

鲜食制干兼用无核葡萄新品种火州紫玉的选育

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摘 要:火州紫玉是新葡1号×红无籽露杂交选育出的中晚熟欧亚种葡萄新品种。果穗圆锥形, 具有较好的紧密度, 平均穗质量600 g, 最大穗质量1000 g; 果粒椭圆形, 平均粒质量3.5 g, 最大粒质量5.0 g; 果皮紫红色, 较薄; 果肉脆, 味酸甜; 种子败育。成熟时可溶性固形物含量(w, 后同)可达21%, 水解后还原糖含量20.6%, 总酸含量3.48 g·kg⁻¹, 糖酸比为59:1, 维生素C含量2.54 mg·100 g⁻¹, 粗纤维含量0.6%。果实生育期130~140 d, 在吐鲁番地区果实9月上旬完全成熟。该品种芽眼萌发率63.0%, 结果枝率63.3%, 结果系数1.52, 丰产性好。抗病虫害、抗旱、抗寒、抗盐碱能力较强, 贮运性能好。可鲜食制干兼用, 适合在新疆及类似环境地区推广种植。

关键词:鲜食制干葡萄; 新品种; 火州紫玉; 无核

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Breeding report of a new seedless grape cultivar Huozhou Ziyu for fresh-eating and dry-processing

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Abstract: Huozhou Ziyu is a new mid-late ripening Eurasian grape (*Vitis vinifera* L.) cultivar bred by a crossing of Xinpu No. 1 × Hongwuzilu. 650 hybrid seeds were obtained in 1997. The seeds were sown in 1998. A total of 130 hybrid individuals were obtained in 1999. It was initially selected for purplish-red skin, crisp pulp, sweet and sour flavor, seedless trait in 2001. After regional adaptability testing at three sites over five years from 2009 to 2013, it was finally selected and reistered by Forest Tree Variety Examination and Approval Committee of Xinjiang Uygur Autonomous Region in 2014. Huozhouziyu belonged to the Eurasian species, and it was diploidy. The young leaves were green and shiny, the petiole was red and dorsal was unvillous. The mature leaves were medium large, the upper and lower surfaces had no villus. The leaf veins of the petiole depression were pink. The petioles were green belt and slightly red. The mature leaves had five crack, upper crack deep, lower crack deep carving, blunt sawtooth, convex sides. The petiole was opens in a “U” shape. A little tender were green without villus. The annual mature branches were reddish brown. The flower was hermaphrodite. The ear was conical, with good tightness, the average ear weight was 600 g, the maximum ear weight was 1000 g, the fruit was oval, the average grain weight was 3.6 g, the maximum grain weight was 5 g, the peel was purple, thin, the pulp was crispy, the taste was sour and sweet, and the seed was abortive. The soluble solids content could reach 21% at maturity, the reducing sugar content after hydrolysis was 20.6%, the total acid was 3.48 g·kg⁻¹, the sugar-acid ratio was 59:1, the vitamin C content was 2.54 mg·100 g⁻¹, and the crude fiber content was 0.6%. The fruit developmental period was about 130–140 d, and the fruit was fully ma-

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ture in early September in Turpan area. The bud burst rate of this cultivar was 63.0%, the fruiting branch rate was 63.3%, the fruiting coefficient was 1.52, and the yield was good. It had strong resistance to pests and diseases, drought, cold, salt and alkali, and good storage and transportation performance. It could be used for both fresh food and dry food, and should be suitable for cultivation in Xinjiang and similar environmental areas.

Key words: Fresh and dry grape; New cultivar; Huozhou Ziyu; Seedless

无核葡萄因食用方便,在鲜食与制干用途上具有独特优势^[1],是全球葡萄品种选育的主要方向^[2],也是中国鲜食与制干品种选育的重要目标。新疆是我国主要的鲜食制干葡萄产区。因特殊的气候和环境条件,对葡萄品种适应性要求较高,适宜栽培的鲜食制干兼用品种相对单一,以无核白葡萄为主,同时少量栽培火焰无核、无核白鸡心、淑女红、波尔莱特等葡萄品种^[3]。针对存在的问题,确定了无核、大粒、红色、脆肉、鲜食制干兼用为育种目标,经20多年的选育,成功培育了中晚熟鲜食制干兼用葡萄无核新品种火州紫玉。

