

无核葡萄新品种碧玉的选育

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摘要: 碧玉是以京秀为母本、红地球为父本杂交育成的绿色无核葡萄新品种。自然坐果平均单穗质量 278.5 g, 单粒质量 3.7 g。果粒近圆形, 果皮绿色、薄、脆, 可溶性固形物含量(w, 后同)20.6%, 可溶性糖含量 16.10%, 可滴定酸含量 0.52%, 维生素 C 含量 3.92 mg·100 g⁻¹, 品质优良。该品种树势中庸, 易成花, 采用短梢修剪。在甘肃兰州露地 4 月下旬萌芽, 6 月初开花, 8 月下旬果实成熟, 为中熟品种。该品种具有较强的抗性和适应性, 适宜甘肃大部分地区种植。

关键词: 无核葡萄; 新品种; 碧玉; 中熟

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A new seedless table grape cultivar Biyu

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Abstract: Biyu is a new seedless grape cultivar selected from the crossing of Jingxiu × Red Globe in 2006. Through artificial crossing technology, 665 seeds were got in 2006 and sowed in 2007. It was initially selected in 2010 for its good appearance, good quality and strong adaptability. After regional adaptability trial in different sites, it was finally selected in 2018. We applied for the registration as a new cultivar and got identification certificate from the Forest Fine Cultivar Examination and Approval Committee of Gansu province in 2020. Biyu has moderate growth vigor and the mature canes are yellow-brown and the average length of internodes is 6.2 cm. The leaves are near round and have five cracks and smooth. The cultivar has hermaphrodite flower and the first inflorescence is usually borne on the 3rd or 4th node. The bud eye germination rate was 75.4% and the bearing cane rate was 85.2%. The average number of panicles per fruit cane was 2.0. The inflorescence is conical-shaped and the bunch weight is 278.5 g averagely with the length and width being 16.2 cm and 12.5 cm, respectively. The berry is green-yellow in color and near round shape, average weight is 3.7 g, and the longitudinal diameter and transverse diameter are 1.82 cm and 1.78 cm, respectively. The berries are soft with middle juice and pleasant sweetness and sourness. The content of soluble solids is 20.6%, the average total sugar content is 16.10%, the average total acid is 0.52% and the average vitamin C is 3.92 mg·100 g⁻¹. The time from bud break to leaf fall stage is about 195 d, and the berry maturity date is at late August in Lanzhou area. The cultivar has some good characteristics including early-ripening fruit, high and stable yield, and strong disease and cold resistance. The young vines in the second year after planting can bear berries, and in the third year they will reach the full bearing stage, also within four years, the yield will reach 14.5–16.0 t·hm⁻². After comprehensive screening, the planting spacings are 1.5 m between vines and 3 m between rows, respectively. In order to produce high quality fruit, the cultivar uses the Y shape frame and short spur pruning technique. The cultivar is productive, so fertilizer and water management should be strengthened. Meanwhile, nitrogen-phosphorus compound fertilizer was applied after berry

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setting, and potassium fertilizer is reasonably used during color-turning and berry expansion period. The grape clusters should be sprayed with spectroscopic fungicides before bagging, and then bagged after the liquid was dried. For prevention of pests and diseases, the control of downy mildew, powdery mildew and gray mildew should be focused by taking steps with combining with the physical and chemical control technology in vineyards. Biyu has a wide adaptability, which can be cultivated in the most areas of Gansu province.

Key words: Seedless grape; New cultivar; Biyu; Middle-ripening

葡萄是我国重要的栽培果树之一,鲜食葡萄面积和产量连续多年位居世界第一^[1]。多年来,我国鲜食葡萄主栽品种以红地球和巨峰为主。随着人们生活水平的不断提高,无核、香味葡萄深受消费者喜爱,将成为鲜食葡萄的发展趋势。近年来根据市场需求,我国葡萄育种单位选育出了一系列无核、香味

葡萄新品种^[2],对丰富和优化我国葡萄品种结构发挥了重要作用。甘肃省农业科学院林果花卉研究所从20世纪80年代开展葡萄新品种选育工作,已育成醉人香、美红、紫丰^[3]等鲜食葡萄新品种。碧玉是通过杂交育成的无核绿色中熟葡萄新品种(图1)。



图1 葡萄新品种碧玉

Fig. 1 A new grape cultivar Biyu

1 选育经过

碧玉是甘肃省农业科学院林果花卉研究所北京植物园选育的京秀葡萄为母本、美国引进品种红地球为父本,于2006年在甘肃省农业科学院林果花卉研究所兰州安宁葡萄品种资源圃通过人工杂交育成的新品种。共杂交1150枚花朵,当年收到杂交种子665粒,2007年2—3月经层积处理后播种于兰州安宁选种圃,获得杂种实生苗384株。2010年杂种苗全部结果,发现代号为JH-162的单株果实综合品质表现优良,初选为优株。2011—2013年,连续3 a观测鉴评,JH-162穗形整齐、品质优良、适应性强,复选为优系。2014—2018年在甘肃天水、白银、兰州、敦煌等不同生态区布点区试。结果表明,该品系综合品质优良、遗传性状稳定,深受栽培者和消费者

