

## Companion Planting

This is a cultural system where two or more plants are grown in close proximity in order that they may provide some form of benefit to one or all of them. This could be to deter or act as a decoy for pests and diseases, or improve growth and flavour. Usually it is the aromatic foliage or flowers of the companion plant which deters the pest or draws it away.

- The improvement in growth or flavour is probably due to the companion plant adding some of the micronutrients or the roots may support microorganisms which improve their uptake. In the case of legumes they fix nitrogen, and White Clover is included in some grass seed mixes, for this reason - it is also drought resistant so 'greens up' quicker than grass when used in lawns.
- Some plants exude protective chemicals (allelochemicals) from their roots or foliage which can deter pests, eg. African Marigolds produce thiopene which repels nematodes so it makes a good companion plant for root crops which are attacked by nematodes. This is given the title Allelopathy.
- Tall plants can provide shelter for lower-growing ones and create a microclimate allowing them to thrive where they may not normally grow. This may also protect them from pests
- Beneficial insects can be attracted to a cropping area by planting something which they use as a food nearby, eg. adult Hover Flies feed on nectar, but their larvae feed on aphids so planting nectar-rich flowering plants will attract them.

Marigolds and Garlic have a reputation for repelling a number of insect pests such as Aphids and Carrot Root Flies. The Mexican Marigold, *Tagetes minuta* or Muster-John-Henry, is an annual which grows to about 1.2 m (the species name refers to the flowers not the height of the plant) The roots have an insecticidal effect on nematodes and some effect on keeled slugs. The secretions responsible begin about 3 months after sowing and also affect the growth of Ground-elder (*Aegopodium podagraria*), Bindweed (*Convolvulus arvensis*), Couch grass (*Agropyron repens*), Lesser Celandine (*Ranunculus ficaria*) and Ground Ivy (*Glechoma hederacea*). It is grown as a half-hardy annual which can be planted out after the risk of frost has passed, but this does not usually give them a long enough growth period to flower and set seed in Britain. Deadheading prolongs the growth for protection purposes.

CROP	COMPANION PLANTS	INCOMPATIBLE WITH
Asparagus	Tomato, Parsley, Basil	
Beans	Most Vegetables & Herbs	
Beans, Broad	Potato, Cucumber, Maize, Strawberry, Celery, Summer Savory	Onion
Beans, Runner	Maize, Summer Savory, Radish	Onion, Beets, Kohlrabi, Sunflower
Cabbage Family	Aromatic Herbs, Celery, Beetroot, Onion Family, Chamomile, Spinach, Chard	Dill, Strawberries, Runner Beans, Tomato
Carrots	Pea, Lettuce, Rosemary, Onion Family, Sage, Tomato	
Celery	Onion & Cabbage Families, Tomato, Broad Beans, Nasturtium	Dill
Cucumber	Beans, Maize, Pea, Sunflowers, Radish	Potato, Aromatic Herbs
Aubergine (Eggplant)	Broad Beans, Marigold	
Lettuce	Carrot, Radish, Strawberry, Cucumber	
Maize (Corn)	Potato, Broad Beans, Pea, Pumpkin, Cucumber,	Tomato

	Squash	
Melon	Maize, Nasturtium, Radish,	
Onion Family	Beetroot, Carrot, Lettuce, Cabbage Family	Beans, Peas
Parsley	Tomato, Asparagus	
Peas	Carrots, Radish, Turnip, Cucumber, Maize, Beans	Onion Family, Gladiolus, Potato
Potato	Beans, Maize, Cabbage Family, Marigolds, Horseradish	Pumpkin, Squash, Tomato, Cucumber, Sunflower
Pumpkins	Maize, Marigold	Potato
Radish	Pea, Nasturtium, Lettuce, Cucumber	Hyssop
Spinach	Strawberry, Cauliflower, Celery	
Squash	Nasturtium, Maize, Marigold	Potato
Strawberry	Broad Beans, Lettuce, Onion, Spinach	Cabbage
Tomato	Basil, Onion Family, Nasturtium, Marigold, Asparagus, Carrot, Parsley, Cucumber, Mint	Potato, Fennel, Cabbage Family
Turnip	Pea	Potato

This is a table of herbs which can be used to repel insects and the plants they can be used to protect. The final column gives the plants for which they are bad companions and some other points of note.

