

LENGTH OF GROWING PERIOD

The correct choice of planting time is one of the most important decisions that a vegetable producer needs to make. It can be critical as far as crop yields and quality achieved are concerned. It can have an important bearing on various costs of production, such as the costs of insect and disease control. Moreover, it determines the season of harvest, and this normally affects prices received for the product.

The climatic requirements of the crop should be matched to the expected conditions applicable to the specific production site selected, if a successful crop is to be produced. In addition, production should, if possible, be aimed at a time of year when remunerative prices are more likely to be paid.

In order for plant growth to take place during favourable conditions, and when aiming to harvest at a specific time, it is essential to know approximately how long it will take the crop to reach market maturity, as well as the length of the cropping season. Obviously these timespans will vary, depending upon the crop concerned and the cultivar, the cultural practices applied, and the environmental conditions prevailing during growth.

Effects of Temperature

The prevailing atmospheric and soil temperatures play a major role in determining the length of the season for any cultivar.

With the exception of lettuce and spinach, most vegetables will either not germinate, or will take a month or longer to emerge, when temperatures are kept at only 5°C.

At 10°C most cool-season crops such as beetroot, carrot, celery, the cabbage family, the onion family, peas, radish and turnip will germinate satisfactorily and generally take 10 to 20 days to emerge.

At 15°C most crops will germinate well and should emerge within 10 to 20 days, except for crops such as Lima bean, okra and peppers, which may take up to about 30 days.

Between 20°C and 30°C most crops will emerge within 4 to 14 days, an exception being celery, which does not readily germinate at temperatures of above 25°C.

At 35°C emergence problems can occur with many cool-season crops, although beetroot, carrot, the onion family and turnip should still emerge well and rapidly.

At 40°C only okra and turnip are likely to emerge satisfactorily. Most vegetable seed will sprout and emerge fairly rapidly at soil temperature varying from 15°C to 30 ° C.

The effects of temperature on time from seeding to plant emergence are illustrated in Table 2 (see Climatic Requirements). These emergence periods will normally be extended with deeper plantings, as is often the practice with vegetables with larger seed, or under drier conditions. Soil temperatures are lower with depth, and the shoot tips have a greater length of growth in order to reach the soil surface. Prevailing temperatures will also affect other growth stages of plants.

The average growing and harvesting periods of various vegetable crops grown under optimum conditions are listed in Table 4. As conditions seldom remain optimal for the full growing period, most crops will, in practice, be later-maturing than indicated in the table.

Delays should be expected with plantings made early in spring or very late in the normal growing seasons, when conditions are not as favourable for growth.

For example, a green bean cultivar may reach maturity in 60 days when grown over summer, but may need 85 days when planted under the cooler conditions prevailing in early spring. This could result in the next planting of the same cultivar, made 2 or even 3 weeks later (when conditions might be more favourable for growth), reaching market maturity within a few days of the earlier planting.

Most other crops will be similarly affected by changes in temperature, day-length or some other factor which could influence rate of growth or development.

Table 4.

The approximate times required from planting to first harvest (under optimum growing conditions) and length of the harvesting period of some vegetable crops. Periods will vary with cultivars.

Vegetable	Days to First Harvest	Usual Harvesting Period
Bean, broad	120	2 months
Bean, green, bush	48 - 60	2 -3 weeks
Bean, green, runner	62 - 68	4 - 6 weeks
Bean, Lima, bush	65 - 78	3 - 6 weeks
Bean, Lima, pole	78 - 90	2 - 4 months
Beetroot	56 - 70	3 - 5 weeks
Brinjal	60 - 85 *	2 - 3 months
Broccoli	50 - 80 *	Heads 1 - 2 weeks Sprouts 3 - 4 weeks longer
Brussels sprouts	100 - 120 *	2 - 3 months
Cabbage	65 - 120 *	1 - 4 weeks
Carrot	80 - 120	1 - 4 weeks
Cauliflower	60 - 130 *	2 - 4 weeks
Celery	90 - 125 *	2 - 4 weeks
Chilli	65 - 80 *	2 - 4 months
Chinese cabbage	70 - 90	1 - 4 weeks
Chives	90	Until replant
Cucumber	60 - 70	1 month
Kohlrabi	50 - 60	2 - 4 weeks
Leek	150	1 - 2 months

Vegetable	Days to First Harvest	Usual Harvesting Period
Lettuce, butter	45 - 70 *	1 - 2 weeks
Lettuce, head	50 - 80 *	1 - 2 weeks
Marrow, baby	40 - 50	6 - 9 weeks
Marrow, large	70 - 80	4 weeks
Melon, musk/sweet	80 - 110	2 months
New Zealand spinach	70	2 months
Okra	50 - 60	4 - 6 weeks
Onion, table	140 - 180 * 200 - 250 direct sowing	1 - 4 weeks
Onion, pickling	70 - 100	1 - 4 weeks
Parsley	70 - 80	4 - 10 weeks
Parsnip	120	2 - 4 weeks
Pea, green	60 - 80	2 - 3 weeks
Pepper, sweet	65 - 80 *	2 - 3 months
Potato	90 - 120	2 - 4 weeks
Pumpkin	110 - 130	1 - 2 months
Radish	20 - 30	1 - 2 weeks
Spinach, true	40 - 55	1 - 2 weeks
Squash	85 - 110	1 - 2 months
Sweet corn	70 - 90	1 - 2 weeks
Sweet potato	90 -150	1 - 2 months
Swiss chard	50 - 60	2 - 4 months
Tomato	75 - 90 *	2 - 3 months
Turnips	45 - 75	2 - 4 weeks
Watercress	180	Until replant
Watermelon	75 - 95	1 - 2 months

* denotes time from transplanting

Note : For crops such as cabbage, carrot, lettuce, onion and potato, the entire crop may be ready for harvesting within a few days but is usually done over a longer period. If the cultivar grown is a hybrid, the harvesting period will probably be more restricted than is the case with an open- pollinated variety.

It must be emphasized that the above periods will vary with cultivar, as well as with variations in environmental factors. Maintenance of records of each planting eventually will enable any grower to forecast, fairly accurately, when any specific planting is likely to reach market maturity, as well as the duration of the harvest. Such information is an invaluable aid in future planning.