

Effect of Rootzone Temperature in Aeroponic System for Tulip Production



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The effects of three rootzone temperatures on the growth and flowering of four tulip cultivars of *Tulipa gesneriana* namely Christmas Marvel, Hollandia, Leen Van Der Mark and Yokohama were studied using aeroponic system. The rootzone temperatures were 10°C, 14°C and 18°C and ambient temperature ranged from 23°C to 40°C. Tulip bulbs that were cured at 90C for 15 weeks flowered successfully and at a much shorter forcing period than the conventional way of planting for two of the four cultivars tested. Cultivar Hollandia and Yokohama flowered after forcing time of 17 days. They are tolerant to stem topple and flowers showed good colour retention. However, flowering was aborted for cultivar Leen Van Der Mark and Christmas Marvel, as they are more heat sensitive. The desirable plant height was achieved for cultivar Hollandia and Yokohama. They were no significant differences between interactions of temperatures and cultivars. It was found that flower diameter was more influenced by cultivars instead of rootzone temperature. Cultivar Hollandia has the largest flower diameter of 5.3cm, with cultivar Leen Van Der Mark at 4.4cm and lastly Yokohama at 3.7cm. Generally, flower quality was better at trough temperature 10°C with better percentage of flowering, better flower colour and stronger plant with narrow leaves.

The Cultivars Selected for Greenhouse Forcing Under Aeroponics Production



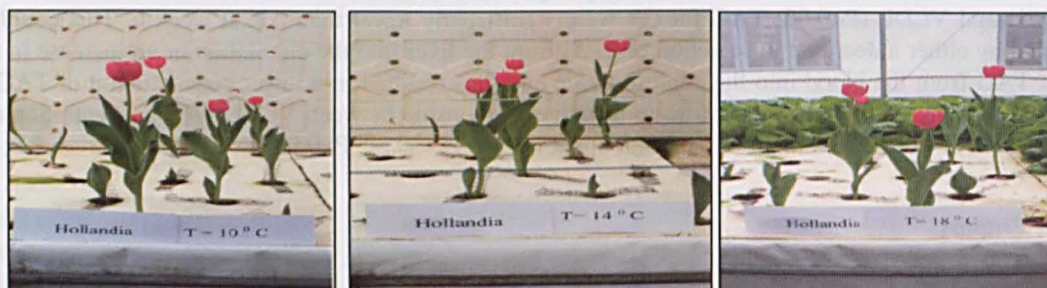
Christmas Marvel

Hollandia

Leen Van Der Mark

Yokohama

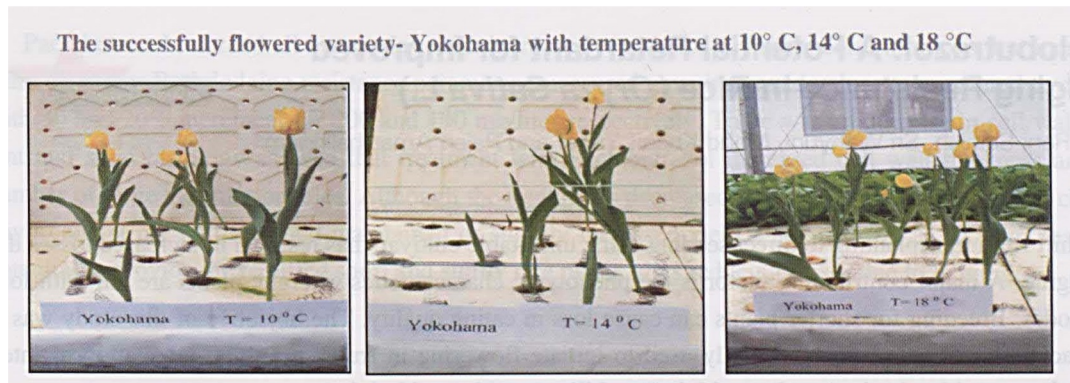
The successfully flowered variety – Hollandia with temperature at 10°C, 14°C and 18°C



Hollandia T= 10 °C

Hollandia T= 14 °C

Hollandia T= 18 °C



The study indicated that it is possible to grow tulips with manipulation of the rootzone temperature and selected heat tolerant cultivar. Thus, it serves as a platform for greenhouse production of tulips suitable to Malaysian climate.

Reader Enquiry

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