

附件

2022 年度林木良种名录

(中英文)

审定通过品种

1. ‘中林 6 号’楸树

树种：楸树

学名：*Catalpa bungei* ‘Zhonglin 6’

类别：无性系

通过类别：审定

编号：国 S-SC-CB-001-2022

申请人：中国林业科学研究院林业研究所

选育人：王军辉、麻文俊、翟文继、董玉山、赵 鲲、杨桂娟、负慧玲、张 珅、薛惠芬、刘俊龙、解孝满、汪小溪、王 楠、晏 增、赵蓬晖、苗婷婷

品种特性

主干通直，树冠呈卵形。叶片三角状卵形，花萼浅紫色。在河南地区 13 年生平均胸径和树高分别为 17.67 cm 和 13.17 m，10 年生气干密度 0.455 g/cm³，基本密度为 0.408 g/cm³，体积干缩系数为 0.341%，抗压强度、抗弯强度和抗弯弹性模量分别为 15.6 MPa、53.1 MPa、5131.6 MPa。

主要用途

用材树种。

栽培技术要点

植树穴呈方形或圆形，穴径 50-60 cm，深 50 cm；栽植时间在土壤解冻后 2-4 周，采取“三埋、两踩、一提苗”的栽植方法，幼龄期注意抹芽、截顶、定干；栽植 3 年后修枝，使枝下高达到 5 m，条件允许可每年适当浇水施肥。

适宜种植范围

河南、山东、安徽等楸树适宜栽培区。

2. ‘江淮 1 号’美洲黑杨

树种：美洲黑杨

学名：*Populus deltoides* ‘Jianghuai 1’

类别：品种

通过类别：审定

编号：国 S-SV-PD-002-2022

申请人：中国林业科学研究院林业研究所

选育人：丁昌俊、苏晓华、于一苏、黄秦军、赵自成、吴中能、苏雪辉、刘俊龙

品种特性

雄性。树皮深灰褐色，纵裂，树干较通直，树冠长椭圆形。11 年生木材基本密度 0.377 g/cm³，木材气干密度 0.501 g/cm³；纤维长度 0.98 mm，纤维长宽比为 50.5，纤维壁腔比为 0.30。在安徽蚌埠 9 年生胸径、树高、单株材积、单位面积蓄积年生长量分别为 30.24cm、26.2m、0.71 m³ 和 39.03 m³/亩，分别超过对照品种 I-69 杨 7.70%、4.38%、20.06%和 20.05%。

主要用途

用材树种。

栽培技术要点

选择土壤 pH 值中性或稍偏碱性的平原、丘陵、江湖滩地，采用大苗、壮苗植苗或者插干造林，栽前泡足水。中大径级造林，初植密度为 5 m×5 m 或 5 m×6 m；小径级造林，初植密度为 2 m×3 m 或 3 m×3 m。及时抹芽、修枝、整形、浇灌、除草松土、施肥和病虫害防治。

适宜种植范围

安徽、江苏南部、湖北东部等美洲黑杨适宜栽培区。

3. 湿加松家系 EH1223

树种：湿地松×加勒比松

学名：*Pinus elliottii* × *P. caribaea* ‘EH1223’

类别：家系

通过类别：审定

编号：国 S-SF-PE-003-2022

申请人：广东省林业科学研究院

选育人：赵奋成、郭文冰、林昌明、**李宪政**、王 哲、谢国彪、林能庆、程 勇、李福明、曾 明、吴惠姗、吴际友、邹秉章、龙 俊、周保彪、李义良、刘 阳、廖仿炎、张应中

品种特性

湿地松为母本，洪都拉斯加勒比松为父本的杂交子代。各试验点年均单株材积0.0235 m³。木材基本密度为0.549 g/cm³，木材顺纹抗压强度48.0 MPa，抗弯强度122.5 MPa，抗弯弹性模量15420 MPa；纤维长度为2.629 mm，综纤维素含量72.3%，木质素含量23.4%。

主要用途

用材树种。

栽培技术要点

选择光照充足、海拔在 500 m 以下，土壤疏松、微酸性，土层 80 cm 以上造林地。条状或沿等高线水平带状整地，挖穴、施放基肥，以高度 20 cm、地径 3 mm 以上的容器苗春季造林，种植密度 1100 株/hm²。造林后 2-3 年进行适当除草、松土、追肥，8-10 年起做适度间伐。

适宜种植范围

广东、福建、湖南等湿加松适宜栽培区。

4. ‘黄秆’乌哺鸡竹

树种：乌哺鸡竹

学名：*Phyllostachys vivax* ‘Huanggan’

类别：品种

通过类别：审定

编号：国 S-SV-PV-004-2022

申请人：中国林业科学研究院亚热带林业研究所

选育人：袁金玲、岳晋军、张运山、马婧瑕、刘菊容、徐 达、袁 娜、肖志宏、田立斌、林敏水、马乃训、王 云、刘向东

品种特性

水肥充沛条件下秆高可达 8-11 m，胸径 5-8 cm。新竹幼秆呈现近透明状淡硫磺色，节下微被白粉，老秆颜色渐深，呈金黄色。节间长 15-30 cm，竹壁厚 3-7 mm。秆中下部节间

偶有 1 至数条不规则的绿色纵条纹。秆箨背面黄绿色至淡黄色，光滑无毛。箨叶带状披针形，前半部强烈皱折下垂，中部有的带青色条纹，边缘为淡黄色，有的呈黑褐色条纹；叶片浓密，一般长 10-15 cm，宽 1.5-2.0 cm，平展或呈簇状微微下垂。

主要用途

观赏品种。

栽培技术要点

造林选择在海拔 500 m 以下，坡度 20° 以下，土层厚度 50 cm 以上，疏松、肥沃，排水和透气性良好的壤土或沙质壤土，土壤 pH 值 4.5-7.0，地下水位 1 m 以下地区。提前 2-3 个月整地，2 月、6 月梅雨季和 10-11 月造林。选用 1-2 年生无病虫害，无开花枝母竹，或颜色鲜艳，芽体饱满，有 4-5 个壮芽的竹鞭，初植密度在 1500-3000 株/hm²，郁闭前可套种矮秆作物，做好除草松土、施肥、灌溉、排水等常规管理扩鞭养竹。

适宜种植范围

福建、浙江、安徽、湖南等乌哺鸡竹适宜栽培区。

5. ‘元宝’毛竹

树种：毛竹

学名：*Phyllostachys edulis* ‘Yuanbao’

类别：品种

通过类别：审定

编号：国 S-SV-PED-005-2022

申请人：中国林业科学研究院亚热带林业研究所、益阳市林业科学研究所

选育人：岳晋军、袁金玲、肖志宏、田立斌、林敏水、马婧瑕、张新明、徐 达、袁 娜、马乃训、卓秋萍、黄 术、谢文超

品种特性

株高 4-5 m；秆扁圆形，节间局部凹陷，节间上部略粗于下部，节波状，从侧面看呈元宝状；分枝以下节间长通常小于 10 cm，且相邻的节间交互歪斜；分枝角一般为 31° -32°；枝条排列紧密，枝叶浓密。

主要用途

观赏品种。

栽培技术要点

造林选择在年降水量 1000 mm 以上，年平均气温 15℃ 以上，极端低温-13℃ 以上区域的丘陵、平地、溪流两岸、四旁杂地。选择土层厚度 50 cm 以上、疏松、肥沃的壤土或冲积土，排灌条件良好，pH 值为 4.5-7.0 的微酸性或中性土壤。栽植前细致整地，在土壤中拌入适量的有机肥，按照 3 m×3 m 密度，挖长宽深 100 cm×60 cm×60 cm 的栽植穴，以 2-3 年生、生长健壮、无病虫害的竹株做母竹栽植，回填 20-30 cm 表层土。在母竹栽植初期要及时浇水保证土壤水分充足，同时用支架固定秆部以防风倒。

适宜种植范围

湖南、福建、浙江等毛竹适宜栽培区。

6. ‘北玺’葡萄

树种：葡萄

学名：*Vitis vinifera* × *V. amurensis* ‘Beixi’

