

中熟鲜食葡萄新品种葡缘沁香的选育

向江, 程建徽, 魏灵珠, 郑婷, 吴江*

(浙江省农业科学院园艺研究所, 杭州 310021)

摘要: 葡缘沁香是以玫瑰香为母本、红地球(♀)与皇家秋天(♂)的杂交后代09-05-3为父本杂交选育出的中熟复合香型葡萄新品种, 属二倍体欧亚种。该品种穗型整齐, 呈圆锥形, 紧密度疏。果粒大小均匀, 椭圆形, 艳红色, 成熟度一致, 果粉薄。平均单穗质量651.47 g, 平均单粒质量9.45 g。果皮薄不易剥离, 果肉脆, 有浓郁的复合香味, 种子3~4粒。可溶性固形物含量(w, 后同)为22.0%, 可滴定酸含量0.15%, 维生素C含量为32.2 mg·kg⁻¹。生长势中庸不徒长, 花芽分化好, 管理省力。在浙江设施栽培条件下, 3月中旬萌芽, 4月下旬开花, 8月中旬浆果成熟, 浙江省内葡萄产区均适宜种植。

关键词: 鲜食葡萄; 新品种; 葡缘沁香; 中熟

中图分类号: S663.1

文献标志码: A

文章编号: 1009-9980(2025)05-1119-04

A new mid-ripening table grape cultivar Puyuan Qinxiang

XIANG Jiang, CHENG Jianhui, WEI Lingzhu, ZHENG Ting, WU Jiang*

(Institute of Horticulture, Zhejiang Academy of Agricultural Sciences, Hangzhou 310021, Zhejiang, China)

Abstract: Puyuan Qinxiang is a new mid-ripening table grape variety with excellent appearance derived from a cross between Muscat Hamburg (♀) and 09-05-3 (♂) in 2024 at the experimental field. A total of 866 hybrid seeds were harvested through artificial pollination hybridization in 2014. The seeds were sown in nutrition cups to obtain 298 hybrid seedlings and then they were transplanted in the grape breeding resource nursery in spring 2015. The original plant numbered 191 was selected as the superior line in 2017 due to the high yield, bright red skin color, large berry, crispy meat and strong complex aroma. After regional adaptability testing at three sites (including Xiaoshan, Haining and Yinzhou) over three years from 2021 to 2023, it was finally named Puyuan Qinxiang. It is a diploid cultivar with bisexual flowers. The tender tips are half-open with dense creeping villi and weak anthocyanins. The upper surface of the young leaves is light reddish brown, and the density of creeping villi between the main veins on the back is moderate. The new canes are semierect and the color of dorsal and ventral sides of internodes is green and red, respectively. The mature leaves are green and pentagonal shaped with 5 lobes. The shape of the serrations is convex on both sides, and the aspect ratio of the serrations is small. Both the upper and lower lateral sinus on mature leaves overlap. The petiole sinus is slightly open. The color intensity of anthocyanin in leaf veins is moderate. The creeping villi between the dorsal main veins and the upright villi on the dorsal main veins are both absent or extremely sparse. The grape clusters are conical in shape with uncompact density and without shoulders. The fruit clusters are large and relatively uniform with the average weight of 651.47 g. The berries are elliptical in shape and bright red in color with consistent sizes and maturity. The average weight of single berry is 9.45 g, and the maximum weight is 12.00 g. The peel is slightly thin covered by thin fruit powder. The flesh is crispy, with-

收稿日期: 2024-11-21

接受日期: 2025-02-04

基金项目: 浙江省“十四五”果品新品种选育专项(2021C02066-6); 现代农业产业技术体系建设专项(CARS-29-13); 国家自然科学基金项目(32472681)

作者简介: 向江, 男, 副研究员, 博士, 主要从事葡萄育种与栽培研究。Tel: 0571-86417309, E-mail: xiangjiang@zaas.ac.cn

