

Growing Fall and Early Winter Vegetables

By

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Table 1. PLANTING TABLE FOR FALL AND EARLY WINTER VEGETABLES.*

Vegetable and variety	Planting							Period for maturity	Harvesting season
	Date for seeding	Date for transplanting	Method	Distance between rows	Distance between plants	Seed per 100 linear feet	Depth		
Beet—Detroit Dark Red.....	June 15-July 15	.....	Drill	<i>Inches</i> 18-24	<i>Inches</i> 2-3	<i>Ounces</i> 1	<i>Inches</i> 1	<i>Days</i> 65-70	<i>Months</i> Sept.-Dec.
Broccoli, green—Calabrese.....	May 1-June 15	June 15-July 30	Plant	30-36	24-30	$\frac{1}{2}$	$\frac{1}{2}$	75-80	Sept.-Dec.
Brussels sprouts—Perfection.....	May 1-May 20	June 15-July 10	Plant	36	30	$\frac{1}{2}$	$\frac{1}{2}$	110-150	Oct.-March
Cabbage, fall—Glory of Enkhuizen.....	April 10-May 10	June 1-June 20	Plant	36	30	$\frac{1}{2}$	$\frac{1}{2}$	100-110	Sept.-Oct.
Cabbage, late—Danish Ballhead, Savoy.....	May 10-May 20	July 1-July 15	Plant	36	30	$\frac{1}{2}$	$\frac{1}{2}$	120	Oct.-Feb.
Cabbage, Chinese—Wong Bok, Chihli.....	June 15-July 15	.....	Drill	18-24	10	$\frac{1}{2}$	$\frac{1}{2}$	70	Sept.-Nov.
Carrot—Chantenay, Nantes, Imperator.....	June 15-July 15	.....	Drill	18-24	2-3	$\frac{1}{2}$	$\frac{1}{2}$	75-80	Oct.-Feb.
Cauliflower—Snowball.....	May 10-June 10	July 1-Aug. 10	Plant	36	30	$\frac{1}{2}$	$\frac{1}{2}$	120	Oct.-Dec.
Cauliflower-Broccoli—S. Valentine.....	May 10-June 10	July 1-Aug. 10	Plant	36	30	$\frac{1}{2}$	$\frac{1}{2}$	220-240	Feb.-April
Celery—Golden self blanching, Utah green.....	April 15-May 20	June 20-July 20	Plant	30-36	5-7	Seedbed	$\frac{1}{2}$	120-135	Sept.-Dec.
Celeriac—Large Prague.....	May 15	.....	Drill	24	4-6	$\frac{1}{2}$	$\frac{1}{2}$	120	Sept.-Dec.
Chard, Swiss—Fordhook, Lucullus.....	June 15-July 15	.....	Drill	24	6-10	1	1	70-75	Sept.-Dec.
Leek—Large Carentan.....	May 15-June 1	.....	Drill	18	4	1	1	90	Sept.-Nov.
Lettuce—New York 12.....	June 20-July 15	.....	Drill	18-24	12-15	$\frac{1}{2}$	$\frac{1}{2}$	80-90	Sept.-Nov.
Kale curled—Dwarf or tall Scotch curled.....	May 10-May 20	July 1-July 15	Plant	30	24	$\frac{1}{2}$	$\frac{1}{2}$	70	Sept.-March
Kohl-rabi—White or purple Vienna.....	June 15-July 15	.....	Drill	18	4	$\frac{1}{2}$	$\frac{1}{2}$	65-70	Sept.-Nov.
Mustard—Southern curled, Fordhook.....	Aug. 1-Aug. 25	.....	Drill	18-24	4-6	$\frac{1}{2}$	$\frac{1}{2}$	40-45	Sept.-Nov.
Onion—Sweet Spanish, Yellow Danvers.....	April 5-April 20	.....	Drill	14-18	.....	1	1	120-150	Sept., and in storage
Parsnip—Hollow Crown, Tender Heart.....	May 1-May 20	.....	Drill	24	3-4	$\frac{1}{2}$	1	110-120	Oct.-March
Pumpkin—Winter Luxury, Table Queen.....	May 10-May 20	.....	Hill	96	96	$\frac{1}{2}$	2	120	Sept., and stored
Radish—Scarlet-turnip white tipped.....	In succession	.....	Drill	12-18	1	1	1	25-30	Sept.-Dec.
Rutabaga—Purple-top Yellow.....	June 10-June 20	.....	Drill	24-30	4-6	$\frac{1}{2}$	$\frac{1}{2}$	90	Oct.-Dec.
Salsify—Sandwich Island.....	May 10	.....	Drill	18-24	2-3	1	1	110	Oct.-Dec.
Spinach—Giant thick-leaf.....	July 15-Sept. 11	.....	Drill	18-24	.....	1	1	45-60	Sept.-Dec.
Squash—Delicious, etc. (see page 7).....	May 10-May 20	.....	Hill	96-120	96-108	1	2	120	See Pumpkin
Turnip—Purple-top White globe.....	July 15-Sept. 1	.....	Broad-cast	Broad-cast	Broad-cast	.....	$\frac{1}{2}$	60	Sept.-Dec.

