

## 枇杷新品种西蜀2号的选育

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**摘 要:**西蜀2号是以大五星为母本、贵妃为父本杂交选育的中熟黄肉枇杷新品种。果实近圆形, 整齐度好, 单果质量40~55 g。果顶平广, 果点小, 果面茸毛短、稀疏; 萼片平展、萼孔开张。果皮和果肉均呈黄色, 且易剥皮。果肉细嫩化渣, 汁液多, 风味浓甜, 可溶性固形物含量(w)15.30%, 品质佳。种子数2~5粒, 平均可食率71.6%。花量适中且松散, 每花序花朵数量40~100朵; 果实全生育期160 d左右, 在成都市新都区(E 104°12'24", N 30°46'46")5月上中旬成熟。该品种果皮厚, 抗叶斑病。西蜀2号自花结实能力强, 丰产性好, 适宜在四川盆地和盆周中低海拔山区推广。

**关键词:**枇杷; 新品种; 西蜀2号; 浓甜

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## Breeding of a new loquat cultivar Xishu 2

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**Abstract:** Xishu 2 is a medium-maturing and yellow-fleshed loquat hybrid. In 2010, we carried out a hybrid between Dawuxing as the female parent and Guifei as the male parent. In the next year, we planted the hybrids in the loquat demonstration garden of Horticulture Research Institute of Sichuan Academy of Agricultural Sciences in Longquanyi District, Chengdu. Among them, the individual plant 4-32 began to bear fruit in 2015, and a large number of fruits were produced in 2016, showing good flavor, pure sweetness, and resistance to sunburn and leaf spot disease. From then on, we identified it as the preferred individual plant. This single plant has been tested for propagation in Longquanyi District, Tianfu New Area and Xindu District of Chengdu city since 2016. From 2017 to 2019, we conducted field investigations and observations on the growth and development, flowering and fruiting habits and fruit quality of this variety. We were confident that its excellent traits can be inherited stably and meet our breeding objectives. Every year when the fruit of this cultivar was mature, we invited peers, professional growers and other relevant personnel to taste and evaluate on site. On May 18, 2019, the cultivar successfully passed the field technical identification of new fruit varieties organized by Sichuan Seed Station. This cultivar is moderately strong and the crown is open. Its biennial branches are brown, and the number of villi is more. The leaf shape is elliptic, the leaf tip is blunt round, and the leaf base is wedge-shaped. The average length of mature leaves is 22.06 cm, the average width is 7.10 cm, the aver-

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age thickness is 0.39 mm, and the petiole length is 8.55 mm. The adaxial midrib of its leaf blade is raised, the lateral veins are curved, and the abaxial reticulate veins are distinct. In addition, the front of the leaf is pleated, but the front of the older leaf is smooth and the back is always downy. The inflorescences of this cultivar are moderate in size and conical in length and width, averaging 13.2 cm; The main shaft is upright and upward, but the supporting shaft is flat. The flower quantity of this cultivar is moderate and the inflorescence is loose, with 40 to 100 flowers per inflorescence. Its fruit is nearly round with good uniformity, and the fruit weight is about 40-55 g. The apex of the fruit is flat and broad. The fruit dots are small, and the hairs on the fruit surface are short and sparse. Its sepals are very flat and the sepal pores are open. Its skin and flesh are yellow and easy to peel. The pulp is soft and tender, with a lot of juice and pure sweet flavor, and the soluble solid content is 15.30%, which is of very good quality. The number of seeds range from 2 to 5, and the average edible rate is 71.6%. The whole growth period of the fruit is about 160 days, and the fruit is mature in the early and middle May in Xindu District of Chengdu (104°12'24"E, 30°46'46"N). The skin of this cultivar is thick. And it's resistant to leaf spot disease. In addition, Xishu 2 has a strong ability to flower and bear fruit. This makes it suitable for cultivating in Sichuan Basin and the mountainous areas with low and middle elevations around the basin.

