

# 中熟红皮梨新品种灿玉的选育

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**摘要:** 灿玉是红茄梨自然杂交选育的优质鲜食中熟红皮梨新品种。平均单果质量325.1 g, 粗颈葫芦形, 果皮底色黄绿色, 盖色橘红, 果心小, 无籽, 可食率高, 果肉乳白色, 软溶, 肉质细腻多汁, 风味酸甜、香, 可溶性固形物含量(w)为14.5%, 鲜食品质上等。树势强, 成枝力、萌芽力强, 树姿开张, 1年生枝向阳面主要颜色为赤黄色。叶缘锐锯齿, 叶尖长渐尖。花芽较易形成, 早果丰产性好, 适宜纺锤形栽培。在河北昌黎地区3月中旬花芽开始萌动, 8月中旬果实成熟, 果实发育期约120 d。适宜在河北昌黎、曹妃甸、泊头及相似生态区种植。

**关键词:** 梨; 新品种; 灿玉; 中熟; 红皮

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## Breeding report of a new mid-ripening red pear cultivar *Canyu*

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**Abstract:** *Canyu* is a new mid-ripening pear cultivar (*Pyrus communis*) with red skin selected from the seedlings of Red Clapp's Favorite by Changli Institute of Pomology, Hebei Academy of Agriculture and Forestry Sciences. It was initially selected in 2008 and named 6-29. Through regional adaptability testing at three sites including Changli county, Caofeidian district and Botou city in Hebei province from 2015 to 2023, the main economic characters of 6-29 showed stable. The variety patent of *Canyu* was obtained in July 2020, and it was approved by the Hebei Provincial Forest Variety Approval Committee in 2024. In Changli area of Hebei province, the flowers bloomed in mid-April, and the flowering period lasted 7-10 days. The fruit development period was around 120 days and could be harvested in mid-August. The tree was vigorous and posture was open. The annual branches were reddish-yellow on the exposed side and straight in shape with short internodes. The leaf buds were adnate. The color of the tender leaves was green. The mature leaves were elliptic in shape with serrate, long gradually acute and round base. The number of flowers in each inflorescence was from five to seven. The flowers were pink, ovate, and the relative position of the petals was overlap, the position of stamen was lower than that of the stigma. The color of the anther was fuchsia. The fruit shape was wide-necked, has green yellow ground color and nacarated over color. The average fruit mass was 325.1 g. The fruit peel was smooth with few russeting, the fruit dots were dense and medium in size. The color of the flesh was creamy white, melting and rich juicy, tasted sour-sweet. The texture was fine with aroma. The fruit had no seeds. The soluble solids content was 14.5% with little stone cell and residue. The hardness of the flesh was 1.62 kg·cm<sup>-2</sup>. The quality was excellent. *Canyu* had a high bud burst capability and branch development capability. The fruit mainly bore fruits on the short branches, the fruit setting rate was high. The continuous fruiting capacity of the branches was strong. After 3 years of planting, it began bearing.

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The yield was 3256 kg per 666.7 m<sup>2</sup> in the seventh year at a density of 2.0 m×4.5 m. The variety had strong disease resistance and extensive ecological adaptability. The density of planting would be (1–3) m × (3.5–4.0) m. Xuehua, Yali, Huangguan pears were the most suitable pollination trees for it, and the configuration of the pollinizer was (4–5): 1. The suitable tree shape for Canyu was spindle. Attention should be paid to the management of fertilizer, water and pests in cultivation. It would be suitable for cultivation in Changli county, Caofeidian district and Botou city and other pear producing areas with similar ecological conditions in China.

**Key words:** Pear; New cultivar; Canyu; Mid-ripening; Red peel

梨的果肉脆嫩多汁,酸甜适口,营养丰富,生熟食食用均可,具有清热止咳、润肠通便的功效,深受消费者青睐<sup>[1–2]</sup>。中国主栽梨品种有砀山酥梨、鸭梨、雪花等传统品种,黄冠、翠冠、玉露香、红香酥等自主选育品种,以及秋月、黄金等引进品种<sup>[3–6]</sup>,而红茄梨、巴梨、盘克汉姆等西洋梨品种因后熟后肉质细腻多汁、风味香甜、可食率高、热量低等特点得到了市场的认可,在山东、辽宁、河南等地有一定的栽培面积<sup>[7–10]</sup>。但是西洋梨品种普遍存在适应性差、易得干腐病,结果晚、不易丰产、栽培管理难度大,且果实不耐贮运、货架期短等问题<sup>[11–12]</sup>。因此适应中国立地条件且拥有西洋梨优良性状的品种,拥有极大的发展空间。

