

## ABSTRACT

# PRODUCTION OF GREENHOUSE-GROWN ROSES IN JAMAICA AND THE CONTROL OF ROSE POWDERY MILDEW

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One of the major problems facing rose growers in Jamaica is the disease Rose Powdery Mildew. This disease is caused by the fungus Sphaerotheca pannosa. The pathogen parasitises aerial portions of the plant disfiguring leaves and buds, and the presence of the white mycelium results in a decrease of the aesthetic value of the bloom.

The fungus thrives in conditions where the day time relative humidities are low and the temperatures are high, and the night relative humidities are high and the temperatures are low. Those parts of the Island most conducive to commercial rose growing are characterized by the temperature/humidity cycles which create conditions favourable for proliferation of the pathogen.

The use of fungicides in order to control Rose Powdery Mildew in the greenhouse by local growers has proven to be both costly and ineffective. Elimination of the conditions which facilitate development of the pathogen should result in

control of the disease.

The day time relative humidity in the greenhouse was raised via a high-pressure misting system. The day time temperature in the greenhouse was lowered by the use of a shade cloth. Evaluation of the effect of the mist/shade system on the incidence and severity of the disease was carried out on a commercial farm. The effect of the mist/shade system on the production of rose blooms was also examined.

There was a significant reduction in the disease incidence in the greenhouse with the mist/shade system. In the same greenhouse, the total bloom production was significantly lower (14.4%) than the production in the greenhouse without the mist/shade system. There was, however, an overall improvement in the quality of the blooms harvested from the house with the mist/shade system in terms of length, weight and bud size.

Observations of the fungicide application process on rose farms in the Island led to the conclusion that the time at which the chemical was applied may have been the factor causing the limited efficacy of the fungicide. It was determined that spraying the plants with the fungicide in the afternoon rather than in the morning was more effective at controlling the disease. The use of water as a drench at mid-day also contributed more to the control of the disease than

spraying the plants with the fungicide early in the morning.

Estimates of costs and benefits associated with each method of control under the existing set-up, are also presented. These have to be considered before making final recommendations.