*The dates in this planting table are approximate, and should be modified to meet varied conditions in different sections of Oregon. The dates apply to Western Oregon in general.

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IN ORDER to provide for successive harvesting of vegetables as long as possible throughout the year, and particularly to furnish supplies for the table during the months when fewer vegetables are available from the garden, it is important to consider what vegetables can be grown for this purpose and ways and means of producing them.

There is a mistaken idea that because some vegetables are consumed during the fall and winter they are started comparatively late in the growing season. This may be true in a few cases in which the crops are quickly grown, such as radish and spinach, but in most instances fall and winter vegetables must be started several months before the intended time of harvesting. This is the case with onions, parsnips, squash, late cabbage, cauliflower, and celery, which are crops that must be started early in the growing season.

This bulletin is intended to interest gardeners in the growing of fall and early winter vegetables and to convey information to that end.

Cabbage, cauliflower, Brussels sprouts, curly kale, and sprouting broccoli. These crops, which are all members of the cabbage tribe, are grown for fall and early winter by sowing seed in an outdoor seed-bed in a handy place where the plants can be given proper attention during their six or seven weeks of growth. The seed should be sown thinly, about 18 to 24 seeds per linear foot, and covered about half an inch. Care should be taken in dropping the seed so that the plants will stand about half an inch apart in the row. The rows should be far enough apart to permit cultivating for weed eradication—approximately 18 to 24 inches apart. For late cabbage, cauliflower, and sprouting broccoli it is often desirable to make two or three successive seedings for successional harvestings. One seeding, however, may be sufficient to provide plants of curly kale and Brussels sprouts. If dry weather prevails, it may be necessary to water the seed-bed so as to provide good germination. Water will be applied when giving treatments of corrosive sublimate solution as described below.

Cabbage maggots may infest the seed-bed. If known to be prevalent in the vicinity in previous years, precaution should be taken to apply a solution of corrosive sublimate to the soil about the plants in the seed row to keep them from being affected by the maggots. The corrosive sublimate (bichloride of mercury) should be mixed in one quart of hot water in a glass, wood, or earthenware vessel and diluted with water at the rate of one ounce to 12 gallons of water. This solution is poured on the surface soil about the young plants in the row at the rate of one gallon to 20 to 40 linear feet of row. The first treatment should be applied soon after the plants are up, the second about ten days later, and the third after another ten-day period. The cost is very small considering the protection given the

plants, being about 7¢ to 10¢ per one thousand plants for three applications. (See page 8 for bulletin on insect control.)

It is inadvisable to have the seed-bed soil for these plants too rich, inasmuch as it will cause a succulent or leafy growth of the plant. The plants should be strong and stocky but not soft; otherwise they will transplant with difficulty in warm weather.

Fit the land well for the plants before transplanting. Select a spell of cloudy weather, if possible, or if the transplanting must be done in warm weather shade the plants on the southwest side with a shingle until established. The plants should be about seven to eight inches tall when set in their permanent place in the field. If the plants are larger and the weather is warm, remove a portion of the leaf surface. Soak the soil of the seed-bed about twelve hours or so before lifting to transplant. The table on page 2 shows varieties, planting distances, etc., of the various members of the cabbage family.

