

枇杷新品种徽玉1号的选育

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摘要:徽玉1号是从白花实生后代中选育的枇杷新品种。果实倒卵形, 平均单果质量40.86 g;果面淡黄色、斑点细而小, 果粉多, 果皮薄, 易剥离;果肉乳白色, 质地致密、化渣, 风味浓、汁多、有香气;种子浅褐色, 平均4.4个。可溶性固形物含量(*w*, 后同)16.23%, 可食率69.47%。果实外观秀气玲珑, 锈斑少, 抗日灼、裂果轻, 品质佳。成熟期为5月底至6月初, 适于安徽皖南山区及温和湿润、雨量充沛的地区推广, 可作为保护设施栽培品种。

关键词:枇杷; 新品种; 徽玉1号

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Breeding report of a new loquat cultivar Huiyu 1

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Abstract: Huiyu 1 is a new loquat cultivar selected from the seedlings of Baihua. Since 1991, the investigation, collection and breeding of new varieties of Santan loquat in Anhui province have been carried out, and nearly 20 strains have been discovered and collected successively. Huiyu 1 (the original number 77-06) showed the traits of early ripening, large fruit, good appearance and other excellent characteristics. It was officially identified as the superior line. A regional test was carried out from 2011 to 2017 in Anhui province, which showed that the botanical characters, biological properties and fruit quality were consistent, stable performance reference to the method of literature standard. And the phenological period, growth and fruiting habits, fruit economic characters of Huiyu 1 were systematically studied in comparison with Baihua loquat. The results showed the fruit is obovate with an average weight of 40.86 g, 1.5 folds that of Baihua. The leaves of Huiyu 1 loquat are obovate, serrated shallowly at the upper margin and entire at lower margin, acuminate at base, with white fuzz on the back. The new shoots are medium green, and old branches are gray-white. The plant has an average of 151 flowers per inflorescence with about 10 branches, and the flowers are small with 5 petals and tawny calyx. The pale yellow peel is thin with much fruit powder and can be easily separated from the flesh. The milk-white flesh is tender in texture and has better flavor, sweet and juicy. The fruit has an average of 4.4 seeds in pale brown color. The flesh recovery is 69.47% and the content of soluble solids 16.23%. In Shehian area of Anhui, blooming begins in late October, peaks in late November, and ends in early January, and fruit mature

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from the end of May to the early June with a harvest period of 7 days earlier than Baihua loquat. With excellent quality, the fruit possesses the characteristics of anti-sunburn and cracking resistance. In the fourth year after planting, the yield of grafted trees reaches over 10 kg per plant. It is suitable for production in mild and humid areas with abundant rainfall, such as the mountainous areas of south Anhui. The suitable planting density of this variety is (1.5–4.0) m between plants and (2.5–5.5) m between rows. The fertilization is better with mainly organic fertilizer, combined with suitable amounts of macro-, medium-, and trace-elements. Plant diseases and insect pests should be well controlled during the growing season. SSR molecular identification showed that the DNA of Huiyu 1 was significantly different from that of Baihua. It was certified by the Crop Variety Identification Committee of Anhui Horticultural Society in January 2019, and was officially named as Huiyu 1.

Key words: Loquat; New cultivar; Huiyu 1

枇杷(*Eriobotrya japonica* Lindl.)原产于中国,是我国南方主要的亚热带果树之一^[1]。据不完全统计,我国枇杷栽培总面积近13万hm²,年产量65万t,生产规模占世界枇杷80%以上^[2]。枇杷主要通过实生选种、杂交育种等方式进行新品种选育^[3-4]。枇杷按果肉颜色大致可分为红肉类型(红沙)和白肉类型(白沙)。白沙枇杷因味甜、肉质细嫩而受到消费者喜爱,但其果实较小,平均单果质量25~35g。随着人们生活水平的提高,大果优质白肉枇杷的市场需求急剧增加。安徽省歙县是我国重要的枇杷传统产

区,栽培的三潭枇杷历史悠久,主栽品种为黄肉品种大红袍、光荣和白肉品种白花,同时一直沿用传统的实生播种繁殖方式,拥有大批实生枇杷老树,产生了性状丰富的优异种质资源,为实生选种提供了条件。果实大小、可食率、综合品质是枇杷育种最主要的3大性状指标。为此,笔者从产业实际需求出发,确定了以选育优质、熟期配套、丰产稳产、适应性强的枇杷品种的育种目标。经过15 a(年)的田间普查、测定分析、区域试验,选育出了白肉枇杷新品种徽玉1号(图1)。



