

HARRIS SEEDS VEGETABLE AND HERB CULTURAL GUIDE

Tips for Producing Pack, Pot, and Container Crops from Seeds and Plugs

HOW TO USE THIS GUIDE

This information is to be used as a general guide only. In particular, the “Number of Weeks to Finish” may vary for individual crops due to environmental differences and cultural practices.

GERMINATION REQUIREMENTS

We suggest using a separate germination area to create the ideal conditions. Proper soil temperature and moisture are essential for optimum seed germination. Always begin with sterile, well-drained, high quality [seed starting media](#). Maintain strict sanitation practices in all germination and production areas.

Germ. Temp. °F

This refers to the recommended soil temperature in °F. Normal greenhouse temperatures are usually not high enough to provide the soil temperatures needed for seed starting. Generally air temperature is about 5° F higher than soil temperature. Therefore, one must provide additional, controlled bottom heat for proper seed germination. In order to accomplish this, a germination area should include [heat mats](#), [heat cables](#), under bench heating, or another method of applying heat.

Light/Dark

Many vegetable and flower seeds require light for germination, so [proper lighting](#) in the germination area is required for best results. Some seeds germinate best in darkness. Covering the seed with a layer of vermiculite or seed starting media will provide darkness and also help maintain moisture around the seeds. Generally, very tiny seeds should not be covered. Also, seeds that require light should not be covered at all, or may be covered very lightly to help maintain moisture.

Days to Germ.

The indicated range is the average number of days to germinate for most varieties within the genus or species. Seedlings can be removed from the germination area after this time, or as soon as the majority of the seeds have

germinated. Seedlings left in the germination area too long are prone to stretching. Providing adequate and uniform moisture is critical. Do not allow flats to become waterlogged, as seeds do need oxygen to germinate. Either cover your flats with clear plastic domes, or provide a mist system. Plastic covers can be removed under sunny/warm conditions to prevent soil temperatures from rising too high and damaging the seed.

GROWING ON TEMPERATURE °F DAY/NIGHT

Optimum day and night temperature ranges are provided for growing on your plants once they leave the germination chamber, for example 66-75/64-66. Use a sterile, well-drained, soilless transplanting mix, and keep plants well-spaced during the growing-on stages. A production area should include a mist system to maintain proper humidity levels, and any artificial lighting should be placed within approx. 2-3” from the plants to ensure that the seedlings do not stretch.

NUMBER OF WEEKS TO FINISH

General time guidelines are provided for producing crops from seed and various plug/liner sizes. This information will vary depending on crop, environment, region of the country, and cultural practices. Note that the finish time is shorter for larger plug sizes because they have had a longer growing period before being shipped (the lower the number of plugs per tray, the larger the plant. Be sure to keep records on sow dates, weather conditions, cultural practices, and harvest dates for future reference.

ARUGULA	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	-	3-6	65
General Cultural Information:				
Grow arugula in the fall and early spring garden. Usable leaves should be ready in 4-6 weeks. The best leaves are from plants grown fast in cool weather. For a continual supply, plant every 2-3 weeks until 1 month prior to first average frost date. Grows quickly and thrives from outdoor sowings in spring and late summer.				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		-	3-4

BASIL	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	75-80	-	10-14	70-75/60-65
General Cultural Information:				
Basil germination may be adversely affected if planted in soil with temperature below 70° F. Usually sown indoors and transplanted, but can be sown outdoors after the threat of frost has passed and soil temp. is at least 60° F				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		6-8	8-9
288 Tray	3-5		2-4	4-5
128 Tray	3-5		1-3	4-5
51 Tray	-		-	1-2
36 Tray	-		-	1-2

BROCCOLI	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	-	4-10	65-70/55-60
General Cultural Information:				
For early season cole crops, seed in a 50-72 tray and aim for 5 - 6 week old field-ready plants. For mid-to-late season cole crops, you can seed in a 128 tray and aim for 4 -5 week old field-ready plants. To prevent premature seeding or bolting in the field, avoid exposing transplants to temperatures below 50°F for long periods (week or more). The cold temperatures cause the development of premature heads or “buttoning” in cauliflower and broccoli. Harden off for a few days at 60° F before planting into the garden. Seed may be sown directly in the garden in June for fall crops. See Harris Seeds Broccoli Chart for variety comparisons: Broccoli Chart				
See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		4-6	-
512 Tray	-		1-3	-
288 Tray	-		0-2	-
128 Tray	5-6		0-2	-
51 Tray	-		-	-

