

早中熟黄肉蟠桃新品种中蟠102的选育

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摘要: 蟠桃因果形扁平、形状独特、品质优良而深受人们喜爱。中蟠102是中国农业科学院郑州果树研究所最新选育的黄肉蟠桃品种, 在郑州地区6月下旬至7月上旬成熟, 平均单果质量208 g, 果顶闭合较好, 成熟时60%左右果面着红晕, 果肉黄色, 溶质, 汁液多, 可溶性固形物含量(w)12.7%~16.0%, 品质优。黏核。花瓣粉色, 5枚, 花粉多, 自花结实, 极丰产。适合中国桃各主产区栽培。

关键词: 蟠桃; 新品种; 中蟠102; 黄肉

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Breeding of an early-middle season and yellow-fleshed flat peach Zhongpan 102

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Abstract: Flat peach is originated in China and popular for its unique flat shape and excellent flavor. However, for a very long time there were not so many cultivars for growers to choose because the fruit apex of most cultivars did not close well and the appearance was also not so desirable. In the past few decades, most deficits have been improved and several flat peaches were released, like Jinxia Youpan, Zhong Pantao 11, Zhongyoupan 7, etc. And an era for flat peach has arrived in China. Zhongpan 102 is a new released yellow-fleshed flat peach, which was bred by Zhengzhou Fruit Research Institute, CAAS. In 1999, Fengbai, a white flesh peach with big fruit but sterility, was chosen as a female parent and NF9260, a late-matured flat nectarine with yellow and thick flesh but small fruit, was chosen as a pollen donation. Among the offspring, a flat peach numbered 99-42-41 was selected for its bigger fruit and prominent appearance, but the yield was not ideal. In 2011, a self-fruited, high yield nectarine cultivar Zhongyou 13 was chosen as the male parent to pollinate 99-42-41 and 31 seedlings were obtained finally. All the seedlings were planted at a space of 1.0 m in the row and 4.0 m between the rows in spring of 2012. The trees were trained to spindle system and only pruned slightly every winter. Other managements were applied according to routine procedure. Most of the seedlings began to flower and fruit in 2014. The plant numbered 11-16-42 performed noticeably well with big fruit, good appearance and high yield. The main characteristics of the mother tree and the grafted trees were stable in the several fruiting years. The regional trial began from 2016 and authorized to release in 2021. The main economic characteristics are as follows: The trees of Zhongpan 102 are vigorous with semi-upright gesture. The branches are red on the sunny side and the budbreak and branching rates are medium. The average internode length is about 2.36 cm. The leaf is about 15.8 cm long and 3.8 cm wide. The leaf shape is elliptic lanceolate with 2-4 reniform leaf glands. The flower color is pink with 5 petals. The inner wall of

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calyx tube is orange. It's fertile and normally yields very high. The fruits of Zhongpan 102 are large and the average fruit mass is 180–230 g. The fruits are flat with light green-yellow background and more than 60% surface area covered with rosy red color when mature. The hair on pericarp is medium in length and density. The pericarp is medium thickness and can not separate from the flesh. The flesh is yellow with no anthocyanins in the flesh and under the pericarp at maturity, and occasionally a small amount of anthocyanins stay near the pit. The flesh tastes sweet and juicy with less fiber. The fruit juice contains 12.7%–16.0% soluble solids. The fruit stones are medium in size, flat in shape and brown in color, with a little grain and furrow on the surface. It's cling-stone. In Zhengzhou, the budbreak time (late February) and flowering time (middle-late March) of Zhongpan 102 are a little bit early. The fruits mature in late June and the fruit development period is about 95 days. The leaves begin to fall in early November and the annual growth period is about 240 days. Zhongpan 102 is recommended to be planted in northern China. Attention should be paid to avoid the alternation of drought and flood in actual production.

Key words: Flat peach; New cultivar; Zhongpan 102; Yellow flesh

蟠桃是普通桃的果形扁平变种,因形状独特、品质优良而自成一类,如早露蟠桃^[1]、瑞蟠4号^[2]等。但在很长一段时间里,蟠桃的栽培一直局限在江浙、新疆等少数地区,由于品种数量不多,同时存在果个小、果顶闭合不完全、果形不够端正等问题,严重制约了中国蟠桃种植的发展。

近些年来,国内科研机构加大了蟠桃育种方面的工作,选择果肉厚、果顶闭合好、不裂果或裂果轻的蟠桃种质与优良的桃、油桃品种杂交,选育出了一批克服了传统蟠桃缺点的品种,如金霞油蟠^[3]、中蟠桃11号^[4]、中油蟠7号^[5]等,受到北方桃主产区果农的欢迎,使蟠桃种植走出“小圈子”,融入了大产业。

