



VEGETABLE GARDENING

INLAND NORTHWEST CLIMATE AND SOIL

The frost-free season is usually between May 15 and September 15. This varies from year to year and there are many microclimates. The soil pH is generally neutral, ranging from 6.5 to 7.5. Most vegetables grow very well in this range. Soils vary from heavy clay loam to very sandy, sometimes in the same yard.

GARDEN SITE

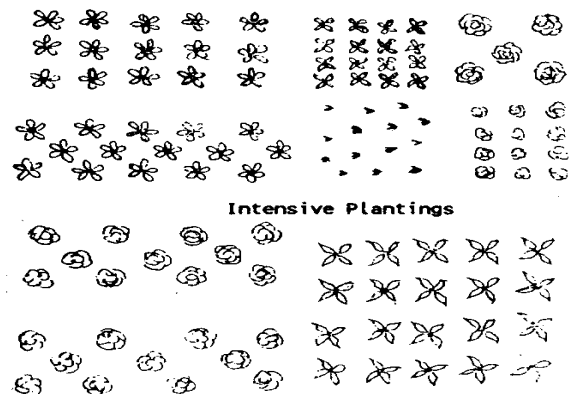
Vegetables do best in full sun (a minimum of 6 hours). A few of the leafy vegetable such as lettuce and spinach will grow in partial shade. Morning sun only may be sufficient for beets and carrots. Plant rows north to south for maximum light. Good drainage is necessary.

GARDEN METHODS

Single row gardens: Rototill or spade the garden and plant seeds in a single row.

Intensive gardening (wide row, block, grid):

So called because you can plant vegetables close to each other and produce more food per unit area than in a row garden. Small seeds are randomly scattered and seedlings are thinned out when very young. A rule of thumb is to thin until leaves of mature plants barely touch each other (beets, carrots, chard, spinach). Larger seeds and transplants can also be spaced closer together. Vegetables such as beans (seed), cabbage and head lettuce transplants are easier to manage if planted in a grid or block pattern.



Raised beds: The soil is worked up and formed into beds 3 to 4 feet wide and of different lengths to fit the garden space. Paths around the beds keep feet clean and allow access to the beds without walking in them. Both intensive and row plantings can be used in raised beds.

Container gardens: Containers are ideal for patios, balconies and small yards. The larger the container the better and it must have drainage holes. Use a soil mixed for containers. Container plants must be watered and fertilized frequently.

WHEN TO PLANT VEGETABLES

Cool season vegetables can germinate in soil temperatures as low as 40°F. They grow and mature during the cool weather of spring and early summer. Several cool season vegetables (broccoli, Brussels sprouts and cabbage) need to be started early indoors or purchased later as transplants to give them time to mature before hot weather.

Warm season vegetables are damaged by frost, cold nights and cold soil. They need warm soil to germinate (at least 60°F) and long warm days to mature. Vegetables that need a long time to mature must be started indoors during late winter/early spring or purchased later as transplants from nurseries or garden stores.

Melons, cucumbers, squash and pumpkins can be grown from direct seeding into the garden or from transplants. These vegetables resent transplanting, but can be started from seed in individual peat pots, which are planted, peat pot and all, into the garden.

Direct seeding: Most vegetables are planted from seed directly into prepared vegetable beds. Follow the directions on seed packets for planting and use the following schedule for planting dates.

Transplants (bedding plants): Transplants are vegetables that are grown from seed indoors during the late winter or early spring months to be planted into the garden later. Transplants can be purchased or home grown. To grow successful transplants it is necessary to have a window with full sun most of the day or to grow under fluorescent lights. For information on growing with lights, call 533-2048 and ask for the free handout "Growing From Seed". When buying nursery transplants, look for stocky plants with a healthy green color and sturdy stems. Buy your plants as close to the planting time as possible unless you have a warm sunny place to keep them until planting time.

GARDEN SCHEDULE

March 1st:

Indoors: Start cabbage, cauliflower, broccoli, Brussels sprouts, tomato and pepper seeds.

Outdoors: Plant dried onion bulblets, called sets, or small green onion plants, and Jerusalem artichokes.

April 15th to May 1st:

Indoors: Start cucumber, melon and squash seeds.

Outdoors: Plant beets, carrots, turnips and other root crops; lettuce, spinach, chard, peas, radishes and potato pieces. Transplant cabbage, cauliflower, broccoli and Brussels sprouts.

May 15th to June 1st:

Outdoors: Plant beans and corn. Be prepared to replant these if frost occurs. Transplant cucumbers, melons and squash, tomatoes, peppers and eggplant.

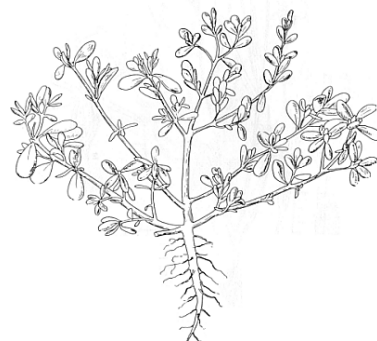
GARDEN MAINTENANCE

Watering: Most vegetables are grown as an annual crop and need at least an inch of water a week. If it is hot and windy, the garden may need additional watering. Tomatoes, peppers and summer squash can develop a problem called blossom end rot. This is a dry, dark blotch on the bottom end of the vegetable. It is usually caused when the soil has been kept moist and then allowed to dry out before watering again. Knobby potatoes are also caused by uneven soil moisture conditions.

