

## 自花结实性早熟梨新品种‘宁酥蜜’的选育

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**摘要:** ‘宁酥蜜’是由‘秋荣’与‘喜水’杂交选育而成的自花结实性早熟砂梨新品种。果实扁圆形, 平均单果质量 310 g, 果皮黄褐色, 果点较大。果肉浅黄色, 肉质细脆, 石细胞少, 果心小, 汁液多, 味浓甜, 可溶性固形物含量(%)为 11.5%~12.5%, 可滴定酸含量为 0.12%, 品质优。在江苏南京地区 7 月下旬成熟, 果实发育期约 110 d。适宜在江苏等长江中下游砂梨产区种植推广。大树高接后的第 2 年开始结果, 第 4 年平均单株产量 20 kg, 折合产量约 15 000 kg·hm<sup>-2</sup>。

**关键词:** 梨; 新品种; ‘宁酥蜜’; 自花结实性

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### Breeding report of a new self-fruitful pear cultivar ‘Ningsumi’ (*Pyrus pyrifolia*)

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**Abstract:** Pear (*Pyrus pyrifolia*) is a gametophytic self-incompatibility fruit tree. Almost all the pear varieties are self-incompatible. Taking rational cultivation measures such as rightly pollinated by other varieties, or artificial hybridization pollination can guarantee yield and quality. Self-incompatible has caused many difficulties in pear manufacturing management. Therefore, cultivating self-fruitful pear varieties is important in the process of simplified production. ‘Ningsumi’ is a new self-fruitful and early-ripening table sand pear cultivar with excellent appearance. The seeding was derived from the cross between ‘Akiba’ and ‘Kisui’ in 2015 at experimental field of Centre of Pear Engineering Technology Research of Nanjing Agricultural University. Through artificial hybridization pollination, 237 hybrid seedlings were got. It was initially selected in 2009 for its self-fruitful characteristic and very early ripening time. After regional adaptability testing at two sites (including Nanjing and Suzhou in Jiangsu province) over four years from 2010 to 2014, it was finally selected in 2015. This species is a medium-sized tree with a large inverted conical crown, grayish-brown trunk, green-brown annual branches, smooth surface, few lenticel. There are no thorns on the branches. Shoots and young leaves are yellow-green in color. The germinating rate is high, and branching ability is moderate. Leaves are long oval, and sharply serrated. Flower is white. The fruit is oblate with yellow-brown skin color, and has obvious fruit dots. The average fruit weight is 310 g, and maximum fruit weight is up to 390 g. The fruit core is small, and the flesh is pale yellow, crisp, fine-texture, rich juice and sweet. The soluble solids content ranges from 11.5% to 12.5%, accompanying with 0.12% titratable acid. The fruit quality is excellent. Flower buds germinate in early and middle March in Nanjing, Jiangsu province. Florescence lasts for 7-10 days from

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late March to early April. Leaf buds begin to germinate in early April. The period from anthesis to fruit ripening is about 110 d, and it matures in late July in Nanjing, Jiangsu province. It has good disease resistance, stress resistance and environmental adaptability. Suitable cultivation area is the Middle-Lower Yangtze Area. This variety can bear fruits next year after planted, and has high yield potential. The yield is up to 15 000 kg·hm<sup>-2</sup> in the fourth year after planting. In plain area with fertile soil and good irrigation conditions, spacing in the rows and spacing between rows are generally 4 m × 5 m, but in hilly areas with general soil conditions, spacing in the rows and spacing between rows are 3 m × (4-4.5) m. When planting with “Y” type tree form, spacing in the rows and spacing between rows are generally (2-2.5) m × (4-5) m. If planting with slender spindle tree form, the planting density could be (1.5-2.5) m × (4-4.5) m. Rational flower and fruit thinning should be carried out in the full fruit period. Fruit bagging can result in golden color and better appearance.

**Key words:** Pear; New cultivar; ‘Ningsumi’; Self-fruitful

梨属于配子体自交不亲和(gametophytic self-incompatibility, GSI)果树,绝大多数梨品种具有自交不亲和的特性,即自花授粉不能坐果,只有通过合理配置授粉树或进行人工授粉才能获得应有的产量和品质,管理难度大、授粉成本高,给梨园生产管理造成许多困难。因此,培育自花结实性新品种是梨园轻简化生产亟待解决的重要问题<sup>[1-2]</sup>。针对这一产业问题,南京农业大学梨工程技术研究中心历时11 a(年),通过杂交选育方法培育成了自花结实性早熟砂梨新品种‘宁酥蜜’,其自花结实率较高,早果性、丰产性好;相同栽培条件下,果实成熟期较目前主栽品种‘翠冠’提前约7 d,且较其他常见早熟砂梨品种风味更浓。

## 1 选育经过

南京农业大学梨工程技术研究中心于2004年以日本砂梨品种‘秋荣’为母本,‘喜水’为父本,采用人工杂交,并于当年年底获得杂交种子。2005年播种杂交种,当年年底移栽,共获得杂交苗237株。2009年多数杂交实生树开始结果,经过初选,复选,筛选出自花结实性单株05-05-151,在江苏南京、苏州等地进行区域试验,性状稳定,外观及内在品质均表现良好。于2015年12月通过江苏省农作物品种审定委员会鉴定,定名为‘宁酥蜜’(图1),并于2018年1月获得国家植物新品种权证书。

## 2 主要性状

### 2.1 植物学特征

‘宁酥蜜’树势中庸,树冠较大,呈倒圆锥形,主干灰褐色,1 a生枝青褐色,枝干表皮光滑、无针刺,



图1 自花结实性早熟梨新品种‘宁酥蜜’