类别：品种

通过类别：审定

编号：国 S-SV-VV-006-2022

申请人：中国科学院植物研究所

选育人：李绍华、范培格、梁振昌、王利军、段伟、吴本宏、杨美容、黎盛臣、辛海平、匡阳甫、李前隽、代占武、任冲、王毅、徐美隆、谢军、廖宣峰

品种特性

植株生长势中等。果粒着生中等紧密，近圆形，紫黑色，平均粒重1.7 g。果粉厚，果皮厚，果肉与种子不易分离，肉质中等。平均每一结果枝上的果穗数为1.9个，果穗圆锥形。平均穗重188.6 g。果汁颜色为绿黄色。果实可溶性固形物含量23.2%-25.8%，可滴定酸含量7.6-9.2 g/L，出汁率67.4%。成年树体亩产控制在500-600 kg。酿制的葡萄酒深宝石红色，有黑醋栗、蓝莓等小浆果气息，和微弱的玫瑰香气。

主要用途

酿酒。

栽培技术要点

栽植区域土壤以全盐含量不高于2.5 g/kg的壤土、沙砾土等为宜，地下水位不高于1.5 m，年日照时数3000 h以上，无霜期155天以上。平栽株距1.0-1.2 m，行距2.3-3.0 m，栽植密度2775-4350株/hm²。采用直立主干的双臂水平“T”型或单臂水平“倒L”型整形，主干高度60 cm以上。华北地区定植当年不埋土可露地越冬，西北地区幼树（1-2年生）采取隔行取土简易埋土方式越冬，埋土厚度10-20 cm，生长健壮的成年树体不埋土露地越冬。

适宜种植范围

北京、天津、宁夏等葡萄适宜栽培区。

7. ‘北馨’葡萄

树种：葡萄

学名：*Vitis vinifera* × *V. amurensis* ‘Beixin’

类别：品种

通过类别：审定

编号：国 S-SV-VV-007-2022

申请人：中国科学院植物研究所

选育人：李绍华、梁振昌、范培格、王利军、段伟、吴本宏、杨美容、黎盛臣、辛海平、匡阳甫、李前隽、代占武、任冲、王毅、徐美隆、谢军、廖宣峰

品种特性

植株生长势较强。果粒着生中等紧密，近圆形，紫黑色，平均粒重2.3 g。果粉厚，果皮厚，果肉与种子不易分离，肉质中等。平均每一结果枝上的果穗数为2.0个，果穗圆锥形。平均穗重155.5 g。果汁颜色为绿黄色。果实可溶性固形物含量多为22.4%-25.4%，可滴定酸含量多为7.9-9.3 g/L，出汁率67.9%。成年树体亩产控制在600-800 kg。酿制的葡萄酒宝石红色，有微弱的玫瑰香气。

主要用途

酿酒。

栽培技术要点

栽植区域土壤以全盐含量不高于2.5 g/kg的壤土、沙砾土等为宜，地下水位不高于1.5 m，年日照时数3000 h以上，无霜期155天以上。平栽株距1.0-1.2 m，行距2.3-3.0 m，栽植密度2775-4350株/hm²。采用直立主干的双臂水平“T”型或单臂水平“倒L”型整形，主干高度60 cm以上。华北地区定植当年不埋土可露地越冬，西北地区幼树（1-2年生）采取隔行取土简易埋土方式越冬，埋土厚度10-20 cm，生长健壮的成年树体不埋土露地越冬。

适宜种植范围

北京、天津、宁夏等葡萄适宜栽培区。

8. ‘中油蟠9号’桃

树种：桃 学名：*Prunus persica* ‘Zhongyoupan 9’
类别：品种 通过类别：审定
编号：国 S-SV-PP-008-2022
申请人：中国农业科学院郑州果树研究所
选育人：王力荣、方伟超、陈昌文、朱更瑞、曹珂、王新卫、张涛

品种特性

早中熟品种。平均单果重 200 g，最大果重 350 g，果实底色黄，果面近全红；果肉黄色，肉质为半不溶质；风味甜，可溶性固形物含量 15.4%，可溶性糖含量 11.72%，总酸含量 0.22%；在郑州地区果实 7 月上旬成熟，果实发育期约 100 天。盛果期亩产可达 2600 kg。

主要用途

鲜食。

栽培技术要点

在花后45天左右进行疏果，进入盛果期后，果与果之间的距离应大于25 cm。采用套袋栽培，以外黄内黑（红）+油光纸袋为宜。合理施肥，保证树势健壮，结果部位在树体中外部，但应保留足够的叶片，避免太阳直射引起果锈。

适宜种植范围

河南、山东、北京等桃适宜栽培区。

9. ‘中蟠13号’桃

树种：桃 学名：*Prunus persica* ‘Zhongpan 13’
类别：品种 通过类别：审定
编号：国 S-SV-PP-009-2022
申请人：中国农业科学院郑州果树研究所
选育人：王力荣、陈昌文、朱更瑞、方伟超、曹珂、王新卫、王玲玲

品种特性

早中熟品种。树势中强，长、中、短果枝均能结果。果实扁平，平均单果重180 g，最大果重260 g；果皮茸毛短，底色黄，果面60%以上着红色；果肉橙黄色，硬溶质，较耐运输；果实风味甜，可溶性固形物含量13.9%，粘核。在郑州地区果实7月初成熟，果实发育期95天。盛果期亩产可达2900 kg。

主要用途

鲜食。

栽培技术要点

适当控制肥水以控制树势，可以采用起垄栽培，垄高 0.4 m，垄宽 1.2 m。需要加大疏花疏果力度，果间距离应大于 15 cm。多雨地区可套袋。果实硬度一般，适时采收。

适宜种植范围

河南、山东、北京等桃适宜栽培区。

10. ‘齐云山 1 号’ 南酸枣

树种：南酸枣

学名：*Choerospondias axillaris* ‘Qiyunshan 1’

类别：品种

通过类别：审定

编号：国 S-SV-CA-010-2022

申请人：江西齐云山食品有限公司、中国林业科学研究院林业研究所

选育人：刘继延、林富荣、凌华山、古和群、黄锦程、刘洪生、郑勇奇、郭文英、陈后荣、何利人、陈周海、林朝楷

品种特性

树皮灰褐色，浅纵裂。果实长梨形，未成熟时为青色，成熟后为黄色，果肉颜色白色或略带淡黄色，平均单果重29 g。果实10月中下旬始熟，果肉含量53%。蛋白质含量1.31 g/100 g，总氨基酸含量2.16 g/100 g，脂肪含量0.09 g/100g；Vc含量0.24 g/100 g，单宁含量0.81 g/100 g。盛果期亩产可达1100-1300 kg。

主要用途

鲜食或加工。

栽培技术要点

宜选择海拔300-800 m山脚、山谷土层肥厚或较肥厚的红壤、黄红壤宜林地建园。行距7-8 m，株距6-7 m，每公顷配置15-30株雄株作授粉树。定植后在离地约1 m处留3-4个主枝，主枝萌发后在80 cm处短截，每个主枝再留3-4个侧枝以培养冠型。成年树可于4月下旬至5月下旬开花期，株施有机肥10-15kg、石灰1 kg以保花；于6-7月果实膨大期，株施腐熟绿肥与饼肥10 kg，并辅以少量磷钾肥。

适宜种植范围

江西、福建和广东等南酸枣适宜栽培区。

11. ‘齐云山 13 号’ 南酸枣

树种：南酸枣

学名：*Choerospondias axillaris* ‘Qiyunshan 13’

类别：品种

通过类别：审定

编号：国 S-SV-CA-011-2022

申请人：江西齐云山食品有限公司、中国林业科学研究院林业研究所

选育人：刘继延、林富荣、凌华山、古和群、黄锦程、刘洪生、郑勇奇、郭文英、陈后荣、何利人、陈周海、林朝楷

品种特性

树皮灰褐色，浅纵裂。果实形状为倒卵形，未成熟时为青色，成熟后为黄色，果肉颜色白色或略带淡黄色。平均单果重 20.3 g，果实 9 月中旬始熟，果肉含量 56%。蛋白质含量 0.68 g/100 g，总氨基酸含量 2.62 g/100 g，脂肪含量 0.08 g/100 g；Vc 含量 0.16 g/100 g，单宁含量 0.93 g/100 g。盛果期亩产可达 1100-1300 kg。

