The Farm and Home VEGETABLE GARDEN

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GARDENING is now recognized as a vital phase of the drive for victory. A conference to develop the victory garden program on a national scale was held in Washington, D. C., in December 1941, attended by representatives of all the states. In mid-January 1942 in Oregon, representatives of 16 state-wide organizations and agencies, meeting in a state conference, developed recommendations for an Oregon Victory Garden Program. This bulletin is in conformity with the program developed by that conference.

Profitable home gardens are usually due to a combination of the following factors: planning the garden; several plantings of certain vegetables, thus eliminating gaps in harvesting; using good seed; sufficient soil fertilization; a planned program of insect control; consistent care in looking after the plantings; application of irrigation water if available.

While a certain number of linear feet of each vegetable is suggested in the planting plan on pages 4 and 5, this is a variable factor according to the size of the garden and the preferences of the family.

The varieties suggested in the table are standard and proved.

Seed should be sown carefully as all supplies are needed.

Systematic work in the vegetable garden is essential to success.

Most of the common vegetable insects can be controlled with standard poison dusts or sprays. (See Extension Bulletin 551.)

Well-grown plants of certain vegetables for transplanting aid materially in giving the crop a good start. These may either be grown in hotbeds or small greenhouses or purchased.

Irrigation if available will more than repay cost.

Fall and early winter vegetables must usually be started several months before the expected maturity of the crop. (See Bul. 487.)

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SOIL FERTILIZATION

Stable manure is the basic fertilizer for the garden. Three to five wheelbarrow loads to the square rod or ten to twelve tons per acre will maintain the important humus of the soil as well as add plant food. Manures in general, and strawy manure in particular, should be applied early enough to be rotted in the soil before planting season. A manure spreader is valuable in the farm garden. Short, rotted manure can be disked into the soil after plowing, but strawy manure should be spaded or plowed under, otherwise it is difficult to prepare a fine seedbed. Application of manure in the hill is an economical way of fertilizing land for tomatoes, squash, cucumbers, and melons. Poultry manure is more concentrated than stable manure and should be mixed with litter or soil to lessen its concentration or applied in less quantities than stable manure. Sheep manure has an average fertilizer value equal to poultry manure. It is fine and easily incorporated with the soil. When shavings or sawdust are used for litter in stables or poultry houses, these materials with the excrement or droppings may be applied to the garden soil in reasonable quantities with no danger of toxicity from their use.

Green manures (cover crops) are as useful in the home garden as they are in commercial gardens. Instead of allowing the land to lie bare all winter, a cover crop should be seeded in the fall. County agents will advise the most desirable winter crop to be grown and turned under the following spring.

When little or no manure is available, commercial fertilizers may have to be used, or in some cases they may be used to supplement manures. A complete fertilizer, already mixed, is best for the home gardener, such as one having an analysis of 4-12-8 or 5-10-10, etc. There are several ways of applying such a fertilizer. It can be broadcast before planting by using three to four pounds per square rod of soil and working it in with a hoe or some other tool to put it into the root zone. Another method is to apply fertilizer at the time of seeding, putting it two inches to the side of the seed row and slightly below the level of the seed, but it should not be placed directly over or under the seed. A third method consists in applying a band of fertilizer, 2 inches wide, lengthwise of the row or around a hill of plants, making the application slightly below the surface of the soil and about two inches from the side of the row or plants in the hill. Such side row applications of fertilizer would be made at the rate of one to two pounds per 100 linear feet. To use fertilizer in soluble form, one to two level tablespoonsful to one gallon of water makes a good dilution. Nitrate of soda or sulphate of ammonia are nitrogen fertilizers useful in solution to stimulate young plants in flats, pots, frames, or garden rows, or one can use a complete fertilizer in the same proportion.

