

Vegetable Seed Germination Temperature Chart

Minimum, optimum and maximum soil temperature for 30 crops, and days to emerge by temperature

ORGANIC BACKYARD GARDENING
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CROPS	MINIMUM (°F)	OPTIMUM RANGE (°F)	MAXIMUM (°F)
Asparagus	50	75-85	95
Beans, Lima	60	75-85	85
Beans, Snap	60	75-85	95
Beets	40	65-85	95
Broccoli	40	60-85	95
Cabbage	40	60-85	95
Carrots	40	65-85	95
Cauliflower	40	65-85	95
Celery	40	*	*
Chard, Swiss	40	65-85	95
Corn	50	65-95	105
Cucumbers	60	65-95	105
Eggplant	60	75-85	95
Garlic	32	65-85	95
Leeks	32	65-85	95
Lettuce	32	60-75	85
Muskmelons (Cantaloupe)	60	75-85	105
Okra	60	85-95	105
Onions	32	65-85	95
Parsley	40	65-85	95
Parsnips	32	65-75	85
Peas	40	65-75	85
Peppers	60	65-75	95
Pumpkins	60	85-95	105
Radishes	40	65-85	95
Spinach	32	65-75	75
Squash	60	85-95	105
Tomatoes	50	65-85	95
Turnips	40	60-95	105
Watermelons	60	75-95	105

Source and updates: organicbackyardgardening.com/vegetable-seed-germination-temperature-chart

Plan a whole bed for your frost date, free: planmygarden.com

Soil temperature, not air temperature, measured 1 to 2 inches deep with a soil thermometer. Below the minimum, seed sits and rots; above the maximum, most seed will not sprout at all. Aim for the optimum range with a heat mat indoors, or wait for the bed to warm outdoors.

Days for seedlings to emerge at each soil temperature

CROPS	32°F	41°F	50°F	59°F	68°F	77°F	86°F	95°F	104°F
Asparagus	0.0	0.0	52.8	24.0	14.6	10.3	11.5	19.3	28.4
Beans, Lima	—	—	0.0	30.5	17.6	6.5	6.7	0.0	—
Beans, Snap	0.0	0.0	0.0	16.1	11.4	8.1	6.4	6.2	0.0
Beets	—	42.0	16.7	9.7	6.2	5.0	4.5	4.6	—
Cabbage	—	—	14.6	8.7	5.8	4.5	3.5	—	—
Carrots	0.0	50.6	17.3	10.1	6.9	6.2	6.0	8.6	0.0
Cauliflower	—	—	19.5	9.9	6.2	5.2	4.7	—	—
Celery	0.0	41.0	16.0	12.0	7.0	0.0	0.0	0.0	—
Corn, Sweet	0.0	0.0	21.6	12.4	6.9	4.0	3.7	3.4	0.0
Cucumbers	0.0	0.0	0.0	13.0	6.2	4.0	3.1	3.0	—
Eggplant	0.0	—	—	—	13.1	8.1	5.3	—	—
Lettuce	49.0	14.9	7.0	3.9	2.6	2.2	2.6	0.0	0.0
Muskmelons	—	—	—	—	8.4	4.0	3.1	—	—
Okra	0.0	0.0	0.0	27.2	17.4	12.5	6.8	6.4	6.7
Onions	135.8	30.6	13.4	7.1	4.6	3.6	3.9	12.5	0.0
Parsley	—	—	29.0	17.0	14.0	13.0	12.3	—	—
Parsnips	171.7	56.7	26.6	19.3	13.6	14.9	31.6	0.0	0.0
Peas	—	36.0	13.5	9.4	7.5	6.2	5.9	—	—
Peppers	0.0	0.0	0.0	25.0	12.5	8.4	7.6	8.8	0.0
Radishes	0.0	29.0	11.2	6.3	4.2	3.5	3.0	—	—
Spinach	62.6	22.5	11.7	6.9	5.7	5.1	6.4	0.0	0.0
Tomatoes	0.0	0.0	42.9	13.6	8.2	5.9	5.9	9.2	0.0
Turnips	0.0	0.0	5.2	3.0	1.9	1.4	1.1	1.2	2.5
Watermelons	—	0.0	—	—	11.8	4.7	3.5	3.0	—

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0.0 means no emergence at that temperature; a dash means not tested. Read across a row to see how much faster a seed comes up with a few more degrees: most crops sprout two to three times faster at 77°F than at 59°F.