

CUTTING LOSS IN PHILODENDRON SPECIES

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Loss of rooted tip cuttings from *Philodendron pertusum* (*Monstera deliciosa*) is a major problem in greenhouse production. The preferred method of propagation is to cut rooted, four- to five-leaf, tip cuttings from the stock plants and establish them rather than using unrooted cuttings. This method saves energy, labor, materials, and time for the grower. Recent investigations have indicated water mold fungi (*Pythium* and *Phytophthora* species) can be a major factor in the loss of the rooted tip cuttings.

The stock plants from which the rooted cuttings are taken grow in raised beds in a heated greenhouse. The plants appear healthy, with reasonable vigor, and produce a good number of cuttings. The rooted tip cuttings have rich green leaves of normal size and appear sound when they are removed from the stock plants, potted in a steam-sterilized soil mix, and placed in a plastic enclosure in a greenhouse for establishment. However, the root system and base of the cuttings frequently develop rot, and the plants rapidly deteriorate.

Attempts to isolate an organism causing this loss of cuttings were not successful when samples were taken from roots that had deteriorated. In contrast, when isolations were made from the roots of tip cuttings freshly taken from the stock plants in the raised beds, water mold fungi were readily found in the roots. Water mold fungi are a group of soil-inhabiting fungi that attack plant roots, often destroying all or part of the root system, causing the entire plant to collapse.

A program has been established using fungicides to determine their effectiveness in reducing this loss. Results of these efforts will be reported as they develop.

Apparently there is considerable difference within the *Philodendron* group in susceptibility to the water mold fungi. Active water mold fungi have been found in samples from *Philodendron panduriforme* rooted cuttings. However, no loss of plants has occurred when cuttings have been removed from the parent plants, potted in a sterilized soil mix, and placed

in a chamber in a greenhouse for establishment. When both species have been handled in the same way, *Philodendron pertusum* cuttings frequently have sustained high loss, while *Philodendron panduriforme* cuttings have been established with little or no loss.

The economic aspects of plant loss are obvious, but another factor not often considered is the energy wasted. Heating a greenhouse in which plant death or reduced growth occurs is wasting energy. It is particularly important now, with decreasing supplies of fuel and the accompanying increased costs, to operate facilities at their optimum productive capacity. Producing clean plants can make a major contribution to greenhouse energy conservation while providing the consumer with a superior product and increased returns to the grower.

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