The apricot (Prunus armeniaca L.), which is native to China, is popular for its attractive appearance, unique flavor, and high nutritional value. Some apricot cultivars bear fruit early in the season; therefore, they are important competitors in the early summer fruit market (Chen et al., 2015; Liu and Liu, 2006). Recently introduced apricot cultivars, such as Katy and Sungold, have been widely planted in China; these cultivars are highly productive and amenable to long-term storage. As the standard of living increases, consumers value other fruit properties in addition to yield, such as taste and quality. Consumers increasingly demand Chinese local or improved apricot cultivars, such as Meishuo, Chuan Zhi Hong, Luo Tuo Huang, and Guo Xiang, which are known to have an attractive color and taste and are suitable for long-term storage. As the market for apricots in China continues to grow, the fruit quality and other economically valuable traits are attracting considerable attention. Some clones were propagated for subsequent trial and regional tests in Henan and neighboring provinces. Over the course of 4 consecutive years (2006–09), agronomic traits were tested and found to be stable across different clones and regions. Finally, in 2010 and 2013, accessions 98-6-11 and 99-6-5, respectively, were approved by the Approval Committee for Improved Varieties of Forest Tree of Henan Province. Accession 98-6-11 was named ‘Zao Jinyan’ and accession 99-6-5 was named ‘Mei Xiang’.

**Description**

**Tree.** Mature ‘Zao Jinyan’ trees are relatively vigorous, with a semi-circular canopy and a semi-open growth habit. The trunk surface of the young tree is smooth and brown, while the trunk of the mature tree is deep brown with slight longitudinal cracks on the surface. One-year-old shoots are thick and strong, purple–red, and contain relatively short internodes (1.3 ± 0.2 cm). Perennial shoots are red–brown. Lenticels are low-density, medium sized, gray, and nearly round. The vegetative growth of ‘Zao Jinyan’ continues for approximately 225 days per year. In Zhengzhou, the chilling requirement was approximately 580–610 h based on the 0 °C to 7.2 °C model described by Wang et al. (2003). The canopy of the mature ‘Mei Xiang’ tree is semi-circular, with an open growth habit. The trunk is dark gray and relatively thick. Perennial shoots are also dark gray, and 1-year-old shoots are gray–brown, tinted, thick, and strong, with a smooth surface and no suberization. The internode length is approximately 1.24 ± 0.2 cm. The ‘Mei Xiang’ trunk contains many lenticels that are medium sized, gray–white, and nearly round. The vegetative growth period of ‘Mei Xiang’ is approximately 220 days annually. The chilling requirement in Zhengzhou is approximately 600–640 h.

**Leaf.** The leaf of cultivar Zao Jinyan is glossy, smooth, deep green, and nearly round, with a round base, a mucronate apex, and a neat crenate leaf margin. Leaves are 6.8 ± 0.2 cm long, 6.2 ± 0.1 cm wide, and 0.03 ± 0.01 cm thick. Both the primary and lateral leaf veins are yellow–green. The petioles are yellow–green.
and 3.1 ± 0.2 cm long. The one to three petiole nectaries are round and relatively large.

The leaves of ‘Mei Xiang’ are glossy, deep green, and ovate, with a round base, a short acute apex, and crenate margins. Leaves are 7.3 ± 0.3 cm long, 6.4 ± 0.2 cm wide, and 0.03 ± 0.01 cm thick. The primary vein is yellow—white, whereas the lateral veins are yellow–green. The petioles are dark red and 3.0 ± 0.3 cm long, with three to four medium sized, round nectaries.

In Zhengzhou, the apricot cultivars Zao Jinyan and Mei Xiang begin pushing leaf buds in late March, and leaves begin to expand in early April. The leaves begin to fall in early November, in late March, and leaves begin to expand in early April. The leaves of ‘Mei Xiang’ are glossy, deep green, and ovate, with a short acute apex, and crenate margins.

The pistils of most ‘Zao Jinyan’ are white and the lower part is red, whereas the portion of complete flowers is greater than or taller than the stamens, and the pro-

**Table 1. Economically important traits of ‘Zao Jinyan’ and ‘Mei Xiang’ fruits compared with those of other apricot cultivars.**

