

‘Fenjiao’: A New *Lagerstroemia* Cultivar with Purple-red Flowers

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Lagerstroemia (crape myrtle) is a valuable ornamental woody plant of the family *Lythraceae*, renowned for its long flowering period, smooth trunk, graceful shape, and rich flower colors (Lin et al. 2024; Wan et al. 2025; Yu et al. 2024; Zhang et al. 2008). Crape myrtles are widely distributed globally, from tropical to warm temperate regions, with China being an important center for their distribution and cultivation (Zhou et al. 2023). Many *Lagerstroemia* species exhibit a wide range of bright flower colors and unique flower patterns, including white, red, pink, purple, violet, and composite flowers, making them highly valuable for garden design and landscaping applications (Hong et al. 2022; Yu et al. 2024). Since the 1960s, Zhang et al. have been investigating and hybridizing *Lagerstroemia* plants in China, successfully cultivating more than 200 varieties with diverse plant structures and flower colors (Wang et al. 2013).

Flower color is an important ornamental feature of plants, not only attracting insects for pollination but also significantly influencing the ornamental value and quality of plants. Breeding excellent *Lagerstroemia* varieties with diverse flower colors is of great importance. ‘Fenjiao’ was selected and released by the Institute of Botany, Jiangsu Province and Chinese Academy of Sciences (Nanjing Botanical Garden Mem. Sun Yat-Sen). This cultivar has gained much attention for its striking purple-red (RHS 73B) (Royal Horticultural Society 2015) flowers, enriching *Lagerstroemia* germplasm resources and enhancing their ornamental value. ‘Fenjiao’

exhibits excellent ecological characteristics, including resilience to pollution, the ability to absorb harmful gases and dust, wide adaptability, and fewer pests or diseases. It is suitable for various applications, including street trees, parks, backyards, and other garden settings.

Origin

In Jul 2014, *L. fauriei* (♀) was cross-bred with *L. ‘Tuscarora’* (♂) at the Nanjing Botanical Garden, Jiangsu Province, China (32°03’N, 118°49’E). Subsequently, more than 500 cross-pollinated seeds were collected in November for dry storage. In Apr 2015, the seeds were sown in a seedbed. After germination, seedlings were transplanted into the field with a 30.0 × 30.0 cm spacing. In Summer 2019, a single plant with brilliant purple-red (RHS 73B) flowers was observed, selected for further phenotypic evaluation, and named ‘Fenjiao’. After 3 years of propagation using hardwood cuttings (2019–21) and 5 years of successive observations (2019–23), the propagated plants exhibited the same morphological characteristics as the mother (donor) plant, confirming their phenotypic stability. Thus, ‘Fenjiao’ has stable genetic traits and was cultivated successfully. The cultivar grew vigorously in Jiangsu (118°49’E, 32°03’N, US Department of Agriculture plant hardiness zones ≈9b/10a), and can tolerate high (37 to 40 °C) and low (–5 to 0 °C) temperatures. A few incidents of powdery mildew, sooty mold, brown spot, and aphids were observed. The Forest Variety Certification Committee of China authorized the cultivar in 2024.

Among existing *Lagerstroemia* germplasm, ‘Fenjiao’ most closely resembles ‘Ning Xiang 1’ (Chen et al. 2022), which was also released by the Nanjing Botanical Garden in 2022. ‘Ning Xiang 1’ has green buds and violet (RHS N81D) flowers, while ‘Fenjiao’ has green-red buds and purple-red (RHS 73B) flowers (Table 1; Fig. 1). The morphological traits of ‘Fenjiao’ are detailed next.

Trees. The tree is arbor-like and can reach up to 3.0 m in height with a 1.4-m spread at 4 years of age. Its canopy is semiupright, consisting of a straight red trunk and many fast-growing reddish-brown branches (Fig. 2A).

Stems and foliage. The stems are red, four-edged, and covered with short wings and low-density pubescence. The leaves are papery and elliptic (7.5 to 7.9 cm in length × 4.2 to 4.5 cm in width) and connected to short petioles (0.4 to 0.5 cm). The color of new leaves is red, which turn green in summer. There is low-density pubescence on the abaxial leaf surface.

Flowers. The flowering time of ‘Fenjiao’ is intermediate (approximately mid-June in Jiangsu, China) and can last for ≈2.5 months (mid-June to the end of August). The cultivar has green-red buds that are conical with weakly raised sutures and apical protuberance (Fig. 2B). The inflorescence is conical, consisting of purple-red (RHS 73B) flowers (2.5 to 3.0 cm) (Fig. 2C) with numerous yellow stamens (n = 35 to 40). The edges of the petals are distinctly wrinkled, and the petals are connected with slender purple-red (RHS 73D) claws.

Fruit. The young fruits of ‘Fenjiao’ are dark green, oval, and medium-sized (vertical diameter: 1.2 to 1.5 cm, horizontal diameter: 1.0 to 1.2 cm). The fruits are usually six-split and turn brown when ripe or dry. The seeds are present in ripe and cracked fruits.

Propagation

‘Fenjiao’ is primarily propagated by hardwood cutting (late March to early April before budbreak). Thick annual shoots are selected and cut into cuttings 10 to 15 cm long, with a cutting depth of ≈8 to 12 cm. The preferred substrate is a 1:1 (v:v) mixture of peat soil and perlite. Cuttings were treated with 2000 ppm indole-3-butyric acid quick dip, resulting in a rooting percentage of 80% in ≈5 weeks. Rooted cuttings could be potted into 1-gallon (3.8-L) containers and transplanted into the field when the plants have grown to a height of 40 cm or more. Additionally, the cultivar can also be regenerated by veneer crown grafting in spring before budbreak using *L. fauriei* seedlings as the rootstock. Other *Lagerstroemia* species can also be selected as rootstocks.

Table 1. Comparison of ‘Fenjiao’ and ‘Ning Xiang 1’ phenotypic attributes.

Attribute	‘Fenjiao’	‘Ning Xiang 1’
Bud color	Green-red	Green
Flower color	Purple-red (RHS 73B)	Violet (RHS N81D)

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Fig. 1. Comparison of floral attributes of 'Fenjiao' (A) and 'Ning Xiang 1' (B).

Cultivation

This cultivar prefers a full sun environment and should be planted in well-drained soil. It is recommended to transplant plants with soil slightly in early spring and then water thoroughly. Proper pruning and reshaping of plants are necessary as required. Adequate watering and fertilization are essential during the growing season, but fertilization should be stopped during the hot summer. Organic fertilizer can also be applied in spring or autumn of the next year, or phosphorus and potassium compound fertilizer can be applied before flowering. Pests and diseases have not been a major concern, with only occasional occurrences of sooty blotch, brown spot, and aphids observed.

Availability

'Fenjiao' plant material can be obtained from Institute of Botany, Jiangsu Province and the Chinese Academy of Sciences (Nanjing Botanical Garden Mem. Sun Yat-Sen). Requests for cuttings for research purposes may be addressed to Dr. Hong Chen (e-mail: chen hong@cnbg.net).



Fig. 2. Phenotypic characteristics of 'Fenjiao'. (A) Semiupright growth habit. (B) Green-red buds. (C) Purple-red (RHS 73B) flowers.

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