

STARTING A LEATHERLEAF FERNERY

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LOCATION

Leatherleaf fern needs a shady location or, for high volume commercial production, a shade house structure (often called a Saran House) with 70-73% shade cloth. Soil should be well drained even in the rainy season. The shade house should be at a higher elevation in a warm location. Low pockets where cold settles are to be avoided. The soil should have some organic matter and the pH should be in the range of 5.5 to 6.0.

SHADE HOUSE

The shade house should be a cable structure. 70-73% shade cloth should be used with the top and sides covered. There should be a covered door, as well.

IRRIGATION

Irrigation uniformity is a key to good production. “Wobblers” or full circle brass nozzles are recommended. Use insect proof nozzles when installing an over-the top-watering system for icing over the saran house at the onset of freezing weather. In this instance, use insect-proof plastic nozzles, if insect-proof brass nozzles are not available. Unclogging nozzles above the shade cloth is a difficult chore to attempt when preparing the shade house and irrigation system for a fast-moving cold front. Ferns can not tolerate too much drying or water-logging. Well water is the best source of irrigation water. Diesel pumps are almost always used. Diesel pumps are highly reliable when irrigation water is needed to protect against freezing temperatures.

SOIL

The area designated for the fernery must be cleared and disced or roto-tilled. Wait two weeks until weeds start to emerge and apply Round-up (glyphosate). Repeat a second time. Then install the irrigation system.

PLANTING

Planting in the fall (around October) is the best time. Use 10-12” rhizomes. Break into 3-5 inch long sections with 2 fronds per section. There should be a least one new head about to sprout. The field should be closely watched, as animals will dig up the rhizomes. The ground should be wet and then roto-tilled. The rhizomes should be planted in strips 3 feet wide. Leave rows between the planted strips that are 2 ½ feet wide. Plant the rhizomes one foot apart. This means that a planted area 3 feet wide and 100 feet long would require 400 rhizomes.

WATERING AND FERTILIZING

Water the rhizomes every day. Use no liquid fertilizers when starting out. In spring, start fertigating with liquid 8-2-8 at a low rate every two weeks. Weeds must be hand-pulled. Apply fungicides on a regular basis. Apply a granular 8-2-8 with 4% magnesium in June and October. Extra Chelated manganese may be needed. Use about 100 pounds of nitrogen per acre the first year. In the second year use about 200 pounds of nitrogen per acre. Beginning in the third year, 250 pounds of nitrogen per acre per year is recommended. In a well managed program, with good irrigation practices and balanced fertilizer inputs this is sufficient nitrogen. Additional nitrogen will only be wasted. Excessive nitrogen not utilized by the ferns will likely be leached and end up in the ground water. Beginning in the third year use liquid 8-0-8 at the rate of about eight gallons per acre every 2 weeks unless the soil test indicates a need for phosphorus. Never

apply phosphorus in the winter. Winter also calls for nitrate sources of nitrogen. Spring is the best time to include phosphorus in the program, if soil testing indicates it is below the optimum range. Growers may continue to apply ground applied fertilizer (use controlled release) to supply a portion of the total nutrient needs.

HARVESTING

Harvesting can begin as early as 9-12 months after planting, with production increasing as the fern becomes better established.

NUTRIENT REQUIREMENTS

Established leatherleaf fern requires about 250 pounds of nitrogen and 300 pounds of potassium per acre per year. About 120 pounds of phosphorus is needed per year, but do not add if testing indicates that soil levels are above optimum. Only add the difference between the yearly uptake and what soil tests show is present in the soil, if soil uptake will drop levels below optimum. Other amounts required in pounds per acre per year are:

Magnesium	50-100 lbs
Sulphur	20-60 lbs
Iron	1.2-6.0 lbs
Manganese	1.0-4.5 lbs
Zinc	0.7-4.5 lbs
Boron	0.5-1.5 lbs
Copper	0.3-1.1 lbs
Calcium	varies

Use dolomitic limestone (or calcitic limestone if tests show excessive levels of magnesium in the soil) as necessary to maintain soil pH between 5.5-6.5. This should supply sufficient Ca for leatherleaf fern, depending on the acidifying effects of fertilizer nutrient sources. Frequent soil and tissue testing are the keys to keeping all nutrients within the optimum range in the fern tissue.

Other trace elements may be supplied occasionally with organic supplements such as humic acids and seaweed.

Also use soil and tissue tests to determine how much of each nutrient is available from soil and water and reduce fertilizer application rates accordingly. Some pesticides contain micronutrients and these contributions should be subtracted from the annual amounts applied using fertilizers. Keep in mind that fungicides containing micronutrients, e.g. manganese and zinc, will leave residues on frond surfaces that may give tissue results much higher than the amounts actually inside the tissue. Nutrients should be applied in small amounts or in controlled/slow release fertilizer in order to minimize leaching and other nutrient losses.

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