VEGETABLE PRODUCTION IN THE HOME GARDEN

Tomatoes. Most important of all vegetable crops in the home garden is the tomato. The fruits are rich in vitamins A, B_1, and C and therefore have high nutritive value. Canned tomatoes and juice are useful throughout the year. Tomatoes can be grown abundantly except in some areas in the state where curly-top is a limiting factor, or frost-free seasons may be short, or where temperatures are too cool for ripening of many fruits. Early ripening is obtained by growing early varieties, setting out well-grown plants, and by using a well-balanced fertilizer high in phosphoric acid. A forkful of well rotted manure worked into the hills two or three weeks before setting out plants makes a good foundation in soil fertilizing. In areas where late spring frosts may occur, covering the plants after setting prevents loss and induces earlier ripening. Hotcaps or home-made protectors of a box with a pane of

glass or cloth as a covering are useful. Plants should be dusted for flea beetle control soon after being set out (See Extension Bulletin 551).

Unless space in the garden is limited, no particular objectives are gained by staking and pruning the plants. Better protection of fruits from sun scald and discoloration, and an increase in total yield are obtained by allowing the plants to grow naturally on the ground, or they may be held up on a support without pruning away any of the fruit-bearing laterals. Fruits sometimes rot by lying on the soil, but the main rot of tomatoes is at the blossom end, induced by insufficient amount of soil moisture for the plant and the fruit during warm weather. Irrigation will assist in maintaining uniform soil moisture and preventing dry rot.

The harvesting season for home grown fruit may be lengthened by gathering the mature green tomatoes before frost. Immature green fruit will not color. Tomatoes will keep well under storage temperatures of 45 to 50 degrees F. without ripening, but from 50 degrees F. upward they will slowly assume a red color (See Extension Circular 339 on Vegetable Storage).

LEAFY VEGETABLES

Cabbage contains vitamins A, B_1, C, and G. An early cabbage crop is grown from plants started in a greenhouse or hotbed and ready for transplanting to the garden as soon as early spring conditions will permit. The plants are moderately hardy and are not injured by spring frosts. Cabbage grows well in manured ground, or if this is unobtainable the plants can be stimulated by the application, alongside of the row, of a complete fertilizer after the plants are set out. Maggots are harmful to early cabbage plants and there should be proper protection of the plants by using tarpaper pads or the corrosive sublimate method. (See Extension Bulletin 551.) Cabbage plants must also be treated for lice and green worms. Golden Acre is a useful variety of early cabbage. For summer and early fall, Copenhagen Market and All Head Early are good varieties. Plants of these varieties should be set out a few weeks later than the earliest set plants. Late cabbage culture is discussed in Extension Bulletin 487.

Lettuce contains vitamins A, B_1, C, and G, as well as the minerals, calcium, and iron. It should be eaten with other parts of the salad and not used solely as a garnish, later to be consigned to the garbage. It is best grown in the home garden by making frequent seedings at 10- to 14-day intervals, seeding comparatively short rows in accordance with the normal amount consumed by the family. A few sowings of long rows result in too much wastage due to the plants going to seed or otherwise spoiling before use. The earliest head lettuce is grown from transplanted plants started at the same time as early cabbage. The first field seeding should be made at the same time and repeated at intervals. Spring, early summer, and fall are best times of the year to mature head lettuce. In coastal counties summer and early fall lettuce is excellent. New York B or New York No. 12 are useful for spring, early summer and fall. Imperial 847 is more suitable for summer weather. Leaf lettuce such as Grand Rapids or Tomhannock is easily grown and is high in vitamin A. Seed should be sown thinly for head lettuce plants so as to stand, when thinned, at 12 to 15 inches in the row. Avoid growing too heavy foliage of plants that makes them more susceptible to tip-burn and slime. Keep the soil stirred lightly about stems to prevent lettuce "drop."

Swiss chard has a high content of vitamins A and C, as well as calcium and iron. It is adaptable to varying weather conditions and has a long

HOME GARDEN PLANTING TABLE FOR AVERAGE FAMILY OF FIVE PERSONS

Keep 'em Growing! *Vegetables for Victory!*

Showing Detailed Recommendations Arranged in Order of Planting, Beginning in the Spring.