Vegetable MD Online (Disease Fact Sheets From Cornell University)

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BRUSSELS SPROUTS	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	-	4-10	60
General Cultural Information:				
For early season cole crops, seed in 50-72 tray and aim for 5 - 6 week old field-ready plants. For mid-to-late season cole crops, you can seed in a 128 tray and aim for 4 -5 week old field-ready plants. Culture is similar to fall broccoli. Time plantings for Oct/Nov. harvest as eating quality is much better after cool, frosty weather. See Harris Seeds Brussels Sprouts Chart for variety information:				
Brussels Sprouts Chart				
See Harris Seeds Vegetable Seed Planting Guide for planting recommendations:				
Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		4-6	-
128 Tray	5-6		0-2	-

CABBAGE	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	-	4-10	65-70/55-60
General Cultural Information:				
For early season cole crops, direct-seed in 50-72 tray and aim for 5 - 6 week old field-ready plants. For mid-to-late season cole crops, you can direct-seed in a 128 tray and aim for 4 -5 week old field-ready plants. Culture is similar to broccoli. See Harris Seeds Cabbage Chart for variety comparisons:				
Cabbage Chart				
See Harris Seeds Vegetable Seed Planting Guide for planting recommendations:				
Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		4-6	-
512 Tray	-		1-3	-
288 Tray	-		0-2	-
128 Tray	5-6		0-2	-
51 Tray	-		-	-

CATNIP	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	-	7-21	65
General Cultural Information:				
Early spring sowings can be made indoors. Early summer seedings can be made directly into the garden.				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		9-11	11-13

The Worm Power Organic Fertilizer Story (Video)

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CAULIFLOWER	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	-	4-10	65-70/55-60
General Cultural Information:				
<p>For early season cole crops, direct-seed in 50-72 tray and aim for 5 - 6 week old field-ready plants. For mid-to-late season cole crops, you can direct-seed in a 128 tray and aim for 4 -5 week old field-ready plants. To prevent premature seeding or bolting in the field, avoid exposing transplants to temperatures below 50°F for long periods (week or more). The cold temperatures cause the development of premature heads or “buttoning” in cauliflower and broccoli. Harden off for a few days at 60 °F before planting into the garden. Culture is similar to broccoli. See Harris Seeds Cauliflower Chart for variety comparisons: Cauliflower Chart</p> <p>See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide</p>				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		4-6	-
512 Tray	-		1-3	-
288 Tray	-		0-2	-
128 Tray	5-6		0-1	-
51 Tray	-		-	-

CHIVES	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	65-70	D	10-14	60
General Cultural Information:				
<p>Usually sown indoors and transplanted. Late summer to fall sowings can be made directly into the garden. Plants dug and potted in late fall should be allowed to freeze before brought indoors for winter use.</p>				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		9-12	15-17
288 Tray	-		3-6	9-11
128 Tray	7-8		2-5	8-10
36 Tray	-		-	5-7

CILANTRO, CORIANDER	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	55-65	D	10-12	55
General Cultural Information:				
<p>Sow seed directly into final sale pots as cilantro is difficult to transplant. Can be sown directly outdoors as soon as danger of frost has passed through July. Plants can be potted and brought in for winter.</p>				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		-	6-8
288 Tray	-		-	3-5
128 Tray	5-6		-	2-4
51 Tray	-		-	1-3
36 Tray	-		-	1-3

How Many Plants/Seeds are Required per Acre?

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<u>COLLARDS</u>	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	-	6-10	60
General Cultural Information:				
Culture is similar to broccoli. Can be direct seeded in May through mid-July. See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		4-6	-

<u>CUCUMBER</u>	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-80	-	6-10	70-75/60-65
General Cultural Information:				
Sow in trays and aim for 3-4 week old transplants from 24 or 38 trays, and 2-3 week old transplants from smaller 128 trays. Do not allow plants to stretch in the greenhouse. Can be sown directly in June through July in the Northeast. See Harris Seeds Cucumber Chart for variety comparisons: Cucumber Chart See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		3-4	-
128 Tray	2-4		0-2	-

<u>DILL</u>	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	D	7-21	60-65
General Cultural Information:				
Sow seed directly into final sale pots as dill is difficult to transplant.				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		-	4-6
288 Tray	3-4		-	1-3
128 Tray	3-6		-	1-2
36 Tray	-		-	1-2