主要用途

鲜食或加工。

栽培技术要点

宜选择海拔 300-800 m 山脚、山谷土层肥厚或较肥厚的红壤、黄红壤宜林地建园。行距 7-8 m，株距 6-7 m，每公顷配置 15-30 株雄株作授粉树。定植后在离地约 1 m 处留 3-4 个主

枝，主枝萌发后在 80 cm 处短截，每个主枝再留 3-4 个侧枝以培养冠型。成年树可于 4 月下旬至 5 月下旬开花期，株施有机肥 10-15 kg、石灰 1 kg 以保花；于 6-7 月果实膨大期，株施腐熟绿肥与饼肥 10 kg，并辅以少量磷钾肥。

适宜种植范围

江西、福建和广东等南酸枣适宜栽培区。

12. ‘粤椹 74’ 桑

树种：桑树

学名：*Morus atropurpurea* ‘Yueshen 74’

类别：品种

通过类别：审定

编号：国 S-SV-MA-012-2022

申请人：广东省农业科学院蚕业与农产品加工研究所

选育人：唐翠明、罗国庆、吴剑安、吴福泉、杨 琼、陈列辉、肖更生、钟建武、黄炳辉、王振江、戴凡炜、林 森、陈 莲、赵登超

品种特性

叶形为长心形，叶色深绿。成熟果紫黑色，圆筒形，果长径平均 4.5 cm，横径平均 1.7 cm。平均单果重 5.5 g，每米条平均产果量 531.2 g。鲜果有籽，可溶性固形物含量 10.5%-13%，前花青素含量 1.08-1.28 g/100 g。盛果期年产量 1800 kg/亩，产叶量 2200 kg/亩。鲜果汁发酵酒的酒精度 11.8%-13.3% vol，干浸出物 47.5-53.6 g/L，总酸（以酒石酸计）5.58 g/L，总糖（以葡萄糖计）57.5 g/L。

主要用途

桑果酒加工，也可果叶兼用。

栽培技术要点

春季种植，华南地区秋冬季亦可种植。栽植行距 3.5-4.0 m，株距 1.5-2.0 m。树形宜二级主干树形，一级主干高度 80 cm，二级主干 3-4 条，长度 40 cm。每年果期结束后剪枝，把二级主干上的一年生枝条剪留 5-10 cm，除弱留强。每年施冬肥、壮果肥和催枝肥。冬肥宜在冬芽萌动前施入，以生物有机肥或腐熟的花生麸、鸡粪等长效有机肥为主，建园后第一年每株施 100 g，以后每年每株增加 50-100 g，第 5 年后每株每次施 400-500 g。

适宜种植范围

广东、湖北、山东等省桑树适宜栽培区。

13. ‘粤椹大 10’ 桑

树种：桑树

学名：*Morus atropurpurea* ‘Yueshenda 10’

类别：品种

通过类别：审定

编号：国 S-SV-MA-013-2022

申请人：广东省农业科学院蚕业与农产品加工研究所

选育人：陈训庭、罗国庆、唐翠明、吴福泉、肖更生、吴剑安、黄楚辉、任德珠、陈列辉、陈卫东、杨 琼、钟建武、黄炳辉、王振江

品种特性

叶形为心形，叶色翠绿。成熟果紫黑色，圆筒形，果长径平均 4.3 cm，横径平均 1.7 cm。平均单果重 5.4 g，每米条平均产果量 526.2 g。在广东省桑果盛熟期 3 月中旬至 4 月上旬。鲜果无籽，可溶性固形物含量 11.7%-13.2%，前花青素含量 0.95-1.23 g/100 g。盛果期年产量 1500 kg/亩，产叶量 2000 kg/亩。

主要用途

鲜食或加工。

栽培技术要点

长江以北地区宜春季种植。栽植密度一般为 1500-2250 株/hm²，行距 3.5-4.0 m，株距 1.5-2.0 m。树形宜二级主干树形，一级主干高度 80 cm，二级主干 3-4 条，长度 40 cm。每年果期结束后剪枝，把二级主干上的一年生枝条剪留 5-10 cm，除弱留强。每年施冬肥、壮果肥和催枝肥。冬肥宜在冬芽萌动前施入，以生物有机肥或腐熟的花生麸、鸡粪等长效有机肥为主，建园后第一年每株施 100 g，以后每年每株增加 50-100 g，第 5 年后每株每次施 400-500 g。

适宜种植范围

在广东、湖北、山东等桑树适宜栽培区。

14. ‘华仲 16 号’ 杜仲

树种：杜仲

学名：*Eucommia ulmoides* ‘Huazhong 16’

类别：品种

通过类别：审定

编号：国 S-SV-EU-014-2022

申请人：中国林业科学研究院经济林研究所

选育人：王璐、杜兰英、刘丹、杜庆鑫、刘攀峰、杜红岩、孙志强、朱景乐、王运钢、王会娜、仝伯强、行永刚、杨菲、郇凯敏、岳慧、庆军

品种特性

叶片绿色，椭圆形，长 11-14 cm，宽 5-7 cm。果实椭圆形，平均果实长 3.39 cm，宽 1.29 cm，平均种仁长 1.78 cm，宽 0.56 cm，成熟果实千粒重 84 g。果皮杜仲橡胶含量 19%-22%，种仁粗脂肪含量 25%-29%， α -亚麻酸含量 65%-68%。果实 9 月中旬至 10 月上旬成熟。嫁接苗或高接换雌后 2-3 年开花，第 5-6 年进入盛果期。盛果期每年产果量达 150-230 kg/亩。

主要用途

可作为油料植物，鲜果用于榨取亚麻酸油。

栽培技术要点

选‘华仲 5 号’、‘华仲 11 号’、‘华仲 22 号’等品种为授粉树，比例 3%-5%。株行距为 2-4 m \times 3-5 m，或种植成宽窄行，宽行 5-6 m，窄行 2-3 m，株距 3 m。树形宜采用自然开心形、两层疏散开心形、自然纺锤形。萌芽到 7 月份追肥 3-4 次。高接园第 1 年每株每次施 100 g 杜仲果园专用 N、P、K 复合肥，以后每年每株增加 50-100 g，建园 8 年后每株每次施肥量 400 g。

适宜种植范围

河南、山东等杜仲适宜栽培区。

15. ‘华仲 22 号’ 杜仲

树种：杜仲

学名：*Eucommia ulmoides* ‘Huazhong 22’

类别：品种

通过类别：审定

编号：国 S-SV-EU-015-2022

申请人：中国林业科学研究院经济林研究所

选育人：刘攀峰、杜庆鑫、仝伯强、王璐、杜兰英、杜红岩、孙志强、朱景乐、王运钢、

王会娜、行永刚、刘 丹、杨 菲、郇凯敏、岳 慧、庆 军

品种特性

叶片椭圆形，叶长 13-17 cm，叶宽 5-8 cm。在河南省花期 3 月下旬至 4 月上旬，雄花 6-11 枚簇生于当年生枝条基部，平均花径 2.32 cm，花高 2.38 cm，雄蕊长度 1.24 cm，每芽雄蕊数 112-145 个，雄花氨基酸含量可达 20.4%。嫁接苗或高接换优后 2-3 年开花，4-5 年进入盛花期，盛花期可产鲜雄花 240-380 kg/亩。

主要用途

制作雄花茶。

栽培技术要点

作为雄花茶园，栽植密度为 2 m×3 m-2 m×4 m；春季在盛花期采集雄花时，将开花枝留 3-8 个芽剪去；夏季 5-6 月份，在当年生枝条基部进行环剥或环割，环剥宽度 0.3-1.0 cm，留 0.2-0.5 cm 的营养带。每 3-5 年将开花枝组逐步回缩短截一轮。

适宜种植范围

河南、山东等杜仲适宜栽培区。

16. ‘豫金 1 号’忍冬

树种：忍冬

学名：*Lonicera japonica* ‘Yujin 1’

类别：品种

通过类别：审定

编号：国 S-SV-LJ-016-2022

申请人：河南师范大学、封丘县贾庄金银花种植专业合作社

选育人：李建军、赵喜亭、常翠芳、王 兰、刘保彬、张光田、贾国伦、王 君、任美玲、连笑雅、叶成霖、程 婷、董倩倩、常筱沛、黄 倩

品种特性

直立性强，茎枝粗壮。叶形为阔形或卵圆形，叶色浅绿。花千蕾质量 23.95 g，超过对照品种‘封丘大毛花’ 15.64%，绿原酸含量 4.38%，酚酸类总含量（绿原酸、异绿原酸 A、异绿原酸 C）6.55%，木犀草苷含量 0.088%。在河南新乡 5 年生干花亩产可达 77.2 kg。

