

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

CROP:	COMPANIONS:	INCOMPATIBLE:
Amaranth	Corn, Onion, Potato	Brassica
Artichokes, Cardoon	Brassicas, Cucumbers, and Prostrate Cucurbits	Potatoes
Asparagus	Basil, Cilantro, Parsley, Tomato, Comfrey	Alliums
Basil	Most Vegetables	Rue
Beans	Most Vegetables, Herbs, Marigolds	Allium, Gladiolus
Beans, Bush	Irish Potato, Cucumber, Corn, Strawberry, Celery, Summer Savory	Allium
Beans, Pole	Corn, Marigolds, Summer Savory, Radish	Allium, Beets, Kohlrabi, Sunflower
Beets, Chard	Brassicas, Alliums, Lettuce	Pole Beans
Blackberries	Grapes, Tansy	Raspberries
Blueberries	Clover, Strawberries, Yarrow	Tomatoes
Borage	Squash, Strawberries, Tomatoes	
Cabbage Family (Brassicas)	Allium, Aromatic Herbs, Beets, Celery, Chamomile, Chard, Clover, Spinach	Dill, Pole Beans, Strawberries, Tomato
Carrots, Parsnip	Allium, English Pea, Lettuce, Rosemary, Sage, Tomato	Dill, Fennel
Celery	Allium & Brassicas, Bush Beans, Nasturtium, Tomato	
Corn	Beans, Cucumber, English Pea, Irish Potato, Pumpkin, Squash	Tomato
Cowpea	Beans, Carrots, Corn, Cucumbers, Radishes, Turnips	Garlic, Onions, Potatoes
Cucumber	Beans, Cabbage, Corn, English Pea, Radish, Sunflowers	Aromatic Herbs, Irish Potato
Eggplant	Basil, Beans, Catnip, Lemon Grass, Marigold	
Fennel	Nothing	Everything
Ginger	Basil, Tomatoes	
Gourds	Corn, Sunflowers	
Grapes	Basil, Beans, Chives, Clovers, Mustard, Oregano, Peas	Cabbage
Lettuce	Carrot, Cucumber, Radish, Strawberry	
Melons	Amaranth, Beans, Chamomile, Corn	Brassicas
Onion (Allium)	Beets, Brassicas, Carrot, Lettuce, Summer Savory	
Okra	Peppers, Squash, Sweet Potatoes	Beans, English Peas
Parsley	Asparagus, Tomato	
Pea, English	Carrots, Radish, Turnip	
Peanut	Eggplant, Melon, Squash, Sunflower	Allium, Gladiolus, Irish Potato
Peppers	Basil, Clover, Marjoram, Tomato	Brassicas
Potato, Irish	Basil, Beans, Brassicas, Horseradish, Marigolds	
Pumpkins	Corn, Marigold	Cucurbits, Tomato, Sunflower, Rosaceae

CROP:	COMPANIONS:	INCOMPATIBLE:
Purslane	Basil, Beets, Cabbage, Carrots, Corn, Lettuce, Turnips, Radish	Beans, English Peas
Radish	Cucumber, English Pea, Lettuce, Nasturtium	Irish Potato
Spinach	Celery, Faba Bean, Strawberry	Hyssop
Squash	Nasturtium, Corn, Marigold	
Strawberries	Borage, Bush Beans, Lettuce, Pyrethrum, Caraway	Irish Potato
Sugarcane	English Peas, Cowpeas	Sorghum, Johnson Grass
Sunflowers	Beans, Corn, Cucumber, Melons, Peanuts	Potatoes
Sweet Potato	Okra, Peppers, Sunflowers	Sorghum, Johnson Grass
Tomato	Alliums, Asparagus, Basil, Carrot, Cucumber, Marigold, Nasturtium, Nettles, Parsley, Rosemary	Pole Beans
Turnip, Rutabaga	English Pea	Irish Potato, Fennel, Cabbage Family
Watermelon	Nasturtium, Marigold	Irish Potato, Mustard

Sources: www.gardenzone.info/articles/indexnew.php?article=11 and https://en.wikipedia.org/wiki/List_of_companion_plants#cite_note-passionfruit_infonet-30

Notes:
Brassica includes arugula, bok choy, broccoli, Brussels sprouts, cabbage, cauliflower, collards, horseradish, kale, kohlrabi, mizuna, mustards, nasturtium, radish, and turnip.
Allium includes chives, garlic, leeks, onions, scallions, and shallots.

The Scientific Foundations for Companion Planting

Science has routinely provided evidence that supports some facets of sustainable agriculture, like companion planting. While the scientists may not call their work companion planting per se, the results of their work show that there is potential for home gardeners and small farms to capitalize on the natures of plants to affect each other's growth. Whether these plants harbor beneficial insects, release nutrients advantageous to another crop's growth, or simply provide a buffer against the elements to tender seedlings, the tenets of companion planting have been shown repeatedly through rigorous scientific experimentation to be beneficial to planting systems.

Trap cropping

Sometimes, a neighboring crop may be selected because it is more attractive to pests and serves to distract them from the main crop. An excellent example of this is the use of collards to draw the diamondback moth away from cabbage (Mitchell et al., 2000).

Trap cropping breaks into several sub-categories: Conventional, Sequential, Multiple, Push-Pull,

Dead-End, Perimeter, Semiochemically Assisted, Biological Control-Assisted and Genetically Modified Trap Cropping (Shelton and Badenes-Perez, 2006). Trap crops should be as healthy as possible to ensure their desirability to their targeted pest species (Mizell et al., 2008).

Conventional Trap-Cropping is simply planting a low-value crop that is more attractive to pests than the adjacent higher value crop, as in the example of the diamondback moth, above. The classic and most economically beneficial example of this is attracting Lygus bugs away from cotton fields by planting alfalfa nearby (Godfrey and Leigh, 1994). The alfalfa must be kept physiologically young with repeated mowing in order for it to remain attractive to Lygus throughout the season. Trap crops are often destroyed as a means of pest control (Hokkanen, 1991).

Sequential Trap Cropping uses time to separate pests from valuable crops. Escape by time is already a common practice in sustainable agriculture (Feeny, 1976) so it makes sense that time is also used in trap cropping. Trap crops are planted ahead of the main crop, and the timing of these traps crops can be critical. For example, in one study, strawberry seedlings planted alone had a 43% mortality rate from wireworms, strawberry

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