

The Farm Vegetable Garden

By

A. G. B. BOUQUET
Horticulturist (Vegetable Crops)

THIS bulletin presents information on planning and planting the farm vegetable garden. It does not deal with commercial vegetable production but is designed to encourage more and better farm and home gardens in the state.

Importance of vegetable crops. Recent census records indicate that 70 per cent of all farms in the state, or nearly 45,000 farms in Oregon, reported vegetable crops grown for home use, having a total value of \$2,000,000.

There are at least 30 to 36 different kinds of vegetables that can be successfully grown in various parts of the state, thus affording a wide range of healthful, nutritious food. In addition to fresh vegetables obtainable from the garden, many crops can be canned, dried, pickled, or stored, thus providing an ample supply the year round. A well-planted garden, properly cared for, invariably results in reduced purchases of food not ordinarily produced on the farm.

Data exhibited by government and state experiment stations have shown that the vegetable garden produces larger gross returns per area of land farmed than any other part of the farm.

Many farmers are apt to underestimate the financial value of the vegetable garden because the bulk of the produce goes to the family table instead of being converted by sales into actual dollars and cents.

Systematic work is as essential to success in the vegetable garden as in the regular care of the dairy, poultry, and stable. No garden will thrive and be satisfactory under irregular, inconsistent attention, any more than would a cow milked whenever the farmer took a notion.

Layout of the garden. Inasmuch as the area selected by the gardener on each farm varies in length and width, no definite size of garden is here mentioned. In order to reduce labor cost by horse cultivation, however, the garden should be about twice as long as it is broad, with the rows running lengthwise of the plot.

A total area of one quarter of an acre or more would be furnished by a plot 50 by 200 feet, 70 by 150 feet, or some such proportion.

While a certain number of linear feet of each vegetable is suggested in the plan, yet this is a variable factor according to the size and the preferences of each farm family. The figures, however, can be safely followed in most instances.

Oregon State System of Higher Education
Federal Cooperative Extension Service
Oregon State College
Corvallis

FARM GARDEN PLANTING TABLE

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

Vegetable	Variety	Ft. of row or No. of plants	Date of seeding	Hills, drills, or plants	Date of planting	Distances of planting		Amt. of seed per 100 ft.	Depth of planting inches	When ma- turing
						Rows	Plants			
Radish.....	Scarlet turnip— white tipped White Icicle	25-50	Mar. 10-	D	Successive seedings	12-18	1	1 oz.	1	May and in succession
Spinach.....	Thick Leaf Longstanding	100	Mar. 10- Apr. 15	D		18-24	1-2	1 oz.	1	May 15- June 10
Lettuce.....	New York 12	3 doz.	Feb. 1-15	Hotbed	Apr. 10	18-24	12			June 1
Pea.....	Thos. Laxton, Imp. Gradus Stratagem Tall Telephone	200	Mar. 10- Apr. 25	D	Successive seedings	30	2-3	$\frac{1}{2}$ lb.	1 $\frac{1}{2}$ -2	June 10
Cabbage—early.....	Golden Acre Copenhagen Mkt.	4-5 doz.	Feb. 1-15	Hotbed plants	Mar. 25	30	18-24			June 30- Aug. 20
Onion (sets).....	Danvers Bermuda	50-75		Hotbed plants	Mar. 10 Apr. 10	24	2	1 lb. sets	1	June 1
Turnip.....	Purple top— White Globe	100	Apr. 10	D		24		$\frac{1}{2}$ oz.	$\frac{1}{2}$	June 1
Beet—early.....	Early Model	50	Apr. 10	D		30	2-3	1 oz.	1	July 1
Carrot—early.....	Chantenay, Nantes	50	Apr. 10	D		30	2-3	1 oz.	$\frac{1}{2}$	July 10
Lettuce.....	New York, Iceberg Imperial 847	50-100	Apr. 10		Successive seedings	20	12	$\frac{1}{4}$ oz.	$\frac{1}{2}$	June 20
Swiss Chard.....	Fordhook Giant	50	Apr. 10	D		30	6	1 oz.	1	July 1
Onion (seed).....	Yellow Danvers Sweet Spanish	100-200	Apr. 10-25	D		30	3	1 oz.	$\frac{1}{2}$	Sept. 10- Oct. 10
Parsnip.....	Hollow Crown	50-75	Apr. 20	D		30	3-4	$\frac{1}{2}$ oz.	1	Sept. 20
Salsify.....	Sandwich Island	50	Apr. 20	D		30	3-4	1	1	Sept. 15
Cauliflower.....	Snowball	2-3 doz.	Feb. 25	Hotbed						July 10
Corn—sweet.....	Golden Early Market Golden Bantam Golden Cross Bantam	Rectangular block of each variety	May 1- June 15	D	Successive seedings	36	12-16	2 oz.	2-3	July 25- frost
Bean—bush.....	Stringless Green pod Black Wax	200	May 1 July 1	D	Successive seedings	36	3	1 lb.	1-2	July 20- frost
Bean—pole.....	Kentucky Wonder Oregon Giant Blue Lake	100	May 15	H		36	24	$\frac{1}{2}$ lb.	2	Aug. 1- frost
Bean—lima.....	Oregon Pole Lima	100-150	May 15	H		36	30-36	1 lb.	2	Sept. 10
Tomato.....	Bonny Best, Pritchard, John Baer, Marglobe	4 doz.	Feb. 25- Mar. 10	H Plants	May 10-20	60-72	48-54		$\frac{1}{2}$	Aug. 1- frost

