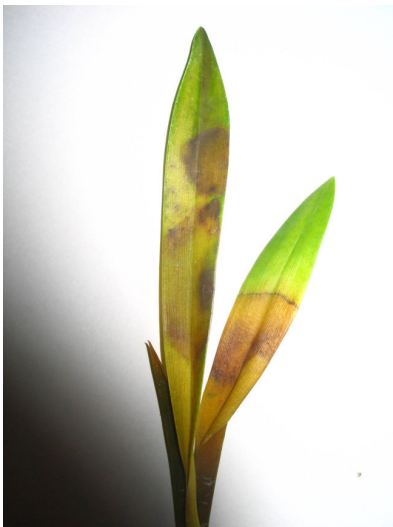


DPA System Improves the Shelf Life and Quality of Cut Orchids for Singapore Floriculturists

Challenge

For a major cultivator and exporter of cut orchids in Singapore, the cut orchids have to be properly handled with sufficient post harvest technology to ensure that marketable products can be delivered to customers. Improper management of cut orchids at this stage would lead to plant diseases and complications. Water quality is one of the vital factors in affecting the physiology of cut orchids. Quality of water can fluctuate according to environmental changes. If water quality is poor, orchid plants can be seriously affected with bacteria, resulting in rotting leaves and roots.



Solutions

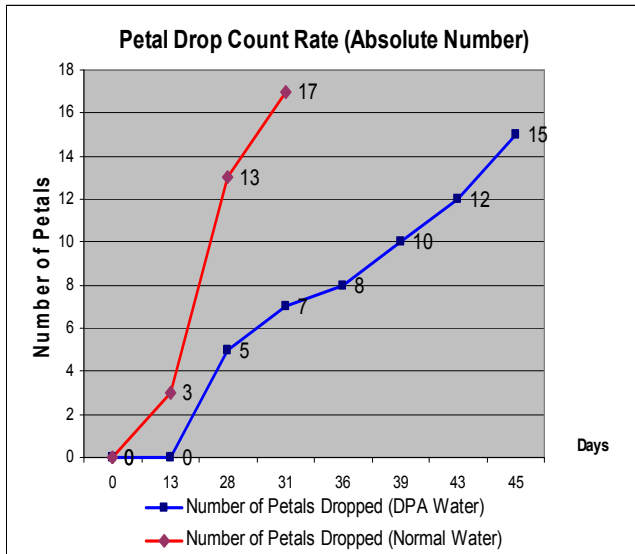
SIF Technologies conducted a trial to demonstrate the effects of DPA System's treated water on the post harvest storage effects of orchid crops. Four similar stalks of orchid plants were used. They were harvested from the same batch, at approximately 0900 hrs from Orchid Paradise on 21 April 2006.

Two of them were immersed in a bottle of water treated using DPA System while the other two were immersed in a bottle of water taken from normal existing water system. Both sets were placed in a room circulated at constant temperature maintained at ambient temperature of 25°C. Both sets of leaves also received equal amount of lighting and equal amount of water (500ml). Results of the trial were evaluated by quantifying the petal drop rate and observing the changes in the physical appearance of the cut orchids. One set of optical recording equipment was used to capture the changes in physical state of the orchids and observations were recorded on a daily basis.

Results

Longer Vase Life

The cut-orchids immersed in DPA water experienced a lower drop count rate as compared to the set of cut-orchids in normal water. By day 36, 17 petals had dropped off for the cut-orchids in normal water. However, in the same period of time, only 8 petals had dropped off for the cut-orchids in DPA water. For the cut-orchids in normal water, all the petals had already dropped off by the 36th day.



Better Plant Quality

Immersing plants in DPA treated water can improve the hydration process and keep them better hydrated. In the same study, it was shown that after 46 days, the orchids in DPA treated water were in better condition than those in normal water. For orchids immersed in DPA treated water, a section of the stem still remained green and lush. In stark contrast, the stems of orchids in normal water turned brown totally.



DPA Water
Day 46: A section of the stem remained green

Normal Water
Day 46: Stem turned brown totally



DPA Water
Day 31: 8 petals remaining

Normal Water
Day 31: 0 petals remaining