Fig. 1 A new self-fruitful pear cultivar ‘Ningsumi’

皮孔数量较少,新梢及幼叶黄绿色,萌芽率高,成枝力中等,叶片长卵圆形,叶缘具锐锯齿,花冠白色。树体抗性较强,对环境适应性好。

### 2.2 果实经济性状

果实扁圆形,果实大,单果质量260~390 g,平均单果质量310 g,纵径6.7 cm,横径8.9 cm。果皮黄褐色,果锈无或极少,果点较大。梗洼中深而广,萼洼中深中广,脱萼。果肉浅黄色,肉质细脆,石细胞少,汁液多,果心小,味浓甜,可溶性固形物含量(w,后同)为11.5%~12.5%,可滴定酸含量为0.12%;果实硬度5.8 kg·cm<sup>-2</sup>;品质上等(表1)。

### 2.3 生长结果习性

‘宁酥蜜’自花结实率约为37%(表2),田间坐果率高,易丰产。以短果枝结果为主,大树高接后的第2年开始结果,第3年即形成产量,株产12 kg,第4年平均单株产量20 kg,折合产量约15 000 kg·hm<sup>-2</sup>,盛果期产量可超过45 000 kg·hm<sup>-2</sup>(表3)。

### 2.4 物候期

在江苏南京江浦地区3月上中旬花芽萌动,3月

表 1 ‘宁酥蜜’与主栽早熟梨品种‘翠冠’果实外观和风味品质的比较  
Table 1 Comparison of fruit main external characteristics and inner index of ‘Ningsumi’ and main early-ripening pear cultivar ‘Cuiguan’

品种 Cultivar	平均单 果质量 Fruit mass/g	果实外观品质 External character	w(可溶性固形物) Soluble solids content/%	w(可滴定酸) Titratable acid content/%	果实综合风味 Fruit flavor
宁酥蜜 Ningsumi	310	果实扁圆形,黄褐色,果点较大 The fruit is oblate with yellow-brown skin color, and has obvious fruit dots	11.5~12.5	0.160	肉质脆,浅黄色,汁液多,石细胞少,口感好, 风味浓甜,果心小 The fruit core is small, and the flesh is pale yellow, crisp, fine-texture, rich juice and very sweet
翠冠 Cuiguan	320	果形端正,圆形,果面有果锈, 果点中等大小 The fruit is globose with fruit rust, and has medium-sized fruit dots	11.0~12.0	0.105	肉质细嫩,味甜,汁液多 The flesh is fine-texture, rich juice, and very sweet

表 2 ‘宁酥蜜’与主栽早熟梨品种‘翠冠’的  
开花结果习性比较

Table 2 Comparison of flowering and fruiting habits of  
‘Ningsumi’ and main early-ripening pear cultivar ‘Cuiguan’

品种 Cultivar	开花期 Florescence	自花结实率 Self-pollination rate/%	果实成熟期 Fruit maturation period
宁酥蜜 Ningsumi	4月1日 April 1st	37	7月20日 July 20th
翠冠 Cuiguan	4月1日 April 1st	0	7月25日 July 25th

下旬初花期,4月1日左右为盛花期,花期持续7~10 d。  
叶芽3月下旬萌动,4月上旬开始萌发。果实7月下旬成熟,生长期110 d左右。

### 3 栽培技术要点

在平地土壤肥沃、灌溉条件好的地区,株行距一般为4 m×5 m,但是,在土壤条件一般的丘陵岗地,株行距3 m×(4~4.5)m;如果采取Y字形栽植时,株行距一般为(2~2.5)m×(4~5)m;如果采用细长纺锤

表 3 ‘宁酥蜜’历年区域试验结果

Table 3 Regional test of ‘Ningsumi’

地区 Region	年份 Year	花芽萌动期 Flower budbreak	盛花期 Flower blooming	叶芽萌动期 Leaf budbreak	果实成熟期 Fruit maturity	平均单果质量 Fruit mass/g	w(可溶性固形物) Soluble solids content/%	株产 Individual yield/kg	综合品质 Comprehensive quality
南京 Nanjing	2012	3月16日 March 16th	4月1日 April 1st	3月22日 March 22nd	7月20日 July 20th	305	12.00	3	好 Good
	2013	3月17日 March 17th	4月2日 April 2nd	3月22日 March 22nd	7月21日 July 21st	310	11.50	12	好 Good
	2014	3月17日 March 17th	4月1日 April 1st	3月24日 March 24th	7月20日 July 20th	310	12.50	20	好 Good
苏州 Suzhou	2012	3月19日 March 19th	4月2日 April 2nd	3月21日 March 21st	7月21日 July 21st	310	11.50	5	好 Good
	2013	3月20日 March 20th	4月3日 April 3rd	3月21日 March 21st	7月23日 July 23rd	310	11.50	10	好 Good
	2014	3月19日 March 19th	4月3日 April 3rd	3月23日 March 23rd	7月21日 July 21st	300	12.50	25	好 Good

形整形修剪,栽植密度可采用(1.5~2.5)m×(4~4.5)m。幼树期各主枝和侧枝应少短截,对辅养枝等宜采用拉枝、压枝和刻伤等措施,促使早结果,早丰产;为保证果实品质,进入盛果期应严格疏花疏果,产量最好控制在37 500~45 000 kg·hm<sup>-2</sup>。果实套袋后果面近似呈金黄色,外观更好。

### 4 综合评价及应用前景

‘宁酥蜜’树势中庸,自花结实率较高,果个大,肉质细脆,果心小,汁液多,味浓甜,品质优。是一个优质的自花结实性早熟砂梨新品种,适宜在江苏等

长江中下游砂梨产区种植推广。

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