

Cool Season vs. Warm Season Crops

Cool Season crops are ones that the seeds require cool soil to germinate and can be sown outdoors in early spring when the soil temperature is consistently at or above the minimum required for germination (chart below). The crops with minimum temperature below 50° F are considered cool season crops.

Soil Temperature and Germination: (Approximately Mid-Late March to Early April)

Vegetable	Minimum	Optimum	Maximum
Beet	40 F	85 F	95 F
Broccoli	40 F	85 F	95 F
Cabbage	40 F	85 F	95 F
Carrot	40 F	80 F	95 F
Cauliflower	40 F	80 F	95 F
Celery	40 F	70 F	75 F
Chard, Swiss	40 F	85 F	95 F
Endive	32 F	75 F	75 F
Lettuce	32 F	75 F	75 F
Onion	32 F	80 F	95 F
Parsnip	32 F	70 F	85 F
Pea	40 F	75 F	85 F
Potato tuber			
Radish	40 F	85 F	95 F
Spinach	32 F	70 F	75 F
Turnip	40 F	85 F	105 F

Warm Season crops are those requiring a minimum soil temperature to germinate at or above 50°F. These crops should be started indoors and transplanted outdoors from starter plants after the danger of frost has passed. You can also plant before our last frost date as long as the minimum soil temperature is reached consistently and you protect the plant with something like a Wall-O-Water®. Douglas County's average last frost is around the middle of May. In Denver, it's May 12th.

Soil Temperature and Germination: (Approximately Mid to Late May)

Vegetable	Minimum	Optimum	Maximum
Asparagus **	50 F	75 F	95 F
Bean, lima	60 F	80 F	85 F
Bean, snap	60 F	85 F	95 F
Corn, sweet	50 F	85 F	105 F
Cucumber	60 F	95 F	105 F
Eggplant			
Muskmelon	60 F	95 F	105 F
Okra	60 F	95 F	105 F
Pepper	60 F	85 F	95 F
Pumpkin	60 F	95 F	105 F
Squash	60 F	95 F	105 F
Tomato	50 F	85 F	95 F
Watermelon	60 F	95 F	105 F

** Asparagus is a perennial crop here in Colorado and tolerates the cold if you are planting from a root stock. The minimum temperature listed above is in regards to starting them from seed.

Charts are adapted from "Ortho All About Vegetables."