101 Ways to (Try to) Grow Arabidopsis: Summary of Recommendations
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| | Standard Production, very | Fast Production, slight risk | Root Treatment Production |
|-----------------------------------|---|---|--|
| | low risk of plant failure | of plant failure | (no flowering required) |
| Location | Growth chamber, light shelf, greenhouse <i>only</i> if <26C | Growth chamber, light shelf or greenhouse <30C | Growth chamber, light shelf, greenhouse <30C |
| Photoperiod | 16-hour | 24-hour | 12-hour |
| Light intensity | 100-150 μmol/m²/s fluorescent or high-intensity discharge (MH, HPS) or 100-600 μmol/m²/s sunlight | 100 µmol/m²/s fluorescent or high-intensity discharge (MH, HPS) or ambient sunlight extended to 24-hours with 100 µmol/m²/s | 100-150 μmol/m²/s fluorescent or 100-400 μmol/m²/s high-intensity discharge (MH, HPS) or 100-600 μmol/m²/s if sunlight |
| Temperature | 22C light 18C dark | 22C constant | 22C light 18C dark |
| Container and plant density | 3" square pot, 3-6 plants or 3601 (36-cell) tray, 2-4 plants | 3" square pot, 3-6 plants or 3601 (36-cell) tray, 2-4 plants | 72-cell tray, 72 plants |
| Soilless Mix | 75% commercial soilless germination mix/ 25% calcined clay granules (0.2-0.5 cm diameter) | 50% commercial soilless germination mix/ 50% calcined clay granules (0.2-0.5 cm diameter) | 100% calcined clay granules (0.2-0.5 cm diameter or finer granules roughly sand-particle size, <0.1 cm) |
| Water source | Tap water, unless testing indicates very poor water quality | Tap water, unless testing indicates very poor water quality | Tap water, unless testing indicates very poor water quality |
| Watering system | Gentle top water when possible. Sub-irrigation for young seedlings and for plants with maturing seeds. Drain trays 5 minutes later. | Capillary mat "self-watering" tray or Constant sub-irrigation | Sub-irrigation, may need to fill to surface of medium. Drain trays 5 minutes later. |
| Watering frequency | After first true leaves appear, allow soil to completely dry to depth of 1-cm below surface. Approximately every 7-10 days. | Keep capillary tray reservoir filled or Keep sub-irrigation tray filled to about 1.5 cm depth. | After first true leaves appear, as needed to avoid water stress. Approximately every 1-3 days. |
| Fertilizer type | General purpose liquid fertilizer w/ micronutrients | General purpose liquid fertilizer w/ micronutrients | General purpose liquid fertilizer w/ micronutrients |
| Fertilizer strength | 200 ppm N (200 mg N/liter) | 300 ppm N (300 mg N/liter) | 200 ppm N (200 mg N/liter) |
| Fertilizer frequency | Every other irrigation | Every irrigation | Three fertilizations, followed by one tap water irrigation |
| Fungus gnat control | Allow soilless mix drying, as described. If needed, apply <i>S. feltiae</i> beneficial nematodes. | If needed, apply <i>S. feltiae</i> beneficial nematodes or chemical controls | Dry out media while avoiding plant water stress |