

## 附件

# 林木良种名录

(中英文)

## 审定通过品种

### 长乐林场 1 代火炬松种子园种子

树种：火炬松

学名：*Pinus taeda* ‘Changle linchang 1dai huojusong zhongziyuan zhongzi’

类别：种子园种子

通过类别：审定

编号：国 S-CSO (1) -PT-001-2017

申请人：中国林业科学研究院亚热带林业研究所

浙江物产长乐实业有限公司（杭州市余杭区国营长乐林场）

选育人：姜景民、栾启福、徐永勤、沈凤强、董汝湘、张建忠、孙洪刚、刘昭息、黄小兵、蒋祥英、方晓东

### 品种特性

种子千粒重 29.1g，单个成熟球果平均重 47.2g。9 年生平均单株材积 0.074m<sup>3</sup>，超过对照天然林种源家系 30.1%，基本密度平均值 0.421g/cm<sup>3</sup>，顺纹抗压强度 40.66MPa，抗弯弹性模量 9.25GPa，抗弯强度 82.85MPa；木素、综纤维素和 α-纤维素含量分别为 27.19%，71.19% 和 42.37%。

### 主要用途

可作为用材林品种。

### 栽培技术要点

采用一年生健壮容器苗或裸根苗造林，造林时间以冬末春初为宜。造林株行距为 2m×3m；树龄9年左右，林分郁闭度达0.8以上进行间伐，间伐强度30%左右，速丰林20-25 年进行主伐；重点防治幼林松梢螟。

### 适宜种植范围

浙江、安徽、江西等火炬松适宜栽培区。

### 热林 7029

树种：柚木

学名：*Tectona grandis* ‘Relin 7029’

类别：引种驯化品种

通过类别：审定

编号：国 S-ETS-TG-002-2017

申请人：中国林业科学研究院热带林业研究所

选育人：梁坤南、黄桂华、裘珍飞、周再知、李冠群、付强、杨众养、彭仕尧、林明平、童清、欧生、钱军、曾炳山、邝炳朝

### 品种特性

中国林业科学研究院热带林业研究所 1983 年引进，原产印度。海南尖峰岭 27 年生种源试验林中，树高、胸径、单株材积和基本密度分别为 16.04m、22.26cm、0.426m<sup>3</sup> 和 0.6009g/cm<sup>3</sup>，分别比对照缅甸种源提高 17.6%、28.9%、82.8% 和 17.4%。静曲强度、抗弯弹性模量、冲击韧性、顺纹抗压强度分别比对照缅甸种源提高 34.0%、44.6%、17.6% 和 31.4%。在贵州罗甸冻害保存率为 83.33%，其他 10 个印度种源的无性系冻害保存率为 8.33-38.83%。

### 主要用途

可作为用材林品种。

### 栽培技术要点

造林密度每公顷990-1320株，造林地土壤pH值5.5以上，造林前施足基肥，以钙、镁、磷肥和有机肥为主，造林当年于生长高峰期及时追施复合肥；及时除草抚育，当年1-2次，第2-4年2-3次，并适当追肥。pH值小于5.0的土壤，则每株追加1kg石灰和0.5kg沸石作基肥。

### 适宜种植范围

广东、海南、云南等柚木适宜栽培区。

### 渤丰 3 号

树种：杨树

学名：*Populus × euramaricana* ‘Bofeng 3 hao’

类别：品种

通过类别：审定

编号：国 S-SV-PE-003-2017

申请人：中国林业科学研究院林业研究所

选育人：苏晓华、黄秦军、梁德军、董玉峰、苟胜军、丁昌俊、姜岳忠

### 品种特性

树干通直，窄冠。在辽宁省凌海市8年生树高17.5m，胸径31cm，材积0.50m<sup>3</sup>，分别超过对照盖杨10.8%、31.3%和88.08%；9年生基本密度0.33g/cm<sup>3</sup>，纤维长度965μm，宽度22.6μm，长宽比42.6，纤维素含量49.77%，综纤维素含量80.83%，木素含量26.43%。气温-25℃时未发生冻害。

### 主要用途

可作为纸浆材品种。

### 栽培技术要点

造林密度每公顷500-1100 株。选择地势平坦，土壤肥力中等以上，土壤有效层厚度在 80 cm 以上地区造林。辽宁锦州地区以一年生根桩秋季造林为主，其他地区以一年生苗木春季直接造林，造林3年后适当修枝。造林后第二年开始施追肥，氮素用量一般为每株50-200g。

### 适宜种植范围

辽宁、山东、河南等欧美杨适宜栽培区。

### 鲁白杨 1 号

树种：杨树

学名：*Populus × ‘Lubaiyang 1 hao’*

类别：品种

通过类别：审定

编号：国 S-SV-PL-004-2017

申请人：李善文

选育人：李善文、姚俊修、徐金光、张有慧、宋跃朋、张志毅

### 品种特性

雌株，树干通直圆满，树皮深灰色，分枝角小于 45 度。在山东冠县 7 年生平均树高 10.6m，平均胸径 13.6cm，平均单株材积 0.0525m<sup>3</sup>，单株材积超对照窄冠白杨 3 号 21.2%；10 年生木材基本密度为 0.3665g/cm<sup>3</sup>，纤维长度 1049.1 μm，纤维长宽比 44.2；综纤维素和纤维素含量分别为 82.4%和 53.4%。不耐水淹。

### 主要用途

可作为纸浆材品种或用于营建农田林网。

### 栽培技术要点

春季和秋末冬初均可栽植，栽植前对苗木进行适当修剪，树穴规格 60cm×60cm×60 cm，造林后立即浇透水。培育纸浆材常用株行距是 2m×3m、3m×3m 和 3m×4m。造林后及时开展浇水、培土、施肥、中耕锄草、整形修枝、病虫害防治等管理措施。

### 适宜种植范围

山东、河北等白杨适宜栽培区。

## 鲁白杨 2 号

树种：杨树

学名：*Populus* × ‘Lubaiyang 2 hao’

类别：品种

通过类别：审定

编号：国 S-SV-PL-005-2017

申请人：李善文

选育人：李善文、徐金光、张有慧、安新民、宋跃朋、张志毅

### 品种特性

雌株，树干通直圆满，树皮灰绿色，分枝角小于 45 度。在山东冠县 7 年生平均树高 11.4m，平均胸径 13.7cm，平均单株材积 0.0737m<sup>3</sup>，单株材积超对照 ‘窄冠白杨 3 号’ 70.1%；10 年生木材基本密度为 0.3889 g/cm<sup>3</sup>，纤维长度 999.6 μm，纤维长宽比 41.7；其化学组分中综纤维素和纤维素含量分别为 83.1%和 54.3%。不耐水淹。

### 主要用途

可作为纸浆材品种或用于营建农田林网。

### 栽培技术要点

春季和秋末冬初均可栽植，栽植前对苗木进行适当修剪，树穴规格 60cm×60cm×60 cm，造林后立即浇透水。培育纸浆材常用株行距是 2m×3m、3m×3m 和 3m×4m。造林后及时开展浇水、培土、施肥、中耕锄草、整形修枝、病虫害防治等项管理措施。

### 适宜种植范围

山东、河北等白杨适宜栽培区。

## 中研 10 号

树种：相思 学名：*Acacia mangium* × *A. auriculiformis* ‘Zhongyan 10 hao’  
类别：引种驯化品种 通过类别：审定  
编号：国S-ETS-AM-006-2017  
申请人：中国林业科学研究院林业研究所  
选育人：宗亦臣、郑勇奇、刘新华、洪小龙、邹少英、段福文

### 品种特性

中国林业科学研究院林业研究所从越南国家林业科学研究所引进。干型圆满通直，根系有大量根瘤菌可固氮。在广东省江门市4年生平均树高8.4m，平均胸径9.7cm，单株材积0.0310m<sup>3</sup>，每公顷蓄积量41.4m<sup>3</sup>，基本密度为0.417g/cm<sup>3</sup>，比对照马占相思分别增加25.4%、21.3%、84.5%、84.0%和 17.5%。

### 主要用途

可作为人造板材、建筑用材及薪碳材品种。

### 栽培技术要点

春季造林，华南地区适宜在清明节前后造林。选择海拔1000m以下的山地丘陵，酸性土壤，土层深厚，排水良好的林地，株行距2.5m×3.0m，苗木高度20-30cm，地径0.3cm以上。定植后的第一年要分别在7-8月份和11-12月份进行2次抚育除杂，防止因杂草杂木遮阴而影响生长。不耐水淹，忌林地积水。

### 适宜种植范围

广东、广西、福建、云南等相思适宜栽培区。

## 四季蓝

树种：丁香 学名：*Syringa* × *meyeri* ‘Sijilan’  
类别：品种 通过类别：审定  
编号：国 S-SV-SM-007-2017  
申请人：中国科学院植物研究所  
选育人：崔洪霞、臧淑英、石雷、夏菲、唐宇丹、张金政、白红彤、秦永生、齐福民、赵广亮、祝长龙、王玲、李祥、白明霞、付治理、赵新国、张锦梅、李艳萍、李慧、胡伟、张粤、郭晓宇、刘雪芹

### 品种特性

株型直立，花色深紫，圆锥花序长 15-17cm，宽 5-8cm。两季开花，在北京平原地区第一季花期 5 月上旬，第二季花期 7 月上旬；在内蒙古恩格贝沙区和大青山腹地包头矿区第一季花期 5 月下旬至 6 月上旬，第二季花期 7 月中旬。耐修剪。

### 主要用途

可用于园林景观和公路绿化带建植。

## 栽培技术要点

栽植圃地要选择地势高的不积水之处，壤土无须施基肥，岩石风化土或荒漠风沙土则需在整地前撒施有机肥（7m<sup>3</sup>/亩）或复合肥（25kg/亩）作为基肥，随后翻耕做畦，气候寒冷地区可做高垄。灌溉可采用地表布管或地下埋管铺设滴灌，或采用喷灌，仅在苗木定植后或旱季补水灌溉。

## 适宜种植范围

北京、内蒙古、黑龙江、青海等丁香适宜栽培区。

## 华瑞

树种：苹果

学名：*Malus pumila* ‘Huarui’

类别：品种

通过类别：审定

编号：国 S-SV-MP-008-2017

申请人：中国农业科学院郑州果树研究所

选育人：阎振立、过国南、张恒涛、张瑞萍、刘珍珍、高启明、李慧峰、韩立新、王红艳、刘利民、田娟

## 品种特性

树姿直立，树势强。果实扁圆形到近圆形，中等偏大，底色绿黄，果面着鲜红色，着色面积达 70%；7月中下旬成熟，平均单果重 208 g，果实去皮硬度 8.3 kg/cm<sup>2</sup>；可溶性固形物含量 14.9%，总酸含量 0.25%，可溶性糖含量 12.02%，Vc 含量 4.99 mg/100 g。盛果期树每亩产量 2200 kg 以上。

## 主要用途

鲜食。

## 栽培技术要点

采用M9、M26中间砧或自根砧、MM106自根砧以1.5-2 m×3-4 m的株行距定植，设施扶干栽培、采用细长纺锤形整形；若采用海棠等实生砧则以2.5-3.5 m×4-5 m的株行距定植，采用自由纺锤形整形。可选择‘嘎拉’、‘美八’、‘富士’等作为授粉品种，新植果园在定植时要穴施有机肥，每年都要秋施有机肥。严格疏花疏果，防止日灼。

## 适宜种植范围

河南、山东等苹果适宜栽培区。

## 塞外红

树种：苹果

学名：*Malus pumila* ‘Saiwaihong’

类别：品种

通过类别：审定

编号：国 S-SV-MP-009-2017

申请人：通辽市林业科学研究院

选育人：王宝侠、叶秀云、宝金山、王永福、吴永俊、包木林、包敖民、韩永增

## 品种特性

树势中庸，树姿半开张。在内蒙古通辽地区 9 月上旬果实成熟，果实发育期 120 天，营养生长期 180 天左右。果实长圆锥形，平均单果重 58.3g，最大果重 80g，成熟时深红色，上覆浓密果粉，可溶性固形物含量 16.9%，还原糖含量 13.6%，总酸含量 6.1g/kg，Vc 含量为 12.7mg/100g。4-8 年生平均亩产 2000kg。