1 选育过程

1997年,新疆维吾尔自治区葡萄瓜果研究所葡萄育种课题组以大粒、紫红色、脆肉、耐贮运的有核鲜食品种新葡1号^[4]为母本,红色、脆肉的无核鲜食制干兼用品种红无籽露为父本,通过常规杂交育种方法配置了杂交组合。9月份果实成熟后采收,在4℃环境中放置一段时间后剥取种子,获得杂交种子650粒。1998年2月进行种子催芽并播种于保护地育苗圃中,1999年5月定植于育种基地。2001年部分单株开始结果,2003年杂交单株97-1-5因果实综合性状优良被初选为优株。2004年经过复选试验,表现为性状稳定,确定为优系,其代号为SP9715。同年嫁接扩繁和扦插育苗,2009—2013年开展了多区域试验,其综合性状表现优异,符合育种目标要求。2014年通过了新疆维吾尔自治区林木良种审定,审定编号为新S-SV-VV-016-2014,命名为火州紫玉。

2 主要性状

2.1 植物学特征

火州紫玉属于欧亚种,二倍体。幼叶绿色,有光泽,叶柄红色,叶背无茸毛。成龄叶片中等大小,叶面及叶背无茸毛,叶绿色,叶柄洼处叶脉呈粉红色,

叶柄绿色略带微红。叶片5裂,上、下裂刻深,叶缘锯齿钝,两侧凸起,叶柄洼呈开张U形。嫩梢绿色,无茸毛,1年生成熟枝条为红褐色,两性花。

2.2 果实经济性状

果穗圆锥形,穗质量600 g左右,果粒着生紧密,果粒椭圆形,果粒纵径2.03 cm,横径1.45 cm,平均粒质量3.5 g,经赤霉素处理粒质量在5.0 g以上。果皮紫红色,较薄,肉脆,种子败育,可鲜食制干兼用(图1)。可溶性固形物含量(w ,后同)可达21%,水解后还原糖含量20.6%,总酸含量 $3.48 \text{ g} \cdot \text{kg}^{-1}$,糖酸比为59:1,维生素C含量 $2.54 \text{ g} \cdot 100 \text{ g}^{-1}$,粗纤维含量0.6%(表1)。

2.3 生长结果习性

生长势较强,芽眼萌发率63.0%,结果枝率63.3%,多着生于结果母枝的2~6节,每果枝平均花



图1 葡萄新品种火州紫玉

Fig. 1 A new grape cultivar Huozhouziyu

表 1 火州紫玉与其亲本性状比较

Table 1 Main characteristics between Huozhouziyu and its parents trait in Turpan area

品种 Cultivar	穗形 Cluster shape	平均穗质量 Average cluster mass/g	果形 Berry shape	平均粒质量 Average berry mass/g	果皮颜色 Skin color	果肉 质地 Flesh texture	w(可溶性 固形物) Soluble solid content/%	w(可滴定酸) Tirataadle acid content/%	种子 类型 Seed types	成熟期 Maturity
火州紫玉 Huozhouziyu	圆锥形 Cone	600	椭圆形 Elliptic	3.5	紫红色 Red-violet	脆 Crisp	21	0.55	无核 Seedless	9月上旬 Early September
新葡 1 号 Xinpu No. 1	圆锥形 Cone	550	圆形 Circular	8.0	紫红色 Red-violet	中等 Medium	19	0.40	有核 Seed	9月上中旬 Early-to-mid September
红无籽露 Hongwuzilou	圆锥形 Cone	450	椭圆形 Elliptic	3.0	紫红色 Red-violet	脆 Crisp	20	0.52	无核 Seedless	8月中下旬 Mid-to-late August

序数 1.52 个,隐芽萌发的新梢和副梢结实力中等。

2.4 物候期

火州紫玉属于中晚熟葡萄品种。在新疆鄯善县山北露地栽培条件下,4月上中旬萌芽,5月中下旬开花,9月上旬果实完全成熟。从萌芽至果实完全成熟大约 130 d,所需≥10℃活动积温为 3200℃。

2.5 抗逆性与栽培适应性

该品种适宜栽培在光热条件较好的干旱、半干旱地区,表现出较强的抗病虫害、抗旱、抗寒、抗盐碱能力。

3 栽培技术要点

3.1 架式与整形

火州紫玉葡萄适合棚架栽培,可根据各地情况选择小棚架或大棚架。小棚架栽培的株行距以(1~1.5)m×(4~5)m为宜。适用于独龙干或双龙干整形方式,保留 1~2 个主蔓延伸至棚架顶端。新梢从主干距地面 80 cm 以上处保留,单侧垂直间距为 20~25 cm,每米枝段上保留新梢 8~10 个,结果枝组在主干两侧 30~40 cm 留一个枝组。使枝条在架面上分布均匀,并使架面透光率保持在 30%左右。

