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早熟无核葡萄新品种‘紫金早生’的选育

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摘 要:‘紫金早生’是‘金星无核’通过化学诱变选育出的早熟、无核葡萄新品种,欧美杂种。果穗圆锥形,较整齐,平均单穗质量317.4 g,果粒圆形或椭圆形,紫黑色,平均单粒质量5.2 g,果皮中等厚,果肉质地较软,有较浓的玫瑰香味,平均可溶性固形物含量为17.2%,可滴定酸含量为0.66%。在南京地区,7月中旬果实成熟,早果性及丰产性强,抗病性强。

关键词:葡萄; 新品种; ‘紫金早生’; 早熟; 无核

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Breeding report of a new early seedless grape cultivar ‘Zijin zaosheng’

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Abstract: ‘Zijin zaosheng’ is an early-ripening and seedless grape with high yield, strong pathogen resistance and rose-fragrant. The original plant was selected from the variation of ‘Venus Seedless’ grape in Institute of Horticulture, Jiangsu Academy of Agricultural Sciences (JAAS). In 2000, stem-segment with single bud of ‘Venus Seedless’ grape was treated by 0.2% colchicine, and 42 single plants were obtained in 2001. These signal plants began to produce fruits in 2003. After three years observation, it was selected in 2006 as for its seedless, strong rose- fragrant, good comprehensive characters, stable fruit bearing and strong pathogen resistance. From 2008, it was evaluated in regional trials under the name of ‘3-2D-05’ in Lishui, Jiangning and Wuxi. In November of 2015, it was put on records by the fruit, tea and flower variety appraisal committee of Jiangsu province and named ‘Zijin zaosheng’. ‘Zijin zaosheng’ belongs to *V. vinifera* - *V. labrusca* type, diploid plant and bisexual flower. The growth vigor of the plant is middle. Young shoots and young leaves are yellowish green, leaves surface and back are covered with heavy hair, internode ventral of the shoot are green. Adult leaves are medium size and tend to nearly triangle, three lobes, superfissure, oval hollow petiole is mild overlapping, serration on the leaf edge is short, both side of the serration are bossed. There is no or little anthocyanin in the principal vein of leaves surface. Creeping and vertical villi is very heavy among the principal vein of leaves back. The distribution of tendril is inconsecutive. ‘Zijin zaosheng’ has conical cluster, the average cluster length is 16.6 cm, average cluster wide is 9.4 cm, average cluster weight is 317.4 g. The fruit grain is round or short-ellipse, the cluster is compact, uniform size, pericarp color is purple-black, and average grain weight is 5.2 g. Bloom is thick, and pericarp thickness is medium. The flesh is soft with sweet and strong rose-fragrant. The berries are seedless, but very few berries have remaining remnant seeds. The soluble solid content is 17.2%, titratable acid content is 0.66%. In the Nanjing area, the time of budburst is usually late March, and flowering at early May. ‘Zijin zaosheng’ is an early-ripening variety. From bud breaking to harvest time is about 112 d, and it harvest at the middle July in Nanjing, Jiangsu province; the average cluster number per bearing

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shoot is 1.7, proportion of fruit branches is 90%-95%, germination rate is 95%-100%. The Juvenile period is short, just need 2 years, this variety can bear fruits, and more than 1 100 kg for 666.7 m^2 during full fruit period. 'Zijin zaosheng' has strong disease resistance, and can be planted in open field or under rain-shelter. The cultivated model is vertical trellis or pergola trellis system. Pruning pattern is short or very short cane pruning. It is better to remove the shoot tips before flower and remove partial berry and cluster to improve commercial quality of fruits.

Key words: Grape; New cultivar; 'Zijin zaosheng'; Early-ripening; Seedless

早熟、无核性状一直是世界各国葡萄育种的重要目标[1]。目前,我国葡萄生产中以中晚熟品种居多,早熟品种较少。早熟葡萄品种的选育对于调整我国葡萄生产结构具有重要意义。近年来,我国各个科研或育种单位已相继培育了部分早熟、无核葡萄品种,在生产中发挥了较大作用[2]。'紫金早生'是江苏省农业科学院园艺研究所以'金星无核'茎段为试材,经化学诱变培育出的早熟、无核、优质、丰产的葡萄新品种(图1)。

图1 葡萄新品种'紫金早生'

Fig. 1 A new table grape cultivar 'Zijin zaosheng'

1 选育经过

'紫金早生'原编号'3-2D-05',是由'金星无核'经秋水仙素诱变选育而来。2000年5月取保存于江苏省果树种质圃的'金星无核'葡萄的新梢,将其切割成单芽茎段后,在0.2%的秋水仙素溶液中浸泡2 h,然后将单芽茎段通过组织培养技术培养成苗。2001年春移栽定植单芽茎段组培苗,成活42株单株。2003年开始结果,经过3 a的连续观察、测定,代号为'3-2D-05'的诱变单株综合性状表现优良,2006年确定为初选优系,并进行扦插扩繁。经多年观察,确认单株表现果实早熟、瘪籽,具玫瑰香味,结果稳定,抗病性较强,综合性状优良。2014年育成,2015年11月通过江苏省果茶花品种鉴定委员会鉴定(苏鉴果201506),并命名为'紫金早生'。

2 '紫金早生'与'金星无核'遗传差异分析

为明确'紫金早生'(原代号'3-2D-05')与'金星无核'的遗传差异,利用RAPD和SSR分子标记对2者的遗传差异性进行了分析,研究结果表明,2者的DNA序列的差异不大,其遗传背景表现出高度一致性,导致2者部分性状出现变化的原因可能是某一位点或少数位点上出现点突变。

