

# MARCH STREET COMMUNITY GARDENS

## Soil Temperature Conditions for Vegetable Seed Germination

There are four essential elements for seed germination. These are water, air, soil conditions, and temperature. The chart below lists the minimum and optimum soil temperatures to expect germination. Seeds can germinate at lower temperatures at a slower rate of growth than the optimum temperature for germination. Greater success will be achieved if optimum conditions are provided. Prior to planting your seeds or seedlings, test the soil temperature with a probe-type Thermometer as this will give the gardener an expectation of plant growth. *“The lower the soil temperature, the slower the seeds will germinate, and the slower the seedling will grow”.*

Vegetable	Minimum (°C)	Optimum range (°C)	Maximum (°C)
Asian greens	4	18-29	35
Asparagus	10	24-29	35
Beans, lima	15	24-29	29
Beans, snap	15	24-29	35
Beans, Broad	5	18-29	30
Beets	5	18-29	35
Broccoli	5	15-29	35
Brussels Sprouts	5	15-29	30
Cabbage	5	15-29	35
Carrots	5	15-29	35
Capsicum	15	18-24	35
Cauliflower	5	15-29	35
Celery	5	*	*
Chard, Swiss	5	15-29	35
Chinese cabbage	5	15-29	30
Corn	10	15-35	40
Cucumber	15	15-35	40
Eggplant	15	24-29	35
Garlic	0	18-29	35
Kale	5	15-29	32
Kohlrabi	5	15-29	32
Leeks	0	18-29	35
Lettuce	0	15-24	29
Melons	15	24-29	40
Okra	15	29-35	40
Onions	0	18-29	35
Parsley	4	18-29	35
Parsnips	0	18-24	29
Peas	4	18-24	29
Potato	7	15-20	35
Pumpkins	15	29-35	40
Radishes	4	18-29	35
Rocket	4	18-29	35
Rhubarb	0	7-24	27
Spinach	0	18-24	24
Squash	15	29-35	40
Swede	4	18-24	32
Tomatoes	10	18-29	35
Turnips	4	15-35	41
Zucchini	15	15-35	40

*A study at March Street community Gardens was done over a 2 year period to ascertain the relevance of soil temperature in the Newcastle area. The study found this compiled document was in fact accurate within the limits of 15% of other studies performed in the USA, India, and Canada.*

Celery requires diffused light and a night temperature between 10° to 15°c lower than the day temperature to obtain good germination. Optimal daytime soil temperature is 29°, with night time soil temp of 18°c.