*通信作者 Author for correspondence. E-mail: wujiang@zaas.ac.cn

out any flesh sacs, and has a rich and complex aroma. The number of seeds in a berry is 3–4, the fruit brush is longer, and it is difficult to separate the berries from the stem. The soluble solid content of berries is 22.0%, the titratable acid content is 0.15% and the vitamin C content is 32.2 mg·kg⁻¹. In the Haining area of Zhejiang province, under facility cultivation conditions, it begins to sprout in mid-March, bloom in late April, and mature in mid-August. Normally, it takes 151–157 days from bud sprouting to berry ripening, making it a medium ripening variety. The growth potential of canes is moderate and not excessive, with a germination rate of 89.50% and a fruiting cane rate of 94.55%. The first inflorescence usually emerges on the fourth or fifth node and average number of inflorescences per fruiting cane is 1.56. The variety shows excellent abilities of flower bud differentiation, fruit setting and secondary fruiting. The yield is suggested to be controlled within 1250–1500 kg per 666.7 m² to ensure berries to set color well. The middle or long cane pruning and T-shape should be used for Puyuan Qinxiang. It is suitable for greenhouse cultivation in Zhejiang and similar areas.

Key words: Table grape; New cultivar; Puyuan Qinxiang; Mid-ripening

鲜食葡萄是经济价值最高的果树之一,在中国大多数地区均有规模化种植,近年来已经成为巩固拓展脱贫攻坚成果和乡村振兴的重要载体^[1-2]。浙江作为南方葡萄产区代表,在经历40 a(年)的发展之后,已经形成了杭州湾南北岸、浙东南沿海和浙中丘陵三大产区的全省葡萄产业布局,栽培模式也由最开始的露天栽培逐渐发展为多样化的设施栽培^[3]。设施栽培的应用使得抗病性较差的欧亚种葡萄在南方地区推广种植成为现实,为丰富和调整葡萄品种结构奠定了品种基础。浙江省农业科学院葡萄团队已培育出了天工系列葡萄新品种,但欧亚种葡萄品种稀缺,仅有一个早中熟天工玉柱^[4]。因此,为丰富浙江自主选育欧亚种品种,培育适宜浙江种植及满足市场需求的红色、大粒、香型、优质的欧亚种葡萄新品种成为新的育种目标。

1 选育过程

2009年,以红地球为母本、皇家秋天为父本进行杂交育种,2010年播种移栽杂交后代。2012—2013年连续2 a考种筛选出优良株系09-05-3。2014年以09-05-3为父本、玫瑰香为母本进行杂交,获得杂交种子866粒,2015年播种获得杂交苗298株并定植。2017年进入结果期进行考种,发现产量高、艳红色、大粒、风味甜、肉质脆、不掉粒、复合香味浓的单株,编号191。2018—2020年进行单株扩繁并开展植物生物学、生长结果习性、果实经济性状、抗病性表现记录,以及主要栽培关键技术研究,发现各株间性状表现一致,外观美、品质优,暂定名天工沁

香。2021—2023年开展该品系与果形相似品种新雅比较试验和配套技术研究及生产性试验,经多年和多点的观察记录,该品系表现稳定,综合性状优良。2024年获得农业农村部植物新品种权证书,品种权号[CNA20221011067],定名为葡缘沁香(图1)。

2 主要性状

2.1 植物学特征

葡缘沁香属二倍体欧亚种葡萄。嫩梢梢尖半开张,匍匐茸毛密,花色苷显色弱。幼叶上表面浅红棕色,背面主脉间匍匐茸毛密度中。新梢生长半直立,节间背侧为绿色,节间腹侧为红色。成熟叶片5裂,五角形,绿色,锯齿形状两侧凸,锯齿长宽比小,上裂刻和下裂刻均重叠。叶柄洼轻度开张,正面主脉上花青苷显色强度中,背面主脉间匍匐茸毛和背面主脉上直立茸毛均为无或极疏。两性花,第一花序位置4~5节。

