

<b>Growing Guide for:</b>	Greenhouse Transplants
<b>Crop:</b>	Greens, Mustard
<b>Botanical Name:</b>	Brassica juncea
<b>Average Seed Count</b>	13,000-17,000 sds/ounce
<b>Seed Forms</b>	Raw Untreated

## GREENHOUSE PLUG PRODUCTION

### Approximately 2-3 weeks

**Media:** Use a well-drained, disease-free soilless media

**pH:** 5.8 - 6.2

**Light:** A light cover of coarse vermiculite helps maintain moisture levels while letting light pass through to the seeds for improved germination.

**Sowing:** Sow into 105/128 cell size plug tray or sow directly into finish containers.

### STAGE 1: GERMINATION & RADICLE EMERGENCE

#### 2-4 Days

**EC:** 0.75 mS/cm

**Humidity:** If soil maintains even moisture, high air humidity is not necessary for germination.

**Media Temperature:** 65-73°F / 18-22°C

**Moisture:** level 4 (medium wet)

### STAGE 2: STEM & COTYLEDON EMERGENCE

#### 3-4 Days

**EC:** 0.5 to 0.7 mS/cm

**Media Temperature:** 68-70°F / 20-21°C

**Moisture:** Keep between level 3 (medium) and level 4 (medium wet).

**Light Levels:** up to 2,500 fcs (26,900 Lux)

**Fertilizer:** Once cotyledons fully expand, begin feeding approximately every other watering with a nitrate-based formulation with low phosphorous < 100 ppm N.

### STAGE 3: BULKING STAGE

#### 6-8 Days

**EC:** 0.7 to 1.0 mS/cm

**Media Temperature:** 65-67°F / 18-19°C

**Moisture:** Keep between level 2 (medium dry) and level 3 (medium). Seedlings can slightly 'flag', but should not wilt.

**Light Levels:** up to 2,500 fcs (26,900 Lux)

**Fertilizer:** Increase rate to 100 to 175 ppm N.

### STAGE 4: TRANSPLANT OR PLUG SHIPPING STAGE

#### 3-5 Days

**EC:** 0.7 to 1.0 mS/cm

**Media Temperature:** 62-64°F / 16-17°C

**Moisture:** Keep between level 2 (medium dry) and level 3 (medium). Seedlings can slightly 'flag', but should not wilt.

**Light Levels:** up to 5,000 fcs (54,000 Lux)

**Fertilizer:** As needed, keeping rate to 100 to 175 ppm N.

## GROWING ON (FINISHED PRODUCTION)

**Approximately 1-3 weeks, depending on finished pot size and variety. (See 'Scheduling' chart below)**

**EC:** 1.2 to 1.5 mS/cm

**Air Temperature:** 62-70°F / 16-21°C for day and 56-61°F / 13-16°C for night

**Moisture:** Maintain consistent moisture at level 3 (medium)

**Light Levels:** As high as possible (to enhance foliage color) while maintaining moderate temperatures. If temperatures rise, temporarily provide shade.

**Fertilizer:** Feed approximately once a week at 175-225 ppm N.

## SCHEDULING

Container Size	Plugs per Container	Weeks Growing On (Transplant to Finish)	Total Weeks (Sow to Finish)
606 cell pack	n/a (2-3 seeds per cell)	n/a (sow into final container)	2-4 weeks
4 inch / 10 cm.	1-2	1-2 weeks	3-5 weeks
8 inch / 20 cm. color bowl	4-6	2 weeks	4-5 weeks
12 inch or larger mixed container	As needed for combo	2-3 weeks	4-6 weeks

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## OTHER TIPS

**Plant Height Controls:** The use of chemical plant growth regulators (PGR's) is not recommended on vegetable plants. Utilize moisture, temperature, and fertilizer levels to maintain height and stretch control.

**Common Greenhouse Diseases:** no serious problems

**Common Greenhouse Pests:** Aphids

**Container Sizes:** Mustard is appropriate for sale in varied pot sizes. All varieties can be grown in cell packs and 4" pots and offered in both early spring and fall for customers to transplant into their gardens. Baby leaf varieties can also be offered in decorative color bowls, either alone or mixed with other spring and fall leafy vegetables and/or ornamentals. Lettuce, arugula, Swiss chard, pansies, or violas are all good choices.

**Garden Care:** Mustard is easy to grow and matures quickly. Many varieties can be harvested young for tender leaves, allowed to mature for typical 'greens' usage, or used solely as an ornamental with other cool season choices. Plants typically grow in an upright habit, making harvesting easier. After cutting leaves back close to the soil surface, plants will continue producing. They can be re-harvested every 1-3 weeks until temperatures warm in the spring or indefinitely in the fall.

**For more information on and photographs of available varieties, visit our website at [www.sakatavegetables.com](http://www.sakatavegetables.com)**

**Note:** Growers should use this information as a general guide combined with their own experience. Crop times will vary depending on the variety used, climate, location, time of year, and greenhouse environmental conditions. Fertilizer recommendations are only guidelines. It is the responsibility of the applicator to read and follow all the current label directions.

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