Squash—summer.....	Yellow Straightneck Zucchini	6 hills	May 10-15	P		48	36	$\frac{1}{2}$ oz.	1	Aug. 10
Cucumber.....	Davis Perfect, Vaughn Boston Pickling	18 hills	May 10-15	H		54-60	48-54	$\frac{1}{2}$ oz.	1	Aug. 1- frost
Squash—winter.....	Delicious Banana Hubbard Table Queen	12-13 hills	May 10-15	H		96	96	1 oz.	1	Sept. 15 and store
Pumpkin.....	Winter Luxury	10-12 hills	May 10-20	H		84	72	$\frac{1}{2}$ oz.	1	Sept. 15
Pepper.....	California Wonder	12-18 plants	Feb. 25	P	June 10	36	24		$\frac{1}{2}$	Aug. 1
Eggplant.....	Black Beauty	6-12 plants	Feb. 25	P	June 10	36	24		$\frac{1}{2}$	Aug. 1
Carrot—late.....	Chantenay, Nantes	50	June 15	D		24	3	$\frac{1}{2}$ -1 oz.	1	Sept. 15
Beet—late.....	Detroit Dark Red	50	June 15	D		24	3	1 oz.	1	Sept. 15
Cauliflower— Broccoli.....	St. Valentine Calabrese	3-4 doz.	May 1-15	P	June 25	36	30		$\frac{1}{2}$	Mar. 10
Celery.....	Golden Self Blanching Utah Green	50 ft.	Mar. 10	P	June 20 and later	30	6-8		$\frac{1}{2}$	Sept. 15 and later
Cauliflower.....	Snowball	3-4 doz.	May 1-20	P	June 20 and later	36	30		$\frac{1}{2}$	Oct. 1 and later
Cabbage—late.....	Glory, Ball Head, Green Savoy	5-6 doz.	May 1	P	June 25 and later	36	30		$\frac{1}{2}$	Oct. 1 and later
Sprouts—Brussels.....	Ulrich's American	2-3 doz.	May 1	P	June 25	36	30		$\frac{1}{2}$	Oct. 20
Kale.....	Scotch curled	50	May 1	P	June 25	36	24		$\frac{1}{2}$	Sept. 25 all winter
Turnip—late.....	Purple Top W. Globe Golden Ball	See note 6	Aug. 10		Kohlrabi can be used as substitute for turnips					Oct. 25 all winter
Cabbage—Chinese.....	Wong Bok, Chihli	25	Aug. 1-15			24	10	$\frac{1}{2}$	$\frac{1}{2}$	Oct. 10
Also the following perennials										
Asparagus.....	Washington	100-200 (50-100 plants)		P	April 15	24-30			8-10	Apr. to July
Rhubarb.....	Victoria Mammoth Red	12-24 plants		P	April 1-15	48			3-4	Apr. to July

NOTES ON PLANTING TABLE

- Dates are approximately correct but naturally vary according to season and locality in the state.
- Dates of maturity show whether a crop takes half or all of the growing season to produce a crop. 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.
- Two sowings of beets and carrots are recommended, the first for early summer roots, the second for fall and winter supply.
- Turnips are usually broadcast for fall production. Ample supplies of "greens" can be grown with spinach, chard, kale, and broccoli.
- 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.
- 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.
- Where more than one variety of a vegetable is suggested, it is not unwise to plant several kinds as in the case of Glory and Ball Head cabbage for fall and winter, dwarf as well as tall peas, varieties of sweet corn differing in season of harvest.

VEGETABLE PRODUCTION IN THE HOME GARDEN

Asparagus is especially useful 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. When the garden is practically barren of crops in the early spring, this valuable perennial will begin its season of harvest. Cutting may continue for two or three months.