**Key words:** Loquat; New cultivar; Xishu 2; Pure sweet

枇杷是蔷薇科中较特殊的常绿果树,一般秋萌冬花,春实夏熟,在百果中独具先天四时之气,被誉为独冠时新的佳果珍味<sup>[1]</sup>。近年来,在科技进步和市场经济的推动下,我国枇杷生产有了长足的发展<sup>[2]</sup>,尤其是以大五星为代表的黄肉枇杷,成为西南枇杷产区的主栽品种。但由于大五星抗叶斑病能力差,树龄老化后果实品质和产量下降趋势明显,严重制约了四川枇杷产业的发展<sup>[3]</sup>。因此,许多科研单位以大五星为亲本持续开展品种改良工作<sup>[4-5]</sup>。四川省农业科学院园艺研究所与四川农业大学园艺学院等单位从2001年开始依托枇杷公益性行业专项和四川省农作物畜禽育种攻关项目,广泛开展了枇杷种质资源的收集、保存与创制工作,历时20余年选育出优质黄肉枇杷新品种西蜀2号。

## 1 选育经过

2010年项目组以大五星为母本、贵妃为父本进行杂交组配,次年将获得的杂交种播种于成都市龙泉驿区阳光城四川省农业科学院园艺研究所枇杷示范园,其中单株4-32于2015年开始结果,2016年大量结果,表现为风味佳、纯甜、抗日灼、抗叶斑病的特性,当年确定为优选株系。

该优株于2016年在成都市龙泉驿区阳光城、天府新区永兴街道和新都区泰兴镇开展扩繁试验,

2017—2019年对该品种进行树体生长发育、开花结果习性及其果实品质等情况的现场调查与观测,确定其优良性状遗传稳定,符合育种目标。每年该品种果实成熟时,邀请同行果树专家、果树种植专业大户等相关人员进行现场品尝和评价。2019年5月18日该品种顺利通过四川省种子站组织的果树新品种田间技术鉴定,2020年4月获四川省非主要农作物品种认定委员会证书(川认果2020002),定名为西蜀2号(图1)。

## 2 主要性状

### 2.1 植物学特征

树势中庸偏强,树冠开张。2年生以上枝条呈棕褐色,茸毛数量较多。叶形为椭圆形,叶尖钝圆,叶基呈楔形;成熟叶片长22.06 cm,宽7.10 cm,厚0.39 mm,叶柄长8.55 mm;中脉正面凸起,侧脉形状弯出,背面网脉明显;叶片正面褶皱,老叶正面光滑,背面有茸毛。花序中等,呈圆锥形,长宽相近,平均13.2 cm,主轴挺直,支轴平伸。花量适中且松散,每花序花朵数量40~100朵,花朵中小,花瓣呈黄白色。

### 2.2 果实经济性状与生产力表现

果实近圆形,整齐度好,单果质量40~55 g。果顶平广,果点小,果面茸毛短、稀疏;萼片平展、萼孔开张。果皮和果肉均呈黄色,且易剥皮;果肉细嫩化



图1 枇杷新品种西蜀2号

Fig. 1 A new loquat cultivar Xishu 2

渣,汁液多,风味浓甜,可溶性固形物含量(w) 15.30%,品质佳。种子数2~5粒,平均可食率71.6%(表1)。

生产试验表明,西蜀2号(4-32)嫁接成活率高,自花结实能力强,坐果率高,丰产性好。成都地区1年生嫁接苗定植后第3年成花和坐果株率超过

30%,第4年成花和坐果株率达100%;春季高接换种后次年成花率可达100%,第3年可恢复2.5 m×2.0 m以上冠幅,平均每株产量达22.25 kg。与四川省主栽黄肉枇杷品种大五星相比,西蜀2号的可溶性固形物含量、总糖含量、总酸含量均有明显提升;与白肉枇杷亲本贵妃相比,西蜀2号的单果质量和可食

表1 西蜀2号与对照品种比较试验结果(龙泉驿区阳光城,2017—2019年)

Table 1 Comparative test results of Xishu 2 and the check variety (Sunny city, Longquanyi district, 2017 to 2019)

