



MASTER GARDENER
COLORADO STATE UNIVERSITY
EXTENSION

CMG GardenNotes #720

Vegetable Planting Guide

- Outline:
- Cool season vegetables, page 1
 - Hardy vegetables – Broccoli, cabbage, kohlrabi, onions, lettuce, peas, radish, spinach, turnips, page 1
 - Semi-hardy vegetables – Beets, carrots, cauliflower, parsley, parsnips, potatoes, and Swiss chard, page 1
 - Warm season vegetables, page 2
 - Tender vegetables – Beans, celery, corn, cucumbers, New Zealand spinach, and summer squash, page 2
 - Very tender vegetables – Lima beans, cantaloupe, eggplant, pepper, pumpkin, winter squash and pumpkin, tomato, and watermelon, page 2
 - Planting Guide Table – Vegetable planting guide, page 3
 - Average Frost Dates, page 4
-

Cool Season Vegetables

These vegetables prefer cool growing temperatures (60°F to 80°F) and lose quality in hot weather. They are often replanted mid-summer for fall harvest.

Hardy Vegetable

Crops: broccoli, cabbage, kohlrabi, onions, lettuce, peas, radish, spinach, turnips

Temperatures: Hardy vegetables grow with daytime temperatures as low as 40°F and may survive a frosty nip.

When to plant:

- Based on soil temperatures, refer to Table 1.
- Plant as soon as soil adequately dries in the spring.
- These crops may be planted as early as 2-4 weeks before the date of the average last spring frost.

Semi-Hardy Vegetables

Crops: beets, carrots, cauliflower, parsley, parsnips, potatoes, and Swiss chard

Temperatures: Semi-hardy vegetables grow with minimum daytime temperatures of 40°F to 50°F, but are less tolerant of a frosty night.

When to plant:

- Based on soil temperature, refer to Table 1.
- Plant as soon as soil adequately dries in the spring.
- These crops may be planted as early as 0-2 weeks before the date of the average last spring frost.

Warm Season Vegetables

Warm season vegetables prefer summer-like weather with temperatures between 70°F and 95°F. They are intolerant of frost and may be sensitive to cool spring winds.

Tender Vegetables

Crops: beans, celery, corn, cucumbers, New Zealand spinach, summer squash

Temperatures: Tender vegetables grow with a daytime temperature above 55°F, and are intolerant of frost.

When to plant:

- Based on soil temperature, refer to Table 1.
- Soil is adequately dry to work.
- These crops may be planted (from seed) around the date of the average last spring frost. Transplants of cucumbers and summer squash without frost protection should be delayed until frost potential is over.

Very Tender Vegetables

Crop: lima beans, cantaloupe, eggplant, pepper, pumpkin, winter squash and pumpkins, tomato, and watermelon

Temperatures: Very tender vegetables are not only intolerant of frost, but also cool spring winds. They need daytime temperatures above 60°F, and prefer temperatures of 70°F to 95°F. A week of daytime temperatures below 55°F, may stunt the crop.

When to plant:

- Based on soil temperature.
- Soil is adequately dry to work.
- These crops are typically planted two plus weeks after the average last spring frost date.
- Weather is becoming summer-like, (i.e., consistently above 55°F (daytime) and breezes should have lost any cool nip).

Table 1 – Vegetable Planting Guide

Vegetable	Germination Temperature ¹			Plant Spacing ²	Planting Depth	Days to Germination	Typical Days to Harvest	Age of Transplant (weeks)
	Min.	Optimum	Max.					
<u>Cool Season Crops³</u>								
Beets	40°	80°	90°	4-6"	¾-1"	7-10	60	
Broccoli ⁴	40°	80°	90°	18"	½"	3-10	65T ⁴	5-7
Cabbage ⁴	40°	80°	90°	18"	½"	3-10	85T ⁴	5-7
Carrots	40°	80°	90°	2-3"	¼"	10-17	70	
Cauliflower ⁴	40°	80°	90°	18"	½"	3-10	65T ⁴	5-7
Kohlrabi	40°	80°	90°	7-9"	½"	3-10	50	
Leeks	40°	80°	90°	4-6"	¼"	7-12	120	
Lettuce (leaf types)	35°	70°	70°	7-9"	¼"	4-10	60	
Onion, green	35°	80°	90°	2-3"	¼"	7-12	60	
Onions, dry (seed sets)	35°	80°	90°	4-6" 4-6"	¼" 1-2"	7-12	110	
Parsnips	35°	70°	90°	5-6"	½"	15-25	70	
Peas	40°	70°	80°	4-6" or 3"×8"	1"	6-15	65	
Potatoes	45°			12-15"	4-6"		125	
Radish	40°	80°	90°	2-3"	½"	3-10	30	
Spinach	40°	70°	70°	4-6"	½"	6-14	40	
Swiss Chard	40°	85°	95°	7-9"	1"	7-10	60	
Turnips	40°	80°	100°	4-6"	½"	3-10	50	
<u>Warm Season Crops</u>								
Beans, snap	55°	80°	90°	6" or 4" x 12"	1-1½"	6-14	60	
Cantaloupe ⁵	60°	90°	100°	36-48"	1-1½"	3-12	85	2-3 ⁵
Corn	50°	80°	100°	12" x 30" 9" x 36"	1-1½"	5-10	60-90	
Cucumbers	60°	90°	100°	6" trellised 24-36" untrellised	1"	6-10	55	2-3 ⁵
Eggplant	60°	80°	90°	18-24"	¼"	7-14	60T ⁶	6-9
Pepper	60°	80°	90°	15-18"	¼"	10-20	70T ⁶	6-8
Tomato	50°	80°	100°	trellised: 24" between plants	¼"	6-14	65T ⁶	5-7
Squash, Summer	60°	90°	100°	36-48"	1-1½"	3-12	50	2-3 ⁵
Squash, Winter	60°	90°	100°	36-48"	1-1½"	6-10	100	2-3 ⁵
Watermelons	60°	90°	110°	36-48"	1-1½"	3-12	85	2-3 ⁵

