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Breeding on Interspecific Hybrid *Michelia* Cultivar ‘Yuxia’

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Abstract. Breeding new varieties of *Michelia* with *Michelia maccluri* as male parent and *Michelia yunnanensis* as female parent. The results showed that: ‘Yuxia’ has the characteristics of excellent ornamental characters, stable ornamental characters and wide adaptability. It is suitable for cultivation in southern China, especially in most areas of the Yangtze River, and has a good application prospect.

Key words: ‘Yuxia’; *Michelia Maccluri*; *Michelia Yunnanensis*; Interspecific Hybrid; South China.

INTRODUCTION

Michelia is the most representative genus of Magnoliaceae. It contains more than 50 species, which are distributed in tropical Asia, subtropical and north-temperate China, India, Sri Lanka, Central and South Peninsula, Malay islands and southern Japan. There are about 41 species of *Michelia* in China, mainly distributed in the southwest to the east, and densely distributed in southwestern China. *Michelia* is an important component of evergreen broad-leaved forest, suitable for growing in warm and humid climate and acid soil environment. *Michelia* has beautiful shape, wide flower diameter, graceful flower shape and rich fragrance. The aggregate fruit is centrifugal pericarp. Often loose spike-shaped aggregate fruit is formed because some of the follicles do not develop. After the fruit cracks along the back seam, the orange-red or bright-red exocarp is revealed, which is of great ornamental value. Its wood is light yellow-brown, straight texture, fine structure, light and soft, fragrant, decay-resistant, can provide raw materials for board, furniture, cabinetwork and so on. In addition, some trees are fragrant and can extract aromatic oil [1-3].

At present, studies mainly focus on their origin, distribution and molecular biology. Introduction, domestication, breeding and reproduction of *Michelia* [4-11]. In this study, interspecific hybrid breeding method was used. The experiment of cross breeding with *Michelia crassipes* as male parent and *Michelia yunnanensis* as female parent was carried out. In order to provide breeding guarantee for ornamental tree species in south China.

PROCESS AND METHOD OF CULTIVAR BREEDING

The applied variety ‘Yuxia’ was obtained from the cross between *Michelia maccluri* and *Michelia yunnanensis*. Through artificial emasculation, bagging, cross pollination. Seeds were obtained and broadcast with the harvest. Hybrid seedlings bloom fifth years after sowing. Screening good individual plants for grafting and breeding. The rootstock was *Michelia patypetala*, and 10 grafted seedlings were obtained. The color of tree stems, trees and leaves is similar to that of male parent, showing good genetic stability.

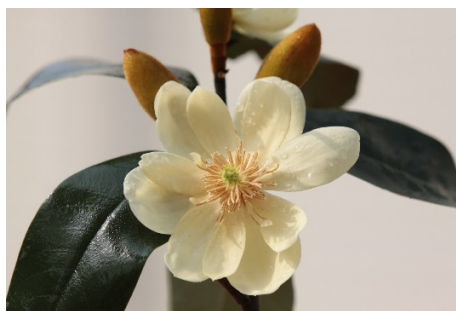
CHARACTERISTICS OF MAIN CHARACTERS

Evergreen small trees, branchlets green, old branches grayish brown. Buds, branchlets, petioles, bracts and pedicels are all grayish brown tomentose. Leathery leaves, oval or oval oval. Apex acute or cuspid, base nearly orbicular or broadly cuneate. Dark green on top, brownish on the back of the leaf, and relatively long in the petioles on the petioles, 1/3~1/2 long petiole. Flowers open and calyx shaped, tepals 9~12. Milky white to yellowish white, lanceolate, 3.2~3.5cm long, 1.2 to 1.8 cm wide. Stamens 60~70, 0.7~1.1 cm long, white. Pistils yellow green, cylindrical. The flowering period is from late March to mid April.

SUITABLE PLANTING AREA

Suitable planting area: In most parts of the south of the Yangtze River in China, Suitable for garden, park, campus and other cultivation.

Cultivation environment: Sunny, warm and humid environment. It is advisable to choose soil with deep, loose, fertile, well drained, and slightly acid to neutral soil.



a. Perianth characteristics of 'Yuxia'



b. Growth status of 'Yuxia'



c. Flower branch characteristics of 'Yuxia'



d. Flower bud characteristics of 'Yuxia'



e. Flowering characters of male parent *Michelia maccluri*



f. Flowering characters of female parent *Michelia yunnanensis*

FIG 1. A new interspecific hybrid *Michelia* cultivar 'Yuxia'

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