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优质桃新品种世纪之星的选育

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摘 要:世纪之星是以久脆(原大久保实生后代35号)作为母本、21世纪作为父本进行杂交的后代群体中选育出的优质桃新品种。果实端正、圆形,两侧对称,果顶微凸,缝合线深,平均单果质量350 g,最大果质量589.2 g;果实底色黄白,果面着鲜红色,着色度75%;果肉白色,近成熟时呈现红色,黏核;汁液中多,风味甜,具香气;硬度8.9 kg·cm^{-2},可溶性固形物含量(*w*,后同)16.0%,较耐贮运,在常温下可贮藏10~15 d,在低温下可贮藏30~40 d;树势中庸,树姿开张,以中长果枝结果为主;自花结实,果实发育期125 d,在河北秦皇岛、唐山地区8月下旬至9月上旬成熟;丰产性强,平均666.7 m^{2}产量为2500 kg左右。

关键词:桃;新品种;世纪之星

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Breeding report of a new high-quality peach cultivar Shijizhixing

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Abstract: Shijizhixing is a new high-quality and late-ripening peach variety derived from a cross between 21 Century and Jiucui in 2003 at experimental field. The male parent, 21 Century is a late-ripening variety with good storability, high total soluble solids and good coloration, but its poor cold resistance limits its cultivation area. The female parent Jiucui has a good storability and is cold resistant. Both of them were bred by the peach breeding team of Hebei Normal University of Science & Technology. The cross-pollination was performed in 2003, and the hybrid seeds were collected and sown in the same year. 389 seedlings were planted at experimental field in Hebei Normal University of Science & Technology, and the seedlings fruited in 2008. In the early January of 2010, the northern part of China experienced an extreme low temperature, which dropped to 21.1 degrees below zero in Changli county. Thirty-six 21 Century trees planted in the same experimental field were frozen to death, and 194 of the seedling trees were eliminated. J3-1 was selected from the survived seedling trees for its strong cold resistance and good fruit characters. From 2010 to 2020, the continuous observation was performed in Baoding, Qinhuangdao, Tangshan (Hebei province) and Beijing. In the early January of 2021, J3-1 experienced a freezing stress with the lowest temperature reached 21 degrees below zero in Changli county. The flower buds of all peach varieties except J3-1 were damaged by freezing. In a word, the fruit characters of J3-1 were consistent in the past 10 years. J3-1 has passed the examination and approval of Hebei Forest Tree Variety Committee, and was named Shijizhixing in April, 2021. The trees of Shijizhixing are moderately vigorous and open in canopy, with a smooth and gray-brown trunk, bark of

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which has transverse cracks in the old trees. All types of fruit branches can bear fruit. The leaves are broadly lanceolate with a short petiole. The flower buds are plump and conical in shape with extremely short pedicels about 6−8 mm. The spherical fruit is bilaterally symmetry with an average weight about 350 g. The maximum single fruit weight can be up to 589.2 g. From 2018 to 2020, the output of Shijizhixing in Department of Forestry of Mancheng was 2242 kg per 666.7 m^2, 2236 kg per 666.7 m^2, 2110 kg per 666.7 m^2, respectively. The base color of fruit is yellowish white with 75% bright red peel. Its flesh is white, also partly red when ripe. The fruit hardness is 8.9 $kg \cdot cm^{-2}$. The fruit is of good taste with aromatic flavor, and the soluble solids content is 16.0%. It has a good tolerance to cold and storability. The fruit growth period is 125 d. The fruit ripens from late August to early September in Qinhuangdao and Tangshan, Hebei Province. Shijizhixing trees perform well in neutral sandy soils with good moisture and fertilizer holding ability. The spacing recommended is (2−3) m × (4−5) m with open-centered training or Y-type training. The opening angle of sapling should be 30°−45°, and water supply should be controlled one month before fruit ripening. The stamens could produce viable pollen and doesnt need a pollinating tree. The trees have no special diseases and insects or pests.

Key words: Peach; New cultivar; Shijizhixing

桃是原产于我国的果树种类之一，种植面积和产量近年来稳居世界第一位[1-2]，产业化栽培在我国落叶果树中居第三位，也是我国最古老的栽培果树之一，其栽培史在4000年以上。我国桃种质资源丰富，经过长期的栽培演化，以及桃育种工作者的选育研究，新中国成立以来育成不同用途的桃新品种600多个[1]。21世纪是河北科技师范学院桃育种团队在2000年选育的耐贮运晚熟桃，经济性状优良[3]，尤以果个大、色泽艳、含糖量高、晚熟、耐贮等突出优点，在河北南部、山西临猗、山东蒙阴、重庆潼南等地广泛栽培，但因其抗寒性较差，限制了该品种在石家庄以北地区的推广栽培。为保持21世纪桃的优良性状，解决抗寒性差的问题，于2003年开始，以21世纪品种为亲本，开展品种改良工作，历经17 a（年），育成抗寒性较强的优质桃新品种世纪之星。

1 选育过程

2003年春季选择亲本进行人工杂交，以21世纪和久脆（原大久保实生后代‘35号’）[4]分别为父母本进行正反杂交，将获得的杂交种子在冬季进行沙藏。2004年3月在温室内营养钵播种获得实生苗389株，其中正交261株，反交128株，定植于河北科技师范学院桃育种基地（昌黎县），2008年全部实生树进入结果期。2010年1月份我国北部遭遇了几十年不遇的低温，昌黎县出现−21.1 ℃低温，实生树自然淘汰194株，基地内36株21世纪无一幸存，对存活的195株抗寒力良好的实生树，根据育种目标对其果实性状[5]进行连续观察记载和选择，获得初选优系‘J3-1’。2010—2013年进行高接，2015年开始陆续在保定、秦皇岛、北京、唐山等地进行多点试验和品种比较试验。2021年1月昌黎县再次出现了−21 ℃低温，该优系未发生冻害。表明果实优良性状稳定，适应性良好。2021年4月通过了河北省林木品种委员会审定，命名为世纪之星（图1），良

