果 树 学 报 2021,38(3):444-446
Journal of Fruit Science

DOI:10.13925/j.cnki.gsxb.20200499

优质抗寒葡萄新品种‘凌丰红’的选育

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摘 要:‘凌丰红’是从欧亚种葡萄‘红地球’和山葡萄品种‘双优’杂交后代中选育出的优质抗寒酿酒、制汁葡萄新品种。该品种果穗圆锥形,松紧适中,果穗平均质量254.1 g,穗长14~22 cm,穗宽6~10 cm,穗梗长度5.04 cm;果粒圆形,平均粒质量3.3 g,可溶性固形物含量(*w*,后同)21.5%,果皮蓝黑色,无涩味,果肉质地中等,无香味,每果实含种子3~4粒。‘凌丰红’成花性强,对白腐病、霜霉病、灰霉病等主要病害具有较强的抗性,果实生育期150 d左右,在沈阳地区露地栽培4月15日萌芽,浆果始熟期为9月15日。

关键词:葡萄;新品种;‘凌丰红’;抗寒

中图分类号:S663.1 **文献标志码**:A **文章编号**:1009-9980(2021)03-0444-03

A new cold hardness grape cultivar ‘Lingfenghong’

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Abstract: Grape (*Vitis* spp.) is an important fruit species due to its potential economic value. ‘Lingfenghong’ is a new cold resistant grape variety bred from the interspecific cross of ‘Red Globe’ (*Vitis vinifera* L.) and ‘Shuangyou’ (*Vitis amurensis* Rupr.). The male parent ‘Shuangyou’ is an excellent variety with strong cold resistance and suitable for cultivation in Northeast China. The female parent ‘Red Globe’ is widely cultivated in the world with high total soluble solid (TSS) and low titratable acid (TA) content. The hybrid seeds were collected in September 2009 and sown in March 2010. In 2011, ‘Lingfenghong’ was first flowering and fruit setting in Shenyang Agricultural University. It was selected as the primary superior line and grafted on ‘Beta’ (*Vitis riparis* Michx × *Vitis labruscana* Bailey) rootstock for propagation in 2013. After several years of continuous observation, it was selected as superior line in 2016 and final line in 2018 based on various stable traits and released as ‘Lingfenghong’ in 2019. The tip of new shoots is half open and the young shoots are growth with partly erect. The front of young leaves is green with yellow spots, and there is no leaf trichome on the back of leaves. This cultivar is bisexual flower. The length of tendril is 16.6 cm. The average size of adult leaves was 382.5 cm^2, and the petioles of adult leaves are reddish. The cluster shape of ‘Lingfenghong’ is conical with medium density, 14-22 cm long, 6-10 cm wide. The average cluster weight is 254.1 g and the average cluster peduncle length is 5.04 cm. The berries are circular with average weight 3.3 g. The color of pericarp is blue-black without astringency. Its flesh texture is middle without aroma. The content of TSS is 21.5%. Each berry contains 3-4 seeds and the seeds are fully developed. ‘Lingfenghong’ has strong adaptability. It has strong resistance to white rot, downy mildew, gray mold and other major diseases, but moder-

收稿日期:2020-11-23 接受日期:2020-12-17

基金项目:国家重点研发计划(2019YFD1001900);国家现代葡萄产业技术体系岗位专家(CARS-29-yc-6);辽宁省自然科学基金(2019-MS-280);辽宁省重点研发计划(2020JH2/10200032)

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ate resistance to powdery mildew. Due to this variety can strong resistance cold, the adult tree can overwinter in Shenyang without cold protection. In Shenyang, it sprouts on April 15 and begins to ripen on September 15 in open field cultivation, the berries growth period is 150 days. It is suitable for trellis or hedgerow cultivation, the spacing in the rows is 1 m and spacing between rows are 2.5 m × 3.0 m. The short shoot pruning is the main method in winter cutting for ‘Lingfenghong’ with ‘dragon-stem’ shape cultivation. For the one-year-old ‘Lingfenghong’, the length of mature branches should remain 1.5-2.0 m after winter cutting by short shoot pruning method, and the thickness under the notch should be more than 0.7 cm. Pinching in growing season, 4-6 leaves should be left above inflorescence for fruiting branches pruning and the process needs to be completed before flowering. 8-12 leaves should be left for vegetative branches, strong branches should be kept long, and weak branches should be kept short. ‘Lingfenghong’ has strong flowering ability. After the new shoot extend. The inflorescence should be thinned about half a month before flowering. One inflorescence is suggested to be left for the strong and moderate fruit branches, and no inflorescence is suggested to be left for the thin and weak branches.