## 主要用途

鲜食。

## 栽培技术要点

选择排水良好的地块建园，株行距 2.5m×4.5m 或 3m×4m，选择小冠形或纺锤形整形。选择‘金红’、‘龙丰’、‘K9’作为授粉树，比例 8:1 或 10:1，增施基肥，以有机肥为主，配合施磷钾肥。合理疏花疏果，4-8 年生株产 20-30kg 为宜。防治食心虫、腐烂病等病虫害。

## 适宜种植范围

内蒙古、吉林南部、山西、山东等苹果适宜栽培区。

## 岳冠

树种：苹果

学名：*Malus pumila* ‘Yueguan’

类别：品种

通过类别：审定

编号：国 S-SV-MP-010-2017

申请人：辽宁省果树科学研究所、中国农业大学、辽宁省林业科学研究院

选育人：刘志、王冬梅、吕天星、伊凯、扈延伍、闫忠业、李天忠、朱守卫、付文凭、

张景娥、杨锋、姜孝军、王颖达、黄金凤、何明莉、杨春雨、马冬菁、刘怡菲、杨月

## 品种特性

晚熟品种，树姿开张，树势强。在辽宁熊岳地区，10 月中下旬果实成熟，果实发育期 165 天左右，营养生长期 210 天。果实近圆形，成熟时鲜红色，无果粉，平均单果重 225g，最大单果重 480g，可溶性固形物含量 15.4%，可溶性糖含量 12.6%，总酸含量 0.39%，Vc 含量 4.38mg/100g。盛果期亩产 3000kg 左右。

## 主要用途

鲜食。

## 栽培技术要点

选择背风向阳、肥水条件较好的平原地或坡度较小的坡地建园。栽植乔砧树的株行距为 3m×4m、矮化中间砧树以 2m×4m 为宜，可选择‘富士’、‘嘎拉’、‘首红’、‘金冠’、‘岳阳红’和‘寒富’作为授粉品种，乔砧栽培园树形宜选用自由纺锤形修剪，密植园树形选用细长纺锤形修剪。严格疏花疏果，注意肥水管理。

## 适宜种植范围

辽宁、河北、江苏等苹果适宜栽培区。

## 岳艳

树种：苹果

学名：*Malus pumila* 'Yueyan'

类别：品种

通过类别：审定

编号：国 S-SV-MP-011-2017

申请人：辽宁省果树科学研究所、中国农业大学、辽宁省林业科学研究院

选育人：伊凯、王冬梅、刘志、吕天星、贾斌英、闫忠业、李天忠、张宇明、杨丽媛、孙胜久、张景娥、姜孝军、杨锋、黄金凤、王颖达、杨宏艳、卜鹏图、郑颖

### 品种特性

中熟品种，树冠为分枝形，树势强。在辽宁熊岳地区 9 月上旬果实成熟，果实发育期 125 天左右，营养生长期 200 天左右。果实长圆锥形，成熟时鲜红色有少量果粉，平均单果重 240g，最大单果重 309g；可溶性固形物含量 13.4%，可溶性糖含量 11.53%，总酸含量 0.42%，Vc 含量 2.42mg/100g。无需套袋，盛果期亩产 2000kg 左右。

### 主要用途

鲜食。

### 栽培技术要点

乔砧适宜砧木为平邑甜茶及山定子等，株行距 2m×4m，矮砧适宜砧木为 'GM256'、'SH 系'、'辽砧 2 号' 等，株行距 1.5m×4m；可选择 '富士'、'嘎拉'、'首红'、'金冠'、'岳阳红'、'岳华' 和 '寒富' 作为授粉品种。乔砧密植可选用细长纺锤形修剪，矮化砧密植采用高纺锤形修剪。

### 适宜种植范围

辽宁、河北、江苏等苹果适宜栽培区。

## 岳华

树种：苹果

学名：*Malus pumila* 'Yuehua'

类别：品种

通过类别：审定

编号：国 S-SV-MP-012-2017

申请人：辽宁省果树科学研究所、中国农业大学、辽宁省林业科学研究院

选育人：刘志、王冬梅、伊凯、张景娥、葛芳、闫忠业、吕天星、李天忠、宋占宝、高付永、杨锋、黄金凤、王颖达、何明莉、姜孝军、孟凡金、张素清

### 品种特性

晚熟品种，乔化，树姿开张，树势强。在辽宁熊岳地区，10 月中下旬果实成熟，果实发育期 160 天左右，营养生长期 210 天。果实长圆形，成熟时鲜红色，无果粉，平均单果重 215g，最大单果重 325g；可溶性固形物含量 15.5%，可溶性糖含量 12.7%，总酸含量 0.37%，Vc 含量 2.53mg/100g，盛果期亩产 2500kg 左右。

### 主要用途

鲜食。

### 栽培技术要点

选择背风向阳、肥水条件较好的平原或坡度较小的坡地建园。选择乔砧树建园株行距以 3m×5m、选择矮砧树株行距以 1.5m×3.5m 为宜。乔砧树树形选用自由纺锤形，密植树树形选用细长纺锤形或高纺锤形。可选择 '富士'、'嘎拉'、'首红'、'金冠'、'岳阳红' 和

‘寒富’作为授粉品种。

### 适宜种植范围

辽宁、河北、江苏苹果适宜栽培区。

### 瑞都香玉

树种：葡萄

学名：*Vitis vinifera* ‘Ruidu xiangyu’

类别：品种

通过类别：审定

编号：国 S-SV-VV-013-2017

申请人：北京市林业果树科学研究院

选育人：徐海英、孙磊、闫爱玲、张国军、孙其宝、龚林忠、鲁会玲、杨丽丽、王慧玲、  
王晓玥、任建成、胡禧熙、陆丽娟、王富荣、肖丽珍、周军永、覃杨

### 品种特性

早熟品种。树势中庸或稍旺，果穗长圆锥形，平均穗重432.0 g。果皮黄绿色，果粉薄，果粒椭圆形或卵圆形，平均单粒重6.3 g，最大单粒重8.0 g，玫瑰香味中，可溶性固形物含量16.20%，总糖含量18.85%，可滴定酸含量0.29%，Vc含量20.05mg/100g。有种子，种子数3-4粒。浆果成熟期8月10-15日，平均生长日数为120天左右。盛果期亩产1500 kg左右。

### 主要用途

鲜食。

### 栽培技术要点

篱架栽培时，合理计划种植密度，冬剪以短梢和极短梢修剪为宜，花前轻摘心。在温室利用直立主干水平主蔓栽培时，将新梢与主蔓之间的角度控制在90°左右，每个枝条留1-2个花穗，开花前进行花穗整形，控制果穗大小在500 g左右。注意提高结果部位，增加底部通风，以减少果实病虫害发生。

### 适宜种植范围

北京、河北、安徽、湖北等省可露地栽培或避雨设施栽植，黑龙江省设施栽植。

### 珍珠油

树种：杏

学名：*Armeniaca vulgaris* ‘Zhenzhuyou’

类别：品种

通过类别：审定

编号：国 S-SV-AV-014-2017

申请人：方立章

选育人：方立章、方田辉、徐英、陈学森

### 品种特性

落叶小乔木，树姿半开张。果实长椭圆形，成熟后呈橙黄色、表面光滑似被一层油脂，在山东省6月20日前后成熟，平均单果重26.9g，最大单果重38g，可溶性固形物含量14.3%，可滴定酸0.57%，Vc含量11.3mg/100g。盛果期亩产可达2000kg。



## 主要用途

鲜食或加工。

## 栽培技术要点

应选择背风向阳的山区丘陵地建园，土层瘠薄的山地、丘陵果园应深翻扩穴，土壤活土层达到 60cm 以上；选择 2 年生山杏砧大苗，按 3m×4m 株行距定植；可选择‘金太阳’等杏品种作为授粉品种；采用周年修剪技术，注意疏果。

## 适宜种植范围

山东、北京、河北、内蒙古、安徽、甘肃等杏适宜栽培区。

## 彩虹

树种：樱桃

学名：*Prunus avium* ‘Caihong’

类别：品种

通过类别：审定

编号：国 S-SV-PA-015-2017

申请人：北京市林业果树科学研究院

选育人：张开春、张晓明、闫国华、周宇、王晶等

## 品种特性

中晚熟品种，在北京 6 月上旬成熟。树姿较开张，果实扁圆形，完熟时全面橘红色，果实发育期 67 天左右。平均单果重 8.0 克，最大果重 10.5 克，可溶性固形物含量 18.9%。盛果期亩产可达 750kg。

## 主要用途

鲜食。

## 栽培技术要点

采用株行距 3m×4m 或 2m×4m 进行定植，进行细长纺锤形整形。加强夏季修剪，每年应保证至少三遍水，结合灌水进行追肥。可选择‘雷尼’、‘先锋’、‘拉宾斯’作为授粉品种，幼树期要注意防治大青叶蝉。

## 适宜种植范围

北京、甘肃等樱桃适宜栽培区。

## 金丝 4 号

树种：枣

学名：*Ziziphus jujuba* ‘Jinsi 4 hao’

类别：品种

通过类别：审定

编号：国 S-SV-ZJ-016-2017

申请人：山东省果树研究所

选育人：张琼、王中堂、单公华、王斌、郭裕新、周广芳、杨茂林、郑宝强、孔德仓、刘建花、曹明

## 品种特性

树姿开张。在山东泰安，9月底至10月初果面全红，果实长筒形，果实10月上旬完熟；平均单果重12.0g，总酸含量2.65g/kg，总糖含量27.79g/kg，可溶性固形物含量37.9%，Vc含量284.15mg/100g；可食率97.3%，制干率55%；盛果期亩产可达1000kg。

## 主要用途

鲜食、制干兼用。

## 栽培技术要点

平原地区建园株行距2m×4m或3m×4m，山区建园按等高线2-3m株距定植。适宜小冠疏层形或主干疏层形树形。无须环剥和配置授粉树，初花期新梢摘心，盛花初期喷施15mg/L赤霉素，促进坐果；追肥在萌芽前、花前及幼果期进行。

## 适宜种植范围

河北、山东、云南等枣适宜栽培区。

## 大板红

树种：板栗

学名：*Castanea mollissima* ‘Dabanhong’

类别：品种

通过类别：审定

编号：国S-SV-CM-017-2017

申请人：河北省农林科学院昌黎果树研究所

选育人：王广鹏、商贺利、张树航、沈文宝、李颖、耿小明、郭燕、石松玉、张馨方、李晓强

## 品种特性

树姿开张。刺苞椭圆形，黄绿色，成熟时三裂或十字形开裂，每苞平均含坚果2.2粒，出实率38.7%。坚果椭圆形，红褐色，油亮，茸毛少，平均单粒重8.2g；果肉淡黄色，含水量56.2%，可溶性糖含量12.5%，淀粉含量19.7%，蛋白质含量3.63%，Vc含量22.1mg/100g。盛产期亩产可达240kg。

## 主要用途

糖炒食用或加工食品。

## 栽培技术要点

先定植实生苗后嫁接建园，株行距2m×4m，树冠扩大后间伐，密度可为4m×4m。授粉树以‘燕兴’和‘燕明’为佳。基肥在果实采收后立即施入，树形宜选用自然开心形，保留主枝3-5个，主要防治桃蛀螟和栗红蜘蛛。

## 适宜种植范围

河北、山西等板栗适宜栽培区。

## 辽榛1号

树种：榛子  
类别：品种  
编号：国S-SV-CH-018-2017  
申请人：中国林业科学研究院林业研究所、辽宁省经济林研究所  
北京市延庆区中榛果业研究所  
选育人：王贵禧、梁维坚、马庆华、解明、郑金利、赵天田、梁丽松、王道明、赵峰

学名：*Corylus heterophylla* × *C. avellana* ‘Liaozhen 1 hao’  
通过类别：审定

### 品种特性

树势强壮，11年生树高4.6 m，冠幅直径3.5 m，辽宁大连9月上旬成熟。坚果椭圆形，灰褐色，平均单果重2.3 g，果壳厚度1.27 mm，出仁率45%，脂肪含量58.14%，可溶性蛋白含量53.29 mg/g，总糖含量15.63 %。盛果期亩产可达310kg。

