

早熟桃新品种陇蜜10号的选育

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摘 要: 陇蜜10号桃是以筑波84号桃为母本、早油118为父本, 通过杂交培育出的早熟普通桃新品种。果实近圆形, 果顶圆平, 缝合线浅, 梗洼中深, 两半对称; 果实较大, 平均单果质量180 g, 最大单果质量260 g; 果面茸毛少, 成熟时底色绿白, 全面着鲜红色晕; 果肉白色, 硬溶质, 肉质细, 汁液多, 风味浓甜, 黏核。果实可溶性固形物含量(w, 后同)为13.5%~15.2%, 可溶性糖9.8%, 可滴定酸0.23%, 维生素C 3.69 mg·100 g⁻¹, 品质优良; 花蔷薇形, 浅粉红色, 有花粉; 在兰州市安宁地区, 一般3月中下旬萌芽, 4月中旬盛花, 果实7月上旬成熟, 果实发育期85 d左右。

关键字: 桃; 新品种; 陇蜜10号; 早熟

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Breeding of a new early-ripening peach cultivar Longmi 10

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Abstract: To breed the early-ripening and storable peach cultivar, we chose Tsukuba 84, an early-ripening peach cultivar, as the female parent, and Zaoyou 118, an early-ripening nectarine cultivar for pollen donation. In spring of 2003, the cross was done by artificial stamen-removing, pollinating, and bagging in case of interference from non-targeting pollen. 242 hybrid fruits were harvested after matured. After removing the pulp and seed shell, the hybrid embryos were taken out and stored in a refrigerator at a low temperature. When the radicles of the seeds grew to more than 1 cm, they were taken out and seeded in a nutrition pot, and then cultivated in a greenhouse. In May 2004, when the height of hybrid seedlings reached over 60 cm, the field transplantation of 212 plants was carried out at a spacing of 1.0 m × 2.5 m, and cultivation management was carried out in accordance with conventional methods. Hybrid seedlings began to blossom and bear fruit in 2007. Through the identification and comparison of fruit characteristics among hybrid seedlings, the single plant numbered 03-3-194 had a higher fruit setting rate, with nearly round fruit, whole red color setting, large fruit and excellent quality. The single plant was observed continuously for 4 a, which showed that the economic characteristics of the fruit were good, and mainly the agronomic characteristics were stable. In 2010, the selected plant was chosen as the best plant, and appropriate amount of seedling breeding and high-grafting observation were conducted. Meanwhile, the main cultivar Yuhualu, which was mature at the same time in Gansu province, was selected as the comparative cultivar. In 2011, multi-point synchronous cultivar comparative tests were carried out in Lanzhou, Tianshui, Longnan and other areas where the peach was mainly grown in Gansu province. After continuous observation for 5 a, the traits of the superior plant in different areas were basically the same as those of the parent plant. Due to the changes in cultivation management techniques and climatic conditions, the single fruit weight, coloration and quality were improved to some extent.

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The experimental results showed that Longmi 10 had a good comprehensive performance in all experimental sites in Gansu province, and was superior to the control cultivar Yuhualu in terms of fruit coloring, flavor, and storage performance, ect., which was well accepted by producers and consumers, and its temporary name was Longmi 10. In 2020, it passed the examination of excellent varieties in Gansu province. The tree is strongly vigorous and semi-opening in canopy. The shape of the leaf is long elliptic lanceolate, and the length and width of leaves are 14.59 cm and 4.36 cm, respectively. The color of the leaf is green, with 2-4 kidney shaped leaf glands. The flowers are rose-shaped, with pollen, pistils and stamens highly congruent. The fruit is nearly round, the top is round and flat, and the two sides are symmetrical. The average fruit weight is 180 g, and the largest fruit weight exceeds 260 g. The peel is covered with short and less hairy, with a white ground color and a red coverage of more than 80%. The flesh is white with much anthocyanin around the skin, and fruit texture is crisp. The soluble solids contents in the fruit juice are 13.5%-15.2%, titratable acid content in fruit is 0.23% and vitamin C content in fruit is $3.69 \text{ mg} \cdot 100 \text{ g}^{-1}$. Longmi 10 has strong adaptability and resistance to the cultivation environment. It is suitable for cultivation in Tianshui, Lanzhou and Longnan in eastern Gansu province. In the Anning district of Lanzhou, the bud break of Longmi 10 happens in end of March. The flowers start to open in mid-April and bloom lasts for 5-7 days. The fruits can be harvested in early July, and the fruit development period is about 85 days. The growth period is 225 days approximately.

