

Soil and Aboveground Temperature Conditions For Germination and Growth

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Soil Temperature Conditions For Vegetable Seed Germination <i>Handbook for Vegetable Growers, James Knott 1957</i>				
Crop	Minimum °F	Optimum Range °F	Optimum °F	Maximum °F
Aparagus	50	60-85	75	95
Bean	60	60-85	80	95
Bean, Lima	60	65-85	85	85
Beet	40	50-85	85	95
Cabbage	40	45-95	85	100
Carrot	40	45-85	80	95
Cauliflower	40	45-85	80	100
Celery	40	60-70	70*	85*
Chard, Swiss	40	50-85	85	95
Corn	50	60-95	95	105
Cucumber	60	60-95	95	105
Eggplant	60	75-90	85	95
Lettuce	35	40-80	75	85
Muskmelon	60	75-95	90	100
Okra	60	70-95	95	105
Onion	35	50-95	75	95
Parsley	40	50-85	75	90
Parsnip	35	50-70	65	85
Pea	40	40-75	75	85
Pepper	60	65-95	85	95
Pumpkin	60	70-90	95	100
Radish	40	45-90	85	95
Spinach	35	45-75	70	85
Squash	60	70-95	95	100
Tomato	50	60-85	85	95
Turnip	40	60-105	85	105
Watermelon	60	70-95	95	100

*Daily fluctuation to 60°F or lower at night is essential

Temperature Range For Plant Growth <i>Handbook for Vegetable Growers, James Knott 1957</i>			
Crop Season	Temperature Range °F	Optimal Temperature Range °F	Plant
Cool-Season Crops	30	60-65	Asparagus, Rhubarb
	40-75	60-65	Beets, Broad Bean, Broccoli, Brussels Sprouts, Cabbage, Chard, Collard, Horseradish, Kale, Kohlrabi, Parsnip, Radish, Rutabaga, Sorrel, Spinach, Turnip
	45-75	60-65	Artichoke, Carrot, Cauliflower, Celeriac, Celery, Chinese Cabbage, Endive, Florence Fennel, Lettuce, Mustard, Parsley, Pea, Potato
	45-85	55-75	Chicory, Chive, Garlic, Leek, Onion, Salsify, Shallot
Warm-Season Crops	50-80	60-70	Bean, Lima Bean
	50-95	60-75	Corn, Cowpea, New Zealand Spinach
	50-90	65-75	Pumpkin, Squash
	60-90	65-75	Cucumber, Muskmelon
Hot-Season Crops	65-85	70-75	Sweet Peppers, Tomato
	65-95	70-85	Eggplant, Hot Peppers, Okra, Sweet Potato, Watermelon