Medicinal Plant Research 2026, Vol.16, No.5, 342-357
http://hortherbpublisher.com/index.php/mpr

Review and Progress Open Access

Propagation of High-Quality Fingered Citron Seedlings and Application of Standardized Orchard Establishment Techniques

Xudong Kong [1,2]

1 Zhejiang Jinhua Fingered Citron (JFC) Biomedical Technology Co. Ltd., Jinhua, 321000, Zhejiang, China
2 Zhejiang Agronomist College, Hangzhou, 310021, Zhejiang, China
Corresponding email: zhejiangkong@163.com

Medicinal Plant Research, 2026, Vol.16, No.5 doi: 10.5376/mpr.2026.16.0022
Received: 13 Jul., 2026
Accepted: 26 Aug., 2026
Published: 20 Sep., 2026

Copyright © 2026 Kong, This is an open access article published under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Preferred citation for this article:
Kong X.D., 2026, Propagation of high-quality fingered citron seedlings and application of standardized orchard establishment techniques, Medicinal Plant Research, 16(5): 342-357 (doi: 10.5376/mpr.2026.16.0022)

Abstract Fingered citron possesses medicinal, edible, ornamental, and aromatic value, and the propagation of high-quality seedlings together with standardized orchard establishment constitutes an important foundation for improving cultivation quality and production stability. This paper focuses on seedling propagation and standardized orchard establishment techniques for fingered citron, systematically analyzing key aspects including the selection of superior mother plants and propagation materials, cutting and grafting propagation, and environmental, water, and nutrient management during the seedling stage. Methods for seedling quality evaluation and grading are also summarized based on morphological traits, growth indicators, root system status, and plant health. For orchard establishment, emphasis is placed on site selection, soil improvement, infrastructure construction, planting density, and standardized planting, followed by discussion of water and nutrient management, root recovery, training and pruning, and pest, disease, and abiotic stress control in young orchards. The analysis indicates that fingered citron production should integrate source material management, seedling propagation, quality grading, standardized orchard establishment, and young orchard management into a coordinated whole-process system. Technical parameters should be optimized according to ecological conditions in different production regions, while demonstration, technical training, and quality traceability should be strengthened to improve the standardized application of these techniques. This paper provides a technical reference for high-quality seedling production, standardized orchard establishment, and large-scale cultivation of fingered citron.

Keywords Fingered citron; High-quality seedlings; Propagation techniques; Standardized orchard establishment; Young orchard management

1 Introduction

Fingered citron (*Citrus medica* L. var. *sarcodactylis*) is a perennial cultivated type of citron (*Citrus medica* L.) in the genus Citrus (Rutaceae). Citron represents an ancestral lineage important to citrus diversity (Denaro et al., 2020). Fingered citron has medicinal, edible, ornamental, and aromatic uses, and its distinctive finger-shaped fruit contributes to its commercial identity (Sun et al., 2024; Li and Fan, 2026). Morphological variability in fruit size, finger number, shape, and tree growth highlights the need to identify and preserve true-to-type propagation materials. Because traits can also respond to environmental conditions, mother-plant evaluation should combine varietal identity, health status, and field performance rather than relying on fruit appearance alone.

The ecological adaptability of fingered citron determines both its production range and its cultivation risk. Current evidence indicates that fingered citron is mainly cultivated in warm regions of southern China, including Guangdong, Fujian, Zhejiang, Sichuan, and Chongqing, while global cultivation also extends to parts of Europe, the United States, and Southeast Asia. At the same time, the species is clearly constrained by climate: it is not resistant to cold or drought, is vulnerable to freezing injury, and shows declining occurrence probability when annual temperature range increases. Habitat suitability studies in citrus identify annual precipitation, temperature annual range, elevation, precipitation seasonality, soil conditions, and human activity as important determinants of adaptation. These broader citrus findings provide comparative support for evaluating fingered citron production environments, but they should not replace species-specific assessment of topography, soil fertility, and management intensity. More broadly in citrus, environmental suitability is shaped by climate, geography, and soil fertility together, and improved orchard performance is associated with evaluating pH, organic matter, and