Aphis and green worms are likely to attack any of the plants of the cabbage tribe in the field, and the plants should therefore be dusted shortly after they are transplanted with a complete or All-in-One garden dust containing calcium arsenate, nicotine sulfate, and lime or sulfur as a carrier. Dusting may have to be repeated at intervals of 14 or 21 days, until the plants appear to be well protected from lice or worms. This material will not control maggots affecting the roots of the plant, but the maggots are seldom serious in the field. Do not cultivate cabbage and cauliflower plants unless there are weeds to be killed or the top of the soil is to be prevented from crusting after a rain. If the soil already has a mulch and there is no rain, constant cultivation during a dry period may be detrimental rather than beneficial. The chief aim of cultivation is weed control.

Cauliflower heads must be kept white by tying the large leaves together over the heads when the latter are forming. Within a week and sometimes less, after leaf tying the heads probably will be ready to cut. Allow the cabbage plants to stand in the field until the heads are thoroughly firm before cutting. If the heads show signs of bursting, pull up on the plants so as to loosen some of the feeding roots. For cabbage storage methods see Extension Bulletin 464, *Vegetable Storage*. Separate mimeographed circulars are available on the growing of late cabbage, cauliflower, and broccoli. Brussels sprouts should be allowed to become solid before harvesting. This vegetable, as well as curly kale, is especially resistant to frosty temperatures.

Head lettuce. Lettuce is an important fall vegetable and can be grown from seed in 75 to 90 days, depending upon temperatures prevailing in the fall. Fall lettuce should be started in midsummer or just as soon as showers in July and August permit seeding. Seed should be dropped thinly in rows 18 to 24 inches apart, and the plants later thinned to stand 12 to 14 inches apart in the row. The best variety of head lettuce for fall and spring is New York No. 12. Lettuce heads are quite subject to injury when cold, frosty weather occurs; consequently there is no use in making a seeding of lettuce in the early part of the fall expecting to harvest a crop later. To have a crop of lettuce for October make seedlings in early August; for November, in the latter part of August. A good method of prolonging the home-grown lettuce season is to have some lettuce plants transplanted into a cold-frame that can be protected from cold and rainy weather so the plants will head

out during November and the early part of December. These plants should be set in the frame no closer than 12 by 12 inches. If protection is given the plants by glass, treated cloth, or any other glass substitute, no bottom heat will be necessary in the frame for the maturity of the lettuce heads.

Spinach. Spinach is a hardy and quick-growing crop and under favorable temperatures can be grown in about five and a half to six and a half weeks. The seeds should be planted as soon as any late summer or fall rains permit, preferably in August or the fore part of September, or if the land can be irrigated during these months seedlings can be made so as to have spinach available during October and November, which are ideal months for this hardy vegetable. Rows of spinach are usually about 16 to 18 inches apart, requiring about 12 pounds of seed per acre. No thinning of the plants is required but the rows may profitably receive a side dressing of nitrate of soda, calcium nitrate, or sulfate of ammonia during the early fall rains in order to hasten the growth of the plant. Two or three successive seedlings should supply sufficient spinach to last until cold weather. Spinach seeds can also be dropped in the ground during October so as to have plants that winter over and are ready for early harvesting the following spring. Improved Thick Leaf and King of Denmark are two good varieties of spinach.

Celery. Celery is a valuable fall and early winter vegetable. It must be started by transplanting plants from June to the middle of July, in order to have celery of varying age and height in the garden, which will provide a succession of bunches for the table. The plants should be set five to seven inches apart in the row and grown with level cultivation. The land should be well fertilized. A top dressing of 4-10-10 fertilizer is sometimes used, applying about one pound to every hundred linear feet of row. Celery must be irrigated at 12- or 14-day intervals. For blanching, use 1x12-inch boards against the plants when they are 14 inches or so high. A few plants should be boarded at one time. The boards should not stand against the celery longer than a normal time of blanch, usually 18 to 20 days; otherwise the celery will become hollow and pithy. When cold weather comes, give extra protection besides the blanching boards. Most celery growers spray or dust their plants with bordeaux before setting them in the field and repeat a few times afterwards, to control celery blight. Golden Self Blanching is the variety most commonly grown. Utah green is becoming increasingly popular. The plants produce crisp, solid stalks of a nutty flavor.

