nonvining plants. Winter squash, such as acorn, butternut, and Hubbard, produce very long vines. Plant both kinds with corn. Tall sunflowers are another suitable companion crop.

ENEMIES: Gardening lore suggests that squash plants may inhibit the growth of potatoes.

GROWING GUIDELINES: Squash thrives in fertile, well-drained soil in full sun. After the last frost, plant seed 1 inch (2.5 cm) deep when the soil has warmed. Space summer squash 1 to 2 feet (30 to 60 cm) apart; winter, 2 to 4 feet (60 to 120

cm) apart. You can also grow winter squash up sturdy trellises to save space; suspend ripening fruits in a panty-hose sling. Water with fish emulsion every 3 to 4 weeks. Mulch with straw to keep the soil moist. Gently guide straying vines back where they belong.

Summer squash fruits grow fast. Pick them every few days, while they are still young and tender, to keep the plant producing. Harvest winter squash when the shell is too hard to dent with a fingernail. Let winter squash cure in the sun for 10 to 14 days; cover if frost is expected.

COMMENTS: Squash are susceptible to various pests and ailments that can cause serious damage. Watch for signs of trouble, like wilting vines, which can indicate squash borers or bacterial wilt; destroy infected plants.



Sunflower
Helianthus annuus
COMPOSITAE

ALLIES: None known.

COMPANIONS: Sunflowers are commonly planted with corn, beans, and squash. Plant a strip of tall-growing sunflowers between plantings of popcorn and sweet corn to block wind-borne pollen that could cross-pollinate the crops.

ENEMIES: Research is turning up strong evidence of allelopathy in sunflowers, in both wild types and cultivars. Wild sunflowers, a common crop weed, have been shown to inhibit or prevent the growth of many species of plants. Field and laboratory studies show that cultivated types can be equally detrimental to some of their neighbors. Just how significant the effect is in the home garden has yet to be determined. Most home companion gardeners notice no detrimental effects from the plants; some claim that the sunflower hulls dropped from bird feeders inhibit plant growth around the base of the feeder.

GROWING GUIDELINES: Sunflowers couldn't be simpler to grow. They thrive in average soil in full sun. In spring, after danger of frost has passed, push a seed ½ inch (12 mm) deep into the soil every 6 inches (15 cm); thin to 18 to 24 inches (45 to 60 cm) apart. You

can transplant the thinnings. Plants are drought-tolerant, but mulching and regular watering will encourage larger seed heads.

COMMENTS: Before you cross sunflowers off your companion list, do a little experimenting yourself. Most research has been done on the sunflower's effect on weeds, such as jimson weed, velvetleaf, Johnson grass, and others, not on home garden crops.

If you enjoy growing sunflowers for their blooms, plant a variety of colors, and be sure to grow extras for cutting. 'Lemon Gem' has black seeds and sulfur yellow petals; other cultivars, including 'Autumn Beauty', 'Music Box Mix', and 'Velvet Queen', offer russets, burgundy, or yellow blotched with brown.

Thyme
Thymus spp.
LABIATAE

ALLIES: Companion gardeners recommend planting thyme with just about everything in the garden; this herb is said to improve flavor and repel pests. Eggplants, cabbage, potatoes, and tomatoes are often mentioned as companions. Scientific evidence is sparse; in one study, the presence of thyme appeared to increase the population of cabbageworms on neighboring plants. Another study suggests that thyme sprays may be more effective

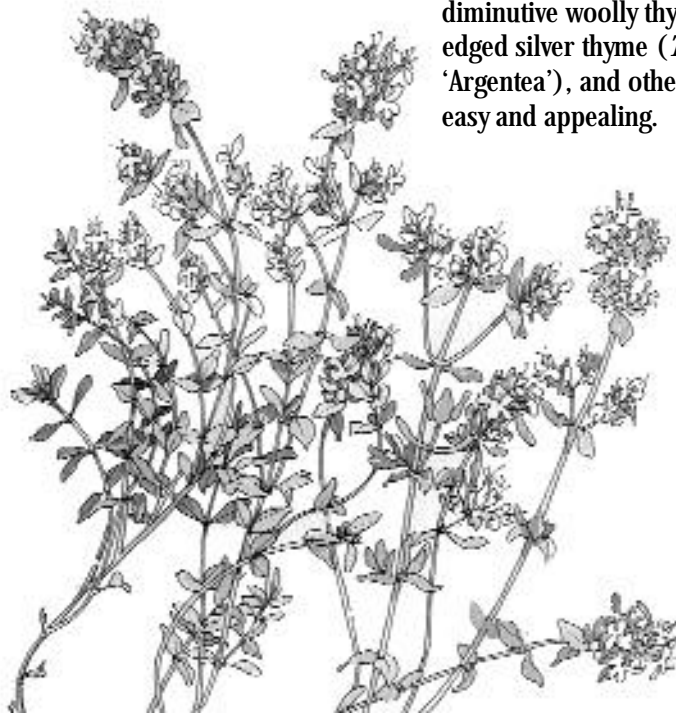
at masking plants from pests that seek hosts by smell.

COMPANIONS: Grow only non-spreading types of this herb in the vegetable garden. Common thyme (*Thymus vulgaris*), an upright, shrubby type, is a good choice for interplanting with vegetables. Spreading, mat-forming thymes, such as the popular woolly thyme (*T. pseudolanuginosus*), the rapidly creeping nutmeg thyme (*T. herbabarona* 'Nutmeg'), and many others, are best kept in separate beds or in the herb and flower garden. Delicately pretty in leaf and flower, a carpet of thyme makes a beautiful underplanting for roses.

ENEMIES: None known.