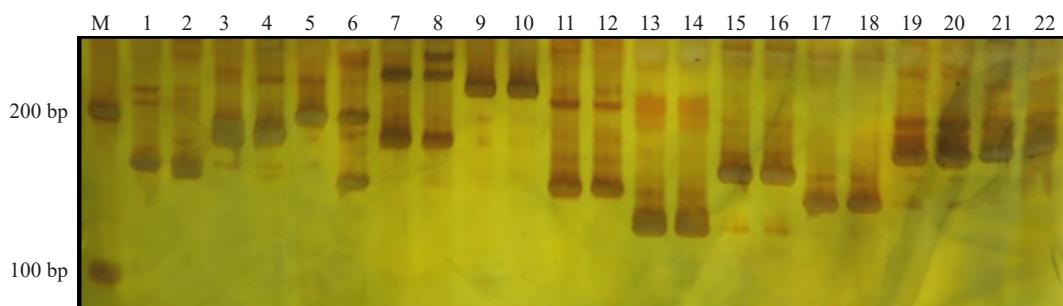
图1 枇杷新品种徽玉1号

Fig. 1 A new loquat cultivar Huiyu1

1 选育过程

徽玉1号为白花实生后代中选育的枇杷新品种。自1991年开始进行安徽省三潭枇杷资源的调查、收集工作,陆续收集了近20个品系(类型),徽玉1号(原编号77-06)为其中一个综合经济性状突出的品系,其为白花自然实生后代,通过多年果实性状观察,其表现出晚熟、大果、外观好等优良特

性,2011年正式将其确定为优系。同年选育组进行嫁接繁殖和大树高接区域试验,经连续多年观察评价和区试,发现其性状表现一致、稳定,果实外观秀气玲珑,锈斑少,抗日灼、裂果轻,肉质细腻,有香气,品质佳;与白花枇杷比较,该品系果形较母本果个增大,糖度高。SSR分子鉴定表明,徽玉1号DNA遗传物质与白花有明显差异(图2),2019年5月通过专家现场鉴定,2019年12月,通过了安徽省



M. DNA marker; 奇数孔是徽玉 1 号,偶数孔是白花;11 对引物顺序为:L16, L20, L25, L38, L42, TsuENH094, MEST028, CH03g12, TsuENH044, NZmsCN898349, NZmsCO754252。

M. DNA marker; The odd number lane is Huiyu 1 DNA amplification product; The even number lane is the Baihua DNA amplification product. The eleven pairs of primers were L16, L20, L25, L38, L42, TsuENH094, MEST028, CH03g12, TsuENH044, NZmsCN898349, NZmsCO754252.

图 2 枇杷品种徽玉 1 号 SSR 分子鉴定

Fig. 2 SSR molecular identification of loquat cultivar Huiyu 1

园艺学会园艺作物品种认定委员会认定,正式命名为徽玉 1 号。

2 主要性状

2.1 植物学特征

徽玉 1 号树势强健,枝条开张,呈 60°角;树冠高大,呈圆头形;主干、老枝灰白色,新梢皮色中绿、披中短茸毛。叶片倒卵形、叶片较薄,中上部边缘锯齿浅,中下部全缘,基部稍窄,叶片绿色,有光泽;叶脉清晰;叶背茸毛白而少,无托叶;春梢上叶片叶柄平均长度 0.98 cm、叶柄粗度 0.23 cm;叶片长度 28 cm、宽

度 8.58 cm,主梢花序平均为 10.38 cm×11.88 cm;每个花序花朵数量平均 151 枚,每个花序平均 10 个枝轴,单花萼片较小,渐尖,黄褐色,花瓣 5 枚,穗紧密,支轴下弯。

2.2 果实经济性状

果实倒卵形,果顶略平,萼筒浅,果面淡黄色、斑点细而小,果粉多,果皮薄,易剥离,果肉乳白色,质地致密、化渣,风味浓甜、汁多,种子浅褐色,平均 4.4 个;平均单果质量 40.86 g,可溶性固形物含量(w) 16.23%,可食率 69.47%(表 1);果实外观秀气玲珑,锈斑少,抗日灼、裂果轻,肉质细腻,有香气,品质佳。

表 1 徽玉 1 号与白花主要经济性状比较

Table 1 Comparison of economic characters of fruits between Huiyu1 and the Baihua