Mulching: Mulching with grass clippings, leaves or straw helps keep the soil evenly moist. Large amounts of grass clippings should be spread out and dried for a day or so to keep them from smelling in hot weather. Run a lawnmower over large leaves before using, as large leaves can smother small plants. Work these mulches into the ground after harvest to help improve the soil.

- Don't use mulches in vegetable beds until the soil has warmed up (about June 1).
- Don't mulch young seedlings with organic mulches until they are six or more inches tall.
- Don't use grass clippings from turf that has been treated with Weed and Feed. Before using clippings from a lawn care company, check to find out if they are using an herbicide.

Weeding: Weeds compete with your vegetables for nutrients and water and may harbor insect pests and diseases. Try to keep ahead of them by hand weeding or hoeing when they are small. Mulching is one of the best ways of controlling weeds. If weeds come through the mulch they are usually easy to pull up. Water a few hours before pulling out large weeds. If the soil is too dry, the weeds will break off; if too wet, the surrounding vegetables may come out as well. Most weeds sprout in the spring. Get good control by weeding before they go to seed. Weeds such as Purslane (see illustration) will root from any small pieces that are left on the soil. Remove them carefully.



- Barnyard manures may contain weeds. Bagged steer manure is usually weed free.
- If beds are in a weedy area try to keep a weed free strip around the beds.
- In intensive plantings of vegetables, weeds are shaded and crowded, but watch for and remove weeds between plantings.
- In raised beds, the soil is lighter and weeds are easier to pull. Hand weeding and light hoeing is usually sufficient.

Fertilizing: If the soil in your vegetable garden or raised beds is "native soil", it is probably high in phosphorus, potassium and calcium. It is frequently low in nitrogen and may be low in sulfur. You may wish to have your soil tested to see if this is true in your yard. To have your soil tested, call the Master Gardener Plant Clinic at 477-2181 for information.

Many Inland Northwest gardeners buy soil (usually 3-way mix) from landscape suppliers (listed under Equipment and Supplies in the telephone yellow pages) to supplement the soil in their vegetable gardens or to build raised beds. These mixes from the soil yards may not have many natural nutrients and usually contain sawdust. Use extra nitrogen the first year or two to compensate for the nitrogen loss as the sawdust breaks down.

If raised beds have been amended with a large proportion of soil-less mix (peat moss, vermiculite, perlite or clean sand), then a complete fertilizer such as 5-10-10, 10-10-10 or 10-20-20 with trace elements will be needed. Pale yellow leaves and stunted growth are signs of nutrient deficiencies. Follow the directions on the label. Do not over fertilize.

Chemical fertilizers, both granular and liquid are available. 5-10-10, 10-20-20 or 16-16-16 are some of the fertilizers that can be used for vegetables. Follow the rate on the label of the fertilizer product you are using. If the directions are not on the package or instructions are missing, the following is a guide for the most common formulations.

Pre-planting:

5-10-5 or 5-10-10	Use at the rate of 2 lbs. broadcast over 100 square feet or down a row 2 feet wide by 50 feet long.
10-10-10 or 10-20-20	Use at a rate of 1 lb. broadcast over 100 square feet or down a row 2 feet wide by 50 feet long.
16-16-16	Use at a rate of 3/4 lb. broadcast over 100 square feet or down a row 2 feet wide by 50 feet long

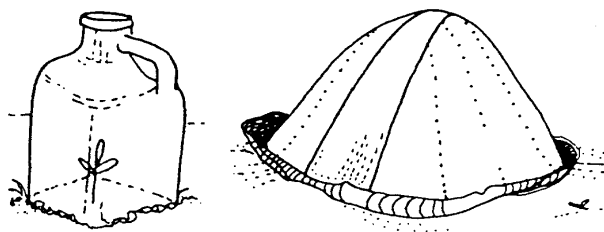
The overuse of any fertilizer, especially those that are high in nitrogen, such as ammonia sulfate 21-0-0, can burn roots and plants. It may also result in excessive foliage and little development of root crops or fruit.

Several companies have packaged organic fertilizers available. Follow label directions. Organic matter used for soil amendments such as manures (horse, cow, chicken and rabbit) and compost supply a small amount of nutrients. Eventually all organic materials break down and release nutrients back into the soil. However, soil needs to warm up enough in the spring for this to happen. In the Inland Northwest this is around the first of June. Therefore, use another fertilizer source early in the season.

EXTENDING THE SEASON WITH PLANT PROTECTORS

Protection from frost and cold weather:

Gardeners who wish to get their plants out earlier than recommended need to purchase plants at garden stores and use small plastic tents (hot caps) to protect them from frost. Gallon-size milk jugs with the bottoms cut out make great "mini greenhouses". Remove them in the mornings on all but the coldest days because a few minutes of bright sun will cook the covered plants.



Floating Row Cover is manufactured by several companies. Most are available pre-packaged. *Reemay* is the brand name of a lightweight polyester material. It is available in Spokane on large rolls and can be cut to the size you need. Water and light penetrate this white material. Spread it over vegetable seeds or young transplants at planting time. The seeds germinate quickly and young plants and transplants will grow faster. When laying down a row cover it is necessary to leave enough loose material for plants to push the cloth up as they grow. Hoops can be made or purchased to drape the cloth over. Weight down the edges of *Reemay* with rocks or boards to keep it in place. Row covers can also be used successfully to block out several vegetable insect pests such as cabbage loopers, cabbage worms, aphids (some smaller aphid may get through), leafminer (an insect that feeds between the tissues of spinach, chard and beet leaves, leaving large blotches), Colorado potato beetle and flea beetles.

Disadvantages: Loosely flapping row cover can whip off the tops of plants during a windstorm. On very hot days, tender plants may burn.