Vegetable	Variety	Ft. of row or No. of plants	Date of seeding	Date of setting plants	Distances of planting Rows	Distances of planting Plants	Amt. of seed per 100 ft.	Depth of planting inches	When maturing	Probable yield of area planted (Column III)
Radish	Scarlet turnip—white tipped White Icicle	25-50	Mar. 10-	Successive seedings	12-18	1	1 oz.	1	May and in succession	25-50 bunches
Spinach	Thick Leaf Giant Leaf	100	Mar. 10- Apr. 15	Successive seedings	18-24	1-2	1 oz.	1	May 15–June 10	30–40 lbs.
Lettuce	New York B	3 doz.	Feb. 1-15*	Apr. 10	18-24	12			June 1	3 doz. heads
Pea	World's Record, Gradus Thos. Laxton, Alderman	200	Mar. 10- Apr. 25	Successive seedings	30	2-3	½ lb.	1½–2	June 10	2–4 bu.
Cabbage—early	Golden Acre Copenhagen Mkt.	4-5 doz.	Feb. 1-15*	Mar. 25 Apr. 20	30	18–24	1 pkt.	½	June 10–Aug. 20	100–130 lbs.
Onions (sets)	Danvers Bermuda	50-75		Mar. 10 Apr. 10	24	2	1 lb. sets or 2–300 plants	1	June 1	5 doz. bunches
Turnip	Purple top— White Globe	100	Apr. 10		24		½ oz.	½	June 1	60–70 bunches
Beet—early	Early Model	50	Apr. 10		30	2–3	1 oz.	1	July 1	3–5 doz. bunches
Carrot—early	Chantenay, Nantes	50	Apr. 10		30	2-3	½ oz.	½	July 10	4–6 doz. bunches
Lettuce	New York 12 or B Imperial §47	50-100	Apr. 10–	Successive seedings	20	12	¼ oz.	½	June 20	3–6 doz. heads
Swiss Chard	Fordhook Giant	50	Apr. 10		30	6	1 oz.	1	July 1	50–100 lbs.
Onion (seed)	Yellow Danvers Sweet Spanish	100-200	Apr. 10-25		30	3	1 oz.	½	Sept. 10–Oct. 10	300 lbs.
Parsnip	Harris Model	50-75	Apr. 20		30	3–4	½ oz.	1	Sept. 20	50–70 lbs.
Salsify	Sandwich Island	50	Apr. 20		30	3–4	1 pkt.	1	Sept. 15	30 lbs.
Cauliflower	Snowball	2-3 doz.	Feb. 25*						July 10	30 heads
Corn—sweet	Golden Early Market Golden Bantam Golden Cross Bantam	Rectangular block of each variety	May 1- June 15	Successive seedings	36	12–16	2 oz.	2–3	July 25–frost	1–2 ears per plant
Bean—bush	Stringless Green Pod Round Pod Kidney Wax	200	May 1 July 1	Successive seedings	36	3	1 lb.	1–2	July 20 frost	2½–3 bu.
Bean—pole	Kentucky Wonder Oregon Giant, Blue Lake	100	May 15		36	24	½ lb.	2	Aug. 1–frost	3–4 bu.
Bean—lima	Oregon Pole Lima	100-150	May 15		36	30–36	1 lb.	2	Sept. 10	30–40 qts.
Tomato	Bonny Best, Pritchard John Baer, Marglobe	5–6 doz.	Feb. 25–* Mar. 10	May 10–20	60–72	48–54	1 pkt.	½	Aug. 1–frost	6–9 bu.
Squash—summer	Yellow Straightneck Zucchini	6 hills	May 10-15		48	36	½ oz.	1	Aug. 10	2-3 doz. fruits

* Date of sowing seed under glass in greenhouse or hotbed.

