

特早熟无核葡萄新品种天工翠香蜜的选育

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摘要:天工翠香蜜是通过胚挽救技术从火焰无核(♀)和寒香蜜(♂)的杂交后代中选出的优质特早熟无核葡萄新品种。果穗圆锥形,平均穗质量372.5 g,最大穗质量761.0 g。果粒呈椭圆形,黄绿色,果粒整齐,果粉较薄,平均单粒质量3.2 g。果皮较薄、脆、无涩味,果汁颜色无,味甜,果肉汁液多,果肉质脆,果肉硬度中等,可溶性固形物含量(w)为20.2%~21.3%。在浙江海宁地区,3月中旬萌芽,4月底开花,6月底浆果成熟。花芽分化和丰产、稳产性均好,萌芽率92.1%,结果枝率达86.4%。

关键词:无核葡萄;新品种;天工翠香蜜;早熟;胚培养

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A new early ripening seedless grape cultivar Tiangong Cuixiangmi

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Abstract: Tiangong Cuixiangmi is a new diploid seedless grape cultivar, derived from the cross between the diploid seedless grape cultivar Flame Seedless (♀) and Hanxiangmi (♂), obtained by means of *in vitro* ovule culture-embryo rescue in Institute of Horticulture, Zhejiang Academy of Agricultural Sciences (ZAAS). In 2013, hybrid embryo rescue breeding was carried out, using Flame Seedless as the female parent and Hanxiangmi as the male parent, and obtained 143 embryo rescue hybrid seedlings. In 2014, we planted them and initially selected them as excellent lines in 2017. Through observation in 2017–2018, we screened out a superior offspring with the number of 13-15-558, which has the characteristics of excellent flower bud differentiation, early maturity, seedlessness, crisp pulp texture, fruitfulness, etc. and finally was named Tiangong Cuixiangmi. The plant has medium growth vigor. The shoot is up-right and the shoot tip is half open with hair. The color of the dorsal side of internodes is green with red strips, while the color of the ventral side of internodes is green. The upper surface of the young leaves is light red and fluffy. Mature leaves are simple, nearly round, and green. The leaf surface has medium bubble-shaped protrusion, serrated and lobed edge on both sides, with 5-lobes, the upper lobes being open, U-shaped, the lower lobes being V-shaped. Petiole depression is open at the base and the petiole is red. There is no villus creeping between the main veins on the lower side the leaf, and leaf vein contains anthocyanins. Flowers are amphoteric and inflorescence born at 2–3 nodes. The compact cluster has an average weight of 372.5 g, with the maximum of 761.0 g. The berry is elliptic shaped, yellow green, with an average weight of 3.2 g. The skin is thin, crispy, with no astringency. The flesh is medium hard, crispy, colorless, juicy and sweet. The average soluble solid content is 20.2%–21.3%. Tiangong Cuixiangmi is an early-ripening variety. Under the greenhouse cultivation conditions in Haining area, Tiangong Cuixiangmi bud breaks in mid-March, flowers in late April and ripens in late June, which is 5–7 days earlier than Hanxiangmi and the same as Tiangong Moyu. The average rate of budbreak is 82.50%, and the rate of bearing shoots is 86.4%, with well flower bud differentiation, high and stable

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yield. The vines have vigorous growth with good adaptability to environment and high disease resistance. Orchard should have neutral sandy soil with good moisture and fertilizer retention. The cultivar is suitable for planting under rain shelter cultivation conditions. It is recommended to use a plant spacing of (2.5–3.0) m × (1.5–3.0) m and “flying bird” T shaped dtrellis system. Pinching is recommended leaving one leaf above the inflorescence to enhance the elongation of the inflorescence. The “messenger flower” in the cluster opens, pinching is carried out again removing all the side shoots. The central shoots are mainly pruned in winter, with 4000 canes per 666.7 m² each with only one cluster left. The fruit clusters are treated with 50 mg · L⁻¹ GA₃ 8–10 days after flowering. From budbreak to flowering, measures should be taken to prevent gray mold, top ditch leaf beetle and aphid; before bagging, anthrax should be well controlled; and after harvest, *Spodoptera litura* and leafhopper should be well controlled.