While asparagus prefers a well-drained soil that warms up early in the spring, the plant grows well in any soil of reasonably good type and fertility. In a dormant condition it will withstand the average winter in any part of the state.

Fifty to one hundred one-year-old plants, costing but 1¢ to 1½¢ apiece, will supply the average family with an ample number of stalks during the cutting season of April to July. Asparagus of the finest quality can be obtained by using it shortly after it is harvested. Beetles are often injurious but can be controlled in the home garden. (See Extension Bulletin 523, *Vegetable-Garden Insect-Pest Control*.)

Rhubarb. Every home garden should have a few plants of rhubarb, a perennial vegetable, which, like asparagus, is one of the earliest producing crops in the spring. Rhubarb plantings are made from divisions of strong plants that bear stalks of a good red color. Unlike asparagus, however, plantings should be renewed every five to eight years in order to keep up good production of stalks. A few new plants should be set out each spring to take the place of those that may be dug in the late fall or early winter for forcing. Rhubarb of the finest quality can be obtained by winter forcing. (See Extension Bulletin 487 and Special Circular on Forcing Rhubarb.)

Garden rhubarb prefers a well-drained soil to which rotted manure is applied. Early rhubarb may be encouraged by covering the hills with warm manure and placing a half barrel over them. Both rhubarb and asparagus will produce more heavily in succeeding years if irrigated during the summer months. Few if any insects bother this crop. The harvest season is the same as for asparagus.

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 beetle control are often essential, otherwise the leaves and pods may be badly chewed. (See methods of controlling the 12-spotted beetle in Extension Bulletin 523.)

Long production of beans depends upon successive seedings, generous soil fertilization, and applications of water during the summer. Clean picking of all pods large enough to be harvested will also insure longer production. Weevils must be controlled by treating seed soon after it is threshed in the fall. The most widely grown varieties of beans are listed in the planting table on page 2.

Beets and carrots. For early use, planting of beets and carrots 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

too large. A few successive seedings, therefore, will insure roots of good quality and medium size.

Young beet plants are susceptible to injury by flea beetles and damping-off. Dusting will control the former, and to avoid damping-off the seed may be treated with either mercury or copper compounds. Careful seeding will eliminate much work in thinning plants in the row. Spring seedings should not be depended upon to produce crops of late beets and carrots. (See Extension Bulletin 487, *Growing Fall and Early Winter Vegetables*.)

Irrigation is desirable for both of these crops during dry weather. The tops from young beet roots make excellent greens. For storage of roots, see Extension Bulletin 464.

Cabbage. An early cabbage crop must be started in the greenhouse or hotbed so that the plants will be ready for transplanting to the garden as soon as early spring conditions will permit. Plants should be somewhat hardened before being set out but not severely so. After transplanting to the garden, control measures for maggots should be carried out, using either the tar pads or the corrosive sublimate method (see Extension Bulletin 523, *Vegetable-Garden Insect-Pest Control*). Otherwise, quite a percentage of plants may die from the injury by maggots. Cabbage plants must also be treated for lice and green worms. Golden Acre is a useful variety of early cabbage. Row or side dressing with a complete fertilizer during spring rains will stimulate the plants to larger and earlier heading. For summer and early fall cabbage Copenhagen Market and Glory of Enkhuizen are good varieties. Late cabbage culture is discussed in Extension Bulletin 487, and in a special mimeographed circular on cabbage.

Cantaloupes. Early melons are grown by starting plants in individual containers and transplanting them to the garden. This is valuable where the season is short. Plants take about $3\frac{1}{2}$ to 4 weeks to reach a proper size for transplanting. Emerald Gem is one of the earliest varieties for home use. Well-rotted manure applied in the hill or a few ounces of complete fertilizer mixed with the soil will provide a good stimulant for young plants. Some growers sow the seed in rows and thin to 18 inches between plants. If the seed is planted before danger of frost is over, it should be protected with some form of covers, such as hotcaps. In the home garden a small box sloping to one side with a pane of glass as a cover will be a means of protecting early plantings. As both striped and spotted beetles attack early melon plants, dusting for these is essential.

Cauliflower. Early cauliflower is likely to head prematurely if the plants are set out as early as the first cabbage. It is inadvisable to have plants ready for transplanting to the garden before the weather has become moderately warm and settled in the late spring. If the plants are set out at that time they must be treated for maggots, lice, and green worms as in the case of early cabbage. Well-fertilized soil is essential for good cauliflower plants and heads. The fall season is the best time for a crop of good size and quality. Culture of this crop is discussed in Extension Bulletin 487.