Cucumber	Davis Perfect, Vaughn Boston Pickling	18 hills	May 10-15		54–60	48–54	½ oz.	1	Aug. 1–frost	80 lbs.
Squash—winter	Delicious Banana Hubbard Table Queen	12-20 hills	May 10-15		96	96	1 oz.	1	Sept. 15 and store	50–200 fruits
Pumpkin	Winter Luxury	10-12 hills	May 10-20		84	72	½ oz.	1	Sept. 15	40–60 fruits
Pepper	California Wonder	12-18 plants	Feb. 25*	June 10	36	24	1 pkt.	½	Aug. 1	6–8 doz. fruits
Eggplant	Black Beauty	6-12 plants	Feb. 25*	June 10	36	24	1 pkt.	½	Aug. 1	2–4 doz. fruits
Carrot—late	Chantenay, Nantes	50-100	June 15		24	3	½–1 oz.	1	Sept. 15	150 lbs.
Beet—late	Detroit Dark Red	50-100	June 15		24	3	1 oz.	1	Sept. 15	75-100 lbs.
Cauliflower—				June 25	36	30	1 pkt.	½	Mar. 10	4 doz. heads
Broccoli	St. Valentine	3-4 doz.	May 1-15							1–2 lbs. per
Broccoli—green	Calabrese	3-4 doz.		Aug. 10						1–2 lbs. per
Celery	Golden Self Blanching Utah Green	50 ft.	Mar. 10 and in succession	June 20 and later	30	6–8	1 pkt.	¼	Sept. 15 and later	12–15 doz.
Cauliflower	Snowball	3-4 doz.	May 1-20	June 20 and later	36	30	1 pkt.	½	Oct. 1 and later	3–4 doz.
Cabbage—late	Glory, Ball Head, Green Savoy	5-8 doz.	May 1	June 25 and later	36	30	1 pkt.	½	Oct. 1 and later	250-300 lbs.
Brussels Sprouts	Ulrich's American	2-3 doz.	May 1	June 25–	36	30	1 pkt.	½	Oct. 20	30–36 qts.
Kale	Scotch curled	50	May 1	June 25	36	30	1 pkt.	½	Sept. 25–all winter	4 doz. heads
Turnip—late	Purple Top W. Globe Golden Ball	See note 4	Aug. 10	Kohlrabi can be used as substitute for turnips				½	Oct. 25 all winter	2 bu.
Cabbage—Chinese	Wong Bok, Chihli	25	Aug. 1-15		24	10	½ oz.	½	Oct. 10	20 heads
Rutabaga	Purple Top Yellow	50-100	June 25-Aug. 10		24	6	½ oz.	½	Oct. 10	4 bu.
			Also the following perennials							
Asparagus	Washington	100-200 (50-100 plants)		March 20–April 15		24		8–10	Apr. to July	30–40 lbs.
Rhubarb	Victoria Mammoth Red	12-24 plants		March 15–April 15		48		3–4	Apr. to July	40–100 lbs.

* Date of sowing seed under glass in greenhouse or hotbed.

NOTES ON PLANTING TABLE

1. Dates are for Western Oregon and may have to be modified according to season and locality in the state.
2. Dates of maturity show whether a crop takes half or all of the growing season to grow to maturity.
   The following successions of crops are suggested: (a) early radish and lettuce followed by late carrots and beets; (b) early spinach followed by celery; (c) early peas followed by broccoli and fall cauliflower; (d) early cabbage followed by fall lettuce and spinach; (e) early beets and carrots followed by Brussels sprouts and curly kale; (f) early onion sets or peas followed by late cabbage.
3. Two sowings of beets and carrots are recommended, the first for early summer roots, the second for fall and winter supply.
4. Turnips are usually broadcast for fall production. Ample supplies of "greens" can be grown with spinach, chard, kale, and broccoli.
5. Contrary to general opinion, winter squash will not cross with pumpkin, cucumber, melon, or summer squash. The only two of these mentioned which will cross are pumpkin and summer squash.
6. When only a single row of vegetable is to be planted the main consideration of the gardener is to observe the distance between plants in the row, allowing the given space, as noted, before proceeding to plant the next vegetable.
7. Where more than one variety of a vegetable is suggested, it is not unwise to plant several kinds as in the case of Golden Acre, Glory and Ball head cabbage, and varieties of peas and sweet corn differing in season of harvest.

period of production. The plants should be spaced six inches or more in the row. Twelve-spotted beetles often injure this vegetable and they should be prevented from doing damage.

