

Environmental Conditions Chart

Stage	Substage	Temp	Light		Water Type	Nutrient Additions	Maintenance
Settled Meiospores	First 14 days	50–54°F 10–12°C	Dark 0 $\mu\text{mol photons m}^{-2} \text{ s}^{-1}$	n/a	Sterilized and pasteurized	F/2 1mL/1L	Scrape on day 14
	Days 15-28	50–54°F 10–12°C	Red 10 $\mu\text{mol photons m}^{-2} \text{ s}^{-1}$	16:8 L:D	Sterilized and pasteurized	F/2 1mL/1L	Water change on day 28 and monthly after
Gametophyte (active growth)	Days 28+	50–54°F 10–12°C	Red 10 $\mu\text{mol photons m}^{-2} \text{ s}^{-1}$	16:8 L:D	Sterilized and pasteurized	F/2 1mL/1L	Water change monthly
Gametophyte (back up culture)	Back up culture	48–52°F 9–11°C	Red 5 $\mu\text{mol photons m}^{-2} \text{ s}^{-1}$	16:8 L:D	Sterilized and pasteurized	F/2 1mL/1L	Water change every four months
	Active culture	50–54°F 10–12°C	Red 10 $\mu\text{mol photons m}^{-2} \text{ s}^{-1}$	16:8 L:D	Sterilized and pasteurized	F/2 1mL/1L	Water change monthly and grind as needed
Introduction	First 24-48 hours	50–54°F 10–12°C	Dark 0 $\mu\text{mol photons m}^{-2} \text{ s}^{-1}$	n/a	Sterilized and pasteurized	F/2 1mL/1L	n/a
	Days 3-21	50–54°F 10–12°C	White 10 $\mu\text{mol photons m}^{-2} \text{ s}^{-1}$	12:12 L:D	Sterilized and pasteurized	F/2 1mL/1L	Refresh nutrients on day 14

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						Flowthrough (100% per day)	Batch Refreshments (100% volume per batch)	
Spools	First 24 hours	50–54°F 10–12°C	Dark 0 μmol photons $\text{m}^{-2} \text{ s}^{-1}$	12:12 L:D	Sterilized	F/2 1mL/10L 2x per day	F/2 1mL/10L directly after filling, +10% daily until next water change	n/a
	Days 2-3	50–54°F 10–12°C	White 20 μmol photons $\text{m}^{-2} \text{ s}^{-1}$	12:12 L:D	Sterilized	F/2 1mL/10L 2x per day	F/2 1mL/10L directly after filling, +10% daily until next water change	Refresh water 100% daily
	Days 4-5	50–54°F 10–12°C	White 40 μmol photons $\text{m}^{-2} \text{ s}^{-1}$	12:12 L:D	Sterilized	F/2 1mL/10L 2x per day	F/2 1mL/10L directly after filling, +10% daily until next water change	Refresh water 100% daily
	Days 6-7	50–54°F 10–12°C	White 60 μmol photons $\text{m}^{-2} \text{ s}^{-1}$	12:12 L:D	Sterilized	F/2 1mL/10L 2x per day	F/2 1mL/10L directly after filling, +10% daily until next water change	Refresh water 100% daily
	Days 8-14	50–54°F 10–12°C	White 80 μmol photons $\text{m}^{-2} \text{ s}^{-1}$	12:12 L:D	Sterilized	F/2 1mL/10L 2x per day	F/2 1mL/10L directly after filling, +10% daily until next water change	Refresh water 100% daily
	Days 15-21	50–54°F 10–12°C	White 100 μmol photons $\text{m}^{-2} \text{ s}^{-1}$	12:12 L:D	Sterilized	F/2 1mL/10L 2x per day	F/2 1mL/10L directly after filling, +20% daily until next water change	Refresh water 75% daily
	Days 22-28	50–54°F 10–12°C	White 120 μmol photons $\text{m}^{-2} \text{ s}^{-1}$	12:12 L:D	Sterilized	F/2 1mL/10L 1x per day	F/2 1mL/10L directly after filling, +20% daily until next water change	Refresh water 50% daily
	Slow growth	50–54°F 10–12°C	White 40 μmol photons $\text{m}^{-2} \text{ s}^{-1}$	12:12 L:D	Sterilized	F/2 1mL/50L as needed	F/2 1mL/10L directly after filling, +20% daily until next water change	Refresh water 10% as needed