Key words: Grape; New cultivar; ‘Lingfenghong’; Cold hardness

葡萄（*Vitis* spp.）属于葡萄科葡萄属植物，目前全球栽培面积达715万hm^2，总产量7918万t(FAOSTAT，2018)，是全世界重要的果树之一。我国葡萄产业经过40 a（年）的飞速发展，总产量位居世界第一位，为世界葡萄产业的发展做出了巨大贡献[1]。随着我国葡萄产业的快速发展，充分有效地利用我国特有资源优势，培育我国拥有自主知识产权的葡萄新品种尤为重要[2]。在我国北方寒冷地区，鲜食和酿酒葡萄需要埋土防寒才能安全越冬，然而埋土防寒不但增加劳动成本，还会造成树体损伤，影响葡萄果实产量和品质，严重时甚至造成葡萄整株死亡[3-4]。因此，培育抗寒性强的优质葡萄新品种对于我国北方寒冷地区葡萄生产具有重要意义。沈阳农业大学以欧亚种葡萄‘红地球’（*Vitis vinifera* L. ‘Red Globe’）为母本、山葡萄品种‘双优’（*Vitis amurensis* Rupr. ‘Shuangyou’）为父本，培育了抗寒、高糖葡萄新品种‘凌丰红’（原代号：9-1-439）。

1　选育过程

2009年，以欧亚种葡萄品种‘红地球’为母本，山葡萄品种‘双优’为父本，开展常规人工杂交，当年秋季收获杂交种子，冬季对种子沙藏层积处理。2010年3月播种杂交种子，同年6月将营养钵实生苗定植于沈阳农业大学育种圃内。2011年，编号为‘9-1-439’的单株开花结果，并且果穗、果粒相对于山葡萄品种明显增大，含糖量提高，经过连续3 a观察，2013年确定为初选优系，并嫁接于‘贝达’砧木扩繁。经过多年的连续观察，各种性状稳定，2016年选为复选优系，2018年确定为决选优系，并于2019年通过农业农村部非主要农作物品种登记[登记编号：GPD葡萄（2019）210012]，定名为‘凌丰红’（图1）。

图1　葡萄新品种‘凌丰红’

Fig. 1　A new cold hardness grape cultivar ‘Lingfenghong’

2 主要性状

2.1 果实主要经济性状

‘凌丰红’为二倍体欧山杂种，果穗圆锥形，松紧适中；果穗长14~22 cm，穗宽6~10 cm，平均果穗质量254.1 g，穗梗长度为5.04 cm。果粒圆形，果皮蓝黑色，平均果粒质量3.3 g，可溶性固形物含量（*w*，后同）为21.5%，果肉硬度适中，无香味，果皮厚度中等，无涩味，种子充分发育，每果粒含种子3~4粒（表1）。

表1 ‘凌丰红’与父母本果实主要性状比较

Table 1 Main characteristics comparison between ‘Lingfenghong’ and its two parents

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	果皮颜色 Skin color	*w*（可溶性固形物）Soluble solid content/%	果肉香味 Flavor	种子数 Seed number	发育期 Germination-harvest/d
凌丰红 Lingfenghong	圆锥形 Conical	254.1	圆形 Round	3.3	蓝黑色 Blue-black	21.5	无 None	3~4	150
红地球 Red Globe	圆锥形 Conical	525.0	圆形 Round	12.0	紫红色 Red-violet	16.5	无 None	3~4	155
双优 Shuangyou	圆锥形 Conical	108.0	圆形 Round	0.9	紫黑 Violet-black	11.8	无 None	2~3	133

2.2 植物学特征

嫩梢梢尖半开张，幼叶正面颜色绿色带有黄斑，新梢半直立，卷须长度为16.6 cm；两性花；成龄叶片面积平均为382.5 cm^2，五角形，五裂，上裂刻浅、裂片开张，下裂刻开张，叶背面无茸毛，成龄叶片叶柄微红色，成熟枝条红褐色。

2.3 物候期

该品种在辽宁沈阳地区，露地栽培4月15日萌芽，浆果成熟期为9月15日。从萌芽到浆果成熟需150 d左右。

2.4 适应性及抗逆性

该品种适应性、抗寒性强，成龄树可以在沈阳地区不防寒露地越冬。

3 栽培技术要点

3.1 栽植方式

适宜棚架或篱架栽培，行距2.5~3.0 m，株距1.0 m，每666.7 m^2定植222~267株。

3.2 整形修剪

采取龙干形整枝。冬剪以短梢修剪为主。定植后的幼树，第一年冬剪时主蔓剪留长度以架高与成熟度为依据，剪留当年成熟长度的2/3或剪留到成熟部分下的第3~4个芽眼，建议剪留长度在1.5~2.0 m，剪口粗度应在0.7 cm以上；结果母枝采用短梢修剪。

生长季修剪，结果枝于花前在花序以上留4~6枚叶片摘心；营养枝留8~12枚叶片摘心，强枝长留，弱枝短留。

3.3 花果管理

‘凌丰红’成花性强，新梢伸展后，在花前半个月左右进行疏花序，以减少营养消耗，健壮及中庸果枝留1个花序，细弱枝不留花序。

3.4 肥水管理

以施用有机肥及生物菌肥为主，每年果实采收后或春天萌芽前666.7 m^2施有机肥5000 kg，并加适量生物菌肥为基肥，生长季适时进行追肥，前期以氮肥为主，果实着色前增施磷钾肥，以利于增加含糖量、提高品质。灌水应根据土壤湿度，重点注意在萌芽前后、开花前、果实膨大期、越冬前等物候期适量灌水。雨季果园积水时，及时排水。

3.5 病虫害防治

‘凌丰红’对白腐病、霜霉病、灰霉病等主要病害具有较强的抗性，对白粉病抗性中等，生产中应采取预防为主、综合防治的方针。

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