图1 桃新品种世纪之星

Fig. 1 The new peach cultivar Shijizhixing

种编号：冀S-SV-AP-005-2020。

2　主要性状

2.1　植物学特征

树势中庸，树姿开张，树干光滑，灰褐色，老树树皮有横向裂纹。新梢光滑，分枝较多，青绿或红褐色。各类果枝均能结果，以中长果枝为主。叶片宽披针形，叶缘锯齿粗大，叶柄短，6~8 mm，柄基有圆形腺体2~4个；叶色深绿，叶面平整，花芽肥大呈圆锥形，花梗极短，萼筒内壁橙黄色，花朵为蔷薇型，花瓣卵圆形，花瓣粉红色，有雄蕊20枚，花柱1枚。有花粉。

2.2　果实经济性状

果实圆形、端正，两侧对称，果顶微凸，缝合线深，平均单果质量350 g，最大单果质量589.2 g；果实底色黄白，果面着鲜红色，着色度80%；果肉白色，近成熟时呈现红色，黏核，不溶质，硬度8.9 kg·cm^{-2}；汁液中多，风味甜，具香气，可溶性固形物含量16.0%，较耐贮运，在常温下可贮藏10~15 d，在低温下可贮藏30~40 d（表1）。

表1　世纪之星与父母本的比较

Table 1　Typical characteristics of Shijizhixing and its parents

品种 Cultivar	单果质量 Single fruit weight/g	缝合线 Stylolite	着色度 Coloring degree/%	*w*（可溶性固形物） Soluble solids content/%	果实发育期 Fruit development period/d	抗寒性 Cold resistance
世纪之星 Shijizhixing	350	深 Deep	80	16.0	125	抗寒 Cold resistant
久脆 Jiucui	250	浅 Shallow	70	12.0	130	抗寒 Cold resistant
21世纪 21 century	350	浅 Shallow	70	16.0	135	不抗寒 Frigolabile

2.3　物候期

世纪之星属于晚熟品种，在秦皇岛地区，一般4月18日左右开花，盛花期4月下旬，花期持续7~8 d，果实8月下旬至9月上旬成熟，果实发育期125 d，适宜采摘期7~10 d，11月上旬落叶。

3　栽培技术要点

适宜沙壤土栽植；株行距（2~3）m×（5~6）m为宜；适宜的树形为开心形、Y字形；自花结实，无需配置授粉树；幼树开张角度以30°~45°为宜；结果以后，冬季修剪采用长枝修剪法；重点去除直立旺枝。果实成熟前一个月控制水分供应；因其花芽量较大，在花果管理中，按20 cm间距留花留果；无特殊病虫害。

4　综合评价

世纪之星桃主要用于鲜食兼加工（制罐）。其成熟期正好在大量中熟品种采收之后，补充空档，具有很好的市场前景。自然存贮5 d后汁液增多，风味甘甜，香气浓，适于鲜食。同时，其果肉白色，核附近红色素少，又为黏核，故也可用于加工。

参考文献 References：

[1]　俞明亮，王力荣，王志强，彭福田，张帆，叶正文．新中国果树科学研究70年：桃[J]. 果树学报，2019，36(10)：1283-1291.
YU Mingliang，WANG Lirong，WANG Zhiqiang，PENG Futian，ZHANG Fan，YE Zhengwen. Fruit scientific research in New China in the past 70 years：Peach[J]. Journal of Fruit Science，2019，36(10)：1283-1291.

[2]　牛良，曾文芳，潘磊，孟君仁，鲁振华，崔国朝，王志强．硬质桃研究现状及展望[J]. 果树学报，2020，37(8):1227-1235.
NIU Liang，ZENG Wenfang，PAN Lei，MENG Junren，LU Zhenhua，CUI Guochao，WANG Zhiqiang. Research status and perspective for stony-hard peach[J]. Journal of Fruit Science，2020，37(8):1227-1235.

[3]　张立彬．耐贮运晚熟桃新品种21世纪[J]. 中国果树，2000(1):1-2.
ZHANG Libin. A new storage-tolerant late rripening peach cultivar ‘21 century’[J]. China Fruits，2000(1):1-2.

[4]　张立彬，肖啸，刘玉艳，李凤英，李育华．耐贮运桃新品种‘久脆’[J]. 园艺学报，2009，36(6):930.
ZHANG Libin，XIAO Xiao，LIU Yuyan，LI Fengying，LI Yuhua. A tolerant storage-transportation peach cultivar ‘Jiucui’[J]. Acta Horticulturae Sinica，2009，36(6):930.

[5]　王力荣，朱更瑞，方伟超，马瑞娟，俞明亮，姜全，赵剑波，郭继英，沈志军．桃种质资源描述规范和数据标准[M]. 北京：中国农业出版社，2005.
WANG Lirong，ZHU Gengrui，FANG Weichao，MA Ruijuan，YU Mingliang，JIANG Quan，ZHAO Jianbo，GUO Jiying，SHEN Zhijun. Descriptors and date standard for peach (*Prunus persica* L.)[M]. Beijing：China Agricultural Press，2005.