主要用途

中药材。

栽培技术要点

栽植密度 3150-6150 株/hm²。早春萌芽期间和干旱时，及时浇水，雨季及时排水；入冬浇一次封冻水。每年追肥 4 次，每次追复合肥 375 kg/hm² 左右。春季及时摘掉金银花茎或分枝顶端部分，促生分枝，疏除密枝。注意病虫害防治，最后一次施药距采收间隔天数不得少于 20 天。

适宜种植范围

河南、河北等忍冬适宜栽培区。

17. ‘中柿 7 号’柿

树种：柿

学名：*Diospyros kaki* ‘Zhongshi 7’

类别：品种

通过类别：审定

编号：国 S-SV-DK-017-2022

申请人：中国林业科学研究院经济林研究所

选育人：刁松锋、李华威、傅建敏、韩卫娟、索玉静、孙 鹏、金 钰、孟海波、李好先、张 悦、范长山、骆 翔、陈利娜、李彦民、张嘉嘉

品种特性

果实亮红色、小果长圆型，单果重约 60g；果实 10 月中旬进入熟期，树上挂果至 12 月中下旬。果实可溶性固形物含量 19%，单宁总含量 2.30 mg/g，可溶性糖含量 29.71 mg/g，水溶性果胶 5.08 mg/g。在河南省定植 4-5 年后进入丰产期，盛果期产量可达 1900 kg/亩。

主要用途

鲜食或加工。

栽培技术要点

造林宜选择以君迁子为砧木的 2 年生苗。适宜密植，根据立地条件可选择株行距 1-4 m × 3-5 m。通过加强春季抹牙和夏季修剪控制树体。可分别在 5 月中下旬和 7 月中下旬增补以氮、钾、镁和钙等为主的叶面肥，以减少大小年现象；果实成熟后至落叶前增施有机肥。

适宜种植范围

河南、山东等柿适宜栽培区。

18. ‘黑山寨 7 号’板栗

树种：板栗

学名：*Castanea mollissima* ‘Heishanzhai 7’

类别：品种

通过类别：审定

编号：国 S-SV-CM-018-2022

申请人：北京市农林科学院

选育人：兰彦平、程丽莉、胡广隆、程运河、江锡兵、黄武刚、周志军、曹庆昌

品种特性

植株生长势较强，树姿半开张。总苞呈椭圆形，每个总苞内坚果数平均 2.3 个。坚果椭圆形，外种皮深褐色，果面茸毛极少，光泽亮；平均单粒重 8.9 g，涩皮易剥离。果肉总糖含量 8.6%，淀粉含量 39.6%，粗纤维含量 1.60%，脂肪含量 0.9%，蛋白质含量 3.86%。钾含量 405 mg/100 g。盛果期产量可达 130 kg/亩。

主要用途

炒食或加工。

栽培技术要点

能适应土层较薄的山地和河滩地种植。山地株行距 4 m × 5 m，河滩地株行距 5 m × 6 m。嫁接当年，对新梢进行 4-5 次摘心和拉枝处理。树形选用自然开心形，主枝 4-5 个，冬剪时，保留全部结果母枝。盛果期树冬剪时，在果前稍长度 7 cm 左右时，每平方米树冠垂直投影面积可留 10-14 个结果母枝。落叶后，主干以及主枝的向阳部位应及时涂白防止日灼。

适宜种植范围

北京、浙江等板栗适宜栽培区。

19. ‘燕平’板栗

树种：板栗
类别：品种
编号：国 S-SV-CM-019-2022
申请人：北京市农林科学院
选育人：兰彦平、程丽莉、胡广隆、程运河、江锡兵、周志军、曹庆昌、兰卫宗

学名：*Castanea mollissima* ‘Yanping’

通过类别：审定

品种特性

树冠较开张。在北京地区 9 月中下旬果实成熟。果实发育期 110 天左右。总苞椭圆形，平均重 58.96 g，每苞平均含坚果 2.8 个，坚果平均单粒重 12.05 g，平均果径 2.63 cm×3.30 cm×2.3 cm，红褐色，有光泽，内果皮易剥离，果肉黄色。坚果总糖含量 7.7%，淀粉含量 34.1%，粗纤维含量 1.60%，脂肪含量 1.7%，蛋白质含量 5.12%。

主要用途

炒食或加工。

栽培技术要点

在平地、河滩地建园株行距以 3 m×4 m 为宜；山地、丘陵薄地株行距以 3 m×3.5 m 为宜。基肥在果实采收后施入。3 月上旬、5 月下旬至 6 月上旬、8 月下旬至 9 月上旬灌水。树形宜选用疏层主干延迟开心形或自然开心形，主枝 4-5 个。每平方米树冠投影面积留结果母枝 8-10 个。病虫害防治以红蜘蛛、桃蛀螟、酮枯病为主。

适宜种植范围

北京、浙江等板栗适宜栽培区。

20. ‘华特’毛花猕猴桃

树种：毛花猕猴桃
类别：品种
编号：国 S-SV-AE-020-2022
申请人：浙江省农业科学院
选育人：张慧琴、谢 鸣、张庆朝、彭尚进、蒋桂华、徐永平、古咸彬、陆玲鸿、郑子洪、鲍金平

学名：*Actinidia eriantha* ‘Huatae’

通过类别：审定

品种特性

植株生长势强。果实长圆柱形，果皮绿褐色，密集灰白色长绒毛，果实软熟时果皮极易剥离，果肉绿色，平均单果重 87.3 g，最大单果重 132.2 g。果实 Vc 含量 628.37 mg/100 g，可溶性固形物含量 14.7%，总酸含量 1.24%，总糖含量 9.0%。盛果期产量 1700 kg/亩。

主要用途

鲜食。

栽培技术要点

造林选择海拔 300-800 m 的丘陵、山坡地。株行距为 4 m×3-4 m。大棚架栽培及“一干两蔓”树形为宜。雌雄株比例 6-8:1，授粉品种‘毛雄 1 号’。重施基肥和有机肥，冬季宜采用短截加疏删的修剪方法，及时更新复壮。

适宜种植范围

浙江、福建、湖北等毛花猕猴桃适宜栽培区。

21. ‘中猕 2 号’美味猕猴桃

树种：美味猕猴桃

学名：*Actinidia chinensis* ‘Zhongmi 2’

类别：品种

通过类别：审定

编号：国 S-SV-AC-021-2022

申请人：中国农业科学院郑州果树研究所

选育人：齐秀娟、方金豹、林苗苗、顾红、钟云鹏、孙雷明、陈锦永、王然、李玉阔、程大伟

品种特性

中熟品种，树势强。果实圆柱形或短圆形，果皮绿色，果面均匀分布黄色硬毛且较难脱落。平均单果重 108 g，最大单果重 145 g，纵径 6.5-7.8 cm，横径 5.8-6.8 cm，果柄长度 2.5-3.8 cm。果肉翠绿，Vc 含量 91.8 mg/100 g，可溶性固形物含量 19.2%，干物质含量 21.1%，可溶性糖含量 12.86%，总酸含量 1.60%。盛果期产量可达 2500 kg/亩。

主要用途

鲜食。

栽培技术要点

在伤流萌芽前进行定植，株行距 3 m×4 m。配置同期开花的美味猕猴桃雄株作为授粉树，比例 5-8:1，也可以采用完全人工授粉。水平大棚架、T 型架或牵引架均可，实行单主干双主蔓管理。树体采用冬季修剪和夏季修剪相结合方式管理。及时疏蕾疏果，长果枝留 4-6 个果，中果枝留 3-4 个果，短果枝留 1-2 个果；夏季树冠下透光率控制在 20%-30%，叶果比 6:1。在雨水较多年份贮藏期需预防软腐病发生。

适宜种植范围

河南、湖北、云南、四川等美味猕猴桃适宜栽培区。

认定通过品种

1. ‘豫林 2 号’香椿

树种：香椿

学名：*Toona sinensis* ‘Yulin 2’