Spinach contains vitamins A, C, B_1, and G and iron. It is a hardy, quick growing crop for greens and will be ready to harvest in from 45 to 60 days. Seed treatment as for peas will improve the stand of plants and prevent them from damping-off. Successive seedings in the spring will produce continuous harvestings, but no seeding should be made later than the last of April. Fall spinach can be grown by planting seed as soon as the early fall rains occur or in irrigated areas during the latter part of August and early September. Side dressings with nitrogen fertilizers hasten growth during the spring and fall. No plant thinning is necessary. The growth of fall and early winter spinach is discussed in Extension Bulletin 487.

Endive is high in vitamins A, C, and G, and in calcium and iron. It is useful in taking the place of lettuce during summer and fall. The Green or White Curled endive makes a full heart that blanches to a light yellow and is of fine quality. The centers are blanched by tying the outer leaves over the center, or by placing a narrow board down the center of the row over the heads, blanching only a few plants at a time for family use. The plants should stand about a foot apart in the row.

Brussels sprouts, most important of winter leafy vegetables, are grown as for late cabbage and their culture is discussed in Bulletin 487. Sprouts contain vitamins A, B_1, C, and iron. Aphids are especially fond of the developing sprouts and must be controlled by using a spray or dust.

Mustard greens. There are several varieties of mustards that are high in vitamins A, C, G, and mineral content. Fordhook Fancy is a vigorous growing, mild variety with leaves curled and fringed at the edges. Mustard is grown by sowing seed in the early spring, or in late summer toward the occurrence of the first fall rains. Thinned plants stand five to six inches apart.

Kale. Table kale is of the dwarf or tall finely curled varieties, and must not be confused with kale for feeding stock. It is unusually high in vitamins A, B_1, C, G and minerals. Culture is the same as for late cabbage. Aphids are fond of this vegetable also and must be controlled as for other members of the cabbage tribe.

Turnip greens, likewise high in vitamins, are valuable for fall, winter, and early spring use. They are grown by making seedings at the same time as for fall turnips. A good variety is the Foliage or Shogoin.

GREEN VEGETABLES

Beans are grown in considerable quantity for use directly from the garden and for canning and freezing. For a continuous supply of green or wax snap beans, successive plantings should be made, beginning after danger of frost is over and continuing to within eight weeks or so of the normal killing frost of the fall. Dwarf varieties will produce more quickly than the pole types, but the latter are more productive over a longer season. Early dustings for control of the twelve-spotted beetle are essential, otherwise the leaves and pods may be badly chewed.

Long production of beans depends upon successive seedings, ample soil fertilization, and applications of water during the summer. Clean picking of all pods large enough to be harvested will also insure longer production. The most widely grown varieties of beans are listed in the planting table on page 4.

While the Oregon lima is not a true lima bean, it is useful as a butter-bean for winter use. For green shelled limas, Henderson's Bush or Fordhook are useful. Seed of these should not be planted until the weather and soil are well warmed.

Green broccoli is especially high in vitamins A, C, and G, and in calcium, phosphorus, and iron. It is used mostly as a fall vegetable grown by planting the seed in June and transplanting from the middle of July to the middle of August. Culture of green broccoli is considered in detail in Extension Bulletin 487.

Green peas furnish an excellent source of vitamins and rank as one of the most delicious vegetables of the home garden when used immediately after harvesting. Since peas are a cool weather crop, the highest quality of peas is obtained if the plants develop pods during moderately cool weather, and seedings should be made accordingly. For the first plantings in the spring when the soil has excessive moisture, seed treatments with copper or mercury compounds (Cuprocide, Semesan) greatly improve the stand, preventing seed rot. Successive spring seedings of one variety, or use of varieties differing in season, will help to provide a continuous supply of pods. Side dressings of a nitrogen fertilizer during spring rains stimulate vine and pod growth. Early dustings for aphis will prevent serious infestations and reduce danger of mosaic. When pea blossoms first appear they should be dusted for control of weevils. Seedings can be made after May 1st in the coast counties but not in the interior counties. For a fall crop of peas, seed two to two and a half months before desired time of harvest.

Green peppers are adaptable to most areas excepting those of high altitude where frost may occur during the summer. If plants are set out as soon as frosts are over in the spring, there should be a good yield of green fruits before fall frosts. Plants are started as for tomatoes, and general cultural directions are listed on page 5 in the planting columns. Few, if any, insects injure peppers. They should be watered, if possible, during the dry season. The thick-meated varieties, such as California Wonder, will keep well after harvest if stored in a cool place. Peppers are high in vitamins A and C.