2.2 果实经济性状

果穗圆锥形,紧密度疏,无岐肩,穗形较整齐,平均单穗质量651.47 g。果粒椭圆形,大小一致,平均单粒质量9.45 g,最大果质量12.00 g。果粒艳红色,成熟度一致,果粉薄,果皮薄不易剥离。果肉脆,无肉囊,复合香味浓郁。种子数3~4粒,果刷较长,果梗与果粒分离较难。风味甘甜,品质上乘,可溶性固形物含量(w,后同)为22.0%,可滴定酸含量为0.15%,维生素C含量为32.2 mg·kg⁻¹(表1)。

2.3 生长结果习性

该品种生长势中庸不徒长,萌芽率89.50%,结



图 1 葡萄新品种葡缘沁香

Fig. 1 A new grape cultivar Puyuan Qinxiang

表 1 葡缘沁香和对照品种新雅及天工丽人果实性状比较

Table 1 Comparison of characteristics of Puyuan Qinxiang, Xinya and Tiangong Liren

品种 Cultivar	果穗 形状 Cluster shape	果穗 质量 Cluster mass/g	果粒 形状 Berry shape	果粒 质量 Berry mass/g	果粒 颜色 Berry color	果肉质地 Flesh texture	果皮涩味 Astringency of skin	香型 Flavor	w(可溶性 固形物) Soluble solid content/%	w(可滴定酸) Titratable acid content/%	w(维生素C) Vitamin C content/ (mg·kg ⁻¹)
葡缘沁香 Puyuan Qinxiang	圆锥形 Conical	651.47	椭圆形 Elliptic	9.45	红色 Red	脆Crisp	无 None	复合香 Complex aroma	22.00	0.15	32.2
新雅 Xinya	圆锥形 Conical	629.66	椭圆形 Elliptic	9.37	红色 Red	脆Crisp	无 None	无None	19.32	0.19	58.3
天工丽人 Tiangong Liren	圆锥形 Conical	513.00	椭圆形 Elliptic	8.20	紫红色 Red-violet	软Soft	中 Medium	玫瑰香 Muscat	20.51	0.32	76.9

果枝率94.55%,每结果枝平均花序数1.56个。自然坐果优良,不易落果,二次结果能力强。丰产稳产性强,定植后第2年开始结果,第3年丰产。为了保证果实均匀上色,生产上宜将每666.7 m²产量控制在1500 kg左右。

2.4 物候期

近几年物候期调查结果显示,在浙江海宁地区,设施栽培条件下的葡缘沁香在3月中旬萌芽,4月下旬开花,8月中旬浆果成熟。从萌芽到浆果成熟需151~157 d,属中熟品种。

2.5 适应性与抗逆性

葡缘沁香的贝达砧嫁接苗在浙江省内3个区试点(萧山、海宁、鄞州)表现优良,适应性强,树体成形快,果实品质好,性状稳定。在避雨设施条件下栽培,病害发生较少。花期若遭遇连续阴雨天,抗霜霉病和灰霉病能力较弱。果实转色期对水分比较敏感,注意均衡供水。另外,红蜘蛛、叶蝉、吸果夜蛾、

绿盲蝽和蓟马等虫害也时有发生,需及时进行防治。

3 栽培技术要点

3.1 架式、整形与栽植密度

建园时搭建避雨设施,可采用“飞鸟”形架或平棚架等进行“一”字形整形。结果树冬季修剪时结果母枝宜中长梢修剪,更新枝2~3芽短梢修剪。根据避雨棚或者大棚实际大小,株行距设置为(1.0~2.0)m×(2.5~3.0)m。结合生产需求,2 a后可隔株间伐,将葡萄树减少一半。

3.2 花果梢管理

当花序上方能分辨出2小叶时花序上留1叶摘心,抑制营养生长促进基部冬芽花芽分化同时拉长花序,留一个顶副梢生长。信使花开时花穗整形:一般留中间15~18个支穗;统一打掉梢尖,其余的侧副梢留一叶绝后。硬核期全园放梢,转熟期再次统一打梢,摘除基部黄叶、老叶改善光照促进着色。

由于该品种结果枝率高,成花容易,每结果枝仅留1个花序,为了确保果穗着色均匀,提早上市与果实品质优良,控制穗质量600~750 g,叶穗比30:1,666.7 m²产量1500 kg左右为宜。

