GrowerFacts

Aquilegia Music

(*Aquilegia caerulea*)

Germination

- Time of radicle emergence (2-3 days)
- Soil temperature 68-72°F (20-22°C).
- Keep media very moist, near saturation.
- Do not cover or bury the seed.
- Light is required for germination.
- Soil pH 5.5-5.8 and soluble salts (EC) less than 0.75 mmhos/cm (2:1 extraction).
- Columbine is very sensitive to high salts, particularly high ammonium, during germination.
- Keep ammonium levels less than 10 ppm.

Plug Production

STAGE 1 - Time of radicle emergence (2-3 days)

- Soil temperature 68-72°F (20-22°C).
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STAGE 2 - Stem and cotyledon emergence (15-25 days)

- Soil temperature 68-72°F (20-22°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 less than 10 ppm.
- Begin fertilizing with 50 75 ppm N from 14 0 14 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 (30-35 days)

- Soil temperature 62-68°F (17-20°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 or other calcium/ potassium nitrate fertilizer.
- Fertilize every 2 3 irrigations.
- If using 15-0-15 supplement with magnesium 1 2x during this stage, using magnesium sulfate (16 oz/100 gal) 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.
- A-Rest, B-Nine, and Cycocel can be used to control height of columbine.

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

- Soil temperature 62-68°F (17-20°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 or calcium/potassium nitrate feed at 100 150 ppm N as needed.

JANUARY SOWING

- Seed sown in January will be ready for sale in late April to early May.
- Plants will not bloom the same season they were sown.

JUNE - AUGUST SOWING

Plants sown in June - August will bloom the following May - June.

TEMPERATURE

30-35°F (-1-2°C)

TRANSPLANT

Transplant into pots around September 15.

OVER WINTERING

- Over winter the plants until spring in an unheated greenhouse or cold frame.
- The root system should be developed throughout the soil volume prior to over wintering.
- Pots should be packed as close together as possible.
- If plants are over wintered outside, cover the plants with a thick layer of mulch.

FERTILIZATION

Fertilization during dormancy will not be necessary.

SEPTEMBER - OCTOBER SOWING

Plants sown in September - October will bloom the following May - June.

TEMPERATURE

35-40°F (2-4°C)

TRANSPLANT

- Transplant to packs in early November.
- Transplant into pots in February.

OVER WINTERING

- Plants are grown at 35-40°F (2-4°C) for 12-14 weeks.
- Perennials grown at this time will compete with other crops for greenhouse space.

FERTILIZATION

Fertilize at 75-100 ppm N from 15-0-15 every other irrigation.

Growing On to Finish

TEMPERATURE

Night: 55-60°F (13-16°C)

Day: 60-65°F (16-18°C)

LIGHT

Maintain light intensity around 1500-3000 foot-candles.

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 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.
- Columbine are responsive to day/night temperature differential (DIF), and are shorter with a negative DIF.
- A-Rest, B-Nine, and Cycocel can be used to control height.

Post Production Care

TEMPERATURE

- Optimum temperatures for columbine:
- Columbine should be displayed in a cool, below 70°F (21°C), location.
- Optimum conditions may be difficult to maintain, especially if plants are displayed outside.
- Using a negative DIF will help keep the plants short and of high quality.

LIGHT

Columbine prefer part shade to full sun.

COMMON PROBLEMS

Insects: Leafminer

Diseases: Pythium, Rhizoctonia

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