GrowerFacts

Lysimachia Alexander

(*Lysimachia punctata*)

Propagation

STAGE 1 - Harvesting of cuttings to sticking

- Harvest uniform diameter cuttings to ensure uniform rooting.
- Make multiple passes over the stock to collect uniform diameter cuttings.
- Harvest cuttings at the correct stage of maturity- be certain stem cuttings are not woody.
- Harvest cuttings in the early morning or late afternoon when ambient temperatures are below 90°F (32°C).
- Place cuttings in carriers either base up or base down.
- Avoid crushing the cuttings when harvesting to decrease botrytis problems.
- Cover the carrier with a damp towel to prevent desiccation of the cuttings.
- Store the cuttings for at least 2 hours at 48°F (9°C) to reduce cutting temperature.
- Maintain 75-90% RH in the cooler to prevent desiccation of the cuttings.
- If planting is going to be delayed, store the cuttings at 50-60? F (10-15? C) for 24 hours maximum.

STAGE 2 - Callus formation (5-7 days)

- Callus formation occurs in 4 steps:
  1. Swelling of the tissue without any color change.
  2. Swollen area begins to turn white
  3. White areas begin to crack open (epidermis ruptures)
  4. Rough callus areas begin differentiating root initials.
- Soil temperature 68-72°F (20-22°C)
- Air temperature 68-70°F (20-21°C) nights, 75-80°F (24-26°C) days.
- To guarantee uniform rooting, the media should be sufficiently moist so that water is easily squeezed out of rooting media.
- Keep RH 75-90% at the base of the cutting.
- Use tempered water, 70°F (21°C), in the mist lines since cold water will lower the soil temperature during the day.
- Maintain high relative humidity in the air surrounding the cutting, 75-90%, to minimize evapotranspiration.
- Prevent leaf wilting by applying overhead mist or fog.
- The mist frequency should increase and decrease as the light and ambient temperatures change during the course of the day.
- During the first 3-5 days frequent night misting may be required.
- Each wilting episode during stage 2 adds at least one day to the rooting program.
- Light intensity should be 500-1000 foot-candles.
- Light intensity above 1000 will increase plant stress due to plant warming.
- Use retractable shade so that the light intensity can be increased as the cuttings mature.
- Begin foliar feeding with 50-75 ppm of 20-10-20 as soon as there is any loss in foliage color.
- Soil pH should be 6.5-7.0 with an EC < 0.5.
- Maintain pH of media leachate at 6.0-6.2.
- Once 50% of the cuttings begin differentiating root initials, the cuttings are ready to transfer to stage 3.

STAGE 3 - Root development (9-11 days)

- Soil temperature 68-72°F (20-22°C).
- Air temperature 68-70°F (20-21°C) nights, 75-80°F (24-26°C) days.
- Once the cuttings begin to form root initials, it is critical to begin drying out the soil.
- Avoid drying out the air since this will increase evapotranspiration which will reduce root zone temperature.
- To reduce soil moisture:
- Reduce the mist application during the dark period.
- Reduce the duration and frequency of the mist.
- Reduce the amount of water applied per day by delaying the start of the mist period until 9:30 to 11:00 AM and end the mist period earlier than 4:00-5:00 PM.
- Begin increasing light intensity to 1000-2000 ftc as the cuttings begin to root out.
- Foliar feed at 100 ppm nitrogen from 15-0-15 alternating with 20-10-20. Increase the frequency and rate to 200ppm at each application to prevent salt problems.
- The majority of fertilizer should be in the nitrate form (15-0-15).
- The soil pH should be 6.5-7.0.
- Soil EC should be below 0.5.
- Monitor the pH and EC of the leachate on a daily basis. The pH should be 6.0 and the EC should stay between 0.5-1.0.

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

- Air temperatures 62-68°F (16-20°C) nights, 72-75° F (22-24°C) days.
- Move the liners form the mist area into an area of lower RH, lower temperatures, and higher light intensity.

- A zero DIF is desired.
- Increase the light intensity to 2000-4000 ftc.
- Provide shade during the mid point of the day to reduce temperature stress on the crop.
- Maintain soil pH 6.5-7.0 and EC less than 0.5 mmhos/cm.
- Fertilize at 100-150 ppm nitrogen from 15-0-15 alternating with 20-10-20 once per week.

Growing On to Finish

TEMPERATURE

Night: 65-68°F (18-20°C) Plants are sensitive to night temperatures below 45°

Day: 72-75°F (22-24°C) Avoid temperatures above 95° F.

LIGHT

- Keep light intensities at 4000-7000 while maintaining moderate temperatures.
- Lysimachia is facultative long day with flowering promoted under long days. During the winter when sunlight is reduced, crops take longer to finish.
- When the photoperiod is less than 9 hours, the plants are vegetative.
- Low light levels promote stem stretch.

MEDIA

- Use a well-drained, disease-free soil-less medium with a high initial nutrient charge and a pH 6.5-7.0.
- Combinations of peat, bark, or perlite are best.
- A pH of 6.5-7.0 is optimum to reduce minor nutrient uptake.
- Reduce the amount of phosphorus in the media to reduce leaf chlorosis.
- Do not use dolomite lime if high in boron, as boron promotes leaf chlorois.
- Plants are very sensitive to high soluble salt levels. Keep EC below 1.0.

WATER

Keep media evenly moist.

FERTILIZATION

- Lysimachia has a light fertilizer requirement
- 2X/week fertilization 15-0-15 alternating with 20-10-20 is best
- As the plants mature the rate can be increased to 150 PPM.
- Excessive ammonia fertilizers will drop the pH which promotes boron and iron uptake. Do not add boron or iron to the fertilizer or spotting and, marginal chlorosis may occur.
- Water with clear water every third watering if high soluble salts problems occur.

PINCHING

- Once liners are established, pinch plants back to improve basal branching.
- Pinch plants above the 3rd-4th leaves about 1-1.5 “above the soil.
- Plants initiate flowers after the 7th leaf pair, therefore delaying the pinch results in flowering with poor branching.

PLANT GROWTH REGULATORS

Lysimachia are not responsive to plant growth regulators.

POST PRODUCTION CARE

TEMPERATURE

Night: 65-68°F (18-20°C)

Day: 72-75°F (22-24°C)

Avoid temperatures above 95°F.

LIGHT

- Lysimachia does best in full sun with flowering reduced as the hours of sunlight decrease.
- Optimum light levels are 5000+ ftc. But will tolerate levels from 1000-9000 ftc.

COMMON PROBLEMS:

Insects: Aphids, Thrips, Whitefly, Spider mites, Fungus gnats

Diseases: Botrytis, Rhizoctonia, Pythium, Powdery Mildew

Problem: Plants collapse

Cause: Wet media for an extended period; Botrytis; Low temperature exposure

Problem: Excessive vegetative growth

Cause: High ammonia concentration in the soil; Over fertilization under low light; Low light and over watering, wet media; Short photoperiods

Problem: Poor branching

Cause: Low fertilization, lack of ammonia; Low light

Problem: Foliage Necrosis

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Cause: Drying out the plant between irrigations; High soluble salts in the soil; Excess phosphorus, boron or iron in the soil

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