

## Current State of the Fruit-Tree Liner Nursery Industry in Japan. Report No. 1<sup>©</sup>

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Most fruit producers in Japan purchase their plants from propagation nurseries, and this makes common sense. This is especially so with newer clones in which cultivar propagation rights are protected as has occurred in many other flowering plants. I would like to discuss fruit-tree propagation in Japan, which is the beginning process of the fruit production industry.

### OUTLINE OF SAPLING PRODUCTION

In Japan, the prefectures of Ibaraki (Saitama), Aichi, and Fukuoka are major fruit-tree-liner production areas. Those areas are located near Okayama, Yamagata, Niigata, and Nagano, which are major fruit growing prefectures in Japan. In Aichi and Fukuoka, citrus fruit-tree liners are produced, while in the other areas deciduous fruit-tree liners of grape (*Vitis*), peach (*Prunus*), persimmons (*Diospyros*), prune and cherry are produced. In addition, both apple (*Malus*) and pear (*Pyrus*) liner propagation occurs in cold areas.

All fruit tree liner suppliers (nurseries) are producing based on environmental conditions. It is very important that protection is provided from both high temperatures and high humidity during the summer season.

In Japan, grafting methods are used for the propagation of fruit-tree liners with the exception of fig trees and raspberries. The stock selected is determined by the climatic condition, land condition, and/or production method of each area (or each fruit).

When fruit-tree propagators need seeds for understock production, they purchase them from a special trader (nursery or market) or gather them privately. A number of imported seeds from China are now found in the market. Recently, we are finding in the market small stock plants of prune and cherry, which are propagated by the in vitro method. However, there is not a large amount of these in market circulation because the price of the clonal propagule is high.

The original characteristics of some cultivars are not clear, for example, *D. khaki* 'Saijo' or 'Fuyu' (major cultivars of persimmon), because they are very old cultivars and there are many "strains" in Japan. I think it is important to clarify the relationships among these strains (for each cultivar) by genetic analysis for further improvements in fruit production.

### CONCLUSION

The economic status for many fruit-tree propagators is currently very difficult. Propagators are not accustomed to competition because in the past they were under government protection for a long time. However, the situation has changed and it is necessary for producers to develop new markets such as supplying a demand from amateur gardeners.