类别：无性系

通过类别：认定 5 年（2022 年 12 月 23 日—2027 年 12 月 22 日）

编号：国 R-SC-TS-001-2022

申请人：中国林业科学研究院林业研究所

选育人：麻文俊、王军辉、翟文继、董玉山、刘俊龙、杨桂娟、解孝满、薛惠芬、贾德胜、赵蓬晖、王付玉、苗婷婷、晏增、马永涛、张武强

品种特性

树皮粗糙，深褐色，红色心材。在河南南阳 10 年生树高和胸径分别为 12.9 m 和 20.8 cm，遗传增益分别为 8.4% 和 16.8%。8 年生木材基本密度为 0.468 g/cm³，气干密度为 0.579 g/cm³，体积干缩系数为 0.417%，顺纹抗压强度、抗弯强度和抗弯弹性模量分别为 40.7 MPa、82.7 MPa、7574 MPa。

主要用途

用材树种。

栽培技术要点

造林地宜选择在阳坡、土层深厚地块，壤土、沙壤土最佳，黏壤土次之，pH值6.5-7.5，排水良好，地下水位在1m以下。穴状整地，穴规格50cm×50cm×50cm。春季发芽前栽植，亦可晚秋和初冬造林，秋冬季栽后需平茬。大径材生产造林密度要小；水土保持造林密度要大。造林后及时进行抹芽、除蘖、除草、松土、追肥、灌水等措施。造林后合理修枝培养主干，5年后保持干高占树高的2/5，修枝高度控制在7-8m之间。

适宜种植范围

河南、安徽、山东等香椿适宜栽培区。

2. 西南桦家系大青山22号

树种：西南桦 学名：*Betula alnoides* ‘Daqingshan 22’
类别：家系 通过类别：认定2年（2022年12月23日—2024年12月22日）
编号：国R-SF-BA-002-2022
申请人：中国林业科学研究院热带林业研究所、中国林业科学研究院热带林业研究中心、福建省林业科学研究院、保山市林业和草原技术推广站、勐腊县林业和草原局
选育人：郭俊杰、曾杰、贾宏炎、陈碧华、赵志刚、杨晏平、朱先成、王春胜、黄佳聪、劳庆祥、郭文福、方碧江、仓正伟、张劲松、李志真、陈伟、韩金发、王欢

品种特性

干形通直。生长9年后年均树高、胸径生长量 1.24 ± 0.07 m、 1.42 ± 0.10 cm；18年生木材全干密度、顺纹抗压强度、抗弯强度、抗弯弹性模量、冲击韧性和硬度分别为 0.687 g/cm³、54.7 MPa、114.9 MPa、15440 MPa、74 kJ/m² 和3330 N。由湿材到全干和由湿材到气干的体积干缩率分别为15.5%和8.2%；由全干到湿材和由全干到气干体积湿胀率分别为18.3%和7.8%；全干密度为 0.687 g/cm³。

主要用途

用材树种。

栽培技术要点

在广西，宜春季造林、雨季补植；云南应以雨季种植为主。造林地全面清理方式，宜带垦或穴垦造林，带垦宽度一般为0.6-1.0m，穴垦的穴径0.5-0.7m、深0.3-0.5m；宜采用40cm×40cm×30cm或50cm×50cm×40cm等穴规格。造林前，施用过磷酸钙200-300g和复合肥100g做基肥；造林株行距可采用2m×3m，3m×3m或2m×4m。可与红锥、杉木等进行混交。造林后一般抚育3年，每年抚育两次，分别在雨季前和雨季后进行，追肥量视经济情况而定。

适宜种植范围

广西、云南西部和南部等西南桦适宜栽培区。

3. 西南桦家系景洪1号

树种：西南桦 学名：*Betula alnoides* ‘Jinghong 1’
类别：家系 通过类别：认定2年（2022年12月23日—2024年12月22日）
编号：国R-SF-BA-003-2022
申请人：中国林业科学研究院热带林业研究所、中国林业科学研究院热带林业研究中心、福建省林业科学研究院、保山市林业和草原技术推广站、勐腊县林业和草原局
选育人：郭俊杰、曾杰、贾宏炎、杨晏平、朱先成、陈碧华、赵志刚、王春胜、黄佳聪、仓正伟、张劲松、劳庆祥、郭文福、方碧江、李志真、陈伟、韩金发、王欢

品种特性

树干通直，生长9年后年均树高、胸径生长量可达 1.30 ± 0.08 m 和 1.46 ± 0.08 cm；其木材全干密度、顺纹抗压强度、抗弯强度、抗弯弹性模量、冲击韧性和硬度分别为 0.688 g/cm³、47.3 MPa、111.2 MPa、15270 MPa、66 kJ/m²和3510 N。由湿材到全干和由湿材到气干的体积干缩率分别为14.6%和6.4%；由全干到湿材和由全干到气干体积湿胀率分别为17.9%和7.6%；全干密度为 0.688 g/cm³。

主要用途

用材树种。

栽培技术要点

在广西，宜春季造林、雨季补植；云南应以雨季种植为主。造林地全面清理方式，宜带垦或穴垦造林，带垦宽度一般为0.6-1.0 m，穴垦的穴径0.5-0.7m、深0.3-0.5m；宜采用40 cm×40 cm×30 cm或50 cm×50 cm×40 cm等穴规格。造林前，施用过磷酸钙200-300 g和复合肥100 g做基肥；造林株行距可采用2 m×3 m，3 m×3 m或2 m×4 m。可与红锥、杉木等进行混交。造林后一般抚育3年，每年抚育两次，分别在雨季前和雨季后进行，追肥量视经济情况而定。

适宜种植范围

广西、云南西部和南部等西南桦适宜栽培区。

4. ‘华桐1号’山桐子

树种：山桐子

学名：*Idesia polycarpa* ‘Huatong 1’

类别：品种

通过类别：认定5年（2022年12月23日—2027年12月22日）

编号：国 R-SV-IP-004-2022

申请人：湖北旭舟林农科技有限公司（国家林业草原山桐子工程技术研究中心）

选育人：刘汉蓁、顿春垚、陈剑英、曹健、吴代坤、谷飞云、李双龙、袁兵武、张娅爽、李兵、王盛斌、万松胜

品种特性

成枝力强，枝条节间长13.5 cm。叶片深绿色，卵圆形。果实圆球形，横径0.75 cm，纵径0.72 cm，呈鲜红色，成熟期紫红色，冬季果实成熟后不易脱落。果实于10月中旬至11月上旬成熟。嫁接苗或高接换头树3年开花，5年进入盛果期，平均单株果穗数量352个，盛果期后亩产鲜果达1050 kg，果实含油率36.51%，亚油酸含量67.3%。

主要用途

油料树种。

栽培技术要点

以坡度在5°以上的半阳坡或阳坡、土层较为深厚地块为宜，以地径大于1 cm，苗高大于100 cm的1年生嫁接苗造林。栽植密度可按照3-5 m×3-6 m，配置5%-10%同花期授粉树。提倡冬季造穴冻土，春季定植，根部离地面不超过3 cm。定干1-1.5 m，高度控制在6 m以内。缺墒补水、缺肥补肥、树旺控势，宜使用复合肥，有条件的区域可每年一次行间深翻。

适宜种植范围

湖北、云南、陕西等山桐子适宜栽培区。

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

1. Zhonglin 6

Species: *Catalpa bungei*

Scientific name: *Catalpa bungei* 'Zhonglin 6'

Type of material: Clone

Category of certification: Certified

Registration No.: Guo S-SC-CB-001-2022

Applicants: Research Institute of Forestry, Chinese Academy of Forestry

Breeders: Wang Junhui, Ma Wenjun, Zhai Wenji, Dong Yushan, Zhao Kun, Yang Guijuan, Yun Huiling, Zhang Shen, Xue Huifen, Liu Junlong, Xie Xiaoman, Wang Xiaoxi, Wang Nan, Yan Zeng, Zhao Penghui, Miao Tingting

Characteristics:

The trunk is straight and the crown is oval. Leaf blade triangular-ovate, calyx light purple. In Henan province, the average diameter at breast height (DBH) and height of 13-year-old tree are 17.67 cm and 13.17 m, respectively. The dry density of 10-year-old tree is 0.455 g/cm³, the basic density is 0.408 g/cm³, the volume shrinkage coefficient is 0.341%, the compressive strength, the flexural strength and the flexural modulus of elasticity are 15.6MPa, 53.1MPa and 5131.6MPa, respectively.