喜爱。2020年12月23日通过甘肃省林木良种审定委员会审定,定名为碧玉(良种编号:甘S-SC-VL-005-2020)。

2 主要性状

2.1 植物学特征

参照葡萄种质资源描述规范和数据标准,碧玉生长势中庸,1年生成熟枝条黄褐色,节间平均长度6.2 cm;叶片近圆形、五裂,表面光滑;花为两性花,第1花序一般着生在第3~4节。

2.2 果实经济性状

碧玉果穗圆锥形、整齐、紧凑,果穗长、宽分别为16.2 cm、12.5 cm,自然坐果的果穗平均质量278.5 g;果粒近圆形,着生紧密,大小均匀,纵径1.82 cm、横径1.78 cm,果粒平均质量3.7 g,最大质量4.2 g;果

皮黄绿色,薄、脆,果肉较软,汁液中,酸甜适口;可溶性固形物含量(w ,后同)20.6%,可溶性糖含量

16.10%,可滴定酸含量0.52%,维生素C含量3.92 $\text{mg} \cdot 100 \text{g}^{-1}$;无核或残核(表1)。

表1 碧玉与对照品种果实经济性状比较

Table 1 Comparison of fruit economic characteristics between Biyu and controls

品种 Cultivar	单穗质量 Bunch mass/g	粒形 Berry shape	单粒质量 Berry mass/g	皮色 Color of skin	风味 Flavor	w (可溶性固形物) Soluble solid content/%	w (可溶性总糖) Soluble sugar content/%	w (可滴定酸) Titratable acid content/%	w (维生素C) Vitamin C content/ ($\text{mg} \cdot 100 \text{g}^{-1}$)
碧玉 Biyu	278.5	近圆形 Near round	3.7	黄绿 Yellow green	酸甜适口 Nice taste	20.6	16.1	0.52	3.92
无核白鸡心 Thompson Seedless	556.0	鸡心形 Ovate	3.9	黄绿 Yellow green	酸甜适口 Nice taste	17.1	13.3	0.40	4.01

2.3 生物学特性

2.3.1 物候期 在兰州安宁,碧玉4月下旬萌芽,6月初开花,7月中旬开始转色,8月下旬果实成熟,果实发育期115 d左右。10月底至11月初大量落叶,年生育期195 d左右。在甘肃敦煌,该品种成熟期比兰州安宁提前7~8 d。在天水麦积,该品种成熟期比兰州安宁提前4~5 d。不同年份,该品种物候期略有差异。

2.3.2 生长结果习性 碧玉植株平均萌芽率75.4%,结果枝率85.2%,果枝平均果穗数2.0个;果实成熟后挂树期较长,早果,丰产。该品种成苗定植第2年开始结果,第4年稳产,产量达到14.5~16.0 $\text{t} \cdot \text{hm}^{-2}$ 。

2.4 适应性及抗逆性

碧玉为欧亚种无核葡萄品种,抗病性总体不如欧美种,但经连续多年多点观测,正常管理下该品种霜霉病、白粉病、灰霉病等常见病害发生较轻。在甘肃埋土防寒越冬区,正常埋土情况下未见冻害和抽条现象。该品种总体抗病性较强,适应性广,无特殊病虫害危害和逆境伤害,适宜在甘肃大部分地区及全国同类型气候区推广种植。

3 栽培技术要点

该品种适宜的架形为Y形架,株行距一般采用1.5 m×3.0 m。

主蔓水平高度距离地面1.2~1.5 m。埋土越冬防寒区主蔓必须倾斜上架,基部同地面呈30°夹角。萌芽后及时抹芽、定枝。夏季修剪,果穗以下副梢全部抹除,果穗对面副梢留2叶绝后摘心,果穗以上副梢留1叶绝后摘心。结果枝花前在果穗以上留6叶摘心,摘心后顶端副梢长至第7枚叶片时进行第2次摘心,第2次摘心后萌发的顶端副梢留2~3枚叶连续摘心。落叶后采用2~3芽短梢修剪。

为了提高产量和品质,盛果期秋施充分腐熟的农家肥45 $\text{m}^3 \cdot \text{hm}^{-2}$ 或商品有机肥15 000 $\text{kg} \cdot \text{hm}^{-2}$,同时加入N、P、K复合肥450 $\text{kg} \cdot \text{hm}^{-2}$ +过磷酸钙600 $\text{kg} \cdot \text{hm}^{-2}$ 。开沟施肥后灌水。坐果后至转色期,采用水肥一体化,滴灌4~5次,每次大量元素水溶肥75~120 $\text{kg} \cdot \text{hm}^{-2}$ 。

采用农业、化学等综合防控技术,主要针对霜霉、白粉、灰霉以及绿盲蝽、斑衣蜡蝉等病虫害,重点在绒球期采用5波美度石硫合剂,2~3叶及花序分离期采用化学农药进行防治。

4 综合评价

碧玉系中熟绿色鲜食无核葡萄新品种,果皮薄、脆,果肉可溶性固形物含量高、酸甜适口,是集优质、美观、稳产于一体的优良品种,具有良好的应用前景,有望在甘肃及全国同类型气候区推广种植。

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