### 主要用途

烤制食用或加工。

### 栽培技术要点

选择平地或25°以下的坡地建园，土层60 cm 以上，pH 值5.5-8.0。平地株行距3m×3 m、2.5m×4m或3m×4 m，坡地可适当密植。与‘辽榛2号’、‘辽榛4号’、‘辽榛9号’互为授粉品种。修剪以轻修剪为主，重点防治榛叶白粉病，分期采收。

### 适宜种植范围

辽宁、河北、山东、江苏、安徽等榛子适宜栽培区。

### 辽榛 2 号

树种：榛子  
类别：品种  
编号：国S-SV-CH-019-2017  
申请人：中国林业科学研究院林业研究所、辽宁省经济林研究所  
北京市延庆区中榛果业研究所  
选育人：王贵禧、梁维坚、马庆华、解明、郑金利、赵天田、梁丽松、王道明、赵峰

学名：*Corylus heterophylla* × *C. avellana* ‘Liaozhen 2 hao’  
通过类别：审定

### 品种特性

树势中庸，11年生树高4.2 m，冠幅直径3.8 m，辽宁大连9月上旬成熟。坚果圆形，黄褐色，平均单果重2.1 g，果壳厚度1.13 mm，出仁率45%，脂肪含量59.33%，可溶性蛋白含量54.20 mg/g，总糖含量16.32 %。盛果期亩产可达320kg。

### 主要用途

烤制食用或加工。

### 栽培技术要点

选择平地或25°以下的坡地建园，土层60 cm 以上，pH值 5.5-8.0。平地株行距3m×3 m、2.5m×4m或3m×4 m，坡地可适当密植。与‘辽榛1号’、‘辽榛4号’、‘辽榛9号’互为授粉品种。修剪以轻修剪为主，重点防治榛叶白粉病，分期采收。

## 适宜种植范围

辽宁、河北、山东、江苏、安徽等榛子适宜栽培区。

## 辽榛 4 号

树种：榛子 学名：*Corylus heterophylla* × *C. avellana* ‘Liaozhen 4 hao’

类别：品种 通过类别：审定

编号：国S-SV-CH-020-2017

申请人：中国林业科学研究院林业研究所、辽宁省经济林研究所、安徽省林业科学研究院、北京市延庆区中榛果业研究所

选育人：王贵禧、梁维坚、马庆华、解明、郑金利、赵天田、梁丽松、王道明、王陆军、赵峰

## 品种特性

树势强壮，11年生树高5.m，冠幅直径3.9 m，辽宁大连8月下旬成熟。坚果圆形，黄色；平均单果重2.0 g，果壳厚度1.00 mm以下，出仁率47%，脂肪含量60.67%，可溶性蛋白含量58.07 mg/g，总糖含量15.12 %。盛果期亩产可达330kg。

## 主要用途

烤制食用或加工。

## 栽培技术要点

选择平地或25°以下的坡地建园，土层60 cm以上，pH值5.5-8.0。平地株行距3m×3 m、2.5m×4m或3m×4 m，坡地可适当密植。与‘辽榛1号’、‘辽榛2号’、‘辽榛9号’互为授粉品种。修剪以轻修剪为主，重点防治榛叶白粉病，分期采收。

## 适宜种植范围

辽宁、北京、河北、山东、山西、江苏、安徽等榛子适宜栽培区。

## 辽榛 9 号

树种：榛子 学名：*Corylus heterophylla* × *C. avellana* ‘Liaozhen 9 hao’

类别：品种 通过类别：审定

编号：国S-SV-CH-021-2017

申请人：中国林业科学研究院林业研究所、辽宁省经济林研究所、北京市延庆区中榛果业研究所

选育人：王贵禧、梁维坚、马庆华、解明、郑金利、赵天田、梁丽松、王道明、赵峰

## 品种特性

树势旺盛，11年生树高5.2m，冠幅直径4.5m，辽宁大连9月上旬成熟。坚果圆形，黄褐色；平均单果重2.6 g，果壳厚度1.45 mm，出仁率45%，脂肪含量57.00%，可溶性蛋白含量57.41 mg/g，总糖含量15.73 %。盛果期亩产可达340kg。

## 主要用途

烤制食用或加工。

## 栽培技术要点

选择平地或25°以下的坡地建园，土层60 cm以上，pH值 5.5-8.0。平地株行距3m×3 m、2.5m×4m或3m×4 m，坡地可适当密植。与‘辽榛1号’、‘辽榛2号’、‘辽榛4号’互为授粉品种。修剪以轻修剪为主，重点防治榛叶白粉病，分期采收。

## 适宜种植范围

辽宁、北京、河北、山东、江苏、安徽等榛子适宜栽培区。

## 中蟠桃 11 号

树种：桃 学名：*Prunus persica* ‘Zhongpantao 11 hao’  
类别：品种 通过类别：审定  
编号：国S-SV-PP-022-2017  
申请人：中国农业科学院郑州果树研究所  
选育人：王力荣、朱更瑞、方伟超、陈昌文、曹珂、冯义彬、王小丽、王新卫

## 品种特性

树姿半开张。河南郑州地区果实7月中下旬成熟，果实生育期120天左右，需冷量800小时。果皮有茸毛，底色黄，果面60%以上着鲜红色，单果重180克，最大果240克；可溶性固形物含量11.6%，总糖含量9.02%，可滴定酸含量0.18%，Vc含量6.84mg/100g。盛果期亩产可达1000kg。

## 主要用途

鲜食。

## 栽培技术要点

采用 2.5m×5m 株行距栽植，冬季修剪时，多留健壮的长果枝，要严格控制树势，防止树冠郁闭。秋施基肥，一般亩施腐熟圈肥 5-8m<sup>3</sup>；在果实成熟前 30 天，每株施 0.5kg 腐熟的饼肥，结合叶面喷施 0.3%的硫酸钾或硝酸钾 2 次。

## 适宜种植范围

河南、山东、新疆等桃适宜栽培区。

## 中桃红玉

树种：桃 学名：*Prunus persica* ‘Zhongtao hongyu’  
类别：品种 通过类别：审定  
编号：国S-SV-PP-023-2017  
申请人：中国农业科学院郑州果树研究所  
选育人：王力荣、朱更瑞、方伟超、陈昌文、曹珂、王新卫、凌国钧

## 品种特性

树势中庸、健壮。河南郑州地区果实6月中旬成熟，果实生育期80天左右，需冷量500小时。果皮有茸毛，果面呈明亮鲜红色；果实圆形，单果重169克，最大果重200克；可溶性

固形物含量12%，总糖含量9.63%，总酸含量0.19%。盛果期亩产可达2500kg。

## 主要用途

鲜食。

## 栽培技术要点

采用 2.5m×5m 株行距栽植，冬季修剪时，多留健壮的长果枝，要严格控制树势，防止树冠郁闭。秋施基肥，一般亩施腐熟圈肥 5-8m<sup>3</sup>；在果实成熟前 30 天，每株施 0.5kg 腐熟的饼肥，结合叶面喷施 0.3%的硫酸钾或硝酸钾 2 次。严格疏花疏果。

## 适宜种植范围

河南、山东等桃适宜栽培区。

## 宁海白

树种：枇杷

学名：*Eriobotrya japonica* 'Ninghaibai'

类别：品种

通过类别：审定

编号：国S-SV-EJ-024-2017

申请人：冯健君

选育人：冯健君、叶建国、陈俊伟、徐红霞、李晓颖

## 品种特性

树势中庸偏强。在浙江省14年生树高2.9m，冠幅2.88m，果实长圆或圆形，在浙江宁波地区，果实5月下旬成熟。果皮淡黄白色，单果重35-55克，最大果重86克，可溶性固形物含量13.6%，蛋白质含量0.4%，还原糖含量11.5%，Vc含量0.65mg/100g。种子数1-4粒/果。盛果期亩产可达600kg。

## 主要用途

鲜食或加工。

## 栽培技术要点

11 月或 3 月建园，株行距 4m×4m，定植穴 1m×1m×0.8m。采用疏删分层形，每年 3 月、6 月修剪，每年施 3 次肥，3 月中下旬疏果，每穗留 1-3 个果，选择牛皮纸袋套袋。注意防治病虫害。

## 适宜种植范围

浙江、江苏、贵州等枇杷适宜栽培区。

## 厚竹

树种：毛竹

学名：*Phyllostachys edulis* 'Pachyloen'

类别：品种

通过类别：审定

编号：国S-SV-PE-025-2017

申请人：江西农业大学

选育人：杨光耀、黎祖尧、施建敏、郭起荣、杨清培、于芬、杜天真、方楷

### 品种特性

秆高可达12m，胸径可达10cm；竹秆略呈四方形或扁圆形，竹秆壁厚，胸高处秆壁厚1.5cm以上，秆壁率50-60%，是等径毛竹的2倍；笋期3月下旬至4月中旬，竹笋实心或近实心。叶、笋、芽中的脯氨酸含量分别为48.73、23.39和48.76 mg/g，均高于毛竹，且差异显著；丙二醛含量分别为34.98、5.27和4.74 mmol/g鲜重。笋用林竹笋亩产可达1000kg。

### 主要用途

笋用。

### 栽培技术要点

移母竹营造笋用林时选择2年生，胸径3 - 4cm母竹，全垦整地，深翻土壤40cm以上；穴的规格60cm×40cm×40cm，栽植密度为3m×4m或4m×4m。每穴施腐熟厩肥20 kg或有机肥10kg，再加复合肥3kg。前4年每年的5月和8月松土施肥一次，施肥量为复合肥100-150kg/亩，11月开沟施有机肥500kg/亩或腐熟厩肥1000kg/亩。

### 适宜种植范围

江西、福建、浙江等毛竹适宜栽培区。

### 皖桑优 1 号

树种：桑树

学名：*Morus multicaulis* 'Wansangyou 1 hao'

类别：品种

通过类别：审定

编号：国S-SV-MM-026-2017

申请人：安徽省农业科学院蚕桑研究所

选育人：汪泰初、李瑞雪、范涛、王钰婷、毕会涛、刘太荣、肖立新、王伟、许涛、高新文、胡钢

### 品种特性

树冠较大，树形稍开展。安徽省合肥地区发芽期4月2日至8日，开叶期4月10日至18日，秋叶硬化期9月中下旬。叶含粗蛋白28.3%，粗脂肪2.4%，还原糖4.5%，粗纤维12.6%，灰分13.7%，桑叶养蚕万头茧层量比对照‘湖桑32号’增产5.68%；百千克叶产茧量增产6.05%。年产叶量可达2000kg/亩。

### 主要用途

饲育蚕。

### 栽培技术要点

宽行密植，株行距0.5m×1.5m，树形养成采用低干养成法。一般3年养成丰产桑园，每亩产枝条1万条左右。多施有机肥；母本园要尽量多留枝条，轻剪梢。

### 适宜种植范围

安徽、山东、河南等桑树适宜栽培区。

## 认定通过品种

### 报春

树种：桃 学名：*Prunus persica* ‘Baochun’  
类别：品种 通过类别：认定3年（2018年3月23日—2021年3月22日）  
编号：国R-SV-PP-001-2017  
申请人：中国农业科学院郑州果树研究所  
选育人：朱更瑞、王力荣、方伟超、曹珂、陈昌文、李全红、刘端明、冯义彬、冯玲玲、王新峰

### 品种特性

早花型观赏桃。树势旺盛，枝条较紧凑，定植后第二年就能开花，花为蔷薇型花。花瓣粉红色，花瓣5轮，花瓣30片左右，外轮花瓣个别萼片化，花朵直径4.95cm；花丝粉白色，48条左右，花药橙黄色略有红色，有花粉。在郑州地区3月18日始花，末花期4月5日，需冷量450小时。

### 主要用途

园林绿化、观光果园以及春节花市、插花。

### 栽培技术要点

盆栽时在夏季应注意多次摘心，为了使树形更紧凑，可以在7月初开始，叶面喷施15%的多效唑200倍液，一周后再喷一次。温室栽培落叶后25-30天就能自然满足需冷量要求，应注意控制进棚时间和温室的温湿度条件，以迎合上市时间。多雨地区注意起垄排水，土壤要疏松，防治流胶病。