1 Germination temperature – Soil temperature is one of the best methods to determine spring planting time. Plant when soils reach minimum temperature measured at 8 a.m., 4 inches deep. Beans are an exception, being measured at 6 inches deep. Optimum temperatures listed in the table are useful for starting seeds indoors. Maximum temperatures are listed in regards to high soil temperatures that may interfere with seed germination in the summer.

2 Plant Spacing – Spacings given are equal-distance spacing for crops grown in block or close-row style beds. For example, beets, with a spacing of six inches are thinned to six inches between plants in all directions. In other words, beets are thinned to six inches between beets in the row and six inches between rows. The closer spacing listed should be used only on improved soils with 4-5% organic matter.

Close-row or block style planting works well for raised bed gardening, with blocks/beds 4 feet wide (any length desired) and 2-foot wide walkways between blocks/beds.

3. Cool Season Crops – Cool season crops prefer a cool soil. Lawn clipping and newspapers make an excellent mulch for these crops by cooling the soil, preventing weed germination, and conserving water. Apply fresh grass clippings only in thin layers (less

than ½ inch) and allow it to dry between applications. Thick layers will mat and smell. Do not use clipping from lawns treated with weed killers or other pesticides. Several layers of newspapers covered with grass clippings also work well between rows. Do not use glossy print materials.

4 Transplanted Cole Crops – Since cole crops (cabbage, cauliflower, broccoli, and Brussels sprouts) germinate better in warmer soil, they are typically started from transplants in the spring. Days to harvest are from transplants. In the warmer areas of Colorado, these crops produce the best quality when direct seeded mid-summer (early July for the Front Range area) for harvest during cooler fall weather. Before planting out, harden off seedlings.

5 Transplanting Vine Crops – Vine crop (cucumbers, squash, melons) roots are extremely intolerant of being disturbed, and perform best when grown by direct seeding rather than by transplants. With the use of black plastic to warm the soil, direct seeded crops germinate rapidly. If using transplants, select small, young plants, not more than 2-3 weeks from seeding.

6 Tomato family transplants – The tomato family is traditionally planted from transplants. In warmer areas of Colorado, they can also be direct seeded with minimal delay. Days to harvest are from transplants.

Average Frost Dates

The following *CMG GardenNotes* (available online at www.cgm.colostate.edu) give average frost dates and growing season information.

- o Climate Summary: Boulder and Longmont, #741
- o Climate Summary: Canon City, #755
- o Climate Summary: Castle Rock, Littleton and Parker, #742
- o Climate Summary: Colorado Springs, # 743
- o Climate Summary: Dillon, #744
- o Climate Summary: Eagle and Glenwood Springs Area, #745
- o Climate Summary: Fort Collins, Greeley and Estes Park, #746
- o Climate Summary: Gunnison and Crested Butte, #747
- o Climate Summary: Northeast Colorado, #748
- o Climate Summary: Northwest Colorado, #749
- o Climate Summary: Norwood and Telluride, #753
- o Climate Summary: Pueblo, #751
- o Climate Summary: San Luis Valley, #754
- o Climate Summary: Southwest Colorado, #750

Authors: David Whiting (CSU Extension, retired), with Carol O'Meara (CSU Extension, Boulder County), and Carl Wilson (CSU Extension, retired).

- o Colorado State University, U.S. Department of Agriculture and Colorado counties cooperating.
- o Extension programs are available to all without discrimination.
- o Copyright 2003-2018. Colorado State University Extension. All Rights Reserved. *CMG GardenNotes* may be reproduced, without change or additions, for nonprofit educational use.

Revised October 2014
