

Benjarong Chaikosol 2008: Aeroponic System for Orchids. Master of Engineering (Irrigation Engineering), Major Field: Irrigation Engineering, Department of Irrigation Engineering. Thesis Advisor: Associate Professor Montri Khamchoo, M.Eng. 183 pages.

This thesis research is aimed to optimize aeroponic system for orchids by microspray and to compare the results from aeroponic with those from the conventional irrigated systems : mini sprinkler and hose watering.

By optimization, 22L/Hr flow rate with 0.80 m. nozzle spacing with equilateral triangle type is the most appropriate for orchid irrigation using microspray whereas 105 L/Hr flow rate with 1.50 m. nozzle spacing is normally chosen by agriculturist for orchid irrigation using mini sprinkler.

The researcher also studied the orchid growth and the result showed statistical insignificant difference of the orchid average growth among different type of irrigated systems : microspray, mini sprinkler and steam line watering.

In term of investment, it is found that, without considering water cost (natural resource or irrigation system water supply), the most appropriate system is hose watering due to its minimum cost per rai. However, microspray becomes to be the most favourable if the water cost is included use to its minimum water, labour and expenditure requirements.

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