### 适宜种植范围

河南、上海等桃适宜栽培区。

### 探春

树种：桃 学名：*Prunus persica* ‘Tanchun’  
类别：品种 通过类别：认定3年（2018年3月23日—2021年3月22日）  
编号：国R-SV-PP-002-2017  
申请人：中国农业科学院郑州果树研究所  
选育人：王力荣、朱更瑞、方伟超、陈昌文、曹珂、刘端明、王小丽、王新卫、冯玲玲、王新峰

### 品种特性

早花型观赏桃。树势旺盛，枝条长。定植后第二年就能开花，花为蔷薇型，花瓣粉红色，花朵直径4.4cm，花瓣4-6轮，花瓣数20-25枚；花丝粉白色，花丝数45枚左右，花药橘红色，有花粉，雌蕊常退化。花有淡香味。在郑州地区3月8日始花，末花期4月1-5日，需冷量400小时。



## 主要用途

园林绿化、观光果园以及插花等。

## 栽培技术要点

生长季需通过摘心、拉枝、扭枝等方法，前期促进分枝，后期控制旺长，必要时叶面喷施 15% 的多效唑 200 倍液，以提高成花量。反季节生产时，注意掌握升温时间，合理控制温度、湿度。

## 适宜种植范围

河南、上海等桃适宜栽培区。

## 迎春

树种：桃

学名：*Prunus persica* ‘Yingchun’

类别：品种

通过类别：认定 3 年（2018 年 3 月 23 日—2021 年 3 月 22 日）

编号：国R-SV-PP-003-2017

申请人：中国农业科学院郑州果树研究所

选育人：王力荣、朱更瑞、方伟超、曹珂、陈昌文、王新卫、刘端明、冯义彬、冯玲玲、王新峰

## 品种特性

早花型观赏桃。树势旺盛。定植后第二年就能开花，花为蔷薇型，花瓣粉红色，花朵直径 4.7 cm，花瓣 4-5 轮，花瓣数 16-24 片，花丝粉白色，66-81 条，有雄蕊瓣化现象，花药橘红色，有花粉，雌蕊 1-2 枚。在郑州地区 3 月 18 日始花，末花期 3 月 29 日，需冷量 450 小时。

## 主要用途

园林绿化、观光果园以及插花等。

## 栽培技术要点

盆栽时在夏季应注意摘心、扭枝处理，前期增加枝量，后期控制旺长。为了缩小树冠枝展，使树形更紧凑，可以在 6 月底到 7 月初，叶面喷施 15% 的多效唑 200 倍液 1—2 次。在进行促早生产时，一般落叶后 25-30 天就能自然满足需冷量要求，升温后 1 个月开花。如果采用遮阴覆盖的方法，20 天即可满足需冷量要求。应注意控制进棚时间和温室的温湿度条件，以迎合上市时间。一般白天温度控制在 20-25℃，夜间温度控制在 5-8℃，湿度控制在 60% 左右，升温 30 天即可开花。

## 适宜种植范围

河南、上海等桃适宜栽培区。

## 元春

树种：桃

学名：*Prunus persica* ‘Yuanchun’

类别：品种

通过类别：认定 3 年（2018 年 3 月 23 日—2021 年 3 月 22 日）

编号：国R-SV-PP-004-2017

申请人：中国农业科学院郑州果树研究所

选育人：王力荣、朱更瑞、方伟超、曹珂、李全红、陈昌文、刘端明、冯义彬、王新卫、冯玲玲、王新峰

### 品种特性

早花型观赏桃。树势旺盛。定植后第二年就能开花，花为蔷薇型花。花瓣红色，花瓣4轮，花瓣23片左右；花朵直径4.65 cm；花丝粉白色，45条左右，少量花丝瓣化；花药橙黄色略有红色，有花粉；雌蕊1枚，或有2枚，花萼2层，红褐色，10片。在郑州地区3月22日始花，末花期4月10日，需冷量550小时。

### 主要用途

园林绿化、观光果园等露地栽培和保护地促早栽培。

### 栽培技术要点

盆栽时在夏季应注意多次摘心，为了使树形更紧凑，可以在7月初开始，叶面喷施15%的多效唑200倍液，一周后再喷一次。温室栽培落叶后25-30天就能自然满足需冷量要求，应注意控制进棚时间和温室的温湿度条件，以迎合上市时间。

### 适宜种植范围

河南、上海等桃适宜栽培区。

## 红菊花

树种：桃

学名：*Prunus persica* 'Hongjuhua'

类别：品种

通过类别：认定3年（2018年3月23日—2021年3月22日）

编号：国R-SV-PP-005-2017

申请人：中国农业科学院郑州果树研究所

选育人：王力荣、朱更瑞、方伟超、曹珂、陈昌文、李全红、刘端明、冯义彬、王小丽、王新卫、冯玲玲、王新峰

### 品种特性

观赏桃。树势旺盛。定植后第二年就能开花，花为菊花型花，花瓣红色，花瓣6轮，花瓣23-27片左右；花朵直径4.4 cm；花丝粉白色，36条左右，少量花丝瓣化；花药橙黄色，有花粉；雌蕊1枚，或有2枚，雌雄蕊等高；花萼2层，红褐色，10片，少量萼片瓣化。在郑州地区4月14日始花，末花期5月2日，需冷量1200小时。

### 主要用途

园林绿化、观光果园和盆栽。

### 栽培技术要点

盆栽时在夏季应注意多次摘心，前期增加分枝量，促进营养生长向生殖生长转化。为使树形更紧凑，可以在7月初开始，叶面喷施15%的多效唑200倍液，一周后再喷一次。由于品种的需冷量长，催花较难。

### 适宜种植范围

河南、上海等桃适宜栽培区。

## 黄水蜜

树种：桃

学名：*Prunus persica* 'Huangshuimi'

类别：品种

通过类别：认定 5 年（2018年3月23日—2023年3月22日）

编号：国R-SV-PP-006-2017

申请人：冯建灿、郑先波、谭彬等

选育人：冯建灿、郑先波、谭彬等

### 品种特性

树姿开张。在河南郑州地区，果实成熟期在6月底7月初，果实发育期85天左右。果实椭圆形到卵圆形，果形指数为1.3，果面茸毛稀少，金黄色，平均单果重160 g，最大果重280 g。可溶性固形物含量12.7%，可溶性糖含量8.89%，总酸含量0.23%，Vc 含量8.14 mg/100g。盛果期亩产可达2500kg。

### 主要用途

鲜食。

### 栽培技术要点

山区、丘陵或瘠薄的土地以株行距 2m×5m 或 3m×4m，平地以株行距 2m×5m 、4m×5m 或 3m×5m 为宜。丰产期应注意增施有机肥，严格疏花疏果，盛果期亩产应控制在 2500 kg 以内。果实发育后期注意防治桃小食心虫、桃蛀螟。

### 适宜种植范围

河南、山东、安徽等桃适宜栽培区。

注：通过认定的林木良种，认定期满后不得作为良种继续使用，应重新进行林木品种审定。

# National list of genetically improved tree varieties

## Certified Varieties

### First generation seed orchard seed of *Pinus taeda* of Changle Forest Farm

**Species:** Loblolly pine

**Scientific name:** *Pinus taeda* ‘Changle linchang 1dai huojusong zhongziyuan zhongzi’

**Type of material:** Seed orchard seeds

**Category of certification:** Certified

**Registration No.:** Guo S-CSO (1)-PT-001-2017

**Applicant:** Research Institute of Subtropical Forestry, Chinese Academy of Forestry; Zhejiang Material Co. Ltd. Changle (Changle Forest Farm)

**Breeders:** Jiang Jingmin, Luan Qifu, Xu Yongqin, Shen Fengqiang, Dong Ruxiang, Zhang Jianzhong, Sun Honggang, Liu Zhaoxi, Huang Xiaobing, Jiang Xiangying, Fang Xiaodong

#### Characteristics:

The average weight of 1000-seeds is 29.1g and the average weight of individual mature cone 47.2g. For 9-year-old trees, the average volume of individual tree is 0.074 m<sup>3</sup>, 30.1 % larger compared with the trees of natural forest. Average basic wood density is 0.421 g/cm<sup>3</sup>, the anti-flexural compressive strength 40.66 MPa, the bending modulus 9.25 GPa, and the bending strength is 82.85 MPa. The content of lignin, holocellulose and alpha-cellulose is 27.19%, 71.19% and 42.37% respectively.

#### Main use:

Used for timber production.

#### Silvicultural techniques:

One-year-old healthy and vigorous containerized or bare root plants are used for planting, late winter and early spring is appropriate seasons for planting. A spacing of 2 m×3 m is used at planting; at the age of 9, the canopy density of the forest is more than 0.8, and the thinning intensity is about 30%, and rotation age is 20-25 years. Attention paid to preventing *Dioryctria splendidella* of young forest.

#### Suitable areas for planting:

Areas suitable for growing Loblolly pine in Zhejiang, Anhui and Jiangxi.

### Relin 7029

**Species:** Teak

**Scientific name:** *Tectona grandis* ‘Relin 7029’

**Type of material:** Introduced exotic variety

**Category of certification:** Certified

**Registration No.:** Guo S- ETS-TG-002-2017

**Applicant:** Research Institute of Tropical Forestry, Chinese Academy of Forestry

**Breeders:** Liang Kunnan, Huang Guihua, Qiu Zhenfei, Zhou Zaizhi, Li Guanqun, Fu Qiang, Yang Zhongyang, Peng Shiyao, Lin Mingping, Tong Qing, Ou Sheng, Qian Jun, Zeng Bingshan, Kuang Bingzhao

**Characteristics:**

Originated in India and introduced into China in 1983. In a 27-year-old provenance trial established in Jianfengling of Hainan, average tree height, DBH, individual volume and wood basic density are 16.04 m, 22.26 cm, 0.426 m<sup>3</sup> and 0.6009 g/cm<sup>3</sup>, respectively, displaying an increases respectively by 17.6%, 28.9%, 82.8% and 28.9% compared to Myanmar provenance used as control. Modulus of rupture, modulus elasticity, impact toughness, and compressive strength parallel to grain increased respectively by 34.0%, 44.6%, 17.6% and 31.4% compared to the Myanmar provenance. In Luodian of Guizhou survival rate after frozen injury is 83.33%, and the survival rate of 10 clones of the Indian provenance varied between 8.33-38.83%.

**Main use:**

Used for timber production.

**Silvicultural techniques:**

Trees planted at a stock density of 990-1320 plants/ha, and soil pH value of the planting site should be 5.5 or above. Adequate base fertilizer, mainly of calcium, magnesium, phosphate and organic fertilizer, applied before planting. Compound fertilizer applied during the peak period of growth in the year of planting. Timely weeding and tending are needed, 1-2 times in the year of planting, 2-3 times in the 2nd-4th year after planting, additional fertilization applied as appropriate. At sites where the pH value is less than 5.0, the base fertilizer should be increased to 1kg of lime and 0.5kg of zeolite per tree.

**Suitable areas for planting:**

Areas suitable for growing teak in Guangdong, Hainan and Yunnan.

**Bofeng 3 hao**

**Species:** Poplar

**Scientific name:** *Populus × euramaricana* ‘Bofeng 3 hao’

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-PE-003-2017

**Applicant:** Research Institute of Forestry, Chinese Academy of Forestry

**Breeders:** Su Xiaohua, Huang Qinjun, Liang Dejun, Dong Yufeng, Qing Shengjun, Ding Changjun, Jiang Yuezhong

**Characteristics:**

Straight stem, narrow crown. In Linghai of Liaoning Province, the 8-year-old tree is on average 17.5 m in height and 31 cm in DBH and 0.50 m<sup>3</sup> in volume, respectively 10.8%, 31.3% and 88.08% larger than control variety 'Gaiyang'; for 9-year-old trees on average, wood basic density 0.33 g/cm<sup>3</sup>, fiber length 965 μm, width 22.6 μm, length/width ratio 42.6, cellulose content 49.77%, holocellulose content 80.83%, lignin content 26.43%. No cold damage occurs at -25 °C.

**Main use:**

Used for pulp production.

**Silvicultural techniques:**

Trees planted at a stock density of 500-1100 plants per hectare. Sites with a flat terrain, soil fertility above average and effective soil layer thicker than 80 cm selected for tree planting. In Jinzhou of Liaoning Province, trees mainly planted in autumn with one-year-old stump root, and in other areas in spring with one-year-old plant stocks, appropriate pruning conducted three years after planting. Fertilization applied from the second year after planting with a nitrogen dosage of 50-200g per plant generally.