Key words: Seedless grape; New cultivar; Tiangong Cuixiangmi; Early ripening; Embryo culture

葡萄是中国果树生产上的重要树种,在果树生产中具有重要地位,而培育具有自主知识产权的优良品种是保障葡萄产业健康可持续发展的基石。无核葡萄由于食用方便深受消费者欢迎,但在育种方面,由于没有种子,作为母本无法获得杂交后代植株,长期以来只能利用有核品种作为母本与无核品种进行杂交,但其后代出现无核植株的比率很低,且育种周期较长。20世纪90年代,胚挽救技术的发展为无核葡萄育种带来了新途径,使无核葡萄作为母本进行杂交育种成为可能,在一定程度上解决了无核葡萄育种的难题^[1]。

近年来浙江省葡萄产业迅速发展,面积与产量位于南方诸省前列,主栽品种有夏黑、京亚、藤稔、巨峰、红地球、巨玫瑰、醉金香和美人指等,其中早熟品种夏黑自然上色难;自主育成的京亚外观美但口感偏酸,近年来种植面积大大减少;深受消费者喜欢的特早熟品种寒香蜜因着色较差、采后极易落粒,影响

其推广。同期成熟的碧香无核,在浙江表现为产量低,抗灰霉病、炭疽病能力差,副梢抽生能力特强,用工量大,在劳动力成本高的地方很难推广。因此,浙江省农业科学院园艺研究所根据浙江葡萄产业生产现状和消费需求,结合国内外葡萄育种新趋势,围绕浙江葡萄生产的目标要求,确定了选育早熟、优质、无核、香型、易花芽分化、抗病性较强的葡萄新品种的育种目标,开展杂交胚挽救育种工作^[2]。历经9 a(年)育成了特早熟无核鲜食葡萄新品种天工翠香蜜(图1)。

1 选育经过

2013年,以火焰无核为母本,寒香蜜为父本,进行杂交胚挽救育种,获得胚挽救杂交苗143株,2014年定植,2017年初选为优株,经过2017—2018年的观察,选育出编号13-15-558的绿色型葡萄优系,其具有花芽分化优良、早熟、无核、果肉质较脆等特点。2022年11月30日通过农业农村部的植物新品



图1 葡萄新品种天工翠香蜜

Fig. 1 A new grape cultivar Tiangong Cuixiangmi

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2 品种特性

2.1 植物学特征

属欧美杂种(*V. vinifera* × *V. labrusca*),二倍体。树势中庸,嫩梢形态闭合,花青素着色中到强,茸毛中多。幼叶表面颜色浅红,有茸毛。成熟叶片叶型单叶,近圆形,绿色,叶面泡状凸起中等,锯齿形状双侧凸,5裂,上裂刻开张,裂刻呈U形,下裂刻V形,叶柄洼基部开张、叶柄红,叶背主脉间匍匐茸毛

无,叶脉花青素中多。新梢生长半直立,节间背侧有红条纹。两性花,花序着生位置2~3节。

2.2 果实经济性状

果穗呈圆锥形,穗质量372.5 g,大穗质量761 g,全穗果粒着生紧密,成熟一致,果梗与果粒分离难,果粒呈椭圆形,黄绿色,果粒整齐,果粉较薄,平均单粒质量3.2 g,果粒横切面呈圆形,果皮较薄、脆,果皮无涩味,果汁颜色无,味甜,果肉汁液多,并且具有果香味,果肉质脆,果肉硬度中等,可溶性固形物含量为20.2%~21.3%(表1),种子败育。