Bedding Plant Vegetable Cultural Guide

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<u>EGGPLANT</u>	Germination Requirements			Growing on Temperatures
Solanaceae Technical Bulletin	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	75-80	-	8-14	70-80/60
General Cultural Information:				
Sow into 50 trays to shorten the time needed to produce transplants by approximately one week. Susceptible to chilling injury and should not be grown below 40°F. Any stress or check in growth will result in tough woody stems and transplants that will have a tough time getting started later in the field or garden. Harden off at 60°F for several days before transplanting to the field. Smokers should wash their hands well to deactivate any tobacco mosaic virus before handling plants. See Harris Seeds Vegetable Seed Planting Guide for planting recommendations:				
Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		6-8	10-12
512 Tray	-		2-4	6-8
288 Tray	4-5		1-3	5-7
128 Tray	6-7		1-3	3-5
51 Tray	-		-	2-4

<u>ENDIVE</u>	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	60-65	-	5-10	60
General Cultural Information:				
May sow seed directly outdoors in early spring through July. See Harris Seeds Vegetable Seed Planting Guide for planting recommendations:				
Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		5-7	-

<u>KALE</u>	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	-	6-10	60-65
General Cultural Information:				
Kale is commonly started indoors and transplanted into the garden when seedlings are 4 to 6 weeks old. May sow directly outdoors through July. See Harris Seeds Vegetable Seed Planting Guide for planting recommendations:				
Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		4-6	-
512 Tray	-		1-3	-
288 Tray	3-4		0-2	-

<u>KOHLRABI</u>	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	-	5-10	60
General Cultural Information:				
May sow directly outdoors until mid-summer. Tolerates light freezes in fall. See Harris Seeds Vegetable Seed Planting Guide for planting recommendations:				
Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		4-6	-

LAVENDER, ENGLISH	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	65-72	L	4-30	60-72/55-65
General Cultural Information:				
Lavender is sometimes slow to germinate, thus prechilling the seed at 40-45°F. for 3-4 weeks may help germination. Cover very lightly w/fine vermiculite (for moisture control). Provide uniform moisture levels. Sow January-March for green pots, June-August for flowering in pots the following year. Crop time is 10-12 months. Vernalization is required for flower initiation. After vernalization, begin forcing plants at temperatures of 60-65 °F for 6-7 weeks under long days to promote flowering.				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		11-17	14-20
288 Tray	5-9		6-8	9-11
128 Tray	-		4-6	7-9
51 Tray	-		-	5-7
36 Tray	-		-	5-7

LEEK	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	-	7-12	65-70/55-60
General Cultural Information:				
Leek is a slow growing crop. Sow seed indoors in late winter or early spring. See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		5-7	10-12

LEMON BALM	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	75-80	L	7-14	70
General Cultural Information:				
Seed germinates best when sown indoors. Ready to transplant 9-12 weeks from seeding.				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		9-12	13-15

LETTUCE	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	65-70	-	6-10	60-65/50
General Cultural Information:				
Light is required for germination on certain cultivars and is indicated on seed packages. May sow directly outdoors from spring through July. See Harris Seeds Lettuce Chart for variety comparisons: Lettuce Chart See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		4-5	-
36 Tray	4-5		-	-

MARJORAM, SWEET		Germination Requirements			Growing on Temperatures
		Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
		65-70	L	7-14	60
General Cultural Information:					
Seedlings grow slowly and are fragile until established. Transplant once or twice for stalkier growth. Pinch back before they bloom the first year to develop stronger plants.					
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)	
Seed	-		8-10	10-12	
288 Tray	-		3-5	5-7	
128 Tray	5-7		2-4	4-6	
51 Tray	-		-	2-3	
36 Tray	-		-	2-3	

MELON		Germination Requirements			Growing on Temperatures
		Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
		75-80	-	4-12	70-75/60-65
General Cultural Information:					
Sow in trays and aim for 3-4 week old transplants from 24 or 38 trays, and 2-3 week old transplants from smaller 128 trays. Do not allow plants to stretch in the greenhouse. Planting in wet, cool soils may reduce germination. May be directly sown outdoors in May and June in warmer regions. See Harris Seeds Melon Chart for variety comparisons: Melon Chart See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide					
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)	
Seed	-		3-5	-	
36 Tray	3-5		-	-	

MINT		Germination Requirements			Growing on Temperatures
		Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
		70-75	L	10-14	65
General Cultural Information:					
Sow seed indoors on the surface of a seed starter mix as light is required for germination. Ready to transplant in 7-8 weeks from seeding.					
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)	
Seed	-		10-11	12-13	
288 Tray	7-8		4-5	6-7	
128 Tray	-		2-3	4-5	
51 Tray	-		-	2-3	
36 Tray	-		-	2-3	