河北省农林科学院昌黎果树研究所自2003年起,选择红茄梨进行自然杂交,历经20 a(年)的选育研究,育成了优质、丰产、适应性强的红皮梨新品种灿玉(图1)。



图1 梨新品种灿玉

Fig. 1 A new pear cultivar Canyu

## 1 选育经过

2003年春季,于河北省农林科学院昌黎果树研究所中五区基地选择红茄梨为母本进行自然杂交,生长季正常栽培管理,当年8月采集成熟果实并收集种子,于11月进行层积处理。翌年3月将处理后的种子播于温室营养钵内,培育实生苗,5月初将实生苗定植于中五区基地杂种实生苗初选圃内,定植株行距0.6 m×2.0 m。2008年实生苗开始结果,编号6-29因果个大、外形美观、酸甜适度、香味浓郁、无籽等特点被选为初选优系。2009年将6-29高接扩繁,并以母本红茄梨为对照进行复选,复选期间6-29性状稳定、整齐度高,定为复选优系。2015年在河北昌黎、曹妃甸、泊头等地对6-29进行区域适应性试验。经多年观察鉴定,6-29表现早果性和丰产性好、适应性和抗病性较强、果实品质优良等特点,具备性状特异性、一致性、稳定性。2019年8月通过了农业农村部DUS测试现场考察,2020年7月获得植物新品种保护权(CNA20181222.6),定名为灿玉。2024年通过河北省林木品种审定委员会审定,证书编号:冀R-SV-PC-013-2024。

## 2 主要性状

### 2.1 物候期

在河北昌黎地区,3月中旬花芽开始萌动,始花期4月中旬,花期持续7~10 d,8月中旬果实成熟,果实发育期约120 d,为中熟品种。

### 2.2 植物学特征

树姿开张,1年生枝直立,向阳面主要颜色为赤黄色,枝条节间短,平均长度3.66 cm。休眠叶芽顶端钝尖、贴生。叶片椭圆形,尖端长渐尖,叶缘锐锯齿,叶基圆形,无托叶,长9.13 cm,宽5.14 cm,叶柄长3.32 cm,无托叶。花芽顶生,长度短。每个花序

的花朵数为5~7朵,花瓣粉红色,重叠,卵圆形,雌蕊柱头高于花药,花粉较多,花药紫红色(表1)。

### 2.3 果实经济性状

果实粗颈葫芦形,果皮底色绿黄色,盖色橘红,部分着色,平均单果质量325.1 g。果梗长2.46 cm,粗0.34 cm,萼片残存,萼洼浅,果顶有果棱,梗洼浅。果面光滑,果锈少,果点小而密。果肉乳白色,

肉质细,经后熟变软,汁液多,石细胞少,风味酸甜、香,可溶性固形物含量(w)为14.5%,果心小且无籽(图2),可食率高,鲜食品质上等(表2)。

### 2.4 生长结果习性

树势强,成枝力强。以短果枝结果为主,容易成花,自交不亲和,异花授粉坐果率高,持续结果能力强。幼苗定植后第3年有经济产量,第5年开始丰

表1 灿玉与红茄梨的主要植物学特征比较

Table 1 Comparison of main botanical characteristics among Canyu and Red Clapp's Favorite

品种 Cultivar	树势 Tree vigor	节间长度 Length of internode/cm	向阳面主要颜色 Main colors on the sunny side	花蕾颜色 Color of unopened flower	叶尖形状 Shape of leaf apex	托叶 Presence of stipules
灿玉 Canyu	强 Strong	3.66	赤黄色 Reddish yellow	粉红色 Pink	长渐尖 Long gradually acute	无 Absent
红茄梨 Red Clapp's Favorite	中 Medium	2.89	红色 Red	粉红色 Pink	渐尖 Gradually acute	有 Present



图2 灿玉果实纵、横切面

Fig. 2 The cross section of Canyu

产,第6年达到丰产稳产。在2.0 m×4.5 m的栽植密度下,单株产量控制在44 kg左右,6年生平均产量约3256 kg·666.7m<sup>-2</sup>。