Sweet corn. The finest-quality corn can be grown in the home garden where it can be watched carefully for development to a point at which it can be harvested in the milk stage and consumed shortly thereafter. Continuous production of ears can be obtained by planting different varieties varying in seasons or by making several plantings of one variety. The new-

er types of hybrid corn are highly productive in yield and grade of ear. In the home as well as the commercial 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 yield. Injury by the corn ear worm can be reduced to quite a small percentage of loss by making several dustings at 3- to 5-day intervals (see Extension Bulletin 523, *Vegetable-Garden Insect-Pest Control*). Irrigation is especially useful in increasing the size and quality of corn and making possible a fall crop maturing in September and October.

Cucumbers. Soil and fertilizer treatments similar to those for cantaloupes will produce a good crop of cucumbers. There should be a liberal seeding to provide a good stand. Growing plants in rows and thinning to 12-18 inches apart will provide for a better growth and larger yields, especially if no irrigation is possible. Beetles are injurious early in the season and the young plants must be protected by dust. Clean picking is essential for continued production of fruits. Applications of water and some side dressings of nitrogen fertilizer in the summer stimulate heavier yields.

Lettuce. The earliest head lettuce is grown from transplanted plants started with heat at the same time as early cabbage (see Extension Circulars 251, 274, and 275 on Plant Growing in Hotbeds). At the time these plants are set out in the garden the first seeding should be made 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. Avoid growing too heavy foliage of plants that makes them more susceptible to tip burn and slime. Keep the soil stirred lightly about the stems to prevent lettuce drop.

Onions. There are three possible methods of growing crops of onions in the farm garden. Early green onions are produced from small, mature sets, and if these are no larger than three-quarters of an inch in diameter, they will often make good dry onions instead of running to seed after having made a green bulb. The fall and winter storage crop is grown by making seedings directly in the garden, as for Danvers or Sweet Spanish, and the early maturing varieties, such as Bermudas, are usually grown by starting young plants in a heated bed or greenhouse and transplanting them to the garden, in which case the crop will mature during the latter part of the summer. (See circular on Growing Bermuda Onions.)

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 or transplanting of plants. Onion plants on lighter soils require watering during the summer to make a good yield. Storage methods are discussed in Extension Bulletin 464, *Vegetable Storage*.

Peas. The best yields of peas are obtained if the plants are developing and forming 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 mercury or copper compounds greatly improve the stand, preventing seed rot. Successive seedings in the spring or use of varieties differing in season will help to provide a continuous supply of pods. Side dressings of nitrogen fertilizer such as nitrate of soda, calcium nitrate, or sulphate of ammonia during spring rains stimulate vine and pod growth. Early dustings for aphids will prevent serious infestations and reduce danger of mosaic. When plants first bloom they should be dusted for control of weevils. For a fall crop of peas, seed two to two and a half months before desired time of harvest.

Spinach. This is a hardy and quick-growing crop for greens and under spring temperatures will be ready for harvesting in about 45 to 50 days. The young plants are subject to damping-off soon after coming through the ground. Seed treatment, as for peas, is a distinct advantage in improving the stand of plants. A few successive seedings will produce continuous harvestings, but no seeding should be made later than about May 1 as the plants will make seed stalks in hot weather. Side dressings with nitrogen fertilizers hasten growth during the spring. No plant thinning is necessary. The growth of fall and early winter spinach is discussed in Extension Bulletin 487.

Sweet potatoes. In warm, sandy, or silt loam soils, good sweet potatoes can be grown and matured if the frost-free season is long and warm enough, usually about 120 to 130 days being necessary. Plants can be grown from tubers planted in a hotbed or can be bought. Nancy Hall and Triumph are the most widely grown varieties. The former has given good yields on the sandy loam soil on the station grounds at Corvallis. The plants are tender when set out and should be transplanted in cloudy weather. Harvesting is done promptly after the first fall frosts. Tubers should be dried well at a temperature of 80° to 85° F. before being put away at a storage temperature of 55° F. or so. (See Publications, page 8.)

Tomatoes. Probably most important of all home garden crops on the farm is the tomato. Early fruiting is obtained by choice of early varieties, setting out well-grown plants, slightly but not severely hardened, and using a well balanced fertilizer high in phosphoric acid. In areas of a short frost-free season, covering the plants for a week or so after setting them out will induce earlier ripening. Hotcaps or home-made protectors of a box with a pane of glass as a covering are useful. Plants should be dusted for flea beetles soon after being set out.