3 主要性状

3.1 植物学特征

'紫金早生'属欧美杂种,二倍体,两性花。植株生长势中等,嫩梢、幼叶黄绿色,叶面、叶背茸毛极密。新梢节间腹侧颜色绿色,成龄叶片中等大小,叶片近三角型,3裂,裂刻较浅,叶柄洼为轻度重叠,锯齿长度短,锯齿形状两侧凸,正面主脉上花青苷显色无或极弱,背面主脉间匍匐与直立茸毛极密。卷须分布不连续。

3.2 果实经济性状

'紫金早生'果穗圆锥形,较整齐,中等大,平均穗长16.6 cm,穗宽9.4 cm,平均单穗质量317.4 g。果粒圆形或短椭圆形,着生较紧密,大小均匀,紫黑色,平均果粒质量5.2 g,果粉厚,有光泽,果皮中等

厚。果穗、果粒成熟较一致，不裂果。果肉较软，多汁，味酸甜，具有较浓玫瑰香味，瘪籽，鲜食品质中等，可溶性固形物含量为17.2%，可滴定酸含量为0.66%（表1）。

表1　果实经济性状比较

Table 1　Comparison of main fruit characteristics

性状 Character	紫金早生 Zijin zaosheng	金星无核 Venus Seedless	夏黑 Summer Black
成熟期 Maturity	7月12日 July 12	7月20日 July 20	7月29日 July 29
果穗形状 Cluster shape	圆锥形 Conical	圆柱形 Cylindrical	圆锥形 Conical
平均穗质量 Average cluster mass/g	317.4	421.7	515.1
果粒形状 Berry shape	圆形或短椭圆形 Round or short-ellipse	圆形或短椭圆形 Round or short-ellipse	近圆形 Near round
平均粒质量 Average berry mass/g	5.2	4.5	7.7
果皮颜色 Berry color	紫黑色 Purple-black	紫黑色 Purple-black	紫黑色 Purple-black
风味 Flavor	酸甜 Acid and Sweet	酸甜 Acid and Sweet	甜 Sweet
果肉香味 Fragrance	玫瑰香味 Rose-fragrant	草莓香味 Strawberry-fragrant	草莓香味 Strawberry-fragrant
果肉质地 Flesh texture	软 Soft	软 Soft	脆 Fragile
果实汁液 Fruit juice	多 Much	多 Much	少 Little
ω（总酸） Acidity content/%	0.66	0.73	0.48
ω（可溶性固形物） Soluble solid content/%	17.2	15.5	20.1

3.3　生长结果习性

该品种植株生长势中等，节间较短。隐芽、副芽萌发力强。芽眼萌发率为95%~100%，结果枝率90%~95%，每果枝平均着生果穗数为1.7个。进入结果期早，一般定植第2年开始结果，并易早期丰产。盛果期，每666.7 m^{2}产量在1 100 kg以上。

3.4　物候期

‘紫金早生’在南京地区露地栽培，3月下旬萌芽，5月上旬开花，6月下旬浆果始熟，7月中旬果实充分成熟。从萌芽到果实充分成熟需112 d，属早熟品种。

3.5　抗逆性与栽培适应性

经过与‘金星无核’‘夏黑’等品种多年田间病害对比调查，‘紫金早生’的综合抗病能力与‘金星无核’相当，强于‘夏黑’，田间正常防治，基本无明显病害发生，抗病性较强。适宜于江苏地区及相似气候条件地区引种栽植。

4　栽培技术要点

4.1　栽培方式与架势

该品种可进行露地栽培、设施避雨栽培或日光温室、塑料大棚设施促成栽培。架势选择包括V型架、Y型架或水平棚架。依据不同的栽培架式和整形方式，株行距以1.5 m×2.8 m或2 m×3 m或4 m×6 m。

4.2　整形修剪

该品种可采用一字整形、T字整形或H整形。冬季修剪以短梢或极短梢修剪为主。夏季修剪疏除过弱或过强新梢，及时去除夏芽副梢。花前2~3 d进行花前摘心，花序上留5~7枚叶片。

4.3　花果管理

进入盛果期后，要控制负载量，弱枝不留果穗，中庸枝留1穗，个别粗壮枝留2穗。适当进行疏果，每666.7 m^{2}产量控制在1 100 kg左右。

4.4　肥水管理

基肥以有机肥为主，果实着色期适当增施P、K肥，发芽前和果粒前期加速生长时要适当灌水，开花前和着色期应停止灌水，雨季要及时排水，防止内涝。

4.5　病虫害防治

该品种抗病性强，绒绣期喷施5波美度石硫合剂，新梢生长期预防霜霉病，花前预防灰霉病、白粉病，套袋前后预防炭疽病、白腐病，采收后预防霜霉病，年用药6次左右。

参考文献 References：

[1] 毛如霆，赵名花，王凤寅，刘军丽，李民，郭景南，刘崇怀，樊秀彩．早熟无核葡萄新品种‘朝霞无核’的选育[J]. 果树学报，2016，33(5)：637-640.
MAO Ruting，ZHAO Minghua，WANG Fengyin，LIU Junli，LI Min，GUO Jingnan，LIU Chonghuai，FAN Xiucai. Breeding report of a new early seedless grape cultivar ‘Zhaoxia Wuhe’[J]. Journal of Fruit Science，2016，33(5)：637-640.

[2] 郭印山，郭修武，李坤，刘镇东，李成祥，高秀岩，李轶辉，周兴本．葡萄新品种—‘沈香无核’的选育[J]. 果树学报，2016，33(1)：124-126.
GUO Yinshan，GUO Xiuwu，LI Kun，LIU Zhendong，LI Chengxiang，GAO Xiuyan，LI Yihui，ZHOU Xingben. Breeding report of a new grape cultivar ‘Shenxiang Wuhe’ [J]. Journal of Fruit Science，2016，33(1)：124-126.