中蟠102是中国农业科学院郑州果树研究所最新选育的早中熟、大果型黄肉蟠桃品种,其果形端正,果顶闭合好,自花结实,丰产性好,在河南省桃主产区区试中表现稳定,2021年通过了河南省林木品种审定(豫S-SV-PP-004-2021)。区试结果表明,中蟠102在陕西西安、浙江杭州、云南昆明等地均表现良好。

1 选育过程

1999年选用大果型、中晚熟桃丰白(大连果树所育成,无花粉,产量低)为母本,以油蟠桃优系NF9260^[6]为父本,杂交选育出了蟠桃优株99-42-41。该单株7月下旬成熟,单果质量200 g左右,果面平整,果肉白色,硬溶质,但丰产性不稳定。2011年,继续以99-42-41为母本,以早熟、优质、丰产性好

的油桃品种中油13号为父本配置杂交组合,于母树大蕾期去雄后进行人工授粉,母本树采用常规管理。

“99-42-41×中油13号”组合当年结果69个,8月3日采收杂种果,杂交种子经低温层积,共培育获得杂种实生苗31株。翌年4月中旬将杂种实生苗定植到桃育种圃,株行距1.0 m×4.0 m,按自然纺锤形整形,常规栽培管理。

该组合中编号为11-16-42的单株于2014年开始开花结果,花为蔷薇型,花粉多。果形扁平,果个较大,品质优,极丰产。经连续3 a(年)的观察,母树各主要经济性状表现稳定,2016年母树最大果质量达270 g。2014年从母树采接穗进行了高接观察,2016年结果,各高接树之间表现无明显差异,遗传上稳定一致。随后开始布置田间区试。2021年经现场考察,通过了河南省林木品种审定(良种编号:豫S-SV-PP-004-2021),定名为中蟠102(图1,2)。

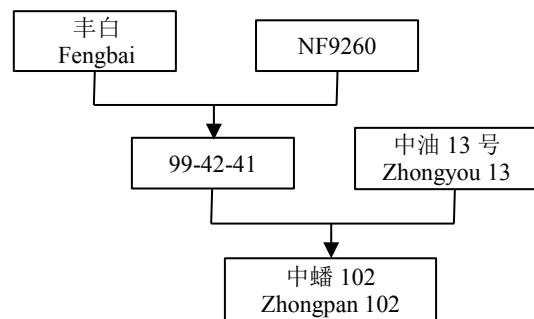


图1 蟠桃新品种中蟠102系谱

Fig. 1 Pedigree of new flat peach cultivar Zhongpan 102



图2 中蟠 102 的花及结果状

Fig. 2 The flowering and fruiting branch of Zhongpan 102

2 主要特性

2.1 主要植物学特征

中蟠 102 树体生长势较强,树姿半直立,萌发力强,成枝率中等。1 年生枝阳面红色,中果枝节间长度平均 2.36 cm。叶片长度中等,15.8 cm 左右,宽度略窄,约 3.8 cm,椭圆披针形,叶片横截面近水平,叶面呈绿色,叶背浅绿色,叶基锐尖,叶缘锯齿浅;叶柄长度中,叶柄蜜腺肾形,2~4 个。花枝粗度中等,花芽着生密,多复花芽。花蔷薇型,花瓣 5 枚,粉红色,

萼筒内壁橙黄色,花粉多。

2.2 果实主要经济性状

中蟠 102 果个较大,平均单果质量 208 g,最大 270 g。果形扁平,果顶凹入;果实梗洼浅、宽,果基稍偏;缝合线中,两半部较对称;果皮底色浅绿黄,成熟时 60% 左右果面着红晕,着色较浅;果皮茸毛密度中等。果皮厚度中等,不能剥离。果肉溶质,黄色,成熟时果皮下无花色苷,近核处偶有少量花色苷;肉质细,汁液中多,纤维少,浓甜。可溶性固形物含量 (w) 12.7%~16.0%,品质优良(表 1)。果核大小中等,

表 1 中蟠 102 与对照品种主要经济性状比较(2020,原阳县)

Table 1 The main economical characters of Zhongpan 102 and the control cultivars (2020, Yuanyang county)

