

火龙果新品种‘粤红3号’的选育

孙清明¹,李春雨¹,刘应钦²,易干军¹

(¹农业部南亚热带果树生物技术与遗传资源利用重点实验室·广东省农业科学院果树研究所, 广州 510640; ²广州仙居果庄农业有限公司,广州 510900)

摘要:‘粤红3号’火龙果是从以‘白水晶’为母本、‘莲花红1号’为父本杂后代中选育出的新品种。植株生长旺盛,枝蔓扭曲。果实圆球形,整齐均匀,平均单果质量285 g;果皮粉红色,果皮中等厚;果肉粉色,肉质细软、清甜。可溶性固形物含量14.1%,总糖含量9.54%,还原糖含量8.97%,可滴定酸含量0.145%。该品种丰产稳产,品质优良,不易裂果,对火龙果溃疡病具有一定抗性。

关键词:火龙果;新品种;‘粤红3号’;杂交

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Breeding report of a new pitaya cultivar ‘Yuehong 3’ (*Hylocereus* spp.)

SUN Qingming¹, LI Chunyu¹, LIU Yingqin², YI Ganjun¹

(¹Key Laboratory of Ministry of Agriculture for South Subtropical Fruit Biology and Genetic Resource Utilization, Institute of Fruit Tree Research, Guangdong Academy of Agricultural Sciences, Guangzhou 510640, Guangdong, China; ²Guangzhou Xianju Fruit Agricultural Company Limited, Guangzhou 510900, Guangdong, China)

Abstract: ‘Yuehong 3’ is a new variety with good quality, strong resistance against pitaya canker disease, pink pulp and twisted branches. The seedling was derived from a cross between a semi wild species ‘Baishuijing’ and a main cultivar ‘Lianhuahong 1’. In 2006, it was initially selected from 5 000 hybrid plants for its twisted branches and special pink pulp. After several years of observation and testing, it was characterized by good quality, strong resistance against pitaya canker disease, pink pulp and twisted branches. In March of 2016, it was approved by the crop variety Approval Committee of Guangdong Province of China and named ‘Yuehong 3’. The margins of green stems are wavy and irregular distortion, and the distortion degree increases as the aging, while the parents were not distort stems. The surface of stems is smooth with obvious waxy. Axillary buds are evolved into spines. The scalloped wing’s diameter of the young stem is 0.40 cm and each has two to five spines with brown color, while the parents are spinier and longer than it. The flowers are mainly distributed in the middle and top of the branches and they can be opened at the same time. The shape of flower bud apex is round. Perianth is big, and the apex of it is flat just before the opening of the bud. The length and width of perianth is 13.60 cm and 7.20 cm. The length and width of pericarpel is 15.40 cm and 3.50 cm. The color of petal is white. The main color of sepal is orange and yellow, and the pattern of secondary color is edged. The length of style is 21.60 cm, the number of stigma lobes is between 23 and 30, and the color of stigma lobe is yellow and green. The position of anthers in relation to stigma is below. Fruit is nearly round, and the length and width of fruit is 8.90 cm and 8.50 cm. The number of bracts is medium and the length of apical bracts is medium. The position of bracts towards the peel is slightly held out. The color of peel is pink and red, and the main color of middle bracts is red. The width of the base of the bracts is 2.30 cm and the thickness of peel is 0.20 cm. The color of

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作者简介: 孙清明,女,副研究员,主要从事火龙果遗传育种研究。Tel:020-38765789, E-mail:qingmingsun@126.com

flesh is pink, fresh and sweet. The average fruit weight is 285 g. It contains total soluble solids of 14.10%, the total sugar of 9.54%, reducing sugar of 8.97% and the titrate acid of 0.145%. The annual bloom and fruit is 10–12 batches in Guangzhou. It has good characteristics as more ability in flowering and the fruit setting, good quality, special pink pulp and strong resistance against pitaya canker disease.

