



Companion Planting: A Toronto Master Gardeners Guide

Companion planting is an effective beneficial practice that organic gardeners can use to grow healthy, vigorous plants. While not scientifically researched, companion planting is based on long-time observations about the benefits of planting certain species in close proximity to others.

The benefits of companion planting include the prevention or protection from pests and diseases; the attraction of pollinators to nearby fruit or nut bearing plants; and soil improvement. Certain plants affect each other positively while other plant combinations can have a negative effect. This gardening guide provides introductory information describing how the practice of companion planting works.



Members of the nightshade family (Solanaceae) such as potato (shown here), tomato and eggplant,

Photo: Helen Battersby

How Does This Work?

Organic gardeners practice companion planting by encouraging biological diversity. Monocultures are more susceptible to pests and diseases. Planting particular plants that repel harmful insects or attract beneficial ones is one aspect of companion planting. Some plants have an immediate response while others have an accumulative effect. In some cases a few plants are effective while in others, more are needed.

Growing certain plants together will encourage mutual healthy and productive growth habits. The soil can be improved by planting 'accumulator' or 'green manure' plants. These are plants that have the ability to absorb minerals from the soil, which are then released into the soil during their decomposition for the benefit of proceeding crops or plants. Planting deep rooted plants will also improve the soil by breaking it up and aerating impacted soils or 'hardpan'.

To attract an abundance of pollinating insects, certain flowering companion plants can be grown near fruit and nut trees and vines that require cross pollination by bees or other insects.

Encourage Diversity

Organic gardeners encourage diversity by planting a variety of herbs, flowers and vegetables to attract helpful insect, bees, and birds into the garden. These beneficial insects, bees and birds play an important role in the garden. For example, in a planting of aromatic herbs such as basil, coriander and catnip, catnip will attract beneficial or predator wasps that attack aphids. Coriander and basil also attract other beneficial insects that destroy other harmful insects.

Attract Birds and Beneficial Insects

To ensure that the beneficial insects, pollinating bees, moths, butterflies and birds remain in the garden, a steady supply of food has to be available from spring through to fall. Planting a variety of flowers and herbs throughout the gardening season ensures a steady diet of nectar and seeds for insects and birds. For example, the carrot family (Umbelliferae) which includes coriander, caraway, dill, chervil, celery, parsley, lovage, anise and angelica, play host to a large variety of beneficial insects such as lady beetles, spiders, and predator wasps.

Combine Mutually Beneficial Plants

Early Canadian settlers learned from indigenous people the benefit of planting three-sisters – pole beans, corn and squash – together. In this companion relationship, the corn supports the beans while the squash acts as a mulch, preventing moisture loss and evaporation of the soil around the corn. The 'living' mulch also shades out the soil, reducing germination and growth of weeds that compete for nutrients and water. The beans "fix" nitrogen in the soil making it available for its companion vegetables. This planting combination also has the added attraction of minimizing growing space.

Use Plants to Confuse or Repel Harmful Insects

Some plants with strong odours are thought to confuse some harmful insects and act as a pest control. For example, when you plant carrots with onions, it seems to confuse both the carrot and onion flies. Planting tomatoes next to beans deceives the leafhoppers thereby minimizing the damage caused.

Avoid Detrimental Combinations

Some plants are thought to be beneficial to some, but hinder the growth of others. For example, it is thought to be helpful to plant tomatoes with asparagus because this combination helps protect asparagus from asparagus beetle. However, planting tomatoes with potatoes hinders the growth of tomatoes because the root exudates from potatoes stunt the growth of tomatoes.

The Gardening Guide entitled Juglone and the Black Walnut identifies many of the plants that can and cannot be successfully grown near black walnut trees. Black walnut trees produces a toxic substance called juglone.

Additional Beneficial and Detrimental Combinations

Consider grouping the following together:

- Beans and carrots and brassica (broccoli, cauliflower, cabbage)
- Beets with bush beans, onions, and brassica
- Carrot with garlic, lettuce, pea, and onion
- Cucumber with radish, peas

Some combinations to avoid include:

- Apples and potatoes
- Beans and onions
- Carrots and dill
- Garlic and onions with peas and beans
- Marigold and beans
- Tomato, potato, eggplant and or fennel

References:

1. Flowerdew, Bob. *Complete Book of Companion Gardening*. London, England: Kyle Cathie Ltd., 2000.
2. Grossman, Joel. "The Power of Companion Planting", *The Herb Quarterly*. Summer 2004 pp 26-32.
3. Rodale, Maria. *Organic Gardening*. Emmaus, Pennsylvania: Rodale Press Inc., 1998.
4. York, Karen. *The Holistic Garden Creating Spaces for Health and Healing*. Toronto, Ontario: Prentice Hall., 2001.

Produced by the Toronto Master Gardeners, these Gardening Guides provide introductory information on a variety of gardening topics.

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