### 2.5 适应性与抗逆性

2015年以来,在河北昌黎、曹妃甸、泊头等梨产区栽培均表现早果丰产、品质优良等特点,高抗梨黑星病,抗梨干腐病,无明显病害危害,耐盐碱,适应性强。

## 3 栽培技术要点

### 3.1 建园及配置授粉树

选择土壤肥沃的平坦开阔地建园,园地需有给

表2 灿玉与对照红茄梨的果实经济性状比较

Table 2 Comparison of main economic characteristic of Canyu and Red Clapp's Favorite

品种 Cultivar	单果质量 Average mass per fruit/g	果实横径 Fruit diameter/cm	果实纵径 Fruit length/cm	果实形状 Fruit shape	果实底色 Ground color	果面盖色 Over color	着色程度 Relative area of over color	果锈数量 Amount of russeting	果点大小 Dot size	萼片状态 Persistency of sepals
灿玉 Canyu	325.1	8.75	11.47	粗颈葫芦形 Wide-necked pearformed	绿黄色 Green yellow	橘红 Nacarat	部分着色 Partial	少 Few	小 Small	残存 Remnant
红茄梨 Red Clapp's Favorite	202.9	7.39	9.35	葫芦形 Pearformed	绿黄色 Green yellow	紫红色 Fuchsia	全面着色 Entire	少 Few	小 Small	宿存 Persistent

  

品种 Cultivar	萼洼深度 Depth of eye basin	果心大小 Fruit core size	果肉硬度 Flesh firmness/(kg·cm <sup>-2</sup> )	果肉颜色 Flesh color	果肉质地 Flesh texture	果肉类型 Flesh texture type	石细胞数量 Amount of stone cells	种子有无 Presence of seeds	风味 Flavor	香气 Aroma	w(可溶性固形物) Soluble solids content/%
灿玉 Canyu	浅 Shallow	小 Small	1.62	乳白色 Creamy white	细 Fine	软溶 Melting	少 Light	无 Absent	酸甜 Sour-sweet	香 Aromatic	14.5
红茄梨 Red Clapp's Favorite	浅 Shallow	中 Medium	1.71	白色 White	细 Fine	软溶 Melting	少 Light	有 Present	酸甜 Sour-sweet	微香 Weakly aromatic	12.3



排水条件,适宜的株行距为(1~3)m×(3.5~4.5)m。定植时需配置授粉树,灿玉与授粉树比例(4~5):1,授粉树可选择雪花、鸭梨、黄冠等品种。

### 3.2 整形修剪

适宜树形为纺锤形,树高控制在4 m左右,在中心领导干上轮生10~15个大型结果枝组。幼树期由于树势较旺,宜采用轻剪技术,多缓放,并配合支、拉等方法开张角度,不宜短截。在生长期进行多次摘心,缓和树势。

### 3.3 花果管理

灿玉容易成花,花粉量大,异花授粉后坐果率高。盛果期需要疏花疏果,合理负载,以实现连年丰产稳产。生产上宜采用无袋栽培或套膜袋,增加果实着色。

### 3.4 肥水管理

每年10月中旬施基肥1次,肥料可选择腐熟的牛、羊粪肥,施肥方法视栽培条件而定,清耕条件下撒施,然后拖拉机深翻将肥料翻进土壤,在果园生草条件下,则在树下开放射沟施入。在生长季追肥3次,花前追肥以氮肥为主,花芽分化期适量施入三元复合肥,果实膨大期以磷钾肥为主,可结合喷药喷施。灌溉视天气及土壤墒情而定,可配合施肥进行,雨季注意排水,以免产生涝害,落叶后土壤封冻前灌1次封冻水。

### 3.5 病虫害防治

灿玉抗病性较强,需注意防治黄粉蚜等虫害。可于萌芽前细致喷布3~5 °Bé石硫合剂进行清园,消灭越冬虫卵,减少越冬病原菌;套袋前可喷吡虫啉、甲维盐、戊唑醇等杀虫杀菌剂。可采用物理防治(黄板、诱虫灯)和生物防治(迷向丝、赤眼蜂)与化学防治相结合的方式,减少农药使用。

## 4 综合评价

灿玉可在河北省梨产区及相似生态区种植推广。该品种早果性和丰产性好,适应性与抗逆性强,果个大,肉细汁多,酸甜适度,香气浓郁,鲜食加工均可,发展前景广阔。

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