3.3 肥水管理

施肥:10—11月初,每666.7 m²施禽肥1500 kg或商品生物有机肥500 kg,加钙镁磷肥50~75 kg和硫酸锌、硼砂各2 kg;谢花75%后追施高氮三元水溶肥15~20 kg,分2~3次微喷或滴管施入,中间施1次钙肥,每666.7 m²3~5 kg,间隔1周再施1次;果实开始转色膨大时,追施高钾三元水溶肥15~20 kg,分2~3次施入,中间施1次钙镁复合肥3~5 kg,隔1周再施1次;当果粒达到目标大小时,施硫酸钾或磷酸二氢钾10~15 kg,每次肥水同灌。灌排水:扣棚后灌水1次,齐芽时灌水1次,开花前1周灌小水1次,坐果后到着色前期一直保持土壤潮湿。该品种皮薄,转色开始供水均匀,降雨天、台风季沟内铺膜以防雨水渗入畦中造成裂果。

3.4 病虫害防治

葡缘沁香为欧亚种,抗病性较差,根据其物候期进行病虫害防治:冬剪后树体枝芽干、地面、架、钢丝全部用5°Bé石硫合剂或类似产品消毒;在绒球期(开始萌动至少部分变绿),用3~5°Bé石硫合剂全园消毒;2叶1心期防绿盲蝽、蚜虫、沟顶叶甲等虫害;8~10叶期防治穗轴褐枯病和灰霉病;始花期和谢花后防治透翅蛾、粉蚧、白腐病、炭疽病、霜霉病等病虫害;套袋前再防治一次,然后套袋;其间树体悬挂斜纹夜蛾性诱剂诱杀成虫,拆袋前悬挂橘小食蝇性诱剂诱杀成虫。采果后至落叶前,用波尔多液或硫制剂、高效氯氰菊酯等防治天蛾、叶蝉、霜霉病

等。二次果、三次果重点防治蓟马。

4 综合评价

葡缘沁香是一个复合香味浓郁的中熟欧亚种葡萄新品种,穗型整齐、果实艳红色、大小均匀、成熟度一致。花芽分化好,二次结果能力强。自然坐果好,花果管理易,果实品质优,丰产性能稳,适合在浙江省及相似的生态地区采用设施栽培,在广东东莞设施栽培一、二次果外观及内在品质表现均好。

参考文献 References:

- [1] 熊丽娟. 走优势农业发展之路 助推乡村产业振兴:以山东莱西葡萄产业为例[J]. 山东经济战略研究, 2019(8):24-26.
XIONG Lijuan. The development path of advantageous agriculture promotes the revitalization of rural industries: Taking the grape industry in Laixi city, Shandong province as an example[J]. Shandong Economic Strategy Research, 2019(8):24-26.
- [2] 苏月. 宾川县葡萄产业发展现状 & 问题探析[J]. 南方农业, 2019, 13(12):115-117.
SU Yue. Analysis of the current situation and problems of grape industry development in Binchuan County[J]. South China Agriculture, 2019, 13(12):115-117.
- [3] 魏灵珠, 樊树雷, 李斌, 周海青, 程建徽, 向江, 吴江. 浙江地区葡萄产业现状及提升策略[J]. 中外葡萄与葡萄酒, 2021(4):7-12.
WEI Lingzhu, FAN Shulei, LI Bin, ZHOU Haiqing, CHENG Jianhui, XIANG Jiang, WU Jiang. Current situation and promotion strategy of grape industry in Zhejiang region[J]. Sino-Overseas Grapevine & Wine, 2021(4):7-12.
- [4] 程建徽, 魏灵珠, 向江, 郑婷, 吴江. 鲜食葡萄新品种天工玉柱的选育[J]. 果树学报, 2023, 40(10):2283-2286.
CHENG Jianhui, WEI Lingzhu, XIANG Jiang, ZHENG Ting, WU Jiang. A new table grape cultivar Tiangong Yuzhu[J]. Journal of Fruit Science, 2023, 40(10):2283-2286.