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‘Rushan’: A New *Prunus conradinae* Cultivar

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Prunus conradinae (Koehne) Yu et Li (Prunoideae, Rosaceae), a member of the Rosaceae family within the genus *Prunus*, is a wild, flowering cherry endemic to central China that represents an important genetic resource for ornamental plant development (Wang 2014). The species exhibits high ornamental value characterized by a luxuriant display of flowers, ranging from white to deep pink. Its natural distribution encompasses montane forests along stream banks at elevations of 500 to 2100 m, predominantly in central China’s mountainous regions. The corymbose inflorescences typically bear three to five flowers per cluster, with flowering occurring before leaf emergence in early spring (March–April) (Li and Bruce 2003). Significant morphological variation is observed in floral characteristics, particularly in inflorescence and calyx tube morphology, rendering it valuable for ornamental gardens (Wang 2014).

Recent breeding efforts have yielded several improved cultivars, including *P. conradinae* Longyun, *P. conradinae* Zuihongyan, *P. conradinae* Hejiahuan, and *P. conradinae* Luoshifener (Dong et al. 2020; Jiang et al. 2022; Liang et al. 2022; Zhang et al. 2022). In 2023, Nanjing Forestry University developed a new cultivar designated *P. conradinae* Rushan, which was granted plant variety rights (no. 20230317) by China’s National Forestry and Grassland Administration (Supplemental Fig. 1). *Prunus conradinae* ‘Rushan’ displays distinct improvements in floral characteristics, including flower color (pinkish white), inflorescence density (compared with *P. conradinae*, each inflorescence has one to two more flowers), and corolla diameter (which has larger flowers than *P. conradinae* and Longyun), significantly elevating its ornamental and horticultural value.

Origin

‘Rushan’ is a novel cultivar derived from a naturally occurring mutant of *P. conradinae*. In 2017, a natural mutant exhibiting distinct morphological characteristics was identified among a provenance collection from Jinzhai County (lat. 31°43′47.0″N, long. 115°55′44.1″E), Anhui Province, China. Subsequently, scions were collected from the mutant plants for graft propagation. In 2018, 50 grafted seedlings were established successfully. Subsequently, scions from these primary grafted plants were used for secondary grafting, and 50 grafted seedlings were again obtained. Through continuous phenotypic evaluation from 2019 to 2020, all grafted progenies maintained stable and uniform morphological characteristics such as flower color, inflorescence density, corolla diameter, and tree shape. In Oct 2023, it passed the onsite review by an expert group of the New Variety Protection Office of the National Forestry and Grassland Administration.

Description

Comparative morphological analysis was performed on 30 flowering individuals each of ‘Rushan’, ‘Longyun’, and *P. conradinae* at the Cherry Blossom Research Center, College of Life Sciences, Nanjing Forestry University, Nanjing, China. The differences in morphological characteristics among ‘Rushan’, ‘Longyun’, and *P. conradinae* are shown in Table 1. All colors were referenced to the Royal Horticultural Society (RHS) color chart (Royal Horticultural Society 2007). Statistical analyses were performed using SPSS v. 22.0 (SPSS Inc., Chicago, IL, USA). Multivariate analysis revealed significant differences ($P < 0.05$) between ‘Rushan’ and both comparator varieties across plant architecture, leaf length, leaf width, flower diameter, number of inflorescences, and flower color.

Plant habit. ‘Rushan’ is a small, deciduous tree with an average height of 6 m that exhibits an open growth habit, in contrast to the more oval form of ‘Longyun’ (Fig. 1A and B). The bark is brown (RHS N200B) with horizontally arranged lenticels. Young branches are grayish brown (RHS N200A), with glabrous 1-year-old shoots.

Leaves. Leaves exhibit dark-green adaxial surfaces (RHS 137A) and light-green abaxial surfaces (RHS 138B), both glabrous, with ovate lamina (Fig. 1D). Mature leaves measure 8 to 13 cm long and 4 to 6 cm wide, and the apex of the leaves is acuminate with a subrotund base (Fig. 1E). The leaf margin displays single serrations with obtusely rounded teeth. The petioles are yellow-green, of medium length, and glabrous. Distinct glandular structures occur at both the leaf marginal serrations and petiole bases. Linear stipules contain distinct glandular structures (Fig. 1F and G).

Flowers. ‘Rushan’ is a tree that blooms before the leaves grow. The inflorescences are umbellate and are composed of four to five flowers per umbel (Fig. 1I). The pedicels are of medium length and the calyx tubes are greenish brown, with a wide bell shape, and are glabrous. The sepals are flat and ovate–triangular. Flowers are haplostemonous, with a single whorl of five petals. Petals are oval and the apices are bifid. The corollas are flat and open (Fig. 1H). The discoid corollas exhibit a color gradation from pink (RHS 69D) to white (RHS 73C), with significantly larger diameters (3.5–4.5 cm) than comparators ($P < 0.05$) (Fig. 1J and K). ‘Rushan’ blooms from early March to mid-March.