**Suitable areas for planting:**

Areas suitable for growing Euroamerican poplar in Liaoning, Shandong and Henan.

**Lubaiyang 1 hao**

**Species:** Poplar

**Scientific name:** *Populus* × 'Lubaiyang1 hao'

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-PL-004-2017

**Applicant:** Li Shanwen

**Breeders:** Li Shanwen, Yao Junxiu, Xu Jinguang, Zhang Youhui, Song Yuepeng, Zhang Zhiyi

**Characteristics:**

Female, straight and round stem, bark dark gray, branching angle less than 45 degrees. In Guanxian of Shandong Province, trees at 7 years of age are on average 10.6 m in height, 13.6 cm in DBH and 0.0525 m<sup>3</sup> in individual volume. The individual volume is 21.2% larger than that of narrow-crown Poplar 3 used as control; at 10 years of age, the wood basic density is 0.3665g/cm<sup>3</sup>, fiber length 1049.1μm, fiber length/width ratio 44.2, and the contents of holocellulose and cellulose is 82.4% and 53.4% respectively. Not resistant to flooding.

**Main use:**

Used for pulp production and farmland shelterbelt forests.

**Silvicultural techniques:**

Trees can be planted in spring, late autumn to early winter, appropriate pruning applied before planting, planting holes are 60 cm×60 cm×60 cm in size, and adequate water applied immediately after planting. Planting spacing is 2 m×3 m, 3 m×3 m and 3 m×4 m. After planting, management measures such as watering, hilling, fertilization, tillage, pruning, and disease and pest control should be carried out in time.

**Suitable areas for planting:**

Areas suitable for growing white poplar in Shandong and Hebei.

**Lubaiyang 2 hao**

**Species:** Poplar

**Scientific name:** *Populus* × ‘Lubaiyang 2 hao’

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-PL-005-2017

**Applicant:** Li Shanwen

**Breeders:** Li Shanwen, Xu Jinguang, Zhang Youhui, An Xinmin, Song Yuepeng, Zhang Zhiyi

**Characteristics:**

Female, straight and round stem, bark greyish-green, branching angle less than 45 degrees. In Guanxian of Shandong Province, trees at 7 years of age are on average 11.4 m in height, 13.7 cm in DBH and 0.0737 m<sup>3</sup> in individual volume. The individual volume is 70.1% larger than that of narrow-crown Poplar 3 used as control; at 10 years of age, the wood basic density is 0.3889 g/cm<sup>3</sup>, fiber length 999.6 μm, fiber length/width ratio 41.7, and the contents of holocellulose and cellulose is 83.1% and 54.3% respectively. Not resistant to flooding.

**Main use:**

Used for pulp production and farmland shelterbelt forests.

**Silvicultural techniques:**

Trees can be planted in spring, late autumn to early winter, appropriate pruning applied before planting, planting holes are 60 cm×60 cm×60 cm in size, and adequate water applied immediately after planting. Planting spacing is 2 m×3 m, 3 m×3 m and 3 m×4 m. After planting, management measures such as watering, hilling, fertilization, tillage, pruning, and disease and pest control should be carried out in time.

**Suitable areas for planting:**

Areas suitable for growing white poplar in Shandong and Hebei.

## **Zhongyan 10 hao**

**Species:** *Acacia*

**Scientific name:** *Acacia mangium* × *A. auriculiformis* ‘Zhongyan 10 hao’

**Type of material:** Introduced exotic variety

**Category of certification:** Certified

**Registration No.:** Guo S-ETS-AM-006-2017

**Applicant:** Research Institute of Forestry, Chinese Academy of Forestry

**Breeders:** Zong Yichen, Zheng Yongqi, Liu Xinhua, Hong Xiaolong, Zou Shaoying, Duan Fuwen

### **Characteristics:**

The variety is introduced from Vietnamese Academy of Forestry. Straight and round stem, root system with large amount of rhizobium that can fix nitrogen. In Jiangmen of Guangdong province, average height, DBH, individual volume, stocking volume and wood basic density of 4-year-old tree is 8.4 m, 9.7 cm, 0.0310 m<sup>3</sup>, 41.4 m<sup>3</sup>/ha and 0.417 g/cm<sup>3</sup> respectively, displaying corresponding increases of 25.4%, 21.3%, 84.5%, 21.3% and 84.5% compared to *Acacia mangium*.

### **Main use:**

Used for panel and construction wood production as well as for fuelwood production.

### **Silvicultural techniques:**

Trees usually planted in spring, and suitable planting time in South China is around Qingming Festival. Planting sites selected in mountains and hills below 1000m elevation, with deep and acidic soil and good drainage. Trees planted at a spacing of 2.5 m × 3.0 m, using young stocks with a height of 20-30cm, ground diameter 0.3cm or above. During the first year after planting, tending and weeding need to be carried out in July -August and November-December to prevent from shading by the weeds. Not resistant to flooding, avoid water accumulation in forestland.

### **Suitable areas for planting:**

Areas suitable for growing Acacias in Guangdong, Guangxi, Fujian and Yunnan.

## **Sijilan**

**Species:** Lilac

**Scientific name:** *Syringa* × *meyeri* ‘Sijilan’

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-SM-007-2017

**Applicant:** Institute of Botany, the Chinese Academy of Sciences

**Breeders:** Cui Hongxia, Zang Shuying, Shi Lei, Xia Fei, Tang Yudan, Zhang Jinzheng, Bai



Hongtong, Qin Yongsheng, Qi Fumin, Zhao Guangliang, Zhu Changlong, Wang Ling, Li Xiang, Bai Mingxia, Fu Zhili, Zhao Xinguo, Zhang Jinmei, Li Yanping, Li Hui, Hu Wei, Zhang Yue, Guo Xiaoyu, Liu Xueqin

**Characteristics:**

Plant type upright, flower color deep purple, panicle 15-17cm long, 5-8cm wide. Two flowering seasons per year. In the plain areas of Beijing, the first flowering season is early May, the second one is early July; in Engebei desert region and Baotou mining areas in the deep Daqingshan Mountains of Inner Mongolia, the first flowering season is from late May to early June, and the second one is mid-July. Resistant to pruning.

**Main use:**

Used for gardening, landscaping and roadside planting.

**Silvicultural techniques:**

Planting sites selected at higher terrain not subject to water logging, for loam soil no base fertilizers needed, for rock weathered soil or desert sand soil, organic fertilizer (7 m<sup>3</sup> / mu) or compound fertilizer (25 kg/mu) applied as base fertilizer before site preparation, followed by ploughing and furrowing, and higher ridges can be made in colder areas. Either drip irrigation system with either surface or underground pipe lines, or sprinkling irrigation system can be used. Irrigation only applied after planting or during dry season as supplementary water.

**Suitable areas for planting:**

Areas suitable for growing lilac trees in Beijing, Inner Mongolia, Heilongjiang and Qinghai.

## **Huarui**

**Species:** Apple

**Scientific name:** *Malus pumila* 'Huarui'

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-MP-008-2017

**Applicant:** Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences

**Breeders:** Yan Zhenli, Guo Guonan, Zhang Hengtao, Zhang Ruiping, Liu Zhenzhen, Gao Qiming, Li Huifeng, Han Lixin, Wang Hongyan, Liu Limin, Tian Juan

**Characteristics:**

Upright tree form with strong vigor. Fruit oblong to round in shape, medium to large in size, background color green yellow, fruit face bright red, coloring area up to 70%; fruit ripens in late July, average fruit weight is 208g and peeling hardness is 8.3 kg/cm<sup>2</sup>. The content of soluble solids is 14.9%, total acid content is 0.25%, soluble sugar content is 12.02%, and Vc content is 4.99 mg

/100 g. The peak yield is more than 2200 kg/mu.

**Main use:**

Used as fresh fruits.

**Silvicultural techniques:**

Using M9, M26 as intermediate or self-root rootstock, MM106 as self-root rootstock to be planted at a spacing of 1.5-2 m × 3-4 m, with facilities to support the stem. Trees pruned into long narrow spindle form. If seedling rootstock is used, the planting spacing should be 2.5-3.5 m × 4-5 m, and trees pruned into a free spindle form. Varieties of 'Gala', 'Mei ba', 'Fushi' can be used as pollinators. For new orchard, organic fertilizer needs to be applied at planting in small holes near the trees, and organic fertilizer should be applied in autumn every year. Applying strict blossom and fruit thinning; preventing from sunburn.

**Suitable areas for planting:**

Areas suitable for growing apple trees in Henan and Shandong.

## **Saiwaihong**

**Species:** Apple

**Scientific name:** *Malus pumila* 'Saiwaihong'

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-MP-009-2017

**Applicant:** Tongliao Academy of Forestry Sciences

**Breeders:** Wang Baoxia, Ye Xiuyun, Bao Jinshan, Wang Yongfu, Wu Yongjun, Bao Mulin, Bao Aomin, Han Yongzeng

**Characteristics:**

Medium vigor, half-open tree form. In Tongliao of Inner Mongolia, fruit ripens in early September, with a fruit development period of 120 days, and a vegetative growth period of around 180 days. Fruit is long conical in shape, average fruit weight 58.3 g, maximum weight 80 g, fruit color is dark red when ripen, covered with dense powder, soluble solids content 16.9%, reducing sugar content 13.6%, total acid content 6.1 g/kg, Vc content 12.7 mg / 100 g. The average yield in 4-8 years is 2000kg/mu.

**Main use:**

Used as fresh fruits.

**Silvicultural techniques:**

Choose a well-drained site to establish orchard, with a planting spacing of 2.5 m×4.5 m or 3 m×4 m, trees pruned into a small crown or spindle form. Varieties of 'Jinhong', 'Longfeng' and 'K9'

selected as pollinators, at a ratio of 8:1 or 10:1. Base fertilizers applied mainly with organic fertilizer, supplemented with phosphorus potassium fertilizer. Appropriate flower and fruit thinning applied to ensure a yield of 20 to 30kg per tree at 4-8 years of age. Measures taken for disease and pest control.

**Suitable areas for planting:**

Areas suitable for growing apple trees in Inner Mongolia, South Jilin, Shanxi and Shandong.

## **Yueguan**

**Species:** Apple

**Scientific name:** *Malus pumila* 'Yueguan'

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-MP-010-2017

**Applicant:** Liaoning Provincial Fruit Research Institute, China Agricultural University, Liaoning Provincial Academy of Forestry

**Breeders:** Liu Zhi, Wang Dongmei, Lv Tianxing, Yi Kai, Hu Yanwu, Yan Zhongye, Li Tianzhong, Zhu Shouwei, Fu Wenping, Zhang Jinge, Yang Feng, Jiang Xiaojun, Wang Yingda, Huang Jinfeng, He Mingli, Yang Chunyu, Ma Dongjing, Liu Yifei, Yang Yue

**Characteristics:**

Late ripen variety, open tree form with strong vigor. In Xiongyue of Liaoning province, fruits ripen in late October, with a fruit development period of around 165 days, and a vegetative growth period of around 210 days. Fruit is nearly round, fresh red when ripen, with no cover of fruit powder, average individual fruit weight 225 g, maximum individual fruit weight 480 g, soluble solids content 15.4%, soluble sugar content 12.6%, total acid content 0.39%, Vc content 4.38 mg/100 g. Fruit yield during the peak period is around 3000 kg/mu.

**Main use:**

Used as fresh fruits.

**Silvicultural techniques:**

Sunny and leeward site in plain or gentle sloping areas with fertile soil and good drainage selected for orchard establishment. Planting spacing is 3 m×4 m for high rootstocks, 2 m×4 m for dwarfed intermediate rootstocks. Varieties of 'Fushi', 'Gala', 'Shouhong', 'Jinguan', 'Yueyanghong' and 'Hanfu' used as pollinators. Pruning into free spindle form for high rootstock orchard and long thin spindle form for densely planted orchards. Applying strict flower and fruit thinning, and paying attention to water and fertilizer management.

**Suitable areas for planting:**

Areas suitable for growing apple trees in Liaoning, Hebei and Jiangsu.

