

# Science-Based Companion Planting Strategies for the Vegetable Garden



## Plant Partners: Science-Based Companion Planting Strategies for the Vegetable Garden by Jessica Walliser

★★★★☆ 4.7 out of 5

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Companion planting is a gardening technique that involves growing different plant species together in close proximity to benefit each other. This practice has been used for centuries by farmers and gardeners to improve crop yields, enhance plant health, and control pests and diseases.

## The Science Behind Companion Planting

There are several scientific principles that support the benefits of companion planting:

- **Nutrient cycling:** Different plant species have different nutrient requirements and can complement each other in a companion planting system. For example, legumes (such as beans and peas) fix nitrogen from the air, which can be used by other plants in the garden.

- **Pest control:** Some plants release chemical compounds that repel or deter pests. For example, marigolds release a compound called pyrethrum, which is effective against nematodes and aphids.
- **Disease resistance:** Companion planting can help to reduce the spread of diseases by creating a physical barrier or by releasing antimicrobial compounds. For example, garlic releases sulfur compounds that are known to inhibit fungal growth.
- **Pollination:** Flowers attract pollinators, which can help to improve fruit and seed production for nearby plants. For example, planting carrots with dill attracts beneficial insects that can pollinate the carrot flowers.

## **Evidence-Based Companion Planting Strategies**

Numerous studies have demonstrated the benefits of companion planting in vegetable gardens. Here are some science-based strategies to maximize your results:

- **Plant nitrogen-fixing plants with heavy feeders:** Legumes (such as beans, peas, and clover) form a symbiotic relationship with nitrogen-fixing bacteria, which convert atmospheric nitrogen into a form that can be used by plants. Planting legumes near heavy feeders (such as tomatoes, peppers, and corn) can help to provide them with the nitrogen they need for optimal growth.
- **Plant pest-repelling plants around susceptible crops:** Companion planting with pest-repelling plants can help to reduce the need for chemical pesticides. For example, planting marigolds around tomatoes and peppers can deter whiteflies, aphids, and nematodes.

- **Plant disease-resistant plants next to susceptible crops:**  
Companion planting with disease-resistant plants can help to reduce the spread of diseases. For example, planting garlic near roses can help to protect them from fungal diseases such as black spot and powdery mildew.
- **Plant pollinator-attracting flowers near fruit and vegetable crops:**  
Flowers attract pollinators, which can help to improve fruit and seed production. For example, planting sunflowers near cucumbers and squash can attract bees and other pollinators that can help to increase yields.

Companion planting is a science-based gardening technique that can help to improve the productivity, health, and sustainability of your vegetable garden. By following these evidence-based strategies, you can create a thriving ecosystem that benefits your plants and provides you with a bountiful harvest.

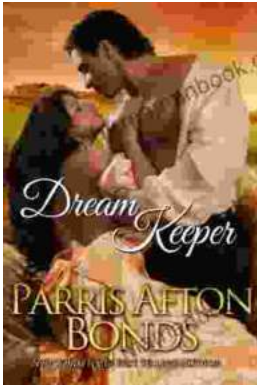


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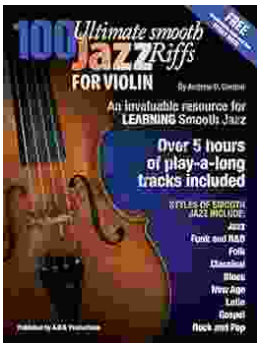
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