Cultivation Technology and Application

‘Rushan’ exhibits exceptional drought tolerance and cold hardiness, withstanding temperatures as low as –15 °C. However, it demonstrates limited tolerance to waterlogged conditions and shows moderate sensitivity to saline–alkali soils. The cultivar maintains moderate resistance to common pests and diseases. This cultivar demonstrates broad ecological

Table 1. Comparison of the main morphological characteristics among ‘Rushan’, ‘Longyun’, and *Prunus conradinae* at the Chuzhou Zhongying Ecological Agriculture Technology Co., Ltd. (Chuzhou, Anhui Province, China).

Characteristic	*Prunus conradinae* Rushan	*P. conradinae* Longyun	*P. conradinae*
Corolla diameter (mm)	37.19 ± 2.44 a[i]	25.62 ± 1.70 b	20.10 ± 1.70 c
Leaf length (mm)	107.93 ± 12.36 a	104.04 ± 10.79 a	66.80 ± 4.52 b
Leaf width (mm)	52.31 ± 8.48 a	41.21 ± 3.46 b	29.38 ± 2.10 c
Leaf length/width	2.11 ± 0.36 a	2.54 ± 0.31 b	2.28 ± 0.18 c
Calyx tube shape	Wide bell	Bell	Tube
Tree shape	Opening	Erect	Erect
No. of flowers per inflorescence	4–5	5–10	3–5
Petal veining	Insignificant	Significant	Insignificant
Flower color	White to pink	Pink	White

[i]Different letters in the same row indicate significant differences for the same characters among ‘Rushan’, ‘Longyun’, and *Prunus conradinae* as determined by a one-tailed *t* test ($P < 0.05$).

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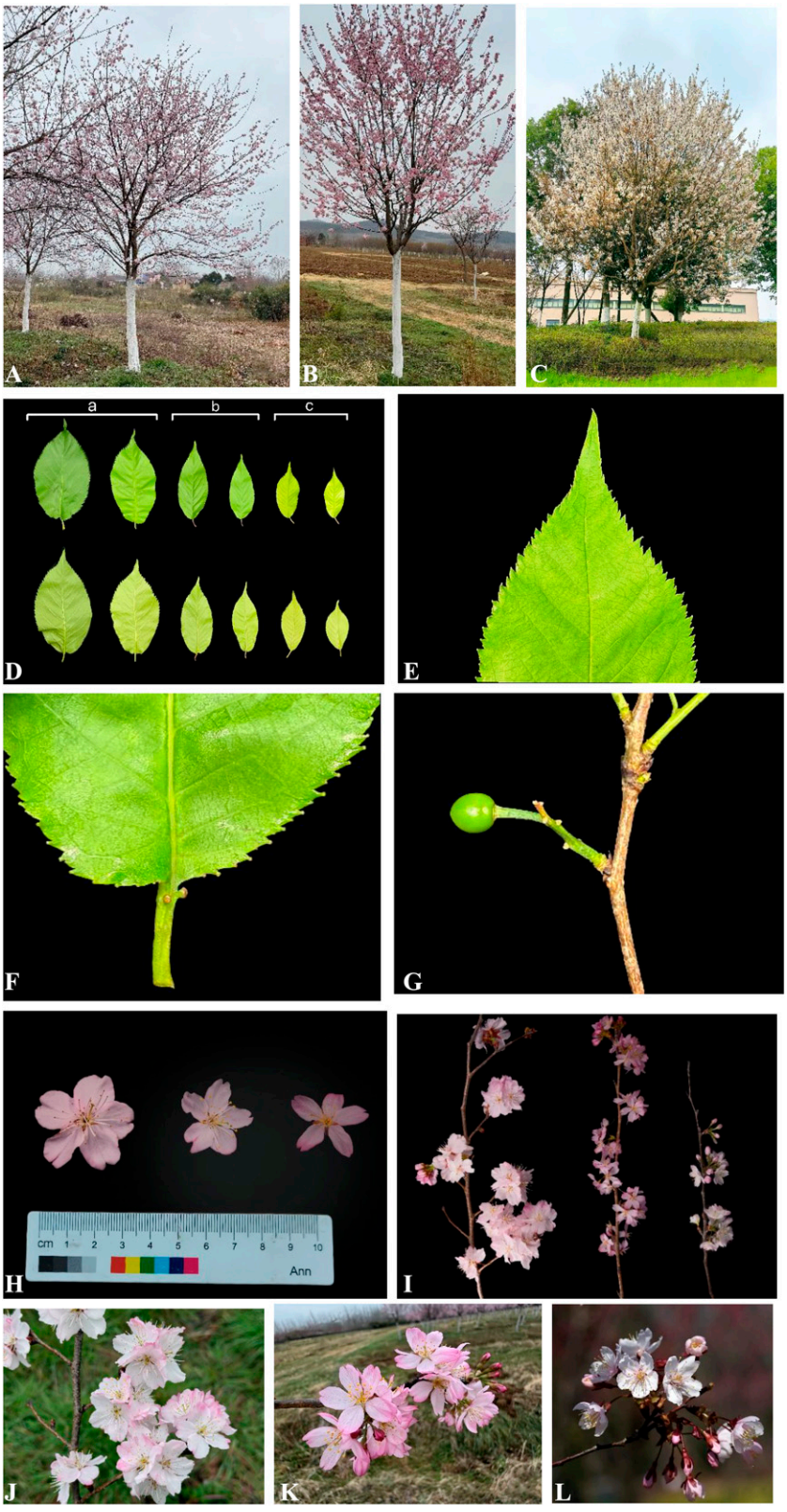

