



## Seed Starting Chart for Vegetables Grown at the Georgeson Botanical Garden, 2010

by Grant Matheke

This list has been developed over many years as a guide for seed germination of vegetables we have grown at the Georgeson Botanical Garden. These guidelines have been refined to adjust to our unique conditions in the greenhouse and in the garden. Your own growing conditions, especially light levels and temperature will be unique. Use this information as a starting point for your own list and take notes on germination rates and times to determine appropriate timing for your conditions. Plants that are too large at transplanting suffer greatly from transplant shock and those that are too small may not produce the plant you are hoping for. The calendar is timed for a field planting date of June 1 for warm season crops such as cucumbers and peppers, and May 20-25 for cool season crops such as broccoli. Check the chart for sowing of direct-seeded crops such as radishes, turnips.

Growing seedlings in the greenhouse or indoors is usually a two-stage process, sowing and transplanting. For most vegetables, we sow seeds into 4-inch pots (up to 50 seeds per pot depending on the size of the seed) or sow them singly into plug trays containing a very fine, sterile, peat-lite seed starting mix. We use additional seed starting mix or fine, horticultural grade vermiculite to cover seeds except those requiring light, so they are surrounded by moisture. We moisten the mix, cover the pots with clear plastic, and germinate them beneath lights with a thermostat-controlled heating mat beneath the pots to provide the optimum temperature. One pot holds a thermometer so we are measuring the medium temperature, not the air temperature. You can grow seedlings in cool rooms as long as the medium temperature is optimum.

As soon as seedlings are large enough to handle, we allow the peat-lite mix to dry a bit then gently tease the seedlings apart and transplant them into cell packs or larger pots using a coarse, peat-lite growing mix. The fine seed starting mix provides the best medium for germination of seeds but is too fine for continued growth. Seedlings easily rot if kept in this mix too long.

Some seedlings do not tolerate transplanting, so we have a one-stage procedure. We skip the seed starting mix and sow them directly in cell packs using the growing mix. They include cucumbers, pumpkins, squash and lettuce. All seedlings are grown in a well lighted cool greenhouse, approximate minimum temperature 60-65F, until ready to move outdoors.

One week before the planting date, we begin hardening off the seedlings. Hardening is a process of gradually exposing the seedlings to strong outdoor sunlight and cool temperatures. We set the flats outdoors for 1 hour on the first day, 2 hours, the second, then 4, 6, 8 and 10 hours on subsequent days. After that, the seedlings stay outdoors until transplanting.

Date	Name	Temp. F	Cover seeds	Days to Germination	Comments
27-Feb	Onion	70-75	y	10-14	transplant into cell packs
12-Mar	Chives	60-70	y	10-14	transplant in clumps into cell packs
12-Mar	Garlic chives (Chinese Leek)	60-70	y	10-14	transplant singly into cell packs
12-Mar	Leeks	70-75	y	10-14	transplant into cell packs
21-Mar	Brussels Sprouts	70-75	y	10-14	transplant into cell packs
21-Mar	Cabbage, Flat Top (O-S Cross)	70-75	y	10-14	seedlings are large; transplant into 6-inch pots to allow for good root growth
21-Mar	Celery	70-75	y	21-25	transplant into cell packs
21-Mar	Eggplant	70	y	10-15	transplant into 3- inch pot
21-Mar	Tomato (basket)	70-75	y	5-8	transplant into 3- inch pot
2-Apr	Artichoke	60-70	y	12-15	transplant into 3- inch pot
2-Apr	Pepper	75-80	y	10	transplant into 3- inch pot
16-Apr	Lentil	70-78	y	?	transplant into cell packs
16-Apr	Melons	75	y	5-7	sow into cell packs, transplant into 4 inch pots
16-Apr	Tomatillo	70-75	y	7-14	transplant into 3- inch pot
16-Apr	Tomato	70-75	y	5-8	transplant into 3- inch pot
23-Apr	Broccoli	70-75	y	8-10	transplant deeply up to leaves, grow cool
23-Apr	Cabbage	70-75	y	8-10	transplant deeply up to leaves, grow cool
23-Apr	Cauliflower	70-75	y	8-10	transplant deeply up to leaves, grow cool
25-Apr	Lettuce	65-70	n	7-10	Sow in cell packs, do not transplant; sow 3 seeds cut 2 out
25-Apr	Raddichio	65-70	n	7-10	Sow into cell packs, do not transplant
25-Apr	Sorrel	65-71	y	7-11	transplant into cell packs
30-Apr	Pumpkin	70-75	y	7-10	sow into cell packs, transplant into 4 inch pots
30-Apr	Squash, Winter	70-75	y	7-10	sow into cell packs, transplant into 4 inch pots
7-May	Cucumber	70	y	7-10	sow into cell packs, transplant into 4 inch pots
7-May	Squash, Summer	70-75	y	7-10	sow into cell packs, transplant into 4 inch pots
Direct	Bean	68-75	y	5-8	Do not sow until soil >55F
Direct	Beet	72	y	7-10	Sow about 1 week before the last frost
Direct	Carrot	58-68	y	7-14	Sow about 1 week before the last frost

Direct	Greens	70	y	10	Sow about 1 week before the last frost
Direct	Kale	70	y	10	Sow about 1 week before the last frost
Direct	Kohlrabi	70	y	10	Sow about 1 week before the last frost
Direct	Lettuce, Leaf	70	y	5-7	Sow about 1 week before the last frost
Direct	Pak Choy	70	y	10	Sow about 1 week before the last frost
Direct	Parsnip	68-70	y	21-25	Germinates slowly, low %, sow heavily. Sow about 1 week before the last frost
Direct	Pea	70	y	7-10	Sow about 1 week before the last frost
Direct	Radish	70	y	10	Sow about 1 week before the last frost
Direct	Rutabaga	70	y	10	Sow about 1 week before the last frost
Direct	Spinach	65-68	y	8-10	Sow about 1 week before the last frost
Direct	Sweet Corn	70-75	y	7-10	Sow as soon as soil can be worked in the spring. Cover with clear plastic or IRT Mulch.
Direct	Swiss Chard	68-72	y	10-15	Sow about 1 week before the last frost
Direct	Turnip	70	y	10	Sow about 1 week before the last frost

Selected seed germination references:

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