Information on Post Harvest Handling of Vegetable Crops
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MUSTARD	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	-	6-10	60-65
General Cultural Information:				
May sow directly outdoors in spring and summer for summer and fall harvests. See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		4-6	-
512 Tray	-		1-3	-
288 Tray	2-4		0-2	-

OKRA	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	75-80	-	8-14	70
General Cultural Information:				
It is best to seed indoors in the Northern U.S. Ready to transplant outdoors 6-8 weeks from seeding. See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		6-8	-
128 Tray	4-5		2-3	-

ONION	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	60-65	-	6-12	65-70/55-60
General Cultural Information:				
Sow in a 128-288 tray. Seedlings should be clipped several times to produce a stocky plant. Aim for 8 -10 week old transplants. Bunching varieties can be sown directly outdoors in early spring through mid-July in the North. Seed started indoors in February can be transplanted in April, and will mature in September. See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		5-9	10-12
128 Tray	8-9		1-2	2-4

OREGANO	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	65-70	L	14-21	60
General Cultural Information:				
Sow seeds indoors on the surface of a seed starting mix as light is required for germination. Seedlings grow slowly and are fragile until established. Transplant at least once to promote stockier growth.				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		10-12	12-13
288 Tray	4-5		4-6	6-7
128 Tray	6-8		3-5	5-6
51 Tray	-		-	2-3
36 Tray	-		-	2-3

PARSLEY	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	75	-	14-28	65-70
General Cultural Information:				
Sow seed indoors. Seed is slow to germinate (2-4 weeks). Ready to transplant 10-13 weeks from seeding. Can be sown directly outside in spring. See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		9-10	11-12
288 Tray	4-5		1-3	3-5
128 Tray	6-8		0-2	2-3
51 Tray	-		-	1-2
36 Tray	-		-	1-2

PEPPER	Germination Requirements			Growing on Temperatures
Solanaceae Technical Bulletin	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	75-85	-	10-20	70-75/60-65
General Cultural Information:				
Note that germination is very slow at lower temperatures. Seeds may be sown into 50-72 trays for early production. Aim for an 8-9 week old field-ready plant. For mid-to-late season peppers, you can direct seed in a 128 tray and aim for a 7-8 week old field-ready transplant. Peppers are prone to damping off diseases especially if the media is compacted. They are also susceptible to transplant shock. Smokers should wash their hands well to deactivate any tobacco mosaic virus before handling plants. See Harris Seeds Pepper Chart for variety comparisons: Pepper Chart Scoville Hot Pepper Rating Chart See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		6-8	8-10
512 Tray	-		1-3	3-7
288 Tray	5-6		1-2	2-4
128 Tray	7-8		0-2	1-3
51 Tray	-		-	0-2

PUMPKIN	Germination Requirements			Growing on Temperatures
Pumpkin Cultural Guide	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	75-80	-	6-10	70-75/65
General Cultural Information:				
Sow in trays and aim for 3 -4 week old transplants from 24 or 38 trays, and 2 -3 week old transplants from smaller 128 trays. Do not allow plants to stretch in the greenhouse. Planting in wet, cool soils may reduce germination. Can be directly sown outside in early June. See Harris Seeds Pumpkin Chart for variety comparisons: Pumpkin Chart See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		2-3	4-6
36 Tray	3-5		-	0-2

ROSEMARY	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	60-65	L	14-28	60
General Cultural Information:				
Sow seed in late winter indoors on the surface of a seed starting mix as light is required for germination. Both germination and seedling growth are slow. Ready to transplant outside 16-21 weeks from seeding.				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		15-20	16-21
288 Tray	4-5		7-9	11-13
128 Tray	6-8		5-6	9-10
51 Tray	-		-	4-6
36 Tray	-		-	4-6

SAGE	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	70-75	-	10-18	60
General Cultural Information:				
Sow seed indoors. Ready to transplant outside 7-10 weeks from seeding. May be directly sown outdoors in early summer.				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		10-12	12-14
288 Tray	3-4		5-7	7-9
128 Tray	7-8		4-6	6-8
51 Tray	-		-	4-6
36 Tray	-		-	4-6

