



Getting the Most out of Your Garden
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As more and more agricultural land is being developed, there is a need to produce more food on less land. Bio-intensive Gardening is an organic agricultural system that gives maximum vegetable yields – on less land using less water, while continually improving soil quality. Two to six times more vegetables can be grown using this method.

Sometimes referred to as “lasagna gardening” or “square foot gardening”, this method mimics nature much more closely than conventional gardens. These methods are not entirely new because many of the techniques were present in the agriculture of ancient Greek, Mayan and Chinese civilizations.

The bio-intensive system uses double dug raised beds, intensive planting, companion planting, and composting. In double digging, a 30-cm trench is dug across the width of the bed at one end. The soil from this trench is set aside. The bottom of the trench is loosened with a fork to a 30-cm depth and amended. A trench is dug adjacent to the first and the soil is dropped into the empty space of the first trench. The lower level of the second trench is then loosened with a fork. This process is repeated along the full length of the bed. The final trench is filled with the soil that was removed from the first trench. The result of this is that the soil has been tilled to a depth of 60cm, which results in greater aeration and drainage. This allows roots to grow deeper and to access more nutrients. Single digging can be done in subsequent seasons until compaction of soil is evident again. Beds are usually 5ft. wide and between 5-20 ft. long.

Planting is not done in rows but in a triangular pattern. Wide beds and close spacing allows not only for more plants but also retains moisture. With no bare soil there is up to 60% less evaporation and far fewer weeds.

Bio-intensive gardening techniques avoid direct seeding. Seeds are started in flats so that garden space is available to larger plants that form a living mulch.

Companion planting makes use of space in the garden more efficiently by mixing shallow rooted plants with deep-rooted plants or fast growing plants with slower growing ones. An example of this is growing the shallow rooted radishes with deeper-rooted carrots, or corn with cucumbers, or beets with bush beans. Companion planting also makes better use of vertical space in the garden. An example is corn, squash and beans grown together. The squash can be planted between the corn and the beans climb up the corn.

The beans help fix nitrogen in the soil and the squash shades the soil to conserve moisture and reduce weeds. The diversity of the three plants helps reduce the incidence of disease.

Bio-intensive gardening practices realize the symbiotic relationships between certain vegetables. Some plants when grown together do better, and have fewer pest or disease problems. Basil grows well with tomatoes, cabbage with potatoes, carrots with beans, corn with potatoes, lettuce with onions, and squash with nasturtiums to name a few.

The goal of the bio-intensive method is sustainability. You can't keep producing higher yields without sustaining the fertility of the soil. In order to achieve sustainability this system uses carbon and calorie farming. Carbon or compost crops are grown in 60% of the cultivated land, which provides the compost for 100% of the land. Compost crops could be cereals; some could be grown in winter when the land would be otherwise unused. Some compost crops are high in nitrogen while others are higher in carbon. Both are needed.

In calorie farming, root crops allow bio-intensive farmers and gardeners to grow more nutrients in smaller areas resulting in less labour and more space for wilderness. These crops like; sweet potatoes, garlic, leeks parsnips and potatoes have a high calorie content per pound and a high yield per area. About 30% of land cultivated for food is used for root crops.

As well as growing crops high in carbon production, the soil has 1-2 in. of compost added to it in a season. Compost enriches the soil with organic matter. Roots of crops should ideally be left in the soil to decompose. Ideally, 60% of carbon or compost crops, grown with 30% high calorie crops would sustain a 10-20% vegetable crop.

The Bio-intensive method has been very successful on small-scale commercial farms, but some of these practices can easily be applied to your home vegetable garden.

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