

# SEED GERMINATION CHARTS



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## Why Use A Seed Germination Temperature Chart?

In this exclusive guide, we provide two indispensable charts: **Optimal Soil Temperature for Vegetable Seed Germination** and **Number of Days for Vegetable Seedlings to Emerge at Different Soil Temperatures**. These charts hold the key to unlocking precise seed starting, optimizing your gardening efforts.

### **Precision Germination:**

Achieving the right soil temperature is the foundation of successful germination. Our Optimal Soil Temperature chart reveals the range that fosters swift and uniform sprouting. It's an essential tool, especially when paired with a seed heating mat with a temperature probe.

### **Accelerated Growth:**

Knowing when your seedlings will emerge is a game-changer. Our Emerge Time chart offers clear insights, enabling you to plan ahead. With a temperature-probe-enabled seed pad, you can fine-tune conditions for quicker growth and transplantation.

### **Harness the Power:**

To maximize results, complement these charts with a seed pad featuring a temperature probe. For more information on compatible products, visit this [link](#).

### **Your Seed Starting Journey Begins**

These charts, combined with precise temperature control, empower you to take control of your seed-starting process. These resources will guide you through successful germination and beyond.

With the right tools at your disposal, you're on your way to nurturing robust seedlings that will flourish into healthy, thriving plants. Get ready to enjoy a rewarding gardening journey that begins with the art of successful seed starting.

Happy planting,  
Tim  
Founder, PlanMyGarden



## Optimal Soil Temperature For Vegetable Seed Germination

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: California Master Gardener Handbook, 2nd edition, Regents of the University of California, Division of Agriculture and Natural Resources, Publication 3382 (Table 5.2, page 114).  
 \*Note: Celery requires diffuse light and a night temperature from 10° to 15°F lower than the day temperature for good germination. Optimal conditions are 85°F day, 70°F night with diffuse light and high moisture.

## Number of Days for Vegetable Seedlings to Emerge At Different Soil Temperatures

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	—

Sources: J.F. Harrington, Department of Vegetable Crops, University of California, Davis, Agricultural Extension Leaflet, 1954 "The New Seed-Starting Handbook", Nancy Bubel, 1988, Rodale Press Notes: 0.00 = little or no germination — = not tested