HERB	COMPANION FOR	PESTS REPELLED	INCOMPATIBILITIES
Allium (Onion Family)	vegetables, fruit trees	aphids, carrot flies, moles, tree borers, and weevils	peas and beans
Angelica ( <i>Angelica archangelica</i> )			Dill
Basil ( <i>Ocimum basilicum</i> )	Tomatoes	Flies, Mosquitoes	Rue
Bay leaves	beans or grains	weevils and moths	
Borage ( <i>Borago officinalis</i> )	Tomatoes, Squash, Strawberries	Tomato Worm	
Caper Spurge or Mole Plant ( <i>Euphorbia lathyris</i> )		Moles and Mice	poisonous, irritant milky sap
Caraway ( <i>Carum carvi</i> )	Good for loosening the soil.		Avoid Dill
Castor Oil Plant ( <i>Ricinus communis</i> ).		Moles	seeds extremely poisonous
Catnip ( <i>Nepeta cataria</i> )	Aubergine	Flea Beetle, Ants	
Chamomile ( <i>Chamaemilum nobile</i> )	Cabbage, Onion		
Coriander ( <i>Coriandrum sativum</i> )	all vegetables	Aphids	attracts Bees
Chervil ( <i>Anthriscus cerefolium</i> )	Radish		

Chives ( <i>Allium schoenoprasum</i> )	Carrots	Root Flies	
Dill ( <i>Anethum graveolens</i> )	Cabbage		Carrots and Caraway
Fennel ( <i>Foeniculum vulgare</i> )			Most plants
Feverfew ( <i>Chrysanthemum parthenium</i> syn. <i>Tanacetum parthenium</i> )	Roses	attracts Aphids away	seeds freely
Garlic	Roses, Raspberries	Aphids	
Henbit ( <i>Lamium amplexicaule</i> )		General Insect Repellent	
Hyssop ( <i>Hyssopus officinalis</i> )	Cabbage, Grapes	Cabbage White Butterflies	Dislikes Radishes
Lavender ( <i>Lavandula angustifolia</i> )		Moths - make sachet with southernwood, wormwood and rosemary, use in doors	
Marigolds ( <i>Tagetes sp.</i> ) most have aromatic foliage	Good companion to most plants	Nematodes, Aphids and others	
Mexican marigold ( <i>Tagetes minuta</i> ), Muster-John-Henry		Good insect repellent, inhibits ground-elder and some other weeds	
Mint ( <i>Mentha sp.</i> )	Cabbage, Tomatoes	Cabbage White Butterflies, Aphids, Flea Beetles	invasive roots
Mustard ( <i>Brassica juncea</i> )	cabbage, cauliflower, radish, brussel sprouts, turnips, and kohlrabi	a trap crop to attract many insect pests	
Nasturtium ( <i>Tropaeolum majus</i> )	Radishes, Cabbage, Squashes and Pumpkims, fruit trees	Aphids, Squash Bugs, Striped Pumpkin Beetle	
Oregano ( <i>Origanum vulgare</i> )	Brassicas	Cabbage Butterflies	
Pennyroyal ( <i>Mentha pulegium</i> )	Roses	Flies, Mosquitoes, Fleas, others	invasive roots
Petunia ( <i>Petunia hybrida</i> )	Beans		
Pot Marigold ( <i>Calendula officinalis</i> )	Tomatoes	Tomato Worm, Asparagus Beetles, Whitefly	
Pyrethrums ( <i>Chrysanthemum cinaerifolium</i> )		Dried flower heads make an insecticide.	

Rosemary ( <i>Rosmarinus officinalis</i> )	Cabbage, Beans, Carrots, Sage	Cabbage Butterflies, Bean Beetle, Carrot Fly	
Rue ( <i>Ruta graveolens</i> )	Roses and Raspberries	Japanese Beetles	Dislikes Sweet Basil
Sage ( <i>Salvia officinalis</i> )	Rosemary, Cabbage, Carrots	Cabbage Moth, Carrot Fly, Flea Beetle, Slugs	Dislikes Cucumbers
Southernwood ( <i>Artemisia abrotanum</i> )	Cabbages	Cabbage Butterflies	
Summer Savory ( <i>Satureia hortensis</i> )	Beans	Bean Beetles	
Tansy ( <i>Tanacetum vulgare</i> )	Fruit Trees, Roses, Raspberries	Flying Insects, Japanese Beetles, Striped Cucumber Beetles, Squash Bugs, Ants, Flies	
Thyme ( <i>Thymus vulgaris</i> )	Cabbage	Cabbage Worm	
Wormwood ( <i>Artemisia absinthium</i> )		Moths, Slugs, Carrot Fly. Plant at boundaries to keep animals out of the garden.	Fresh material will stunt growth of young plants, use dried sprigs
Yarrow ( <i>Achillea millefolium</i> )	Plant near aromatic herbs to enhance production of essential oils.	Attracts Hover Flies and their larvae prey on Aphids	