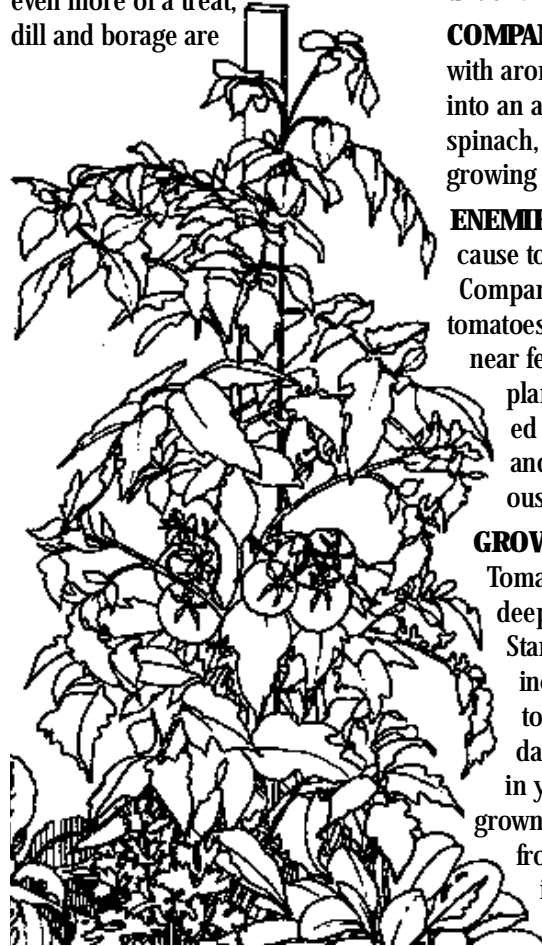
GROWING GUIDELINES: Thyme thrives in poor to average, well-drained soil in full sun. Common thyme is easy to grow from seed sown shallowly indoors in late winter. Sprinkle the seed generously into pots. Buy other species and cultivars as plants from garden centers. Cuttings are extremely easy to root. Layering is also a good way to create more plants; simply nudge a bit of soil over a low-growing branch and anchor with a stone. Sever the rooted plant from the mother when it begins producing vigorous growth and resists a slight tug. Divide older plants in spring.

COMMENTS: A sampler garden of thymes, including yellow-edged lemon thyme (*T. x citriodorus*), diminutive woolly thyme, white-edged silver thyme (*T. x citriodorus* 'Argentea'), and other favorites, is easy and appealing.



Tomato
Lycopersicon
esculentum
SOLANACEAE

ALLIES: Companion gardeners plant tomatoes with asparagus, broccoli, cauliflower, cabbages, carrots, and onions, hoping for improved growth and flavor. Aromatic basil, parsley, and sage are also supposed to make tomatoes even more of a treat; dill and borage are



said to deter hornworms. In one study, intercropping tomatoes with plants of the cabbage family resulted in reduced populations of diamond-back moths and flea beetles in the cabbage-family crops.

Gardeners often interplant marigolds with tomatoes to control nematodes, but studies indicate that the best way to control nematodes—if they are indeed a problem in your garden—is to plant a whole bed of marigolds, then turn it under and follow it with tomatoes.

COMPANIONS: Surround tomatoes with aromatic herbs, or plant them into an already-growing bed of spinach, lettuce, or other fast-growing crops.

ENEMIES: Black walnut roots cause tomato plants to wilt and die. Companion gardeners believe that tomatoes fail to thrive when planted near fennel or potatoes. Avoid planting tomatoes where related plants, such as eggplants and potatoes, grew the previous 2 years.

GROWING GUIDELINES:

Tomatoes thrive in full sun in deep, fertile, well-drained soil. Start plants from seed sown $\frac{1}{4}$ inch (6 mm) deep indoors, 5 to 6 weeks before the average date of the last expected frost in your area. Or, buy nursery-grown plants. After all danger of frost has passed, set plants out in the garden; make the hole deep enough so soil

covers the stem up to the bottom leaves. Space them 12 to 24 inches (30 to 60 cm) apart if you plan to cage or trellis the plants; allow 36 to 48 inches (90 to 120 cm) between plants if you plan to let them sprawl. Mulch with compost in midsummer, and water once with fish emulsion when plants are in bloom.

Zinnia
Zinnia elegans
COMPOSITAE

ALLIES: Zinnias attract insects of all kinds to the garden with their bright flowers and bushy foliage. Nectar-seeking wasps and hover flies are two of the beneficials that come to the feast. Zinnias also attract butterflies of many species, from small coppery metalmarks to big, showy swallowtails.

COMPANIONS: Zinnias are outstanding plants for beds, borders, and containers. These rewarding, gaily colored annuals bloom prolifically from summer until frost. Interplant in the vegetable garden to

add a dash of color. Be sure to grow a few rows just for cutting; cut flowers stay fresh for over a week with no special treatment.

ENEMIES: None known.

GROWING GUIDELINES: Zinnias thrive in full sun in average, well-drained soil and are at their best in hot summer weather. They are among the quickest and easiest annuals you can grow from seed. Direct-sow $\frac{1}{4}$ inch (6 mm) deep in spring after danger of frost has passed. Deadhead regularly to keep the flowers coming. Powdery mildew often causes dusty white spots on the foliage. Antidesiccant sprays may help protect leaves. Or, look for resistant species and cultivars, such as *Zinnia angustifolia*.

COMMENTS: Let some plants go to seed to attract goldfinches and other seed eaters to the garden. Easy-to-grow zinnias are a great way to introduce children to the pleasures of growing flowers. Young gardeners are particularly enchanted by peppermint-striped cultivars and extra-small miniatures, such as 'Thumbelina'.