Main use:

It can be used as timber tree.

Silvicultural techniques:

The planting hole is square or round, the hole diameter is 50-60 cm, and the depth is 50 cm. The planting time is 2-4 weeks after the soil is thawed, and the planting method is to cover the soil 3 times, step on it 2 times, and lift the seedlings 1 times. In the young period, attention shall be paid to bud wiping, top cutting and fixed drying. Prune the branches 3 years after planting to make the height under the branches reach 5 m. If conditions permit, water and fertilize properly every year.

Suitable areas for planting:

Areas suitable for growing *Catalpa bungei*, such as Henan, Shandong and Anhui.

2. Jianghuai 1

Species: *Populus deltoides*

Scientific name: *Populus deltoides* 'Jianghuai 1'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-PD-002-2022

Applicants: Research Institute of Forestry, Chinese Academy of Forestry

Breeders: Ding Changjun, Su Xiaohua, Yu Yisu, Huang Qinjun, Zhao Zicheng, Wu Zhongneng, Su Xuehui, Liu Junlong

Characteristics:

Male. Bark dark gray brown, longitudinal crack, trunk relatively straight, crown long oval. The basic density of 11-year-old wood is 0.377 g/cm³, and the air-dried density of wood is 0.501 g/cm³; The fiber length is 0.98 mm, the fiber aspect ratio is 50.5, and the fiber wall to lumen ratio is 0.30. In Bengbu, Anhui province, the diameter at breast height (DBH), height (H), volume of single tree and volume per unit area of 9-years-old tree were 30.24 cm, 26.2 m, 0.71 m³ and 39.03 m³/mu, respectively, which were 7.70%, 4.38%, 20.06% and 20.05% higher than those of the control variety *Populus deltoides* 'I-69', respectively.

Main use:

It can be used as timber tree.

Silvicultural techniques:

It is suitable to select plains, hills and river and lake floodplains with the soil of neutral or slightly alkaline pH value, adopt big seedlings and strong seedlings for planting or truncheon afforestation, and soaking in sufficient water before planting. For afforestation of trees of medium and large diameter class, the initial planting density is 5 m×5 m or 5 m×6 m. For afforestation of trees of small diameter, the initial planting density is 2 m×3 m or 3 m×3 m. Timely bud wiping, pruning, shaping, watering, weeding, loosening soil, fertilizing and pest control.

Suitable areas for planting:

Areas suitable for growing *Populus deltoides*, such as Anhui, southern Jiangsu, eastern Hubei.

3. EH1223

Species: *Pinus elliottii* × *P. caribaea*

Scientific name: *Pinus elliottii* × *P. caribaea* 'EH1223'

Type of material: Pedigree

Category of certification: Certified

Registration No.: Guo S-SF-PE-003-2022

Applicants: Guangdong Academy of Forestry

Breeders: Zhao Fencheng, Guo Wenbing, Lin Changming, Li Xianzheng, Wang Zhe, Xie Guobiao, Lin Nengqing, Cheng Yong, Li Fuming, Zeng Ming, Wu Huishan, Wu Jiyou, Zou Bingzhang, Long Jun, Zhou Baobiao, Li Yiliang, Liu Yang, Liao Fangyan, Zhang Yingzhong

Characteristics:

It is the hybrid offspring of *Pinus elliottii* as female parent and *Pinus caribaea* as male parent. The average annual individual volume of each test site was 0.0235 m³. The wood basic density is 0.549 g/cm³, the compressive strength parallel to grain is 48.0MPa, the bending strength is 122.5 MPa, and the bending modulus of elasticity is 15420 MPa. The fiber length is 2.629 mm, the content of holocellulose is 72.3%, and the content of lignin is 23.4%.

Main use:

It can be used as timber tree.

Silvicultural techniques:

Afforestation can be carried out in the land with sufficient light, an altitude below 500 m, loose and slightly acidic soil and a soil layer above 80 cm. Strip or horizontal strip along the contour line to prepare the ground, and then dig holes and apply base fertilizer. Container seedlings with height of 20 cm and ground diameter of more than 3 mm are used for afforestation in spring, and the planting density is 1100 individuals/hm². After 2-3 years of afforestation, proper weeding, scarification and topdressing shall be carried out, and moderate thinning shall be carried out from 8-10 years.

Suitable areas for planting:

Areas suitable for growing *Pinus elliottii* × *P. caribaea*, such as Guangdong, Fujian and Hunan.

4. Huanggan

Species: *Phyllostachys vivax*

Scientific name: *Phyllostachys vivax* 'Huanggan'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-PV-004-2022

Applicants: Research Institute of Subtropical Forestry, Chinese Academy of Forestry

Breeders: Yuan Jinling, Yue Jinjun, Zhang Yunshan, Ma Jingxia, Liu Jurong, Xu Da, Yuan Na,

Xiao Zhihong, Tian Libin, Lin Minshui, Ma Naixun, Wang Yun, Liu Xiangdong

Characteristics:

The culm height is 8-11 m and DBH is 5-8 cm under the condition of abundant water and fertilizer. The young culms of new bamboo are nearly transparently light sulfur, with white powder under the nodes. The old culms are gradually darker and golden yellow. The internode length is 15-30 cm, and the wall thickness is 3-7 mm. The lower internodes of the culm occasionally have 1 to several irregular green longitudinal stripes. Culm sheaths abaxially yellowish green to yellowish yellow, smooth glabrous. The sheath leaves are ribbon-lanceolate, strongly wrinkled and drooping at the top half, some with cyan stripes in the middle, pale yellow edges, and some with black-brown stripes. Leaves dense, generally 10-15 cm long and 1.5-2.0 cm wide, spreading or slightly pendulous in tufts.

Main use:

It can be used as ornamental tree.

Silvicultural techniques:

Afforestation can be carried out in areas with elevation below 500 m, slope below 20°, soil layer thickness above 50 cm, loose, fertile loam or sandy loam with good drainage and air permeability, soil pH value of 4.5-7.0 and underground water level below 1 m. Land preparation is carried out 2-3 months in advance, and afforestation is carried out in February and June (plum rainy season) and in October and November. 1-2-year-old mother bamboos without plant diseases, insect pests and flowering branches, or bamboo rhizomes with bright colors, full bud bodies and 4-5 strong buds, were selected, and the initial planting density is 1500-3000 plants/hm². Dwarf crops can be interplanted before canopy closure, and conventional management such as weeding, loosening soil, fertilizing, irrigating, draining and the like is carried out to expand the rhizomes and cultivate the bamboos.

Suitable areas for planting:

Areas suitable for growing *Phyllostachys vivax*, such as Fujian, Zhejiang, Anhui, Hunan provinces.

5. Yuanbao

Species: moso bamboo

Scientific name: *Phyllostachys edulis* ‘Yuanbao’

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-PED-005-2022

Applicants: Research Institute of Subtropical Forestry, Chinese Academy of Forestry, Yiyang Research Institute of Forestry Science

Breeders: Yue Jinjun, Yuan Jinling, Xiao Zhihong, Tian Libin, Lin Minshui, Ma Jingxia, Zhang Xinming, Xu Da, Yuan Na, Ma Naixun, Zhuo Qiuping, Huang Shu, Xie Wenchao

Characteristics:

Plant height is 4-5 m. Oblate culms, depressed locally in internodes and the upper internodes are slightly wider than the lower part, nodes wavy, the internodes similar to ingots from the side. The length of internodes below branches are usually less than 10 cm, and the adjacent internodes skewed interactively. The branches arranged closely, with branch angle 31°-32°, generally with dense foliage.

Main use:

It can be used as ornamental tree.

Silvicultural techniques:

Select hills, flat land, the banks of streams or the surrounding land for afforestation, where annual precipitation over 1000 mm, the annual average temperature over 15 °C and extreme low

temperature over -13 °C . Select the forestland with loose, fertile loam or alluvial soil with a thickness of above 50 cm, good drainage and irrigation conditions, slightly acidic or neutral soil and pH value of 4.5-7.0. Prepare the ground meticulously before planting and mix appropriate amount of organic fertilizer in the soil. Select 2-3 years old, robust and no pests and diseases mother bamboo as maternal plant for planting at a hole spacing of 100 cm×60 cm×60 cm according to the density of 3 m×3 m, backfill 20-30 cm surface soil. In the early maternal planting, water timely for sufficient soil moisture and fix the stem to prevent wind fall.