| Cultivar  | Ripening date | Avg fruit wt (g) | Fruit shape | Soluble solids content (% Brix) | Total soluble sugar content (%) | Reducing sugar content (%) | Titratable acid content (mg/mL) | Vitamin C content (mg/100 g) | Pectin content (%) | Chilling requirement (h) |
|-----------|---------------|------------------|-------------|---------------------------------|---------------------------------|---------------------------|-------------------------------|---------------------------|-----------------|------------------------|
| Zao Jinyan | 4–10 May      | 59.6 ± 4.8       | Near globose| 15.6 ± 0.5                      | 8.16 ± 0.22                     | 3.00 ± 0.09                | 4.9 ± 1.1                    | 9.65 ± 1.0                 | 1.33 ± 0.11     | 580–610                |
| Mei Xiang  | 1–10 June     | 97.0 ± 9.3       | Near globose| 14.6 ± 0.4                      | 7.19 ± 0.16                     | 2.91 ± 0.09                | 8.9 ± 1.2                    | 10.9 ± 1.1                 | 1.31 ± 0.15     | 600–640                |
| Zao        | 3–10 May      | 49.1 ± 3.3       | Heart-shaped| 14.8 ± 0.4                      | 7.37 ± 0.21                     | 2.89 ± 0.11                | 6.2 ± 0.9                    | 10.7 ± 1.4                 | 1.22 ± 0.11     | 550–600                |
| Yang Shao  | 10–20 June    | 86.9 ± 6.7       | Ovate       | 15.3 ± 0.2                      | 8.29 ± 0.24                     | 3.39 ± 0.07                | 10.3 ± 1.1                   | 11.7 ± 0.9                  | 1.40 ± 0.13     | 600–640                |
| You Xi     | 20–30 June    | 107.0 ± 8.0      | Oblong, globose| 15.8 ± 0.3                      | 8.09 ± 0.34                     | 3.23 ± 0.14                | 9.5 ± 1.2                    | 11.3 ± 1.1                 | 1.25 ± 0.12     | 610–650                |
| Sungold    | 20–30 May     | 58.6 ± 5.1       | Near globose| 13.1 ± 0.3                      | 7.02 ± 0.25                     | 2.91 ± 0.12                | 11.1 ± 0.8                   | 8.22 ± 0.7                  | 1.21 ± 0.09     | 610–650                |
| Katy       | 3–12 June     | 95.5 ± 6.3       | Oblong, globose| 12.7 ± 0.4                      | 6.82 ± 0.15                     | 2.71 ± 0.11                | 10.4 ± 0.9                   | 7.73 ± 1.0                  | 1.26 ± 0.14     | 690–730                |

*Data were obtained from three replicates, and each replicate comprised nine uniform fruits from three different trees. Data are expressed as mean ± sd.
The average dry stone weight is nearly 40 kg of fruit, and the fruit yield during the full fruiting period is estimated to be 33,600 kg per hectare at a density of 3 × 4 m.

**Cultivation techniques.** The internodes of ‘Zao Jinyan’ and ‘Mei Xiang’ are relatively short, which allows rational high-density planting (2–3 × 3–4 m) in newly built orchards to generate early, plentiful yields. The recommended planting time is from the end of defoliation until the soil freezes in the fall, or from the time soil thaws to the beginning of bud burst in the spring. Suitable pollinizers, such as ‘Katy’ and ‘Sungold’ apricots, are required at a ratio of one pollinizer to four to eight cultivars.

The recommended tree structures for ‘Zao Jinyan’ and ‘Mei Xiang’ are open center, ‘Y’, or free spindle. Proper tree training will reduce the number of skeleton branches, ensuring sufficient air circulation and light penetration. This will facilitate management, harvest, and regeneration.

Flowering branches that are weak or too long should be pruned before flowering. The first fruit thinning should be performed 20 d after flowering. At this time, fruit that are not well-developed or that are crowded should be removed. A second fruit thinning should be performed 15 d later; only one fruit should be retained per 8- to 10-cm branch segment. Proper fruit thinning will ensure high stable yields in subsequent years.

Intercropping, weeding, and mulching are suggested during the growth periods of ‘Zao Jinyan’ and ‘Mei Xiang’. After autumn harvest, organic fertilizer and compound fertilizer should be applied to each tree using pit or furrow application techniques. After 1–2 years of growth, ~5000 kg organic fertilizer per 666.7 m² should be applied. At the end of autumn, each fully productive tree should receive 25–50 kg organic fertilizer (e.g., composted chicken manure, cattle manure, and pig manure) plus 0.5–1.0 kg diammonium phosphate, potassium chloride, or potassium sulfate. Fully productive trees typically should be top-dressed twice per year using quick-acting fertilizer, once before flowering and once before fruit expansion.

Field observations indicated that ‘Zao Jinyan’ and ‘Mei Xiang’ apricots were resistant to stressors, diseases, and pests. However, management techniques should be prophylactically applied in orchards.

In conclusion, ‘Zao Jinyan’ and ‘Mei Xiang’ apricots are early-maturing cultivars with excellent fruit quality. Both cultivars are stable, high-yield producers; therefore, they are strong competitors in the early summer fruit market. These cultivars are believed to be suitable for Henan and neighboring provinces.

**Availability**

‘Zao Jinyan’ and ‘Mei Xiang’ are the property of the ZFRI-CAAS. They have been approved by the Approval Committee for Improved Varieties of Forest Tree of Henan Province (no. Henan S-SV-AV-007-2010; no. Henan S-SV-AV-016-2013). A limited quantity of bud wood is available on request for trial and research purposes as well as commercial propagation.

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