Asparagus contains vitamins A, B_1, and C, and is especially useful in the home garden because it is a perennial crop. Once planted it is productive for many years. Plants begin to bear well three or four years after being set out but light cuttings may be made before that time. It is one of the earliest vegetables to be harvested in the spring and cutting will continue for two or three months. While asparagus prefers a light, well-drained soil that warms up early in the spring, the plant grows well in any soil of reasonably good type and fertility. Fifty to 100 one-year-old plants will supply the average family with an ample number of stalks during the cutting season of April to July. Asparagus has the finest quality when used immediately after cutting.

YELLOW VEGETABLES

Carrots are high in vitamins A, B_1, and G, and contain vitamin C. For early roots, planting of carrot seed should be made as soon as spring weather and soil conditions permit. Root crops have the finest quality when grown quickly and harvested before they are woody. A few successive seedings, therefore, will insure roots of good quality and medium size.

Sweet corn provides vitamins A, B_1, and G. The finest quality can be grown in the home garden where it can be watched carefully and harvested in the milk stage for immediate consumption. Continuous production can be ob-

tained by planting different varieties varying in season of maturity or by making successive plantings of one variety. The newer types of hybrid corn are highly productive in yield and quality. In the home garden planting shorter rows to form a rectangle rather than a few long rows is best. In experiments at Corvallis, suckering has slightly increased the early but not the total yields. Injury by the corn earworm can be reduced to quite a small percentage of loss by dusting silks at three to five day intervals. (See Extension Bulletin 551.) Irrigation is especially useful in increasing the size and quality of corn and making possible a fall crop maturing in September and October.

Squash. Varieties of yellow and orange fleshed squash have high nutritive value. Storage is an important factor in obtaining long use from squash and the proper methods of handling and storing squash are discussed in the publication on Vegetable Storage.

MISCELLANEOUS VEGETABLES

Potatoes contain calcium, iron, vitamins B_1, C, and G, and are especially high in energy value. They do best on well drained, fertile soils in good tilth. Round varieties are best on heavier soils. Early varieties include Bliss Triumph, a red skinned, round potato; and White Rose, a long, white tuber. Late varieties include Burbank and Netted Gem of the long white type, and Katahdin and British Queen of the round white type.

Seed potatoes should be treated with corrosive sublimate for disease control. Tubers should be cut into blocky pieces weighing 1½ to 2 ounces. Cut pieces should be dusted with landplaster before planting. The cut seed must not be exposed to sunlight. It should be cut in the shade and when planted should be covered immediately.

Potatoes are planted in rows 30 to 36 inches apart and from 12 inches to 15 inches apart in the row. Where planted in dry land gardens in eastern Oregon, rows should be 3 to 4 feet apart with plants from 18 to 24 inches apart in the row. Planting depth should be 5 to 6 inches for level cultivation and 4 inches if rows are to be ridged.

Planting early potatoes may be done from early March to mid-April; late potatoes from mid-April to June.

Rutabagas and turnips contain vitamins A, B_1, C and G, and are high in calcium. Yellow purple-top rutabagas and Golden Ball turnips are among the best varieties of these vegetables. Rutabagas should be planted from June 15 to July 15 in drills 2½ to 3 feet apart and the plants thinned to at least 6 inches. Turnips are seeded either in early spring or in late August to early September. See planting table for details.

Onions are readily grown by any one of three methods. The fall and winter storage crops of Danvers or Sweet Spanish are usually grown from spring-planted seed. Late summer and fall onions such as Bermudas are grown by setting out plants in April. Onions demand a fine seedbed and a well enriched soil to which may be applied a broadcasting of a complete commercial fertilizer two weeks or so previous to seeding. Storage methods are discussed in Extension Circular 339 on vegetable storage.

Cauliflower and celery are important vegetables grown in the fall and early winter garden. Their culture is discussed in Extension Bulletin 487. As a substitute for celery, grow *Celeriac,* or celery root.

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