SQUASH, SUMMER	Germination Requirements			Growing on Temperatures
SQUASH, WINTER	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	75-80	-	6-10	70-75/65
General Cultural Information:				
Sow in trays and aim for 3 -4 week old transplants from 24 or 38 trays, and 2 -3 week old transplants from smaller 128 trays. Do not allow plants to stretch in the greenhouse. Planting in wet, cool soils may reduce germination. May sow directly outdoors after soil has warmed in June. See Harris Seeds Squash Charts for variety comparisons:				
Summer Squash				
Winter Squash				
See Harris Seeds Vegetable Seed Planting Guide for planting recommendations:				
Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		2-3	4-6
51 Tray	3-4		-	2-3
36 Tray	3-5		-	1-2

Sweet Corn and Other Vegetable Growing Guides/Resources

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STEVIA	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	68-75	-	7-21	65-70
General Cultural Information:				
Start seeds indoors 6-8 weeks before last frost date. Transplant to 3-4" pots when seedlings are large enough to handle. Do not over-water. For bushier plants, pinch back growing tips every few weeks for the first 1-2 months after germination.				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		7-8	8-10

SWISS CHARD	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	65-75	D	7-14	60/50
General Cultural Information:				
May be sown directly outdoors in May and July for summer and fall harvests. See Harris Seeds Vegetable Seed Planting Guide for planting recommendations: Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		3-4	4-6
288 Tray	2-3		-	2

THYME	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	65-70	-	18-24	55-60
General Cultural Information:				
Sow seed indoors in early spring. Ready to transplant outdoors 11-13 weeks form seeding.				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		10-12	13-15
288 Tray	4-5		3-5	6-8
128 Tray	6-7		2-4	5-7
51 Tray	-		-	2-4
36 Tray	-		-	2-4

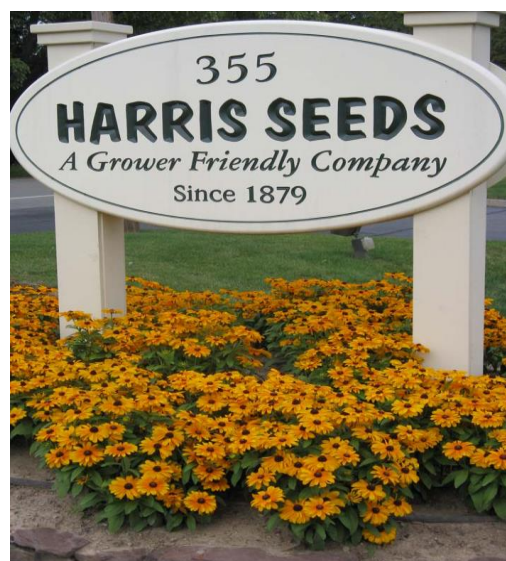


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<u>TOMATO</u>	Germination Requirements			Growing on Temperatures
Tomato Grafting Guide	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
Solanaceae Technical Bulletin	75-80	-	6-14	65-75/60
General Cultural Information:				
For early market tomatoes, you can seed in 288 trays and transplant to larger tray (50) at first true leaf. Aim for approx. 8-week-old field-ready plant. For mid-to-late season tomatoes, direct-seed in 128 tray. Plants should be 6 to 7 weeks old for mid-to-late May plantings; 5 weeks old for June plantings. Smokers should wash their hands well to deactivate any tobacco mosaic virus before handling plants. See Harris Seeds Tomato Chart for variety comparisons:				
Tomato Chart See Harris Seeds Vegetable Seed Planting Guide for planting recommendations:				
Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		5-8	8-10
512 Tray	-		2-3	5-7
288 Tray	3-4		1-2	4-6
128 Tray	6-8		0-1	2-4
51 Tray	-		-	1-2
36 Tray	-		-	1-2

<u>WATERMELON, SEEDED</u>	Germination Requirements			Growing on Temperatures
	Germ Temp, °F	Light/Dark	Days to Germ	°F, Day/Night
	75-80	-	4-14	70-80/65-70
General Cultural Information:				
As they require a long growing season, watermelons are best started indoors approximately 3-4 weeks prior to the last frost of the season. Or you may direct-seed 1 to 2 weeks after average last frost when soil is 70° F or warmer. See Harris Seeds Vegetable Seed Planting Guide for planting recommendations:				
Vegetable Seed Planting Guide				
Number of Weeks to Finish From:	Plug Crop Weeks	To:	Pack (Seed to Sale)	Pot, 4" (1 ppp)
Seed	-		3-5	6-8
36 Tray	5-6		-	1-2



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