If celery is not grown, substitute celeriac or celery root, which has turnip-like bulbs forming under the ground.

Celeriac. Plant celeriac as you would parsnips, thinning out the plants to stand six inches or so apart in the row. The plants and the roots are hardy and will be useful in fall and early winter for soup or flavoring in place of celery.

Chinese cabbage. This is an excellent fall vegetable, individual plants, when fully grown, being capable of making a quantity of food for salad or cooked greens. The varieties commonly grown are Wong Bok, Chihli, and Pe Tsai. Sow the seed as early as possible after the summer drought breaks, preferably about August 10 to 15, and thin the plants to 12 to 16

inches apart in the row. The plants must grow steadily if not rapidly, otherwise they may run to seed. Allow the plants to grow to a good solidity of the bunch before harvesting.

Mustard. Varieties of mustard, including Southern Curled, Fordhook Fancy, and Elephants Ear, make fine crops of mustard greens for fall and early winter use. Sow at the same time as the Chinese cabbage or when the first rains in the late summer or early fall occur. Thin the plants to stand 6 to 12 inches apart in the row, depending upon the variety.

Late carrots and beets. Do not rely on March- or April-sown carrot and beet seed to produce crops of roots for fall and winter. The roots will be too large and woody if sown in the early spring for fall and winter. Seedings of these vegetables should be made again in early June, or even early July, before or following summer rains or by means of irrigation. The varieties most widely used for this planting are Detroit dark red beets, and Chantenay carrots. The plants should stand from 2 to 3 inches apart in the row, with rows 18 to 24 inches apart.

Radish. Fall-grown radishes usually are free from maggots but any radish plantings can be kept from being injured by maggots by covering the bed with a muslin screen, having approximately 20 to 30 threads to the inch. Instead of having a single long row for radishes, plant several short rows so as to form a rectangular bed which will be covered by the muslin attached to four boards of 1x8 or 1x10 inch, forming the outside of the bed. The purpose of such a screen is to keep the maggot fly from laying eggs, thus prohibiting any entrance of the maggots to the roots. Radishes can be planted at various intervals up to October 15. There is a large range of varieties varying in color and shape. The Scarlet Turnip white-tipped variety is very popular.

Turnips. Seedings of turnips can be made either broadcast or in rows. If there is danger of maggots affecting the roots a broadcast sowing should provide for an ample supply of roots for the table even though a certain percentage of them are affected with the maggots. Seedings can be made at any time in late August up to the first part of October. If broadcast seeding is used, the land should be clean of weeds. There are three types of varieties that may be grown—white, yellow, and purple and white. A small rectangular bed can be screened, as for radishes.

If table rutabagas of the Golden Heart variety are grown, the rows should be far enough apart for cultivation and the plants thinned to about six inches apart in the row. Sow in the middle of the summer for a fall crop.

Sprouting or green broccoli. This is a valuable fall and early winter vegetable which is hardy to frost, forming a head of a green color in the center of the plant. After this head is cut, numerous lateral branches are formed which produce small heads about the size of a carnation. These and the tender stems bearing them make excellent greens. The green heads as well as the buds should be harvested before they begin to break or open. Successive seedings and transplanting will give a continuous harvesting of this valuable vegetable. The crop is grown in a manner similar to fall cabbage or cauliflower.

Cauliflower-broccoli. This form of broccoli makes white heads in the early spring following the year of transplanting the plants. It is in many respects similar to cauliflower, varying mainly in its hardiness to survive the ordinary Western Oregon winter. The crop is grown in a manner similar to late cabbage and cauliflower as discussed above. (See planting table Page 2.)