## **Yueyan**

**Species:** Apple

**Scientific name:** *Malus pumila* 'Yueyan'

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-MP-011-2017

**Applicant:** Liaoning Provincial Fruit Research Institute, China Agricultural University, Liaoning Provincial Academy of Forestry

**Breeders:** Yi Kai, Wang Dongmei, Liu Zhi, Lv Tianxing, Jia Binying, Yan Zhongye, Li Tianzhong, Zhang Yuming, Yang Liyuan, Sun Shengjiu, Zhang Jinge, Jiang Xiaojun, Yang Feng, Huang Jinfeng, Wang Yingda, Yang Hongyan, Bu Pengtu, Zheng Ying

**Characteristics:**

Medium ripen variety, branching crown with strong vigor. In Xiongyue of Liaoning province, fruits ripen in early September, with a fruit development period of around 125 days, and a vegetative growth period of around 200 days. Fruit is long conic in shape, fresh red in color when ripen, with a cover of few fruit powders, average individual fruit weight is 240g, with a maximum of 309 g, soluble solids content 13.4%, soluble sugar content 11.53%, total acid content 0.42%, Vc content 2.42 mg/ 100 g. No need to bag the fruits. Fruit yield during the peak period is around 2000 kg/mu.

**Main use:**

Used as fresh fruits.

**Silvicultural techniques:**

*Malus hupehensis* and *Malus baccata* Borkh are suitable species for high rootstock, planting spacing is 2 m×4 m. GM256, SH, and 'Liaozhen 2 hao' are suitable clones or varieties for low root stock, with a planting spacing of 1.5 m×4m. Varieties of 'Fushi', 'Gala', 'Shouhong', 'Jinguan', 'Yueyanghong' and 'Hanfu' can be used as pollinators. High rootstock tree can be pruned into slender spindle form, and low root stock tree into high spindle form.

**Suitable areas for planting:**

Areas suitable for growing apple trees in Liaoning, Hebei and Jiangsu.

## Yuehua

**Species:** Apple

**Scientific name:** *Malus pumila* 'Yuehua'

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-MP-012-2017

**Applicant:** Liaoning Provincial Fruit Research Institute, China Agricultural University, Liaoning Provincial Academy of Forestry

**Breeders:** Liu Zhi, Wang Dongmei, Yi Kai, Zhang Jinge, Ge Fang, Yan Zhongye, Lv Tianxing, Li Tianzhong, Song Zhanbao, Gao Fuyong, Yang Feng, Huang Jinfeng, Wang Yingda, He Mingli, Jiang Xiaojun, Meng Fanjin, Zhang Suqing

**Characteristics:**

Late ripen variety, large tree size, open tree form with strong vigor. In Xiongyue of Liaoning province, fruits ripen in mid and late October, with a fruit development period of around 160 days, and a vegetative growth period of around 210 days. Fruit is long circular in shape, fresh red in color when ripen, with no cover of fruit powders, average individual fruit weight is 215g, with a maximum of 325 g, soluble solids content 15.5%, soluble sugar content 12.7%, total acid content 0.37%, Vc content 2.53 mg/ 100 g. Fruit yield during the peak period is around 2500 kg/mu.

**Main use:**

Used as fresh fruits.

**Silvicultural techniques:**

Sunny and leeward site in plain or gentle sloping areas with fertile soil and good drainage selected for orchard establishment. Planting spacing is 3 m×5 m for high rootstocks, 1.5 m×3.5 m for low rootstocks. Varieties of 'Fushi', 'Gala', 'Shouhong', 'Jinguan', 'Yueyanghong' and 'Hanfu' can be used as pollinators. Pruning into free spindle form for high rootstock orchards and long thin spindle form for densely planted orchards.

**Suitable areas for planting:**

Areas suitable for growing apple trees in Liaoning, Hebei and Jiangsu.

## **Ruidu xiangyu**

**Species:** Grape

**Scientific name:** *Vitis vinifera* 'Ruidu xiangyu'

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-VV-013-2017

**Applicant:** Beijing Academy of Forestry and Pomology Sciences

**Breeders:** Xu Haiying, Sun Lei, Yan Ailing, Zhang Guojun, Sun Qibao, Gong Linzhong, Lu Huiling, Yang Lili, Wang Huiling, Wang Xiaoyue, Ren Jiancheng, Hu Xixi, Lu Lijuan, Wang Furong, Xiao Lizhen, Zhou Junyong, QinYang

**Characteristics:**

Early ripen variety, moderate or slightly strong vigor, fruit cluster is long conical with an average clusters weight of 432.0 g. Pericarp yellow-green, with thin fruit powder covered, fruit is ovate or ovoid, with an average individual weight of 6.3 g, and a maximum of 8.0 g, moderate rose fragrance, soluble solids content 16.2%, total sugar content 18.85%, and the titration acid content 0.29%, Vc content 20.05 mg/ 100 g. Each fruit has 3-4 seeds. Fruit ripens in August 10th-15th, with an average growth period of about 120 days, Fruit yield during the peak period is around 1500 kg/mu.

**Main use:**

Used as fresh fruits.

**Silvicultural techniques:**

When cultivated with espalier form, the planting density should be reasonably planned, and the winter pruning is appropriate on short and extremely short tips. Slight topping applied before flowering. When cultivated in greenhouse using vertical stem and horizontal main vines, new shoots kept at an angle of around 90 ° with the main vine, each branch left with 1-2 spicas which are pruned before flowering, in order to keep the fruit cluster at a weight of around 500 g. Attention paid to heightening the fruiting sites and enhancing ventilation in the bottom of plants in order to reduce fruit pests and diseases.

**Suitable areas for planting:**

Cultivated in open field or rain-proof facilities in Beijing, Hebei, Anhui, Hubei and other provinces, but in facilities in Heilongjiang.

**Zhenzhuyou**

**Species:** Apricot

**Scientific name:** *Armeniaca vulgaris* ‘Zhenzhuyou’

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-AV-014-2017

**Applicant:** Fang Lizhang

**Breeders:** Fang Lizhang, Fang Tianhui, Xu Ying, Chen Xuesen

**Characteristics:**

Small deciduous tree, with a half open form. Fruit oblong, orange yellow when ripen, with a smooth surface as if covering with a layer of grease, ripens around June 20th in Shandong province, with an average fruit weight of 26.9 g and a maximum of 38 g, soluble solids content 14.3%, titratable acid 0.57%, Vc content 11.3 mg / 100 g. Fruit yield during peak period can reach 2000 kg/mu.

**Main use:**

Used as fresh fruit or processed food.

**Silvicultural techniques:**

Sunny and leeward sites in mountainous and hilly land selected for orchard establishment, deep ploughing and enlarging planting holes conducted for poor soils to ensure an active soil layer deeper than 60 cm. 2-year-old large plants on apricot rootstock used for orchard planting at a spacing of 3 m×4 m. 'Jintaiyang' and other apricot varieties can be used as pollinators. Annual pruning applied and attention paid to fruit thinning.

**Suitable areas for planting:**

Areas suitable for growing apricot trees in Shandong, Beijing, Hebei, Inner Mongolia, Anhui and

Gansu.

## **Caihong**

**Species:** Cherry

**Scientific name:** *Prunus avium* 'Caihong'

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-PA-015-2017

**Applicant:** Beijing Academy of Forestry and Pomology Sciences

**Breeders:** Zhang Kaichun, Zhang Xiaoming, Yan Guohua, Zhou Yu, Wang Jing, etc

### **Characteristics:**

Medium to late ripen varieties, ripen in early June in Beijing. Tree form relatively open, fruit oblong, full orange color when completely ripen, with a fruit development period of around 67 days. The average individual fruit weight is 8.0 g, with a maximum of 10.5 g, soluble solid content of 18.9 %. Fruit yield during peak period reaches 750 kg/mu.

### **Main use:**

Used as fresh fruit.

### **Silvicultural techniques:**

A spacing of 3 m×4 m or 2 m×4 m used for planting, and pruned into long spindly form. Summer pruning intensified, at least three times of irrigation applied every year in combination with fertilization. Varieties of 'Leini', 'Xianfeng' and 'Labinsi' used as pollinators, attention paid to pest control for young trees, especially *Cicadella viridis*.

### **Suitable areas for planting:**

Areas suitable for growing cherry trees in Beijing and Gansu.

## **Jinsi 4 hao**

**Species:** Jujube

**Scientific name:** *Ziziphus jujuba* 'Jinsi 4 hao'

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-ZJ-016-2017

**Applicant:** Shandong Institute of Pomology

**Breeders:** Zhang Qiong, Wang Zhongtang, Shan Gonghua, Wang Bin, Guo Yuxin, Zhou Guangfang, Yang Maolin, Zheng Baoqiang, Kong Decang, Liu Jianhua, Cao Ming

### **Characteristics:**

Open tree form. In Taian of Shandong Province, fruit surface fully red from the end of September to early October. Fruit is cylindrical in shape and fully ripens in early October. The average fruit weight is 12.0 g, total acid content 2.65 g/kg, total sugar content 27.79 g/kg, soluble solid content 37.9%, Vc content 284.15mg/ 100g; the edible proportion is 97.3% and dried proportion is 55%. Fruit yield during peak period reaches 1000kg/mu.

**Main use:**

Used as fresh fruit or dried Chinese jujube.

**Silvicultural techniques:**

In plain areas, planting spacing is 2 m×4 m or 3 m×4 m, and in mountain areas planted along contours with a tree-tree distance of 2-3 m. Suitable for pruning into small crown with sparse layers or main trunk with sparse layers. No need to girdle and configure the pollination trees, topping at initial flowering period, spray of 15 mg/L gibberellin during early peak flowering period to promote the fruit setting; additional fertilizers applied before sprouting, before flowering and during the young fruit stage.

**Suitable areas for planting:**

Areas suitable for growing jujube trees in Hebei, Shandong and Yunnan.

## **Dabanhong**

**Species:** Chestnut

**Scientific name:** *Castanea mollissima* ‘Dabanhong’

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-CM-017-2017

**Applicant:** Changli Institute of Pomology, Hebei Academy of Agriculture and Forestry Sciences

**Breeders:** Wang Guangpeng, Shang Heli, Zhang Shuhang, Shen Wenbao, Li Ying, Geng Xiaoming, Guo Yan, Shi Songyu, Zhang Xinfang, Li Xiaoqiang

**Characteristics:**

Open tree form. Bracts elliptic, yellow-green, trifid or cruciform cracking when ripen, with an average of 2.2 kernels of nuts per bract, 38.7% of the yield. Nuts ellipsoidal, reddish brown, glossy, little fuzz, average single grain weight 8.2 g; the fruit is pale yellow with 56.2% water content, 12.5% soluble sugar content, 19.7% starch content, 3.63% protein content and 22.1 mg/100g of Vc. Nut yield during peak period reaches 240 kg/mu.

**Main use:**

Used as sugar fried nuts or processed for food products.

**Silvicultural techniques:**



Seedlings planted for rootstocks and orchard established by grafting, spacing can be 2 m×4 m, orchards thinned to a stocking density of 4 m×4 m when tree crown growing big. Varieties of 'Yanxing' and 'Yanming' can be used as pollinators. Base fertilizer applied immediately after the fruit harvesting, trees pruned into natural open heart shape keeping 3-5 main branches. Pests control mainly for *dichocrocis punctiferalis* and chestnut spider mite.

**Suitable areas for planting:**

Areas suitable for growing *Castanea mollissima* in Hebei and Shanxi.

**Liaozhen 1 hao**

**Species:** Hazelnut

**Scientific name:** *Corylus heterophylla* × *C. avellana* 'Liaozhen 1 hao'

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-CH-018-2017

**Applicant:** Research Institute of Forestry, Chinese Academy of Forestry; Liaoning Institute of Economic Forestry; Yanqing Zhongzhen Fruit Research Institute

**Breeders:** Wang Guixi, Liang Weijian, Ma Qinghua, Xie Ming, Zheng Jinli, Zhao Tiantian, Liang Lisong, Wang Daoming, Zhao Feng

**Characteristics:**

Strong vigor. Average height and crown diameter is respectively 4.6 m and 3.5m at 11 years old. Nut ripens in early September in Dalian, oval in shape and greyish brown in color, with an average individual nut weight of 2.3 g, shell thickness of 1.27 mm, kernel proportion of 45 %, fat content 58.14 %, soluble protein content 53.29 mg/g, total sugar content 15.63 %. Nut yield during peak period reaches 310 kg/mu.