表1 天工翠香蜜与父母本果实性状比较

Table 1 Typical characteristics of Tiangong Cuixiangmi and its parents

品种 Cultivar	穗形 Cluster shape	果穗紧密度 Cluster compactness	平均单穗质量 Average cluster mass/g	果粒形状 Berry shape	平均单粒质量 Average berry mass/g	果肉质度 Flesh texture	有无核 Seedless or not	果皮颜色 Berry color	w(可溶性 固形物) Soluble solids content/%
天工翠香蜜 Tiangong Cuixiangmi	圆锥形 Conical	中等 Medium	372.5	椭圆形 Elliptic	3.2	较脆 Slight crisp	无核 Seedless	黄绿色 Yellow green	20.2~21.3
寒香蜜 Hanxiangmi	圆锥形 Conical	松 Loose	425.1	近圆形 Subcircular	3.9	软 Soft	无核 Seedless	浅粉红 Light pink	18.1~25.0
火焰无核 Flame Seedless	圆锥形 Conical	中等 Medium	303.7	近圆形 Subcircular	2.4	较脆 Slight crisp	无核 Seedless	红色 red	18.8~20.1

2.3 生长结果习性

花芽分化好,丰产、稳产性均好,萌芽率为92.1%,结果枝率达86.4%。

2.4 物候期

在浙江海宁地区设施栽培条件下,3月中旬萌芽,4月底开花,6月底浆果成熟,比寒香蜜早5~7 d,与天工墨玉同期成熟^[3]。

3 栽培技术要点

3.1 架式与整形

适宜浙江避雨设施栽培条件下种植。考虑早期丰产因素,行距2.5~3.0 m,株距1.5~3.0 m。宜采用飞鸟形架式,结合T字形树形。

3.2 花果管理

花序上留1叶摘心,自然拉长花序;对萌芽整齐的园子可以在结果枝生长至6~8叶时用5 mg·L⁻¹ GA₃喷或浸花拉长花序。信使花开时统一剪或打梢,不留副梢。冬季修剪时以中长梢修剪为主,每666.7 m²留新梢4000个左右。由于结果枝率高,成花容易,每结果枝留1个果穗。

3.3 肥水管理

10月—11月初,每666.7 m²施禽肥1000~1250 kg或豆粉或菜饼有机生物肥150 kg,加钙镁磷肥50~75 kg;在花后每666.7 m²及时施用高氮复合肥或水溶

肥20 kg,硝酸钙10 kg,分两次施入;在浆果开始软熟时,每666.7 m²施硫酸钾或磷酸二氢钾10~15 kg、钙镁肥5~10 kg。每次施肥结合灌水一次。

3.4 病虫害防治

萌芽至开花前后主要防灰霉病、顶沟叶甲、蚜虫,套袋前防炭疽病,采果后防斜纹夜蛾、叶蝉。

4 综合评价

天工翠香蜜系特早熟无核葡萄新品种,花芽分化优良、果肉质度较脆、有果香,综合性状优于其父母本寒香蜜和火焰无核,近年来在浙江地区市场良好,具有广阔的推广应用前景和很强的市场竞争力。

参考文献 References:

- [1] 郑婷,程建徽,梅军霞,魏灵珠,吴江.南方地区无核葡萄胚挽救及其取样时间研究[J].安徽农业科学,2014,42(13):3842-3843.
ZHENG Ting, CHENG Jianhui, MEI Junxia, WEI Lingzhu, WU Jiang. Study on embryo rescue techniques and sampling time of southern seedless grape[J]. Journal of Anhui Agricultural Sciences, 2014, 42(13): 3842-3843.
- [2] 郑婷.南方地区无核葡萄胚挽救影响因子研究[D].金华:浙江师范大学,2015.
ZHENG Ting. Studies on factors affecting embryo rescue techniques of seedless grape in southern China [D]. Jinhua: Zhejiang Normal University, 2015.
- [3] 魏灵珠,程建徽,向江,吴江.早熟无核葡萄新品种‘天工墨玉’的选育[J].果树学报,2018,35(7):898-900.
WEI Lingzhu, CHENG Jianhui, XIANG Jiang, WU Jiang. A new early ripening seedless table grape cultivar ‘Tiangong Moyu’ [J]. Journal of Fruit Science, 2018, 35(7): 898-900.