Pumpkin and squash. Seeds of these fall and early-winter vegetables should be planted from May 10 to 20 in hills either 8 by 8 or 10 by 10 feet apart in rows 8 to 10 feet apart, the plants to be thinned to about 2½ to 3 feet in the row. A handful of a complete commercial fertilizer may be mixed with the soil of each hill or a forkful of rotted manure applied to the soil where the seeding is to be done. The varieties of winter squash most widely grown are Golden Delicious, Delicious, Banana, Hubbard, Marble-head, Delicata, and Table Queen. The most widely grown variety of pumpkin is the Orange Winter Luxury. If the plants are grown by the hill method, they should be thinned to three strong plants per hill. The plants may need to be protected from injury by the twelve-spotted beetle by dusting early with nicotine sulfate or the All-in-One dust previously mentioned for cabbage insects. See Extension Bulletin 463 for suggested methods of controlling squash bugs and Extension Bulletin 464 for storage of squash and pumpkin.

Kohl-rabi. This vegetable is easily grown and makes an excellent addition to the list of roots available for the table. Kohl-rabi produces a dilated stem which is like a round turnip and is cooked and eaten like the latter. When turnips are affected with maggots kohlrabi is often entirely free. Plant seeds of White Vienna in late summer or very early fall and thin to 6 inches or so in the row. The plants may also be grown and transplanted like late cabbage in July.

Swiss chard. This vegetable is of particular value in any garden because of its use during both cool and warm weather. Seed of chard planted in the spring or early summer will furnish a continuous supply of greens through the summer, fall, and early winter. The plants will also bear a new crop the following spring before running to seed. Lucullus has been the variety grown for many years, but some new, improved strains of chard such as Fordhook and broad-ribbed green-leaved are available, producing larger and wider stalks, which can be used like asparagus, and dark green, smooth or wrinkled leaves. Chard plants should stand about a foot or so apart in the row.

Salsify. This vegetable should be more widely planted for fall and early winter use in flavoring soups. The crop is grown in the same way as late carrots or parsnips. Mammoth Sandwich Island is the variety grown.

Parsnips. One of the hardest vegetables to be grown and harvested over a long season is the parsnip. Smooth tapering roots of medium size are desirable. Parsnips have a higher sugar content after slight freezes but should be pitted or otherwise stored before severely frozen. (See Extension Bulletin 464 *Vegetable Storage*).

Forced rhubarb. Rhubarb plants that have been growing in the garden for a few years can be dug up in November, December, or January with the intention of forcing a growth of fine tender stalks for winter use. The entire plant should be dug up, allowed to freeze and then placed in a dark

cellar, shed, frame or under the bench of the greenhouse. The plants should be covered with two inches or so of soil, watered and kept at a temperature of 50 to 60 degrees F. About four weeks from the time of setting in the forcing place pink stalks of from 12 to 16 inches may be harvested and the plants will continue to bear for about four weeks if the stalks are kept pulled. After production has ceased, discard the plants or set them back in the garden to recuperate for harvesting in future years. A few new plants should be set out each spring to make up for those that are dug each winter for forcing.

PUBLICATIONS USEFUL IN HOME AND COMMERCIAL VEGETABLE GROWING

BULLETINS

- Extension Bulletin 443. The Farm Vegetable Garden.
 Extension Circular 282. A monthly Schedule of Operations in Growing Vegetables for Home Use on the General Farm.
 Extension Bulletin 457. Planting the Subsistence Vegetable Garden.
 Extension Bulletin 463. Vegetable-Garden Insect Pest Control.
 Extension Bulletin 464. Vegetable Storage.

MIMEOGRAPHED CIRCULARS

Greenhouses, Hotbeds, Cold Frames, Plants

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.
 Suggestions for the control of the leaf-mold disease of tomatoes.
 Suggestions for the control of Tomato mosaic and streak.
 Growing mushrooms.
 Growing and forcing Witloof Chicory or French endive.
 Forcing Rhubarb.

Crops

Artichoke
 Asparagus
 Snap beans
 Beets
 Broccoli
 Brussels sprouts
 Cabbage
 Cauliflower

Carrots
 Cantaloupe
 Celery
 Cucumber
 Garlic
 Horseradish
 Lettuce
 Onion

Green peas
 Peppermint
 Rhubarb
 Sweet corn
 Sweet potatoes
 Squash
 Pumpkin
 Tomato