**Main use:**

Used as roasted or processed nut.

**Silvicultural techniques:**

Flat area or slopes less than 25 ° with soil layer more than 60 cm in depth and pH 5.5-8.0 selected for orchard establishment. A spacing of 3 m×3 m, 2.5 m×4 m or 3 m×4 m used in flat areas and a smaller spacing can be used in sloping areas. It is a pollination variety in reciprocal with varieties of 'Liaozhen 2 hao', 'Liaozhen 4 hao' and 'Liaozhen 9 hao'. Light pruning conducted mainly. Disease control focused on hazelnut white powdery mildew. Nuts collected in different stages.

**Suitable areas for planting:**

Areas suitable for growing chestnut in Liaoning, Hebei, Shandong, Jiangsu and Anhui.

## **Liaozhen 2 hao**

**Species:** Hazelnut

**Scientific name:** *Corylus heterophylla* × *C. avellana* ‘Liaozhen 2 hao’

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-CH-019-2017

**Applicant:** Research Institute of Forestry, Chinese Academy of Forestry; Liaoning Institute of Economic Forestry; Yanqing Zhongzhen Fruit Research Institute

**Breeders:** Wang Guixi, Liang Weijian, Ma Qinghua, Xie Ming, Zheng Jinli, Zhao Tiantian, Liang Lisong, Wang Daoming, Zhao Feng

### **Characteristics:**

Moderate vigor. Average height and crown diameter is respectively 4.2 m and 3.8 m at 11 years old. Nut ripens in early September in Dalian, round in shape and yellowish brown in color, with an average individual nut weight of 2.1 g, shell thickness of 1.13mm, kernel proportion of 45 %, fat content 59.33 %, soluble protein content 54.20 mg/g, total sugar content 16.32%. Nut yield during peak period reaches 320 kg/mu.

### **Main use:**

Used as roasted or processed nut.

### **Silvicultural techniques:**

Flat area or slopes less than 25 ° with soil layer more than 60 cm in depth and pH 5.5-8.0 selected for orchard establishment. A spacing of 3 m×3 m, 2.5 m×4 m or 3 m×4 m used in flat areas and a smaller spacing can be used in sloping areas. It is a pollination variety in reciprocal with varieties of ‘Liaozhen 1 hao’, ‘Liaozhen 4 hao’ and ‘Liaozhen 9 hao’. Light pruning conducted mainly. Disease control focused on hazelnut white powdery mildew. Nuts collected in different stages.

### **Suitable areas for planting:**

Areas suitable for growing chestnut in Liaoning, Hebei, Shandong, Jiangsu and Anhui.

## **Liaozhen 4 hao**

**Species:** Hazelnut

**Scientific name:** *Corylus heterophylla* × *C. avellana* ‘Liaozhen 4 hao’

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-CH-020-2017

**Applicant:** Research Institute of Forestry, Chinese Academy of Forestry; Liaoning Institute of Economic Forestry; Anhui Academy of Forestry; Yanqing Zhongzhen Fruit Research Institute

**Breeders:** Wang Guixi, Liang Weijian, Ma Qinghua, Xie Ming, Zheng Jinli, Zhao Tiantian, Liang Lisong, Wang Daoming, Wang Lujun, Zhao Feng

**Characteristics:**

Strong vigor. Average height and crown diameter is respectively 5.0 m and 3.9 m at 11 years old. Nut ripens in late August in Dalian, round in shape and yellow in color, with an average individual nut weight of 2.0 g, shell thickness of 1.00 mm, kernel proportion of 47%, fat content 60.67%, soluble protein content 58.07 mg/g, and total sugar content 15.12%. Nut yield during peak period reaches 330 kg/mu.

**Main use:**

Used as roasted or processed nuts.

**Silvicultural techniques:**

Flat area or slopes less than 25 ° with soil layer more than 60 cm in depth and pH 5.5-8.0 selected for orchard establishment. A spacing of 3 m×3 m, 2.5 m×4 m or 3 m×4 m used in flat areas and a smaller spacing can be used in sloping areas. It is a pollination variety in reciprocal with varieties of ‘Liaozhen 1 hao’, ‘Liaozhen 2 hao’ and ‘Liaozhen 9 hao’. Light pruning conducted mainly. Disease control focused on hazelnut white powdery mildew. Nuts collected in different stages.

**Suitable areas for planting:**

Areas suitable for growing chestnut in Liaoning, Beijing, Hebei, Shandong, Shanxi, Jiangsu and Anhui.

## **Liaozhen 9 hao**

**Species:** Hazelnut

**Scientific name:** *Corylus heterophylla* × *C. avellana* ‘Liaozhen 9 hao’

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-CH-021-2017

**Applicant:** Research Institute of Forestry, Chinese Academy of Forestry; Liaoning Institute of Economic Forestry; Yanqing Zhongzhen Fruit Research Institute

**Breeders:** Wang Guixi, Liang Weijian, Ma Qinghua, Xie Ming, Zheng Jinli, Zhao Tiantian, Liang Lisong, Wang Daoming, Zhao Feng

**Characteristics:**

Strong vigor. Average height and crown diameter is respectively 5.2 m and 4.5 m at 11 years old. Nut ripens in early September in Dalian, round in shape and yellowish brown in color, with an average individual nut weight of 2.6 g, shell thickness of 1.45 mm, kernel proportion of 45 %, fat content 57.00 %, soluble protein content 57.41 mg/g, total sugar content 15.73%. Nut yield during

peak period reaches 340 kg/mu.

**Main use:**

Used as roasted or processed nut.

**Silvicultural techniques:**

Flat area or slopes less than 25 ° with soil layer more than 60 cm in depth and pH 5.5-8.0 selected for orchard establishment. A spacing of 3 m×3 m, 2.5 m ×4 m or 3 m×4 m used in flat areas and a smaller spacing can be used in sloping areas. It is a pollination variety in reciprocal with varieties of ‘Liaozhen 1 hao’, ‘Liaozhen 2 hao’ and ‘Liaozhen 4 hao’. Light pruning conducted mainly. Disease control focused on the key to control hazelnut white powdery mildew. Nuts collected in different stages.

**Suitable areas for planting:**

Areas suitable for growing chestnut in Liaoning, Beijing, Hebei, Shandong, Jiangsu and Anhui.

## **Zhongpantao 11 hao**

**Species:** Peach

**Scientific name:** *Prunus persica* ‘Zhongpantao 11 hao’

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-PP-022-2017

**Applicant:** Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences

**Breeders:** Wang Lirong, Zhu Gengrui, Fang Weichao, Chen Changwen, Cao Ke, Feng Yibin, Wang Xiaoli, Wang Xinwei

**Characteristics:**

Half open tree form. Fruits ripen in mid and late July in Zhengzhou of Henan province, with a fruit development period of around 120 days, and a cold period of 800 hours. Pericarp haired, with a background color of yellow, more than 60% of fruit surface bright red, with an individual fruit weight of 180 g and a maximum of 240 g; the content of soluble solids is 11.6 %, total sugar content 9.02%, titrable acid content 0.18%, and Vc content 6.84 mg/ 100 g. Fruit yield during peak period can reach 1000 kg/mu.

**Main use:**

Used as fresh fruit.

**Silvicultural techniques:**

A spacing of 2.5 m×5 m is used for planting. Winter pruning keeps more healthy long fruiting branches, strict control of tree vigor applied to prevent canopy closure. Base fertilizer applied in autumn, usually 5-8m<sup>3</sup>/mu thoroughly decomposed manure; 0.5kg of thoroughly decomposed

fertilizer-disc applied to each tree 30 days prior to fruit ripening, combined with 2 times of spray of 0.3% potassium sulfate or potassium nitrate on the leaves.

**Suitable areas for planting:**

Areas suitable for growing peach trees in Henan, Shandong and Xinjiang.

**Zhongtao hongyu**

**Species:** Peach

**Scientific name:** *Prunus persica* 'Zhongtao hongyu'

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-PP-023-2017

**Applicant:** Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences

**Breeders:** Wang Lirong, Zhu Gengrui, Fang Weichao, Chen Changwen, Cao Ke, Wang Xinwei, Ling Guojun

**Characteristics:**

Trees are moderately vigorous, healthy and strong. Fruits ripen in mid-June in Zhengzhou of Henan province, with a fruit development period of around 80 days, and a cold period of 500 hours. Pericarp is haired, with bright red fruit surface. Fruit is round with an individual fruit weight of 169 g and a maximum of 200 g; the content of soluble solids is 12.0 %, total sugar content 9.63%, total acid content 0.19%. Fruit yield during peak period can reach 2500 kg/mu.

**Main use:**

Used as fresh fruit.

**Silvicultural techniques:**

A spacing of 2.5 m×5 m is used for planting. Winter pruning keeps more healthy long fruiting branches, strict control of tree vigor applied to prevent canopy closure. Base fertilizer applied in autumn, usually 5-8 m<sup>3</sup>/mu thoroughly decomposed manure; 0.5 kg of thoroughly decomposed fertilizer-disc applied to each tree 30 days prior to fruit ripening, combined with 2 times of spray of 0.3% potassium sulfate or potassium nitrate on the leaves. Strict blossom and fruit thinning applied.

**Suitable areas for planting:**

Areas suitable for growing peach trees in Henan and Shandong.

**Ninghaibai**

**Species:** Loquat

**Scientific name:** *Eriobotrya japonica* 'Ninghaibai'

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-EJ-024-2017

**Applicant:** Feng Jianjun

**Breeders:** Feng Jianjun, Ye Jianguo, Chen Junwei, Xu Hongxia, Li Xiaoying

**Characteristics:**

Trees are moderately to slightly strong vigorous. In Zhejiang province, average height and crown width of 14-year-old tree is 2.9 m and 2.88 m respectively. Fruit is oval or round, and ripens in later May in Ningbo of Zhejiang province with a yellowish white pericarp, an average individual fruit weight of 35-55 g and a maximum weight of 86 g, soluble solid content of 13.6%, protein content of 0.4%, reducing sugar content of 11.5%, and Vc content of 0.65 mg/ 100 g. Each fruit contains 1-4 seeds. Fruit yield during peak period can reach 600 kg/mu.

**Main use:**

Used as fresh fruit or processed food.

**Silvicultural techniques:**

Orchard established in November or March, with a spacing of 4 m×4 m for tree planting, planting holes in size of 1 m×1 m×0.8 m. Pruning conducted in March and June every year to have a sparsely layered crown. 3 times of fertilization applied on a yearly basis, fruit thinning conducted in middle and late March, keeping 1-3 fruits for each fruit cluster, and fruits are bagged with kraft paper. Attention paid to disease and pest control.

**Suitable areas for planting:**

Areas suitable for growing loquat trees in Zhejiang, Jiangsu and Guizhou.

## **Thick bamboo**

**Species:** Moso bamboo

**Scientific name:** *Phyllostachys edulis* ‘Pachyloen’

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-PE-025-2017

**Applicant:** Jiangxi Agricultural University

**Breeders:** Yang Guangyao, Li Zuyao, Shi Jianmin, Guo Qirong, Yang Qingpei, Yu Fen, Du Tianzhen, Fang Kai

**Characteristics:**

Stem can reach a height of 12 m, and a DBH of 10 cm. Bamboo stem is slightly square or oblong, with a thick wall more than 1.5cm at breast height, and a wall thickness to stem diameter proportion of 50-60%, doubling the proportion compared to moso bamboo with same diameter.

The bamboo shoots from late March to mid-April, with solid or nearly solid core. The content of proline in leaves, bamboo shoots and buds are 48.73, 23.39 and 48.76 mg/g respectively, all higher than those of moso bamboo, and the difference is significant. The content of malondialdehyde is 34.98, 5.27 and 4.74 mmol/g respectively. The yield of bamboo shoots can reach 1000 kg/ mu.

**Main use:**

Used for production of bamboo shoots.

**Silvicultural techniques:**

2-year-old Bamboo plants with a DBH of 3-4 cm selected for production of bamboo shoots. Site preparation is done by complete ploughing with a depth of more than 40cm. Planting holes prepared in size of 60 cm×40 cm×40 cm, with a spacing of 3 m×4 m or 4 m×4m. 20 kg fully decomposed manure or 10kg organic fertilizer with 3 kg additional compound fertilizer applied to each planting hole. In the first four years, fertilization and scarification should be applied once every May and August with a dosage of 100-150kg/mu of compound fertilizer, 500kg/mu of organic fertilizer or 1000kg/mu of manure in November.