品种 Cultivar	花型 Flower type	成熟期 Harvest time	果锈 Fruit rust	果皮茸毛 Skin fuzz	着色 Fruit color	平均单果质量 Average fruit mass/g	w(可溶性固形物) Soluble solid content/%	风味 Flavor	产量 Yield
中蟠 102 Zhongpan 102	蔷薇型 Showy	06-20—07-04	无 None	中 Middle	中 Middle	208	12.7~16.0	浓甜 More sweet	高 High
中蟠 13 号 Zhongpan 13	铃型 Non-showy	06-28—07-08	无 None	多 More	多 More	184	11.4~13.4	甜 Sweet	高 High
中蟠 101 Zhongpan 101	蔷薇型 Showy	06-12—06-18	无 None	中 Middle	多 More	146	12.2~14.6	浓甜 More sweet	中等 Middle

扁平形,褐色,表面有点纹和沟纹,黏核。偶有轻微裂核或裂果。

2.3 生长结果习性

中蟠 102 营养生长较旺,幼树期一年可抽生 2~3 次新梢,二次枝当年可成花。花芽起始节位 2~4 节,花芽以复花芽为主,复花芽比例 78.2%,单花芽比例 14.7%。

各类果枝均能结果,幼树期以中长果枝结果为主,盛果期后树势稍缓和,各类果枝均可稳定结果,坐果率可达 54.8%,建议以中果枝结果为主,严格疏果。该品种在较好管理条件下,第 2 年结果,

第 3 年 666.7 m² 产量可超过 1500 kg,进入盛果期,第 4 年 666.7 m² 产量可超过 2000 kg。

2.4 物候期

在郑州地区,中蟠 102 萌芽时间偏早(2 月底),开花时间较早(3 月中下旬)。果实 6 月下旬成熟,果实发育期 95 d 左右。11 月上旬开始落叶,到 11 月中旬完全落叶,全年生育期 240 d 左右。

3 栽培技术要点

3.1 建园

北方干旱地区以山桃为砧木,南方以毛桃为砧木

嫁接培育苗木。选择背风向阳、土层深厚、排水良好、坡度不大于 15° 的地块建园。选择南北行,低洼地块建议起垄栽培,株行距 $(1.5\sim 2.0)\text{m}\times 5.0\text{m}$ 左右,根据肥水条件灵活调整。在土壤肥力和透气性较差的地块,建议在定植区域补充每 666.7m^2 不低于 2t 的优质有机肥。

3.2 整形修剪

春季萌芽前距地面 $40\sim 50\text{cm}$ 高度留饱满芽定干。萌芽后在东西两侧选留强旺新梢培养主枝,主枝上下间距约 10cm ,夹角 60° 左右,可立支架辅助整形。对于主枝上萌发的强旺侧枝,可留 $5\sim 10\text{cm}$ 摘心,中庸枝可作为下一年的结果枝培养。结果后,树冠结构保持下大上小,主枝中下部可培养中小型结果枝组。适时夏剪,控上促下,保持树冠通风透光。

3.3 花果管理

疏果时间从花期至果实成熟前均可,越早疏果对果实膨大和品质发育越有利。花期以疏除畸形花、朝天花、过密花为主。盛花2周后,大小果分明时,疏除小果、畸形果、伤病果、朝天果等,相邻果实间距不小于 10cm 。建议后期进行套袋管理,定果后喷施一遍杀菌杀虫农药,选择优质双层果袋1周内完成套袋作业。

冬季修剪时,可按1个中长果枝 0.5kg 的负载量选留果枝,即每 666.7m^2 产量 2500kg 对应 5000 个中长果枝, $2.0\text{m}\times 5.0\text{m}$ 株行距每株留 75 个左右中长果枝。

3.4 肥水管理

根据土壤条件及树体长势确定施肥量,一般肥力较好地块,除底肥外,在结果前可以不用施肥。如年新梢生长量低于 30cm ,需要加大施肥量。肥料种类一般以复合肥为主。施肥时间以春季萌芽前为主,果实成熟前3周左右可适当补充磷钾肥,秋季可补充复合肥,以增加树体贮藏营养,增强树体抗逆性。

3.5 病虫害防控

应根据病虫害发生规律做好防控工作。以农业防治、物理防治、生物防治为主,化学防治为辅。需要重点关注的病虫害主要有桃蚜、卷叶蛾、红蜘蛛、柑

橘小实蝇、褐腐病、细菌性穿孔病等。

4 应用前景

中蟠102是一个早中熟黄肉蟠桃品种,果个大,果顶闭合较好,品质优良,极丰产。在河南、陕西西安、浙江杭州、云南昆明等地的区试结果表明,该品种在各桃主产区栽培均表现出色,适应性强,早果性、丰产性好,果实经济性状优良,有较好的推广应用前景。

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