3.2 花果管理

在开花前后进行产量预估和果穗数量统计,及时摘除发育不良和多余果穗,保留好果穗,一般一个结果枝保留 1 穗,成年树每株保留 20~30 穗。果实长至黄豆大小时,间隔疏除多余小穗、副穗。小穗上保留果粒 6~10 个,整个果穗保持 120~170 个果粒。每个果穗的质量控制在 500~700 g。按树势强弱计算出单株预留的果穗数量。为了保险起见,可在此基础上增加 10%~15%的果穗,将穗形不好、多余的果穗全部疏除,掐除卷须及过小的花序。可选择性地进

行膨大处理,一般在花后 1 周左右,使用 75 mg·mL⁻¹赤霉素混配葡萄叶面肥溶液喷施 1 次。

3.3 肥水管理

施肥主要分为四个时期。在葡萄出土上架后,以速效有机肥、生物菌肥、微肥为主;以氮、磷肥混合追施;6月中旬至7月上旬,穴施或沟施复合肥,以磷、钾肥为主。喷施叶面肥,以磷、钾肥及微量元素肥为主;7月下旬果实进入着色期,穴施磷、钾肥,结合喷磷酸二氢钾或含钾叶面肥;在下架盘墩前,沟间穴施基肥,以羊粪为主。

全年灌水定额为 700~1000 m³·666.7 m⁻²(沟灌)。在生长季节,田间土壤持水量保持在 60%~70%。后期果实成熟期,应降低土壤水分含量,持水量保持在 50%~60%。按时期可分为开墩水、花前水、坐果水、膨大水、采前水、越冬水。

3.4 病虫害防治

坚持“预防为主,综合防治”的原则,重点加强果园的管理,提高葡萄的自身抗性。葡萄埋土前、开墩后,各喷一次 3~5°Bé 的石硫合剂或 200 倍的五氯酚钠,以防治白粉病、霜霉病、毛毡病等病虫害。在 5 月上旬至 7 月上旬,喷一次半量式或等量式 150~180 倍的波尔多液,以预防白粉病、霜霉病的发生。最后一次用药距离果实采收必须达到安全间隔期,一般为 15~20 d。

3.5 埋土防寒

葡萄下架前,要灌足越冬水,而且要等表层土壤半干后再进行埋土防寒,以防土壤湿度过大,造成芽眼腐烂。在当地气温在 0℃以下、土壤开始结冻前(10月中下旬至 11 月上中旬)埋土。有 20 cm 稳定积雪的地区,埋土厚度保持在 20 cm 左右,无稳定积雪地区需埋土 30 cm 以上。埋土时将所有葡萄

枝条都顺向一个方向,用纱网覆盖后用土壤掩埋。葡萄埋土完成后,需清除园内所有杂草、作物秸秆等。冬季要随时检查,防止牲畜践踏土堆与鼠害危害。发现有裂缝或洞孔须及时覆土埋严,防止跑水淹地。

4 综合评价

火州紫玉是一个中晚熟鲜食制干兼用无核品种,其具有花芽分化好,易成花,结果稳定,产量高,穗形整齐,着色一致,颜色艳丽,肉质脆爽,风味十足,果实贮运性能好,栽培适应性强,抗病虫害、抗逆能力较强等特点。在新疆等干旱半干旱条件下种植,综合表现优良,具有良好的推广前景。

参考文献 References:

[1] 张剑侠,牛茹萱. 无核葡萄胚挽救技术的研究现状与展望[J]. 园艺学报,2013,40(9):1645-1655.

ZHANG Jianxia, NIU Ruxuan. The present situation and prospect of embryo rescue technique research in seedless grape breeding[J]. *Acta Horticulturae Sinica*, 2013, 40(9): 1645-1655.

[2] 李莎莎,王跃进. 葡萄无核基因及无核育种研究进展[J]. 园艺学报,2019,46(9):1711-1726.

LI Shasha, WANG Yuejin. Advances in seedless gene researches and seedless breeding in grapevine[J]. *Acta Horticulturae Sinica*, 2019, 46(9): 1711-1726.

[3] 段长青,刘崇怀,刘凤之,王忠跃,刘延琳,徐丽明. 新中国果树科学研究 70 年:葡萄[J]. 果树学报,2019,36(10):1292-1301.

DUAN Changqing, LIU Chonghuai, LIU Fengzhi, WANG Zhongyue, LIU Yanlin, XU Liming. Fruit scientific research in New China in the past 70 years: Grape[J]. *Journal of Fruit Science*, 2019, 36(10): 1292-1301.

[4] 骆强伟,李学文,蔡军社. 大粒、优质、耐贮运的葡萄新品种“新葡一号”[J]. 吐鲁番科技,1997(1):14-15.

LUO Qiangwei, LI Xuewen, CAI Junshe. A new grape variety “Xin Pu 1 Hao” with big grain, high quality and good storage and transportation[J]. *Turpan Technology*, 1997(1): 14-15.