

Broccoli Raab

(*Brassica oleracea* var. *italica*)

Germination

- Time of radicle emergence (3-5 days)
- Soil temperature 65-70°F (18-21°C).
- Soil pH 5.5-5.8 and soluble salts (EC) less than 0.75 mmhos/cm (2:1 extraction).
- Broccoli is very sensitive to high salts, particularly high ammonium, during germination.
- Keep ammonium levels to less than 10 ppm.
- Cover the seed with coarse vermiculite.

Plug Production

STAGE 1 - Time of radicle emergence (3-5 days)

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STAGE 2 - Stem and cotyledon emergence (4-7 days)

- Soil temperature 62-65°F (17-18°C).
- Reduce moisture levels once radicle emergence occurs! Allow the soil to dry out slightly before watering for best germination and rooting.
- Keep soil pH 5.5-5.8 and EC less than 0.75 mmhos/cm.
- Keep ammonium levels to less than 10 ppm.
- Begin fertilizing with 50 75 ppm N from 14 0 14, 15-5-15 or a calcium/potassium nitrate feed once cotyledons are fully expanded.
- Alternate feed with clear water.
- Irrigate early in the day so foliage is dry by nightfall to prevent diseases.

STAGE 3 - Growth and development of true leaves (10-14 days)

- Soil temperature 62-65°F (17-18°C).
- Allow the soil to dry thoroughly between irrigations but avoid permanent wilting to promote root growth and control shoot growth.
- Maintain soil pH 5.5-5.8 and EC less than 1.0 mmhos/cm.
- Increase feed to 100 150 ppm N from 20 10 20 alternating with 14 0 14, 15-5-15 or other calcium/potassium nitrate fertilizer.
- Fertilize every 2nd – 3rd irrigation.
- Supplement with magnesium 1 2x during this stage, using magnesium sulfate or magnesium nitrate. Do not mix magnesium sulfate with calcium

nitrate as precipitate will form!

- Use DIF whenever possible, especially the first 2 hours after sunrise, to control plant height.

STAGE 4 - Plants ready for transplanting or shipping (7 days)

- Soil temperature 60-62°F (16-17°C).
- Allow soil to dry thoroughly between irrigations.
- Maintain soil pH 5.5-5.8 and EC less than 0.75 mmhos/cm.
- Fertilize with 14 0 14, 15-5-15 or calcium/potassium nitrate feed at 100 150 ppm N as needed.

Growing On to Finish

TEMPERATURE

- **Night:** 50-60°F (10-15°C)
- **Day:** 55-60°F (18-21°C)

LIGHT

Maintain light levels as high as possible while maintaining moderate temperatures.

MEDIA

Use a well-drained, disease-free soil-less medium with a medium initial nutrient charge and a pH 5.5-6.2.

FERTILIZATION

- Fertilize every other irrigation with 15-0-15 or 15-5-15 alternating with 20-10-20 at 150-200 ppm nitrogen.
- Maintain medium electrical conductivity around 1.0 mmhos/cm (using 1:2 extraction).

CONTROLLING HEIGHT

- Once plants are rooted to the sides of the containers they can be allowed to wilt prior to irrigation to provide some height control.
- Height can also be controlled by withholding fertilizer, especially phosphorous and ammonium-form nitrogen.
- Broccoli is responsive to day/night temperature differential (DIF), and is shorter with a negative DIF.
- Chemical PGR's can not be used on vegetables and herbs.

COMMON PROBLEMS

Insects: Aphids, Cabbage looper, Whitefly, Stem borer, Fungus Gnats

Diseases: Pythium, Rhizoctonia

Post Production Care

Optimum temperatures for broccoli:

Night: 62-65°F (17-18°C)

Day: 65-70°F (18-21°C)

- Broccoli prefers cool temperatures, temperatures below 70°F (21°C) are recommended during retail display.
- Optimum conditions may be difficult to maintain, especially if plants are displayed outside.

LIGHT

Broccoli grows best in full sun; however partial shading may be beneficial during retail display.

