

优质杏新品种‘黄金油杏’的选育

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摘要:‘黄金油杏’是利用从新疆轮台搜集的特异资源种子经实生选优培育而来的杏新品种。该品种果实近圆形, 平均单果质量38.6 g, 最大果质量45.4 g。果皮金黄色, 中厚, 光滑细腻, 有光泽。果肉金黄色, 肉质软细, 硬度中, 纤维少, 多汁, 风味浓甜, 芳香浓郁, 可溶性固形物含量(*w*, 后同)为19.6%~22.6%, 总糖含量15.35%, 总酸含量0.46%, 维生素C含量21.4 mg·100 g⁻¹。果核椭圆形, 表面光滑细腻; 仁甜、较饱满, 可食率93.0%。郑州地区3月上旬开花, 果实6月上旬成熟, 11月上中旬落叶。采果期长, 耐贮藏, 常温下可贮藏7~10 d。生长势强, 成花易, 以花束状果枝、短果枝结果为主; 自花结实, 丰产性好。该品种对土壤要求不严, 在我省各地区及周边省杏的栽培区域均可种植栽培。

关键词:杏; 新品种; ‘黄金油杏’; 甜仁

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A new apricot cultivar ‘Huangjinyouxing’

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Abstract: ‘Huangjinyouxing’ is a new glabrous apricot cultivar, selected from the seeds of special germplasms from Luntai, Xinjiang. The fruits of ‘Huangjinyouxing’ apricot are approach globose with an average mass of 38.6 g, and the largest mass of 45.4 g. The fruit peel is golden yellow, the surface of the fruit is smooth and delicate with glossy, and the fruit peel is medium thick. The fruit of ‘Huangjinyouxing’ apricot has thick golden yellow flesh with delicate flesh texture, less fiber and medium hard flesh. ‘Huangjinyouxing’ apricot is an attractive and excellent fruit, has excellent flavor and quality, which has abundant juice, intense fruity aromas, strong-sweet taste, with soluble solids content of 21.9%, total soluble sugar content of 15.35%, reducing sugar content of 2.84%, total acid content of 0.46%, and vitamin C content of 0.214 mg·g⁻¹. The nuclear of ‘Huangjinyouxing’ apricot is oval with smooth and delicate surface, the average dry core weighs is 3.2 g with an average vertical diameter of 2.0 cm and transverse diameter of 1.2 cm. Apricots have sweet and plump apricot kernels, and the average weight of dried kernel was 0.7 g and the edible rate is 93%. In Zhengzhou, Henan province, middle China, the flower bud of ‘Huangjinyouxing’ apricot begins to sprout in early March, the first flower of ‘Huangjinyouxing’ apricot comes into bloom mostly appears in early March, full blooming in mid-March and the flowering period can last 7-10 days. The fruit of ‘Huangjinyouxing’ apricot matures in

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early June in Zhengzhou city, Henan province, and the whole fruit development period is 70 d. It has good storage tolerance and its shelf life is 7-10 days at room temperature (25 °C). The leaves bud begins to sprout in late March and exhibition in early April, the leaves start falling in early November and completely fallen in the middle of November, and the vegetative growth of ‘Huangjinyouxing’ apricot trees was about 218 d. The trees potential of ‘Huangjinyouxing’ apricot shows middle or strong vigorous, semi-opening in canopy and easy initiation of floral bud. ‘Huangjinyouxing’ apricot is characterized of strong growth and easy flower-formation. It was indicated that the more fruits were produced on the bouquet spurs and fruit spurs. The results of self-pollination at flowering stage showed that the self-pollination rate for ‘Huangjinyouxing’ apricot was very high and it was suggested to be self-compatible cultivars. However, the cross-pollination has strong operation ability which can produce more fruits and high yields, and high yield scion can be selected for self-grafting. It has such good characteristics as high-stable yield, high self-fruitful ability and low pistils abortion rate. ‘Huangjinyouxing’ apricot may have slight cracking in the rain during the ripening period, so water control should be carried out in late May when near the ripening period to avoid cracking and improve the fruit quality. ‘Huangjinyouxing’ apricot pays little emphasis on soil, it is suitable to be cultivated and developed in Henan province and surrounding plains, hills and mountains, and potential to the other apricot suitable planting areas of China.