Key words: Pitaya; New cultivar; ‘Yuehong 3’; Cross-breeding

火龙果为仙人掌科热带亚热带果树,起源于中、南美洲热带地区^[1]。20世纪90年代初引入中国大陆,因种植效益好,近年发展迅速,主要分布在广东、广西、海南、云南、福建及贵州等地区。目前生产上栽培品种种类较少、大多是民间从越南或我国台湾等地引进,随意命名品种,而且一些品种不完全适应我国的气候条件或存在明显缺陷,导致火龙果果品质量良莠不齐,市场竞争力低;品质较好的红肉品种大多数具有自交不亲和特性,生产中需要人工授粉以提高产量,这无疑增加了生产成本,成为产业发展的限制因素;尤其是近年大面积引种,缺乏苗木病虫害检疫,加之管理不善,火龙果种植区病害发生日趋严重,在火龙果上已记载发生的病害有17种,一些老果园甚至遭受到毁灭性打击^[2],产业迫切需要抗病品种问世。为此,国内育种机构相继开展了火龙果新品种培育工作,以大果、优质、抗病、自交亲和、耐贮运、具有特殊果肉颜色、耐寒等性状作为育种目标,为火龙果产业提供与储备良种,确保产业良性发展^[3]。广东省农业科学院果树研究所与广州仙居果庄农业有限公司联合开展火龙果新品种选育工作,通过杂交育种,选育出特异枝条类型、肉色粉色、品质优良的火龙果新品种‘粤红3号’。

1 选育经过

2003年,选择品质优良、丰产、果肉白色、小果型半野生种‘白水晶’为母本,品质中上、丰产、果肉紫红色、中果型品种‘莲花红1号’为父本进行人工杂交,将5 000粒杂交种子播种到苗床;2004年,随机选取3 000个健壮单株移栽大田。株高40 cm左右,剪取接穗进行嫁接(砧木为普通白肉火龙果),嫁接成活1 680株。2006年,嫁接苗陆续结果,其中1个单株表现丰产、果肉粉色、口感好、枝蔓扭曲、对溃疡病具有较高抗性。连续3 a对其进行调查,年份间性状表现稳定。2009—2010年采集接穗育苗、扩繁,进入复选。2010—2014年在广东从化鳌头镇、温泉镇、东莞望牛墩镇开展区域和生产试验,植物学和生物学性状稳定性、一致性较好。2015年10月经过田间现场鉴定,2016年3月通过广东省农作物品种审定委员会审定,命名为‘粤红3号’(图1)。



图1 火龙果新品种‘粤红3号’

Fig. 1 A new pitaya cultivar ‘Yuehong 3’

2 主要性状

2.1 植物学特征

树势中等偏强,枝条边缘呈波浪状不规则扭曲,随老熟程度增加,扭曲程度增大,每2~5个刺座间距就发生10°~45°角扭曲,而父母本均未出现枝条扭曲现象。茎表面光滑、蜡质明显,腋芽演化为刺座。刺座呈褐色,幼茎刺座直径均值0.40 cm;刺棕色,每个刺座含有2~5个刺,刺数目少于双亲,且刺较短。花苞圆球形,花冠大,未完全开放前花被顶部平齐;花被平均长13.60 cm,宽7.20 cm;心皮长15.40 cm,宽3.50 cm。花瓣白色,萼片主色橙黄色,边缘红色渐变明显,花柱长21.60 cm,柱头裂片数23~30个,裂片黄绿色,花药高度低于柱头。

2.2 果实主要经济性状

由表1可知,‘粤红3号’火龙果果实圆球形,平均纵径8.90 cm,平均横径8.50 cm,果皮粉红色,鳞片与果皮相对位置为略微外张,鳞片薄,鳞片数目26~39个,果蒂周围鳞片短、略退化。果实中部鳞片基部宽度2.30 cm,果皮厚度0.20 cm。平均单果质量285 g,可食率