Fig. 1. Comparison of the overall tree shapes of 'Rushan' (**A**), 'Longyun' (**B**), and *Prunus conradinae* (**C**). Detailed characterization of leaves (**D–F**) and fruit (**G**) of 'Rushan'. (**H**) Comparison of corolla diameter of 'Rushan' (**left**), 'Longyun' (**right**), and *P. conradinae* (**middle**). (**I–L**) Comparison of flower characteristics of 'Rushan' (**I, left; J**), 'Longyun' (**I, middle; L**), and *P. conradinae* (**I, right; K**).

adaptability, and thrives in temperate, warm temperate, and subtropical climatic zones (Dong et al. 2022).

The optimal propagation method involves T-bud grafting during autumn (late September to early October), using 1-year-old *P. conradinae* seedlings as rootstock. During the second growing season, rootstock removal should be performed after scion budbreak, accompanied by timely lateral branch pruning. Under optimal conditions, grafted plants can reach heights exceeding 1.5 m by autumn.

Cultivation management should emphasize proper drainage to prevent waterlogging and regular application of organic fertilizers. Young seedlings require protection against common insect pests, whereas established plants necessitate windbreak measures, particularly in exposed locations. No additional specialized management practices are required beyond standard ornamental cherry cultivation protocols (Supplemental Fig. 2).

Availability

The plant variety rights of 'Rushan' are owned by Chuzhou Zhongying Ecological Agriculture Technology Co., Ltd. (Chuzhou, Anhui Province, China). For research collaboration or plant material requests, please contact the corresponding representative at Chuzhou Zhongying Ecological Agriculture Technology Co., Ltd. via e-mail (524455628@qq.com).

References Cited

Dong J-J, Chen J, Li M, Wang X-R, Yi X-G. 2022. Simulation and analyses of ecological characteristics of *Cerasus conradinae* adaptability area. J Nanjing For Univ. 46(3):213–221. https://doi.org/10.12302/j.issn.1000-2006.202101024.

Dong J-J, Wang Y, Si J-P, Peng Z-Q, Dong P, Yang H, Chen J, Li M, Wang X-R, Yi X-G. 2020. *Cerasus conradinae* 'Longyun': A new cherry blossom cultivar. J Nanjing For Univ. 44(6):236–238. https://doi.org/10.3969/j.issn.1000-2006.202007045.

Jiang D, Shen X, Shen B. 2022. *Prunus conradinae* 'Luoshifener': A flowering cherry cultivar with a strong aroma. HortScience. 57(11): 1473–1474. https://doi.org/10.21273/HORTSCI-16663-22.

Li CL, Bruce B. 2003. Flora of China: Pittosporaceae through Connaraceae (vol 9). Science Press, Beijing, China.

Liang R, Li Z-Q, Ye X-L, Hu X-M, Zhu J, Li Y-F. 2022. A new *Cerasus conradinae* cultivar 'Zuihongyan'. J Acta Hortic Sin. 49(Suppl 2): 251–252. https://doi.org/10.16420/j.issn.0513-353x.2022-0784.

Royal Horticultural Society. 2007. Royal Horticultural Society colour chart. Royal Horticultural Society, London, UK.

Wang XR. 2014. An illustrated monograph of cherry cultivars in China. Science Press, Beijing, China.

Zhang W, Hu X-M, Ye X-L, Zhu J, Gao S, Chen D-N. 2022. A new *Cerasus conradinae* cultivar 'Hejiahuan'. J Acta Hortic Sin. 49(Suppl 2): 255–256. https://doi.org/10.16420/j.issn.0513-353x.2022-0847.