Key words: Apricot; New cultivar; ‘Huangjinyouxing’; Sweet kernels

杏是蔷薇科(Rosaceae)植物,原产于我国,在我国栽培历史悠久,种质资源丰富,广泛栽培于我国西北、华北和东北地区,当前杏主栽品种存在着品种老化、良莠不齐、不耐贮运等缺点,因此果形美观、口感好、抗性强、果肉硬、早熟、丰产、耐贮、质优成为选育杏新品种的育种方向^[1]。全世界杏属植物共有10个种,我国有9个种,13个变种,2 000余个品种和类型,其中普通杏(*P. armeniaca* Lam.)是世界上栽培最广泛的一个种^[2]。李光杏(*P. armeniaca* var. *glabra* Sun S. X.)是普通杏的变种,果实表面光滑无茸毛^[3],多在新疆地区栽植,果实较小,成熟期晚。‘黄金油杏’是中国农业科学院郑州果树研究所从新疆轮台收集的李光杏种子中发现的优良特异单株,果皮金黄光亮,果肉黄色,肉厚质细,汁液多,甜味浓,种仁饱满香甜,该品种植物学性状表现稳定,经济性状良好,深受生产者和消费者的喜爱。

1 选育经过

2005年中国农业科学院郑州果树研究所在新疆轮台进行种质资源搜集时,收集了李光杏种子446粒,于2006年春季播种繁育出苗283株。进行正常水肥抚育管理,分别编号、调查。2009年实生播种苗开花结果,参照刘宁等^[4]的杏种质资源描述

规范和数据标准,对果实经济性状、丰产性能、结果习性等多方面调查观察、鉴定,其中编号为‘西黄7-1’的实生单株,果实性状表现优异且稳定:果个较亲本大,果形美观,果皮金黄光亮,果肉黄色,肉厚质细,纤维极少。汁液多,气味浓郁芳香、口感好、风味极佳。种核壳薄、种仁饱满香甜。可溶性固形物含量为19.6%~22.6%,遂定为优良单株。

2010年开始进行多头高接和苗木嫁接,2011年将嫁接苗定植在郑州黄河滩区采摘园内,进行观察试验。2012年调查发现高接树和定植苗均开始开花结果,并表现良好。经2013—2016年连续4 a(年)对‘西黄7-1’高接树和嫁接苗的果实经济性状、丰产性能、生长结果习性及抗性等多方面观察,结果表明‘西黄7-1’果实品质和性状稳定。

2012年起分别在开封市祥符区城关镇、濮阳市林业科学院试验场、偃师市邙岭镇兰庄村等试验点进行区域试验或引种栽培。经过对各区域试验点连续多年的观察,‘西黄7-1’树性和果实性状稳定。果皮金黄光亮,光滑细腻,果肉黄色,肉厚质细,纤维极少,汁液多,气味浓郁芳香,口感好、风味极佳。种核壳薄、种仁饱满香甜。丰产、稳产、适应性强,自花结实,适合设施和露地栽培,是很有发展潜力的杏优良新品系。2018年12月通过河南省林木品种审定委

员会审定,命名为‘黄金油杏’(良种编号:豫S-SV-AV-033-2018)(图1)。



图1 杏新品种‘黄金油杏’

Fig. 1 A new apricot cultivar ‘Huangjinyouxing’

2 主要性状

2.1 果实经济性状

如表1所示,‘黄金油杏’果实近圆形,平均单果质量38.6 g,最大果质量45.4 g;纵径3.8 cm,横径3.5 cm。果顶微凹,缝合线浅,片肉较对称,梗洼浅。果皮金黄色,着色均匀,中厚,半透明,光滑细腻,表面光滑似被一层油脂。果肉金黄,肉质细、蜜,硬度中,纤维少,多汁,味极甜,芳香浓郁,可溶性固形物含量(w ,后同)为19.6%~22.6%,pH值6.7,维生素C含量 $21.4 \text{ mg} \cdot 100 \text{ g}^{-1}$,还原糖含量2.84%,总糖含量15.35%,总酸含量0.46%,果胶含量1.86%。核椭圆形,表面光滑细腻;干核平均质量3.2 g;纵径2.0 cm,横径1.2 cm。仁甜、较饱满,有清香味,干仁平均质量0.7 g;可食率93.0%;采果期长,耐贮运,常温下可贮藏7~10 d。可鲜食、制干、仁用。

2.2 植物学特征

‘黄金油杏’为落叶乔木,树姿半开张。主干较

表1 ‘黄金油杏’与生产上杏品种果实经济性状比较

Table 1 Comparison of economic characters of fruits between ‘Huangjinyouxing’ and other apricot cultivars

品种 Cultivar	成熟期 Maturity period	平均单果质量 Average fruit mass/g	果形 Fruit shape	肉质 Flesh texture	汁液 Juice content	风味 Flavor	品质 Quality	w (可溶性 固形物) Soluble solids content/%
黄金油杏 Huangjinyouxing	6月上旬 Early June	38.6	近圆 Approach globose	厚细 Thick and less fiber	多 Many	香甜 Fragrant and sweet	极上 Extremely superior	21.9
珍珠油杏 Zhenzhuyouxing	6月中旬 Mid June	28.0	椭圆 Elliptic	细 Less fiber	多 Many	香甜 Fragrant and sweet	上 Superior	18.5
金太阳 Golden-sun	5月下旬 Late May	65.9	近圆 Approach globose	厚细 Thick and less fiber	较多 More	甜微酸 Sweet with slightly sour	上 Superior	14.5