Suitable areas for planting:

Areas suitable for growing moso bamboo, such as Hunan, Fujian and Zhejiang.

6. Beixi

Species: Grape

Scientific name: *Vitis vinifera* × *V. amurensis* 'Beixi'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S- SV-VV-006-2022

Applicants: Institute of Botany, Chinese Academy of Sciences

Breeders: Li Shaohua, Fan Peige, Liang Zhenchang, Wang Lijun, Duan Wei, Wu Benhong, Yang Meirong, Li Shengchen, Xin Haiping, Kuang Yangfu, Li Qianjun, Dai Zhanwu, Ren Chong, Wang Yi, Xu Meilong, Xie Jun, Liao Xuanfeng

Characteristics:

Moderate growth potential. Fruit is medium dense, nearly round, purplish black, average grain weight was 1.7 g. Flesh was medium fleshy with thick powder, thick skin and separate hardly with seeds. Cluster is conical and average cluster number of bearing branch is 1.9, average panicle weight is 188.6 g. The juice is greenish-yellow containing 23.2%-25.8% soluble solid, 7.6-9.2 g/L titratable acid and the ratio of juice yield is 67.4%. The yield of adult plants is 500-600 kg/mu stably. The fermenting wine is a deep ruby red with hints of blackcurrant, blueberry and other small berries, and faint rose aromas.

Main use:

It can be used for wine making.

Silvicultural techniques:

Variety favours loam and sand soils with total salt content below 2.5g/kg and water table less than 1.5m. It requires more than 3000 h of sunshine hours, and over 155 d of frost free period. The recommended in-row vine spacing ranges from 1.0-1.2m, and the inter-row spacing is around 2.3-3.0m, with approximately 2775-4350 vines/ hm². Single or double cordon with spur-pruning is preferred, and at least 60 cm above ground. It can withstand the cold winter of the North China region without burying, while young vines (1-2 years) required burying depth of 10-20 cm in Northwest region.

Suitable areas for planting:

Areas suitable for growing grape cultivation, such as Beijing, Tianjin and Ningxia.

7. Beixin

Species: Grape

Scientific name: *Vitis vinifera* × *V. amurensis* 'Beixin'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S- SV-VV-007-2022

Applicants: Institute of Botany, Chinese Academy of Sciences

Breeders: Li Shaohua, Liang Zhenchang, Fan Peige, Wang Lijun, Duan Wei, Wu Benhong, Yang Meirong,

Li Shengchen, Xin Haiping, Kuang Yangfu, Li Qianjun, Dai Zhanwu, Ren Chong, Wang Yi, Xu Meilong, Xie Jun, Liao Xuanfeng

Characteristics:

Plant has strong vigour and upright growth. The bunches are medium compact, conical, with an average weight of 155.5g, and with an average bunch number of 2.0 per fruit cane. The berries are slight oval, black purple. They have a thick skin and heavy bloom, and with an average weight of 2.3g. The seeds are difficult to separate from the pulp. The juice is greenish-yellow in colour, with an average juice yield of 67.4%, soluble solid of 22.4%-25.4%, and titratable acidity of 7.9-9.3 g/L. The recommended crop load is around 600-800kg/mu (9000-12000kg/ hm²). The wine has a deep ruby red colour, with a hint of rose note.

Main use:

It can be used for make wine making.

Silvicultural techniques:

Variety favours loam and sand soils with total salt content below 2.5g/kg and water table less than 1.5m. It requires more than 3000h of sunshine hours, and over 155d of frost free period. The recommended in-row vine spacing ranges from 1.0-1.2m, and the inter-row spacing is around 2.3-3.0m, with approximately 2775-4350 vines/ hm². Single or double cordon with spur-pruning is preferred, and at least 60cm above ground. It can withstand the cold winter of the North China region without burying, while young vines (1-2 years) required burying depth of 10-20cm in Northwest region.

Suitable areas for planting:

Areas suitable for growing grape cultivation, such as Beijing, Tianjin and Ningxia.

8. Zhongyoupan 9

Species: Peach

Scientific name: *Prunus persica* 'Zhongyoupan 9'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S- SV-PP-008-2022

Applicants: Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences

Breeders: Wang Lirong, Fang Weichao, Chen Changwen, Zhu Gengrui, Cao Ke, Wang Xinwei, Zhang Tao

Characteristics:

'Zhongyoupan 9' is early-middle flat nectarine peach cultivar. It has a big size, average 200g and the biggest can reach 350g. The fruit is covered nearly 100% red flush. The SSC is 15.4%, and flavor is good with high sugar and low acid. The flesh is yellow, texture is non-melting, cling stone. Fruit dates in early July, and fruit development periods around 100d . The yield can reach 2600 kg/mu.

Main use:

It can be used as fresh fruit.

Silvicultural techniques:

Fruit thinning should be done after blossom 45d. And the distance between the fruit should be greater than 25cm. Fruit bagged is suggested to avoid fruit cracked and get more beautiful surface. Bag fruit paper is outside yellow inside black or red and oily. Equitable fertilizing is needed and to ensure the balanced tree. Fruits bear at middle and outside of the crown, and keep enough leaves to avoid from sunshine directly

Suitable areas for planting:

Areas suitable for growing peach, such as Henan, Shandong and Beijing.

9. Zhongpan 13

Species: Peach

Scientific name: *Prunus persica* 'Zhongpan 13'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-PP-009-2022

Applicants: Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences

Breeders: Wang Lirong, Chen Changwen, Zhu Gengrui, Fang Weichao, Cao Ke, Wang Xinwei, Wang Lingling

Characteristics:

Early to middle ripening flat nectarine varieties. The tree vigor is slightly strong, and three kinds of branches can bear fruit. Under normal cultivation conditions, the average fruit weight is 180g, and maximum fruit weight is 260g. The fuzz on the is short, the background color is yellow, and flush is more than 60%. Texture is melting, flesh is yellow, sweet, scling stone, soluble solid content of 13.9%. The fruit ripens in early July and fruit development period is 95 days in Zhengzhou, Henan province. The yield can reach 2900 kg/mu.

Main use:

It can be used as freshly served fruit.

Silvicultural techniques:

In order to control tree growth, balanced fertilizer and water can be adopted and flood irrigation can be avoided. Ridging cultivation are suggested to used, with ridge height of 0.4m and ridge width of 1.2m. It is necessary to strengthen the intensity of thinning flowers and fruits, and the distance between fruits should be greater than 15cm. Bags can be bagged in rainy areas. The fruit has a moderate hardness, which needs to be harvested in a timely manner.

Suitable areas for planting:

Areas suitable for growing peach, such as Henan, Shandong and Beijing.

10. Qiyunshan 1

Species: *Choerospondias axillaris*

Scientific name: *Choerospondias axillaris* 'Qiyunshan 1'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-CA-010-2022

Applicants: Jiangxi Qiyunshan Food Co., LTD; Research Institute of Forestry, Chinese Academy of Forestry

Breeders: Liu Jiyuan, Lin Furong, Ling Huashan, Gu Hequn, Huang Jincheng, Liu Hongsheng, Zheng Yongqi, Guo Wenyong, Chen Hourong, He Liren, Chen Zhouhai, Lin Chaokai

Characteristics:

The bark is greyish-brown, with light longitudinal split. The fruit is long pear-shaped, with the color of cyan in immature stage and yellow during maturation period. The flesh color is white or slightly yellowish. The average single fruit weight is 29g. The fruit ripens in mid to late October, and the pulp content is 53%. Protein content 1.31g/ 100g, total amino acid content 2.16g/ 100g, fat content 0.09g/100g; Vc content 0.24 g/ 100 g, tannin content 0.81g/100g. The average yield is up to 1100-1300 kg/mu in peak fruiting period.

Main use:

It can be used for freshly served fruit or processing.