品种 cultivar	成熟期 Ripening	单果质量 Single fruit weight/g	果形 Fruit shape	果皮颜色 Pericarp color	果肉颜色 Skin color	可食率 Edible rate/%	w(可溶性固形物) TSS/%	风味 Flavor
徽玉 1 号 Huiyu 1	5月底 6月初 Late May and early June	40.86	倒卵形 Obovate	淡黄色 Pale yellow	乳白色 Milk white	69.47	16.23	浓甜 Strong sweet
白花 Baihua	6月初 Early June	26.85	圆形、扁圆形 Circular, oblate	淡黄色 Pale yellow	黄白色 Yellow white	68.33	14.32	甜 Sweet

2.3 物候期与生长结果习性

徽玉 1 号在歙县地区 1 年抽生 3 次新梢,春梢抽发期为 3 月上旬至 4 月初,夏梢为 5 月下旬至 7 月上旬,秋梢为 8 月中旬至 9 月中旬。10 月上中旬抽生花穗,10 月底至 11 月上旬初花,11 月下旬至 12 月中旬盛花,翌年 1 月上中旬终花。幼果迅速膨大期为 4 月初至 5 月中旬,果实成熟期为 5 月底至 6 月初。春梢短而粗,夏梢抽发多而整齐,但较春梢细长,叶片较小,秋梢抽发较短。以夏梢为主要结果母枝,是形成产量的主要枝梢。嫁接苗定植 3 a 即可初花结果,

4 年生单株产量可达 10 kg。

2.4 抗逆性及适应性

区域试验表明,徽玉 1 号抗日灼、裂果较轻。成熟期为 5 月底至 6 月初,属三潭地区晚熟枇杷品种,可作为三潭地区保护设施栽培品种。

3 栽培技术要点

3.1 园地选择

建园宜选择地势高、地下水位低、排水良好、土层深而疏松的沙质土壤。最好在园地的四周建有防

风林带。

平地果园宜选择交通方便、地势高燥(坡地的坡度在25°以下)、晚霜少、土质疏松、肥沃、不易积水且地下水位低于1.0 m的壤土、沙壤土或砾质壤土。平地果园四周挖主干排水沟,深、宽各1 m,视地势排水条件适当调整。

3.2 苗木定植

株行距(1.5~4.0)m×(2.5~5.5)m。南北向为宜。以秋季落叶后至11月中旬前或翌年春季土壤解冻后至3月底前定植为佳。

3.3 整形修剪

该品种生长势较旺,干性较强,树形宜选择主干形或主干分层形,定干不宜过高,修剪应以矮化树冠为目的,便于疏果、套袋等操作。主干高度控制在3.0 m以内为宜。修剪以春季为主,幼龄初果树以拉枝、摘心、短截、疏枝为主。成年结果树修剪应剪除扰乱树形的强旺徒长枝、纤弱枝和病虫枯枝等,同时对衰弱性结果枝组进行回缩短截,更新复壮。

3.4 花果管理

疏穗在11—12月份进行,疏去20%~30%花穗,有冻害的地方可在疏去少数早花穗的基础上疏支轴,同时宜选留开花迟的花,并且多留一部分花蕾;疏果在4月上中旬进行,一般将外张、平展和下垂果、畸形果等疏去,每穗留生长发育一致的果2~3个;疏果后进行套袋,防止鸟害、日灼,套袋前喷1次杀虫杀菌剂,果袋宜选白色或者外黄内黑袋。

3.5 肥水管理

每年施肥3~4次,第1次为花前肥,以速效肥为主,适当增加P、K肥比重,施肥量占全年的10%~20%,第2次为壮果肥,根据树势而定,主要为叶面追肥;第3次为采果肥,以商品化有机肥为主,配合施用复合肥,施用量占全年的50%;第4次为基肥,以商品化有机肥为主,施用量占全年的30%~40%。

3.6 病虫害防治

加强病虫测报,坚持预防为主、综合防治原则,优先采用农业防治、物理防治、生物防治,配合合理使用化学防治。主要病虫害有灰斑病、角斑病、炭疽病、黄毛虫、舟形毛虫等,注重前期预防。

4 开发应用前景

徽玉1号为晚熟白肉枇杷新品种,其特点是质优、抗寒,风味浓郁,抗逆性强,丰产性好,是一个比较有潜力的新品种,适于皖南山区及温和湿润、雨量充沛的地区推广,可作为保护设施栽培品种。

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