

Liriope muscari cv Emerald goddess®
USPP 15,471
Growing Protocol



Soil Mix:

Soil mixtures shall consist of a propagation blend, such as the Fafard 3B or an approved substitute, containing relatively sterile components. The use of perlite is recommended for good drainage. The soil mix should be moist, but well drained. A nutrient blend shall be incorporated into the soil; **do not add nutrients via top dressing; this causes an accumulation of nutrients in the crown which may damage the plant.** A blend, such as Nutricote 13-13-13-T 270 has produced excellent results. See Exhibit A for media pH and media analysis ranges.

Growing Times:

4” liners should be grown for a period of 3 to 5 months to establish a sufficient root system and set additional bibs. 2 gallon containers shall be grown for 3-4 months and/or until they meet the minimum specifications of 6 bibs with a height of 18” and a width of 24”.

Soil Temperatures:

During propagation soil temperature should be maintained at a minimum of 60-65 degrees Fahrenheit. A frost and/or light freeze does not appear to affect bib establishment; shelter from cold drying winds. There appears to be no seasonality.

Lighting:

Grow in full sun to partial (40% or less) shade.

Rooting Hormones:

Not applicable.

Herbicides:

We do not recommend the use of herbicides. Hand weeding is sufficient with the use of Best Practice Procedures to prevent weed contamination.

Pests and Diseases:

Anthracnose, leaf spot, root rot and slugs may occur. This plant has demonstrated a resistance to crown rot caused by the fungus *Phytophthora palmivora*.

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Bibs: (Single or 3 bib clump)

Foliage should be trimmed 6" from the ground level and any old or damaged foliage should be removed. Roots should be trimmed to ½" of rhizome. The cut surface on the rhizome should be suberized before shipment. Particular care should be taken to prevent bruising of the crown during handling and shipping.

Bibs should be treated with a broad spectrum algaecide/fungicide, such as Zerotel, or a fungicide, such as Subdue, as a dip solution; and with an organophosphate insecticide, such as Malathion, as a dip solution.

4" Liners:

Initial plantings shall be in 4" liners. Best Practice Procedures shall be used to prevent contamination during the planting process. Avoid overcrowding on the propagation beds. Bibs should be planted to a depth sufficient to cover the root ball and leave the crown at a minimum of ½" above the soil line. When liners have 3–5 bibs at the soil line they should be transferred to 2 gallon containers. Liners can be held up to 9 months without loss of vigor. See Exhibit A for systemic tissue analysis ranges.

2 Gallon Containers:

Finish plantings shall be in 2 gallon containers, such as the Classic C-600. Best Practice Procedures shall be used to prevent contamination during the transplanting process. Bibs should be planted to a depth sufficient to cover the root ball and leave the crown at a minimum of ½" above the soil line. Avoid overcrowding; 2 gallon containers shall be placed, at a minimum, on 24" centers on the finishing beds. Finished containers will have minimum specifications of; a bib count of 6 with a height of 18" and a width of 24". See Exhibit A for systemic tissue analysis ranges.

Rainy Season:

During the rainy season, liners and finishing containers exposed to the elements should be treated on a regular schedule with fungicide to avoid foliage and/or root diseases.

Shipping:

Finished 2 gallon containers should be shipped on shelves, and not stacked, to avoid crown damage.

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Media - pH and Nutrients



Media pH	Recommeded Range	
	From	To

Media pH	5.30	6.20
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Media Analysis - Media:	Normal Ranges	
	From	To

Nitrate (NO ₃ -N)	40	200
Ammonium (NH ₄ -N)	0	30
Phosphorus (P)	5	30
Potassium (K)	40	200
Calcium (Ca)	40	200
Magnesium (Mg)	28	60
Iron (Fe)	0.30	3.00
Manganese (Mn)	0.10	3.00
Boron (B)	0.05	0.50
Copper (Cu)	0.01	0.30
Zinc (Zn)	0.10	0.30
Molybdenum (Mo)	0.01	0.10
Sodium (Na)	no data	no data
Aluminum (Al)	no data	no data
Soluble Salts	0.75	2.50

Tissue Analysis - Systemic:	Sufficiency Ranges	
	From	To

Macro Nutrients:

Nitrogrn (N)	1.32	1.95
Phosphorus (P)	0.15	0.34
Potassium (K)	1.04	2.31
Calcium (Ca)	0.35	1.22
Magnesium (Mg)	0.18	0.33
Sulfur (S)	0.12	0.21

Mirco Nutrients:

Iron (Fe)	65	125
Manganese (Mn)	29	376
Boron (B)	14	31
Copper (Cu)	1	8
Zinc (Zn)	27	93
Molybdenum (Mo)	0.12	0.58

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