Unless limited space in the garden is concerned, no particular objectives are gained by pruning and staking the plants. Better protection of fruits from sun scald and discoloration as well as an increased total yield are obtained by allowing the plants to grow naturally on the ground. Fruits may sometimes be induced to rot by lying on the soil; but the main rot of tomatoes is at the blossom end, which rot is induced by an insufficient amount of soil moisture for the plant and fruit during periods of warm weather. Irrigation is useful, therefore, in tomato growing to assist in maintaining uniform soil moisture.

As mature green tomatoes or "green-ripes" will develop a normal red color under moderate room temperatures, the harvesting season for home-grown fruit may be considerably lengthened by gathering the mature green tomatoes before frost. Immature green fruit will not color. Tomatoes will keep well in a storage temperature of 45° to 50° F. without ripening, but at 50° F. upward will slowly assume a red color. (See Extension Bulletin 464, *Vegetable Storage.*)

ADDITIONAL SUGGESTIONS

1. Unprofitable farm gardens are usually due to any or all of the following factors: lack of planning the garden; too few plantings, thus causing gaps in production; using inferior seed; insufficient soil fertilization; lack of humus (See Extension Bulletin 524); little if any insect control work (see Extension Bulletin 523); inconsistent care in looking after plantings; need of irrigation.

2. Well-grown plants of certain vegetables for transplanting, such as cabbage, lettuce, onions, cauliflower, tomatoes, celery, and pepper aid ma-

terially in giving the crop a good start. These should either be grown in hotbeds or small greenhouses on the farm or purchased from some reliable plant grower.

3. Commercial fertilizers are often a valuable stimulant to vegetable growth. Of particular value are side dressings to rows of vegetables as indicated in the discussion regarding certain crops in the preceding paragraphs. A special circular is available concerning fertilizer materials to use and how to apply them (see Publications, page 8).

4. Many farm gardens will repay, in increased yields and value of crops, money and time spent in irrigation. The water can be readily applied by gravity from the water storage tank on the farm or pumped from some nearby river, creek, or well.

5. There is little excuse for an insect-eaten garden. Most of the common vegetable insects can be readily controlled with standard poison dusts or sprays. A complete dust containing calcium arsenate, nicotine sulphate, and a filler of lime or sulphur is useful for the control of many leaf-eating or leaf-sucking insects. Keep handy a copy of Bulletin 523, *Vegetable-Garden Insect-Pest Control*.

6. Fall and early winter vegetables must usually be started a number of weeks before the expected maturity of the crop. Extension Bulletin 487, dealing with this phase of gardening, should be used by all who desire a complete garden.

7. Crops that are not discussed in this bulletin but the culture of which is to be found in Extension Bulletin 487, *Growing Fall and Early Winter Vegetables*, are as follows: cabbage, cauliflower, Brussels sprouts, curly kale, sprouting broccoli, fall head lettuce, spinach, celery, celeriac, Chinese cabbage, mustard, late carrots and beets, radish, turnip, pumpkin and squash, kohlrabi, Swiss chard, salsify.

PUBLICATIONS USEFUL IN HOME AND COMMERCIAL VEGETABLE GROWING

Bulletins

- Extension Bulletin 457. Planting the subsistence vegetable garden.
- Extension Bulletin 464. Vegetable storage.
- Extension Bulletin 487. Growing fall and early winter vegetables.
- Extension Bulletin Club Series D-11. Vegetable growing for 4-H club members.
- Extension Bulletin 523. Vegetable-garden insect-pest control.
- Extension Bulletin 524. Fertilizers for vegetable crops.

Mimeographed Circulars

Greenhouses, Hotbeds, Cold Frames, Plants

- A monthly schedule of operations in growing vegetables for home use on the general farm.
- Small greenhouses for growing vegetable plants and crops.
- Growing early vegetable plants under glass.
- Treating soil for control of the damping-off disease.
- Construction and operation of the cold-frame in vegetable growing.
- Growing vegetable plants in the manure-heated hotbed.
- The flue-heated hotbed in growing early vegetable plants.
- Greenhouse vegetables—tomatoes—cucumbers.
- Applying formaldehyde to greenhouse soils.
- Suggestions for the control of tomato mosaic and streak.
- Growing and forcing Witloof chicory or French endive.
- Forcing rhubarb.

Crops

Artichoke	Cabbage	Garlic	Rhubarb
Asparagus	Cauliflower	Horseradish	Sweet corn
Snap beans	Carrots	Lettuce	Sweet potatoes
Beets	Cantaloupe	Onion	Squash
Broccoli	Celery	Green peas	Pumpkin
Brussels sprouts	Cucumber	Peppermint	Tomato

Cooperative Extension Work in Agriculture and Home Economics

Wm. A. Schoenfeld, Director

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