Key words: Peach; New cultivar; Longmi 10; Early-ripening

早熟桃的生产在我国桃生产中占有十分重要的地位^[1]。为了满足广大生产者与消费者多元化的需求,近年来,国内相关桃育种单位先后育成了春雪^[2]、春蜜^[3]、春美^[4]、美瑞^[5]等早熟桃优良品种。由于栽培区域及气候差异,使得在特定的区域内综合性状表现优良的品种仍然缺乏,且目前生产上的早熟桃主栽品种多存在肉质较软、耐贮运性差^[4]的问题,果农只能依靠早采来获得较高的果实硬度,早采的果实由于在果实大小、着色、品质等均未发育完全,很难满足消费者的需求^[6]。因此培育不同成熟时期、符合不同地域特色的桃优良品种仍然是桃育种工作者的主要目标。

甘肃省农业科学院林果花卉研究所经过多年培育,选育出了早熟、品质优良、耐贮运的桃新品种陇蜜10号。在甘肃省中东部桃主产区进行的中试栽培中,陇蜜10号桃表现为栽培适应性强、果实外观和内在品质等综合性状方面优于同期成熟的主栽品种,可作为甘肃省中东部地区早熟桃的更新换代品种,具有良好的发展前景。

1 选育经过

以品质优、着色好、耐贮运的不同熟期桃品种为育种目标,选择引自日本国农林水产省果树试验场选育的早熟品种筑波84号(早熟、全红、品质优)为

母本、美国加州遗传与育种研究所选育的油桃品种早油118(早熟、全红、硬溶)为父本,于2003年4月桃花大蕾期,采集父本树早油118的花粉,对即将开花的母本树筑波84号进行人工去雄,对去雄后的雌蕊点授早油118的花粉,然后进行套纸袋保护。母本树筑波84号的果实完全成熟后,收集杂交果实242个,去掉果肉,砸开果核取出杂种胚,对种胚消毒后保湿存放于恒温柜中,低温冷藏处理,定期查看、消毒,待种子的胚根生长至1 cm以上时取出,播种于营养钵内,在温室内培养成苗。2004年5月当外界气温稳定、杂种实生苗高度超过60 cm时移栽于大田,移栽株行距1.0 m×2.5 m,定植于甘肃省农业科学院林果花卉研究所桃杂种圃,共212株,按照主干形整形,常规方法进行栽培管理。

2007年杂种实生苗全部开花结果,通过对杂种实生苗各单株果实经济性状的鉴定比较,发现筑波84号×早油118组合杂种实生单株中编号为03-3-194的单株坐果率高,果实近圆形、全红、果个较大、品质优。该杂种实生单株经连续4 a的观察,表现为果实经济性状优良,主要农艺性状稳定。2010年复选为优株,对该单株进行少量的繁育苗木和高接观察,以甘肃省内同期成熟的主栽品种雨花露为对照。2011年春在甘肃省中东部桃产区的兰州、天水、陇南等地开展多点同步区域试验。经过连续5 a

的观察,该优株在不同的区试点的表现性状与母株基本一致,由于区试点气候条件和栽培技术的改变,在单果质量、着色以及品质等方面有所提升。试验结果表明,陇蜜10号在各区试点表现为综合性状优良,果实大小、着色、风味、耐贮运性等方面优于对照品种雨花露,深受生产者和消费者的欢迎,命名为陇蜜10号(图1)。2020年通过甘肃省林木良种审定(编号:甘S-SC-PL-003-2020)。



图1 早熟桃新品种陇蜜10号
Fig. 1 A new early-ripening peach variety Longmi 10

2 主要性状

2.1 植物学特征

陇蜜10号生长势较强,树姿较开张,萌芽率和成枝率中等,一年生枝阳面紫红色,果枝节间长2.1 cm;叶片长14.59 cm,宽4.36 cm,叶柄长0.69 cm,长椭圆披针形,绿色,叶面平展,叶基楔形,叶缘为钝锯齿;蜜腺肾形,2~4个;花蔷薇形,粉红色,花瓣5枚,花药橙红色,有花粉,萼筒内壁淡黄色,雌蕊与雄蕊等高。

2.2 主要经济性状

陇蜜10号桃果实近圆形,果个中大,果形端正,平均单果质量180 g,大果质量超过260 g;果顶平,缝合线浅,梗洼中深,果皮表面茸毛中等,底色绿白,成熟时全面着鲜红色晕,果皮中厚,不能剥离;果肉白色,近核处无红色;硬溶质,汁液中多,纤维少,味浓甜,可溶性固形物含量(w,后同)为13.5%~15.2%,可溶性糖9.8%、可滴定酸0.23%,维生素C 3.69 mg·100 g⁻¹,黏核,果核浅褐色,椭圆形(表1)。

2.3 生长结果习性

陇蜜10号树势较强,易成花,复花芽多,花芽起

表1 陇蜜10号与雨花露主要经济性状比较

Table 1 Comparison of main economic characters between Longmi 10 and Yuhualu

品种 Cultivar	成熟期 Maturing period	果形 Fruit shape	着色 Skin color	单果质量 Average fruit mass/g	肉质 Flesh type	w(可溶性固形物) Soluble solid content/%	风味 Flavour	丰产性 Yield	核黏离性 Stone adhesion
陇蜜10号 Longmi 10	7月上旬 Early July	近圆 Nearly round	多 Much	180	硬溶质 Hard melting	13.5	浓甜 Sweet rich	高 High	黏核 Cling stone
雨花露 Yuhualu	7月中旬 Mid. July	近圆 Nearly round	中 Middle	156	软溶质 Melting	11.2	甜 Sweet	高 High	黏核 Cling stone