**Suitable areas for planting:**

Areas suitable for growing Bamboo in Jiangxi, Fujian and Zhejiang.

## **Wansangyou 1 hao**

**Species:** Mulberry

**Scientific name:** *Morus multicaulis* ‘Wansangyou 1 hao’

**Type of material:** Variety

**Category of certification:** Certified

**Registration No.:** Guo S-SV-MM-026-2017

**Applicant:** Institute of Sericulture, Anhui Academy of Agricultural Sciences

**Breeders:** Wang Taichu, Li Ruixue, Fan Tao, Wang Yuting, Bi Huitao, Liu Tairong, Xiao Lixin, Wang Wei, Xu Tao, Gao Xinwen, Hu Gang

**Characteristics:**

The trees have a relatively large crown and slightly open form. Germination period from April 2nd-8th, leaf spreading period from April 10th-18th, and autumn hardening period in mid and late September in Hefei of Anhui province. The leaf contains crude protein 28.3%, crude fat 2.4%, reducing sugar 4.5%, crude fiber 12.6%, ash 13.7%, the number of cocoons is increased by 5.68% compared to the control variety of ‘Husang 32’. The yield of cocoon per 100 kg leaf increased by 6.05%. The annual yield of leaves can reach 2000 kg/mu.

**Main use:**

Used as fodder for silkworm.

**Silvicultural techniques:**

Trees densely planted in wide rows with spacing of 0.5 m×1.5 m, pruned into low trunk form. In general, high yield mulberry garden can be established in three years, with a production of more than 10,000 branches per mu. Organic fertilizer more frequently applied; branches need to be kept on parental trees as many as possible, tips slightly pruned.

**Suitable areas for planting:**

Areas suitable for growing mulberry in Anhui, Shandong and Henan.

## Pre-certified varieties

**Baochun**

**Species:** Peach

**Scientific name:** *Prunus persica* 'Baochun'

**Type of material:** Variety

**Category of certification:** Pre-certified for 3 years (From March 23, 2018 to March 22, 2021)

**Registration No.:** Guo R-SV-PP-001-2017

**Applicant:** Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences

**Breeders:** Zhu Gengrui, Wang Lirong, Fang Weichao, Cao Ke, Chen Changwen, Li Quanhong, Liu Duanming, Feng Yibin, Feng Lingling, Wang Xinfeng

**Characteristics:**

Early flowering ornamental peach tree, with strong vigor and compact branches. Trees start to flower from the second year after planting. Flowers are rose-like, petals pink and arranged in 5 rounds, with a total of approximately 30 petals, outer petals occasionally change into sepals, flower diameter is 4.95cm; approximately 48 filaments pink white, anthers orange yellow with slightly red, pollen exists. The flower starts to blossom on March 18th in Zhengzhou, and the final flowering period is April 5th. It needs 450 hours of cold for flowering.

**Main use:**

Used for garden greening, sightseeing orchard and cut flowers for Spring Festival flower market.

**Silvicultural techniques:**

Multiple toppings are needed in summer time when grown in pot, in order to make tree form more compact. 15% paclobutrazol diluted 200 times can be sprayed on leaves from the beginning of July and once again one week later. For greenhouse cultivation, 25-30 days after defoliation can meet the need for cold naturally. Attention paid to the timing of transferring into greenhouse and the temperature and humidity conditions in the greenhouse, in order to match the market needs in



terms of timing. Attention paid to ridging and drainage, keeping soil loose and disease controlled.

**Suitable areas for planting:**

Areas suitable for growing peach trees in Henan and Shanghai.

**Tanchun**

**Species:** Peach

**Scientific name:** *Prunus persica* ‘Tanchun’

**Type of material:** Variety

**Category of certification:** Pre-certified for 3 years (From March 23, 2018 to March 22, 2021)

**Registration No.:** Guo R-SV-PP-002-2017

**Applicant:** Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences

**Breeders:** Wang Lirong, Zhu Gengrui, Fang Weichao, Chen Changwen, Cao Ke, Liu Duanming, Wang Xiaoli, Wang Xinwei, Feng Lingling, Wang Xinfeng

**Characteristics:**

Early flowering ornamental peach tree, with strong vigor and long branches. Trees start to flower from the second year after planting. Flowers are rose-like, petals pink with a diameter of 4.4 cm and arranged in 4-6 rounds, with 20-25 petals. Around 45 pink white filaments, anthers orange red, pollen exists. Pistils often degrade. Flowers are slightly fragrant. The initial flowering starts from March 8th in Zhengzhou, and the final flowering period is April 1st-5th. It needs 400 hours of cold for flowering.

**Main use:**

Used for garden greening, sightseeing orchard, flower arranging.

**Silvicultural techniques:**

Measures such as topping, branch stretching and twisting need to be taken in growing season to promote branching at early stage and to control rapid growth at later stage. 15% paclobutrazol diluted 200 times can be sprayed on leaves when necessary to improve flower formation. Attention paid to the timing of increasing temperature for greenhouse cultivation, and to temperature and humidity control.

**Suitable areas for planting:**

Areas suitable for growing peach trees in Henan and Shanghai

**Yingchun**

**Species:** Peach

**Scientific name:** *Prunus persica* ‘Yingchun’

**Type of material:** Variety

**Category of certification:** Pre-certified for 3 years (From March 23, 2018 to March 22, 2021)

**Registration No.:** Guo R-SV-PP-003-2017

**Applicant:** Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences

**Breeders:** Wang Lirong, Zhu Gengrui, Fang Weichao, Cao Ke, Chen Changwen, Wang Xinwei, Liu Duanming, Feng Yibin, Feng Lingling, Wang Xinfeng

**Characteristics:**

Early flowering ornamental peach tree, with strong vigor. Trees start to flower from the second year after planting. Flowers are rose-like, petals pink with a diameter of 4.7 cm and arranged in 4-5 rounds, with 16-24 petals, 66-81 pink white filaments. Stamens occasionally change into petals, anthers orange red, pollen exists, and 1-2 pistils. The initial flowering starts from March 18 in Zhengzhou, and the final flowering period is March 29th. It needs 450 hours of cold for flowering.

**Main use:**

Used for garden greening, sightseeing orchard, cut flowers.

**Silvicultural techniques:**

Topping needed in summer time when grown in pot, branch twisting conducted to promote branching at early stage and to control rapid growth at later stage. To reduce crown size and to make tree form more compact, 15% paclobutrazol diluted 200 times can be sprayed on leaves for 1-2 times from the end of June to the beginning of July. When promoting early flowering, 25-30 days after defoliation can meet the need for cold naturally, and flower one month after temperature rise. If shading cover applied, 20 days can meet the need for cold. Attention paid to the timing of transferring to greenhouse and the temperature and humidity conditions in the greenhouse, in order to match the market needs in terms of timing. Usually the temperature kept at 20-25 °C at the day time and 5-8 °C at night, humidity kept at about 60%, it starts to flower 30 days after temperature rise.

**Suitable areas for planting:**

Areas suitable for growing peach trees in Henan and Shanghai

## **Yuanchun**

**Species:** Peach

**Scientific name:** *Prunus persica* 'Yuanchun'

**Type of material:** Variety

**Category of certification:** Pre-certified for 3 years (From March 23, 2018 to March 22, 2021)

**Registration No.:** Guo R-SV-PP-004-2017

**Applicant:** Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences

**Breeders:** Wang Lirong, Zhu Gengrui, Fang Weichao, Cao Ke, Li Quanhong, Chen Changwen, Liu Duanming, Feng Yibin, Wang Xinwei, Feng Lingling, Wang Xinfeng

**Characteristics:**

Early flowering ornamental peach tree, with strong vigor. Trees start to flower from the second year after planting. Flowers are rose-like, with a diameter of 4.65 cm. Around 23 red petals arranged in 4 rounds. Some of the approximately 45 pink white filaments change into petals, anthers orange yellow with slight red, pollen exists. 1 or 2 pistils and 10 reddish brown sepals arranged in 2 layers. The initial flowering starts from March 22nd in Zhengzhou, and the final flowering period is April 10th. It needs 550 hours of cold for flowering.

**Main use:**

Used for garden greening, sightseeing orchard and other open field cultivation, and cultivation for early flowering at protected sites.

**Silvicultural techniques:**

Multiple toppings are needed in summer time when grown in pot, in order to make tree form more compact. 15% paclobutrazol diluted 200 times can be sprayed on leaves from the beginning of July and once again one week later. For greenhouse cultivation, 25-30 days after defoliation can meet the need for cold naturally. Attention paid to the timing of transferring into greenhouse and the temperature and humidity conditions in the greenhouse, in order to match the market needs in terms of timing.

**Suitable areas for planting:**

Areas suitable for growing peach trees in Henan and Shanghai.

## **Hongjuhua**

**Species:** Peach

**Scientific name:** *Prunus persica* 'Hongjuhua'

**Type of material:** Variety

**Category of certification:** Pre-certified for 3 years (From March 23, 2018 to March 22, 2021)

**Registration No.:** Guo R-SV-PP-005-2017

**Applicant:** Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences

**Breeders:** Wang Lirong, Zhu Gengrui, Fang Weichao, Cao Ke, Chen Changwen, Li Quanhong, Liu Duanming, Feng Yibin, Wang Xiaoli, Wang Xinwei, Feng Lingling, Wang Xinfeng

**Characteristics:**

Ornamental peach, strong vigor. Trees can flower from the second year after planting. Flowers are chrysanthemum-style with a diameter of 4.4 cm. Petals red and arranged in 6 rounds with a total number of 23-27; filament pink-white, with a number of around 36, a few of filaments changed

into petals; the anthers orange yellow, containing pollen, 1 or 2 pistils equal to stamen in length. Sepals occur in 2 layers, reddish brown in color, with a number of 10. A few of sepals change into petals. Initial flowering occurs from April 14th in Zhengzhou, and the final flowering period is May 2nd. It needs 1200 hours of cold for flowering.

**Main use:**

Used for garden greening, sightseeing orchard, pot cultivation.

**Silvicultural techniques:**

Multiple topping in summer time when grown in pot to improve the quantity of branches at early stage and to promote transition from vegetative growth to reproductive growth. To make the trees more compact, leaf spray of 15% paclobutrazol diluted 200 times applied at the beginning of July, and once again a week later. Flower forcing is difficult because of the long-time cold need.

**Suitable areas for planting:**

Areas suitable for growing peach trees in Henan and Shanghai.

## **Huangshuimi**

**Species:** Peach

**Scientific name:** *Prunus persica* 'Huangshuimi'

**Type of material:** Variety

**Category of certification:** Pre-certified for 5 years (From March 23, 2018 to March 22, 2023)

**Registration No.:** Guo R-SV-PP-006-2017

**Applicant:** Feng Jiancan, Zheng Xianbo, Tan Bin, etc.

**Breeders:** Feng Jiancan, Zheng Xianbo, Tan Bin, etc.

**Characteristics:**

Open tree form. Fruits ripen in late June or early July in Zhengzhou of Henan province, with a fruit development period of around 85 days. Fruit oblong to oval, with a fruit shape index of 1.3, fruit surface with scarce hairs, golden, average individual fruit weight 160 g, with a maximum of 280 g. The content of soluble solids is 12.7%, soluble sugar content 8.89%, total acid content 0.23%, Vc content 8.14bmg /100g. Fruit yield during peak period can reach 2500 kg/mu.

**Main use:**

Used as fresh fruit.

**Silvicultural techniques:**

Trees planted at a spacing of 2 m×5 m or 3 m×4 m in mountainous, hilly or barren land, and a spacing of 2 m×5 m, 4 m×5 m or 3 m×5 m in flat areas. Attention paid to increasing the application of organic fertilizer during peak period of production; apply strict flower and fruit thinning. The fruit yield should be controlled within 2500 kg/mu. In the late stage of fruit

development, attention paid to busck and *dichocrocis punctiferalis* control.

**Suitable areas for planting:**

Areas suitable for growing peach trees in Henan, Shandong and Anhui.

**Note: The pre-certified varieties may not be used as improved varieties after expiration and need to be certified again.**