粗,树皮棕褐色,多年生枝灰褐色,一年生枝绿褐色,粗壮,锐角斜生,光滑无毛;节间平均长1.4 cm。皮孔中多、平,小,灰白色,近圆形。花5瓣,粉白色,子房光滑无毛;雌蕊1枚,雄蕊32~41枚。叶片长圆形,基部钝圆形,尖端锐角。叶柄浅红色,密腺中大,圆形,多于3个。叶片深绿色,有光泽,叶缘较整齐,锯齿尖;主脉黄绿色,侧脉浅绿色。

2.3 物候期

在郑州地区,‘黄金油杏’3月初花芽开始萌动,3月上旬开花,3月中旬盛花期,花期7~10 d,3月下旬叶芽萌动,3月底展叶,6月上旬果实成熟,果实发育期70 d,11月初开始落叶,到11月中旬完全落叶,树体营养生长约218 d。

2.4 生长结果习性

‘黄金油杏’树势较强,郑州地区10年生树高3.35 m,冠幅3.2 m,干周61.7 cm。当年新梢长平均49.6 cm,枝条直径平均0.76 cm。‘黄金油杏’以花束状果枝和短果枝结果为主,自花结实,丰产性好。该品种嫁接苗第2年开始开花结果,3 a即可大量结果,5 a生树株产35 kg以上,成龄大树株产50 kg。

2.5 适应性与抗逆性

‘黄金油杏’适应性强,对土壤要求不严,在我省各地区及周边省杏的栽培区均可种植栽培。在肥沃、排水良好的砂壤土、壤土、黏壤土上栽培,表现出优良的生长结果习性。在丘陵、山地或河滩、平原均能正常生长,但以平原和低山丘陵的砂质壤土生长

较好。

3 栽培技术要点

3.1 园址选择

园区应选择通风向阳、地势平坦、土壤深厚肥沃、土质疏松、保水性较好、排水和灌水条件良好、交通便利的缓坡或平坡荒地，土质以砂壤土为最好。

3.2 合理密植

‘黄金油杏’树势强。为实现早实丰产，宜适当进行密植，新建园株行距一般采用(2~3)m×3 m，每666.7 m²定植74~110株；采摘园可采用较宽株行距，株行距为(2.5~3.0)m×4 m，每666.7 m²定植56~67株。‘黄金油杏’自花结实能力较强，坐果率高，不需要配置授粉树。

3.3 整形管理

‘黄金油杏’树形可采取自由纺锤形或主干疏层形。幼树修剪多采用摘心，以促生分枝形成花芽。盛果期树修剪应适当重剪，强枝少剪、弱枝多剪、不过密不疏枝，合理安排主枝、侧枝和枝组，通过剪除挡光枝、重叠枝、交叉枝和病弱枝，改善树冠内部通风透光条件。成龄树修剪需控制树冠，改善树冠内通风透光。

3.4 肥水管理

杏树开花早结果早，果实生育期较短，为了满足树体的营养，秋季(8—10月)应尽早施用基肥，一般为有机肥和复合肥。花前追施氮肥，可促进新梢生长，提高坐果率；花芽分化前施用适量含磷钾较高的复合肥，可促进花芽分化和果实膨大。

杏树是抗旱树种，需水量相对较少，但是也要适当灌水确保果实的产量和质量，在花前期(3月初)、硬核期(4月中旬)、果实膨大期(5月中旬)和土壤封冻前(12月底)各灌水一次，以满足树体的生长需要。另外，在施肥后和土壤干燥时应及时灌水，雨季及时排水。‘黄金油杏’在成熟期遇雨可能会出现轻微裂果，果实接近成熟期时(5月下旬)要进行控水，以避免裂果进而增进果实品质^[5]。

3.5 病虫害防治

‘黄金油杏’抗性较强，病虫害相对较少，对褐腐病及流胶病等有较强的抵抗能力。要做好病虫预防和防治，加强果园水肥管理，合理修剪，增强树势，提

高树体抗病能力。药物防治要选择生物制剂和高效低毒低残留农药，可选用石硫合剂、多菌灵600倍液、可立施、杀螟松200~1 500倍液等防治红蜘蛛、介壳虫、蚜虫、杏疔病、穿孔病等病虫害。

4 应用前景

‘黄金油杏’果形美观，果皮金黄光亮，光滑细腻，可溶性固形物含量高，维生素含量丰富，浓郁芳香、蜜甜可口、肉厚质细、仁甜饱满，耐贮藏，是优良的鲜食、制干、仁用杏品种。该品种克服了当前生产上其他品种口感差、杏仁苦、不丰产等缺点，商品价值极高。‘黄金油杏’适应性强，自花可实、丰产、稳产；2 a 生杏树开始开花结果，5 a 即可达到丰产，666.7 m²产量在2 050 kg以上，是建设杏丰产园、精品果园及生态旅游观光果园首选的优良杏新品种，很有发展潜力，极具推广价值。

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