品种 Cultivar	平均单果质量 Average fruit weight/g	w(可溶性固形物) soluble solid content/%	w(总糖) Total sugar content/%	w(总酸) Total acid content/%	w(维生素C) Vitamin C content/(mg·kg <sup>-1</sup> )	可食率 Edible rate/%	叶斑病情指数 Disease index of leaf spot disease
西蜀2号 Xishu 2	46.80	15.30	13.24	0.45	4.67	71.50	1.08
大五星 Dawuxing	56.40	12.58	10.36	0.39	7.14	72.20	10.28
贵妃 Guifei	37.31	15.56	14.20	0.79	4.52	66.67	6.25

率有明显提升。

### 2.3 物候期

西蜀2号在成都地区每年抽发3次梢,以晚春梢和早夏梢结果为主,春梢大量抽发期为2月中旬至3月下旬,夏梢大量抽发期为5月下旬至6月中旬,秋梢大量抽发期为8月中旬至9月初。每年6—7月进入花芽分化期,9—10月抽生花序,11月中下旬进入盛花期,12月底终花。果实成熟期为5月上中旬,果实全生育期160 d左右。

### 2.4 抗逆性与适应性

西蜀2号适应性强,果皮厚,不易裂果、抗日灼。多年多点连续观测结果表明,西蜀2号叶斑病情指数平均为1.08,抗叶斑病能力明显强于其亲

本和四川省其他主推枇杷品种。

## 3 栽培技术要点

### 3.1 定植前处理

栽植时期以秋季9月中旬—10月上旬和春季2月上旬—3月上旬定植为宜,秋植最佳。栽植密度以株行距(3~4)m×(4~5)m为宜。带土球苗木在起苗前3~5 d用广谱性杀菌剂喷雾叶片。起苗时剪去每片叶1/2~1/3的叶面积,减少水分蒸发。栽植前,解除嫁接膜,剪掉残枝、断枝。在定植点上挖比苗木根幅稍大的定植穴,将苗木轻轻放入定植穴,扶正苗木,用熟化的表层细土作为定植土,填土后踏实。定植完毕后做直径≥80 cm水圈,浇足定根水,用细土

覆盖露出的根系后进行垄面覆盖或树盘覆盖,覆盖物可选用地布或厚度 $\geq 0.03$  mm的地膜。

### 3.2 肥水管理

幼树遵循勤施薄施原则,前期以氮肥为主,每次每株 100 g 左右,后期增加磷钾肥比例,促进花芽分化。成年树花前肥,占全年施肥量的 50%~60%。在 8 月下旬至 9 月上旬施入。每株施 20~30 kg 腐熟有机肥+1.0~1.5 kg 均衡型复合肥,可在本次肥中加入 1.5% 的硼砂微肥。壮果肥占全年施肥量的 20%~25%。在 3 月下旬至 4 月上旬施入。每株施 150~200 g 高钾型水溶肥或 300~400 g 颗粒复合肥,可适当加入铁、锌、钙肥。采果肥占全年施肥量的 20%~30%。在采果后至夏梢抽发前施入。每株施 200~300 g 均衡型水溶肥或 500~600 g 颗粒复合肥。

### 3.3 整形修剪

该品种宜采用双层杯状形树形,具有缓和树势、提升产量、易管理等优点。幼年树以采取抹嫩梢的方法为主,抹去多余的新梢,选留方向、位置适宜的梢。成年结果树通过疏梢减少枝梢数,使结果枝组充实健壮,保持全树营养枝与结果枝的比例为 2:(3~4)。

### 3.4 花果管理

在 9 月底—10 月上旬能看清全树花序且花序支轴尚未分离前进行疏花。主要疏除衰弱枝和长结果母枝上的花序、小花序、病虫花序和过多的花,选留顶生的短结果母枝上的花序。在 2 月份冻害结束后进行疏果。先疏除畸形果、病虫果、伤果及受冻果,再疏去较小的和多余的幼果,每穗留 3~6 个果。

## 4 应用推广前景

西蜀 2 号是中熟黄肉枇杷新品种,其特点是风

味浓甜,果皮厚,不易裂果,抗日灼、抗叶斑病,且自花结实能力强,丰产性好。该品种与大五星互相授粉效果好,是一个具有发展潜力的新品种,适宜在四川盆地和盆周中低海拔山区推广。

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