始节位1~2节,平均新梢长度45.3 cm;各类果枝均能结果,以中长果枝结果为主,早果能力较强,进入盛果期后,树势转为中庸。成苗当年定植即可形成花芽,第2年开始结果,第3年有一定产量,第5年进入大量结果期,每666.7 m²产量超过2000 kg(表2)。

2.4 物候期

在兰州安宁区,陇蜜10号一般3月下旬萌芽,4月中旬开花,花期5~7 d。果实在7月上旬成熟,果实发育期85 d左右。11月上旬开始落叶,全年生育期225 d左右(表3)。

2.5 栽培适应性及抗逆性

经多年观察,陇蜜10号对环境的适应性和抗逆性较强,在各区试点不同的生态气候条件下表现为

表2 陇蜜10号与雨花露产量比较

Table 2 Comparison of yields between

品种 Cultivar	Longmi 10 and Yuhualu			kg·666.7 m ²
	3年生产量 Yield of 3-year-old tree	4年生产量 Yield of 4-year-old tree	5年生产量 Yield of 5-year-old tree	
陇蜜10号 Longmi 10	539.5	1 261.6	2 033.5	
雨花露 Yuhualu	464.8	1 062.4	1 809.4	

树体生长势较强、早果丰产、农艺性状稳定、果实经济性状优良,均无特殊的病虫害和逆境伤害。在兰州安宁地区,陇蜜10号桃母株、高接树和新植树多年内未见严重花芽受冻和抽条现象,树体和花芽抗寒性均较强。区试和生产实践表明,陇蜜10号桃适

表3 陇蜜10号与雨花露在兰州安宁地区主要物候期

Table 3 Phonological phases of Longmi 10 and Yuhualu in Anning, Lanzhou

品种 Cultivar	叶芽萌动期 Sprouting stage	盛花期 Full flowering stage	果实成熟期 Fruit maturation stage	果实发育期 Fruit development period/d	全年生育期 Growth period/d
陇蜜10号 Longmi 10	03-26—03-30	04-11—04-17	07-06—07-10	83~88	225
雨花露 Yuhualu	03-27—03-31	04-11—04-17	07-09—07-13	85~91	225

注:株行距 2 m×4 m, Y 字形, 2011 年春定植于甘肃省农科院林果花卉研究所安宁桃试验园。

Note: In the spring of 2011, it was planted in the peach orchard Pomology Experiment of Anning District, Station of Institute Fruit and Floriculture Research, Gansu Academy of Agricultural Sciences, with a row spacing of 2 m × 4 m and a Y shaped tree.

宜在甘肃省天水、陇南、兰州等地以及气候环境条件相似的地区栽培。

3 栽培技术要点

3.1 整形修剪

幼树期以培养树形为主,选留好主枝,及时调整方向和开张角度,培养稳健树体骨架,对背上直立枝、过密枝和徒长枝疏除,对斜生的中庸枝适当保留结果。进入大量结果期,轻剪主枝延长头,及时回缩结果枝组,旺树以疏枝、长放为主,弱树采取回缩、长放与短截相结合的方式,注重培养和更新结果枝。注重夏季修剪,在生长季对并生枝、过密枝及背上强旺枝疏除,保证树体通风透光,夏季修剪需分2~3次进行。

3.2 肥水管理

陇蜜10号桃早果丰产,果实成熟早,应加强早期的肥水管理。基肥以有机肥为主,秋季施入;萌芽前追肥以速效性氮肥为主,果实膨大期追肥以速效性钾肥为主。浇水应根据土壤墒情、结合降雨进行,宜少量多次。果实采前10 d内不宜浇水,保证果实品质,越冬前浇足冬水。

3.3 疏花和疏果

疏花在花露红期进行,摘除果枝背上、背下以及果枝两头花蕾。花后40 d前后进行疏果,疏除畸形果、并生果及病虫伤果,选留枝条中部侧生果。留果间距以20~30 cm为宜,短果枝留1个果,中果枝留1~2个果,长果枝留2~3个果。

3.4 病虫害防治

注重对早期苹小卷叶蛾、梨小食心虫和蚜虫等的防治,以减轻对果实的危害,可使用性诱剂、糖醋液诱杀或人工摘除、捕杀等方法进行防控,同时结合虫情测报喷啉虫脒、阿维菌素、吡蚜酮等药剂防治;对穿孔病、炭疽病以及疮痂病等在花芽露红期喷3~5波美度石硫合剂,花后喷春雷霉素、吡唑醚菌酯、

咪鲜胺或苯醚甲环唑等药剂防治。

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