

Disease Indexing of Citrus Seedling Production and Establishment of Propagation System of Virus-free Kumquat Seedlings.¹

Kuo-Ming Lee An-Long Chiou²

Summary

In order to establish propagation systems for certified virus-free seedlings of Kumquat, seeds of healthy Sunki (*C. sunki*) rootstock suitable for future grafting were collected. These seeds were treated with hot water and their dormancy were broken; and then grown into rootstock seedlings for grafting. By doing so, NT\$43,000 of rootstock cost was saved for each hectare. To obtain virus-free Kumquat budwoods, the virus-free line HF-1 was further separated into 12 sublines with names of HF-1-1 to HF-1-20 individually. Virus-free budwoods were grafted onto Sunki rootstocks with a survival rate of 84.1%. The grafted seedlings were planted in a sloped-land (SL) and a level-land (LL) testing orchard. SL orchard had higher average plant height than LL orchard. The HF-1-9 grown in LL had the highest yield per tree of 22.0 kilograms, which is significant higher ($p=0.05$) than that of control. All seedling lines grown at the LL had higher yield than the SL. The HF-1-16 at SL and the HF-1-15 at LL had the greatest average fruit weight of 20.2 and 20.1 grams respectively; that were higher than all other lines at each orchard. The LL orchard had larger average fruit size than the SL orchard. There were no differences ($p=0.05$) in soluble solids contents between the two orchards. Pretty high levels of acid content were found in fruits from both orchards. Overall results indicated that the horticultural performances of the virus-free Kumquat trees grown in either SL or LL orchard were significantly better than that of the control.

Key words: Kumquat, seedling production, pathogen-free citrus, propagation system

1. Research Article No. 199 of the Hualien District Agricultural Research and Extension Station.

This study was supported by the Chung Cheng Agriculture in Social Welfare Foundation (Plane No.91-chung cheng-Agr.-7、92-chung cheng-Agr.-3、93-chung cheng-Agr.-5).

2. Associate horticulturist and Former assistant research, Lan-Yuan Branch Station, Hualien DARES.