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Intensive Vegetable Gardening

Intensive planting techniques are those intended to maximize yields of a given planting area over the growing season. Besides increasing production, intensive gardening can save time, space, energy, fertilizer and water. Intensive techniques can solve drainage problems, enable use of inhospitable sites, minimize soil compaction, eliminate the need for power equipment and expand the length of the growing season. Intensive growing techniques also transfer well to raised beds or containers adapted to disabled gardeners.

Planning

Careful planning is essential for successful intensive gardening, which relies on high yield practices such as wide-row planting, staggered planting, succession planting, interplanting and growing upward. Pay careful attention to crop rotation, since any given area will produce two or three crops in a single growing season. Choose space-saving varieties of vegetables, such as bush cucumbers and squash and determinate tomatoes

Soil Preparation

The foundation of intensive planting is a deep, fertile, well-drained soil, free of perennial weeds and located in full sunlight. However, growers can create such conditions even on inhospitable sites, by creating raised planting beds elevated a foot or move above the natural terrain.

Well-rotted manure, homemade or commercial compost, cover crops and organic mulches such as chopped leaves, straw or pine needles will improve the soil's water-holding capacity, drainage and long-term fertility.

Test your garden soil every third year and follow the laboratory recommendations, broadcasting lime and fertilizers evenly and incorporating them thoroughly into the top two or three inches of soil.

Special Care

In addition to proper soil preparation, the intensive garden will require special attention to watering, thinning, and pest control. For example, planting in wide rows keeps the soil cool and moist. Therefore, watering and mulching between plants within the wide rows may be reduced or eliminated.

On the other hand, plants within wide rows or intensively-planted beds compete for water and nutrients and must be thinned to allow for adequate space between plants. Close plantings can reduce air circulation, which may encourage disease and insect pests. Because early damage may not be noticed as quickly in dense plantings, intensive gardeners should monitor plants often for any signs of insect or disease attack.

Intensive Planting Techniques

Wide Row/Raised Bed Planting

Planting vegetables in bands 1-4 feet wide is an effective way to increase vegetable yields per square foot. Planting bands elevated 6-12 inches above the natural soil level are called raised beds. Raised beds can be open, with sloping sides, or enclosed by walls of treated wood, rock or other masonry.

Vegetables that succeed well in wide rows or raised beds include beets, carrots, chard, leeks, lettuce, onions, parsnips, radishes, spinach, turnips, beans, kale, cabbage, beans, peas, garlic and shallots. The foliage of the maturing plants helps shade the soil, retain moisture and suppress weeds.

Prepare the soil and lay out wide rows in the same way you would single rows, but use two strings instead of one, marking off a broad planting band. Broadcast small seeds, such as lettuce and carrots, over the wide row, tamping them gently into the loose soil. Larger seeds of crops such as beans and peas can be planted in 2 or 3 rows within the wide band spacing the rows the same distance apart as the seeds are planted within the rows. Broadcast plantings will require extensive thinning once seedlings emerge.

Recommended Spacing Between Plants

Radishes	*1"*	*Cabbage, Broccoli, Cauliflower*	*18"*
Onions, Beets, Carrots	*2-3"*	*Eggplant*	*18-24"*
Leeks, Turnips, Peas	*3-4"*	*Tomatoes*	
Lettuce, Bush Beans	*4-6"*	*(depending on variety)*	*18-48"*

Not all vegetables grow well in wide rows or beds. Plants such as corn and tomatoes, require plenty of sun and space and grow best in a staggered planting

To save valuable garden space, stagger your plants by planting equal distances apart in all directions rather than lining them up in a single file row.

Succession Planting

After harvesting one crop, replant the space with another - a practice called *succession planting*. For example, early cabbage and broccoli might be followed by snap beans or zucchini. Replace spring lettuce, radishes, and spinach with a planting of carrots or beets. Transplant Brussels sprouts or fall onions into the space left after harvesting peas.

Before making a seeding or second planting in the garden for a fall garden, remove all weeds and crop residues. Refertilize as you would for an early spring planting, incorporating the fertilizer into the soil. Plant seeds and transplants slightly deeper in the summer and be sure to keep them constantly moist during their early stages.

Interplanting

Planting two or more different crops in the same row or bed without overcrowding is called interplanting. For example, mature pepper plants need a 12-inch spacing. After a pepper transplant is set into the garden, there will be space between plants that won't be needed until the pepper plant matures. This leaves room between the peppers to plant a fast-growing crop, such as radishes, leaf lettuce or spinach.

Remember that two or more of these planting methods may be combined. For instance, by combining succession planting with intercropping, beans can be sown a week or two before early cabbage is harvested and a staggered planting of broccoli would allow an interplanting of lettuce seedlings.

Growing Vertically

Tomatoes and vine crops, big space-wasters when allowed to sprawl along the ground, can be trained upward on trellises. Pole beans, which climb by spiraling around supports, and tall peas and cucumbers, whose short tendrils cling to supports, are naturals for growing vertically. Others, such as melons, pumpkins, and squash, can be trained to grow vertically if they are tied to strong supports.

Spiraling vines (pole beans) can be supported by a 6-7 foot high frame with top and bottom stringers of heavy gauge wire. Lace strong twine vertically, and train the tendrils as soon as they are long enough to wind a round two or three times. From then on, only occasional training will be necessary.

Clingers (peas, cucumbers) can get by with shorter supports 5-6 feet in height. Chicken wire stretched over a vertical frame works well.

Strong, tall support structures and slings to support individual fruit are needed for melons and winter squash. Since these vines do not climb, they must be trained upward to drape over supports.

Tomatoes can be forced to grow up using cages or stakes. For vigorous tomato hybrids, cages should be 5-6 feet in height and 2 ½ feet across. Invest in large mesh, galvanized fence and form it into a cylinder by bending it around a barrel.

Staked tomatoes should be pruned to one or two main stems and loosely tied to a 5-6 foot high stake with strips of cloth or other material. Staking usually produces large, cleaner fruit than flat grown tomatoes, but yields per plant are lower.

adapted from an original fact sheet by Tina M. Smith,
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