Silvicultural techniques:

It is better to choose suitable forest land for afforestation with thick or relatively thick red soil and yellow red soil at 300-800m above sea level at mountain foot and valley. Row spacing is 7-8m, plant spacing is 6-7m, and each hectare is equipped with 15-30 male plants for pollination trees. After colonization, 3-4 main branches were left about 1m above the ground, and the main branches were truncated at 80 cm after germination. 3-4 lateral branches were left for each main branch to cultivate the crown. For adult trees, 10-15kg of organic fertilizer and 1 kg of lime can be applied each plant to protect the flowers during the flowering period from late April to late May. From June to July, 10kg of decomposed green fertilizer and cake fertilizer were applied each plant, supplemented by a small amount of phosphate and potassium fertilizer.

Suitable areas for planting:

Areas suitable for growing *Choerospondias axillaris*, such as Jiangxi, Fujian and Guangdong.

11. Qiyunshan 13

Species: *Choerospondias axillaris*

Scientific name: *Choerospondias axillaris* ‘Qiyunshan 13’

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-CA-011-2022

Applicants: Jiangxi Qiyunshan Food Co., LTD; Research Institute of Forestry, Chinese Academy of Forestry

Breeders: Liu Jiyan, Lin Furong, Ling Huashan, Gu Hequn, Huang Jincheng, Liu Hongsheng, Zheng Yongqi, Guo Wenyong, Chen Hourong, He Liren, Chen Zhouhai, Lin Chaokai

Characteristics:

The bark is greyish-brown, with light longitudinal split. The fruit is obovate in shape, with the color of cyan in immature stage and yellow during maturation period. The flesh color is white or slightly yellowish. The average single fruit weight is 20.3g. The fruit ripens in mid-September and the pulp content is 56%. Protein content 0.68 g/100 g, total amino acid content 2.62g/100g, fat content 0.08g/100 g; Vc content 0.16g/100g, tannin content 0.93 g/ 100g. The average yield is up to 1100-1300 kg/ mu in peak fruiting period.

Main use:

It can be used for freshly served fruit or processing.

Silvicultural techniques:

It is better to choose suitable forest land for afforestation with thick or relatively thick red soil and yellow red soil at 300-800 m above sea level at mountain foot and valley. Row spacing is 7-8m, plant spacing is 6-7m, and each hectare is equipped with 15-30 male plants for pollination trees. After colonization, 3-4 main branches were left about 1m above the ground, and the main branches were truncated at 80cm after germination. 3-4 lateral branches were left for each main branch to cultivate the crown. For adult trees, 10-15kg of organic fertilizer and 1kg of lime can be applied each plant to protect the flowers during the flowering period from late April to late May. From June to July, 10kg of decomposed green fertilizer and cake fertilizer were applied each plant, supplemented by a small amount of phosphate and potassium fertilizer.

Suitable areas for planting:

Areas suitable for growing *Choerospondias axillaris*, such as Jiangxi, Fujian and Guangdong.

12. Yueshen 74

Species: Mulberry

Scientific name: *Morus atropurpurea* ‘Yueshen 74’

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-MA-012-2022

Applicants: Sericultural and Agri-Food Research Institute, Guangdong Academy of Agricultural Sciences

Breeders: Tang Cuiming, Luo Guoqing, Wu Jian'an, Wu Fuquan, Yang Qiong, Chen Lihui, Xiao Gengsheng, Zhong Jianwu, Huang Binghui, Wang Zhenjiang, Dai Fanwei, Lin Sen, Chen Lian, Zhao Dengchao

Characteristics:

The leaf is long heart-shaped and dark green. The mature fruit is purplish black, cylinder-shaped, with the average fruit length being 4.5cm and the average fruit width being 1.7cm. The average single fruit weight is 5.5g and the average fruit yield per meter branch is 531.2g. The fresh fruit has seeds, with soluble solid content of 10.5%-13% vol and proanthocyanidin content of 1.08-1.28g/100g. In full productive age, the annual fruit yield is 1800kg/mu, and the leaf yield is 2200kg/mu. The alcohol content of fresh juice fermented wine is 11.8%-13.3%vol, the dry extract content is 47.5-53.6g/L, the total acid (tartaric acid) content is 5.58g/L, and the total sugar (glucose) content is 57.5g/L.

Main use:

It can be used in mulberry wine processing, also can be used as edible leaves and fruits.

Silvicultural techniques:

It is usually planted in spring, but can also be planted in autumn and winter in South China. Row spacing is 3.5-4.0m, and plant spacing is 1.5-2.0m. The tree should be shaped like a secondary trunk. The primary trunk is 80cm in height, and the secondary trunk has 3-4 branches and is 40cm in length. After the fruiting period, prune the annual branches on the secondary trunk to 5-10cm, and the weak branches should be cut while the strong branches should be left. Apply winter fertilizer, strong fruit fertilizer and spur fertilizer every year. Winter fertilizer should be applied before the germination of winter buds, mainly biological organic fertilizer or decomposed peanut bran, chicken manure and other long-acting organic fertilizer. In the first year after the establishment of the garden, 100g fertilizer per plant is applied, and the annual increase of each plant is 50-100g. After the fifth year, each plant is applied 400-500 g fertilizer.

Suitable areas for planting:

Areas suitable for growing mulberry, such as Guangdong, Hubei and Shandong provinces.

13. Yueshenda 10

Species: *Morus atropurpurea*

Scientific name: *Morus atropurpurea* 'Yueshenda 10'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-MA-013-2022

Applicants: Sericultural and Agri-Food Research Institute, Guangdong Academy of Agricultural Sciences

Breeders: Chen Xunting, Luo Guoqing, Tang Cuiming, Wu Fuquan, Xiao Gengsheng, Wu Jianan, Huang Chuhui, Ren Dezhu, Chen Lihui, Chen Weidong, Yang Qiong, Zhong Jianwu, Huang Binghui, Wang Zhenjiang

Characteristics:

The leaf is heart-shaped and jade green. The mature fruit is purple black, cylinder-shaped, with the average fruit length being 4.3cm and the average fruit width being 1.7cm. The average fruit weight is 5.4g and the average fruit yield per meter strip is 526.2 g. In Guangdong Province, the full productive age of mulberry fruit lasts from mid-March to early April. The fresh fruit is seedless, the soluble solid content is 11.7%-13.2%, and the proanthocyanidin content is 0.95-1.23g/100g. In full productive age, the annual fruit yield is 1500 kg/ mu, and the leaf yield is 2000 kg/ mu.

Main use:

The fruits are used for fresh-eating and processing.

Silvicultural techniques:

The variety should be planted in spring in the north of the Yangtze River. The planting density is generally 1500-2250 plants /hm², the row spacing is 3.5-4.0 m, and the plant spacing is 1.5-2.0 m. The tree shape should be second-level trunk tree, the height of the first level trunk is 80 cm, and the length of the second level trunk is 40 cm. After the fruit period is over, cut the annual branches on the second main stem by 5-10 cm, except for weak ones. Every year, winter fertilizer, fruit fertilizer and promoting branch fertilizer should be applied. The winter fertilizer should be applied before the germination of winter buds, with bio-organic fertilizer or long-term organic fertilizer such as decomposed peanut bran and chicken manure as the main fertilizer. The application rate was 100 g per plant in the first year after establishment, increased by 50-100 g per plant per year, and 400-500 g per plant per time after the fifth year.

Suitable areas for planting:

Areas suitable for growing mulberry in Guangdong, Hubei, Shandong provinces.

14. Huazhong 16

Species: *Eucommia ulmoides*

Scientific name: *Eucommia ulmoides* ‘Huazhong 16’

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-EU-014-2022

Applicants: Research Institute of Non-timber Forestry, Chinese Academy of Forestry

Breeders: Wang Lu, Du Lanying, Liu Dan, Du Qingxin, Liu Panfeng, Du Hongyan, Sun Zhiqiang, Zhu Jingle, Wang Yungang, Wang Huina, Tong Boqiang, Xing Yonggang, Yang Fei, Xun Kaimin, Yue Hui, Qing Jun

Characteristics:

Green and oval-shaped Leaf, 11-14 cm long and 5-7 cm wide. The average length and width of the fruit were 3.39 cm and 1.29 cm, respectively. The average length and width of the kernel were 1.78 cm and 0.56 cm, respectively. The content of gutta-percha rubber in pericarps was 19%-22%, crude fat in kernels was 25%-29%, and α -linolenic acid was 65%-68%. Fruit ripened from mid-September to early October. The grafted seedlings or top-grafted female seedlings start flowering 2-3 years after planting, and enter full bearing period in 5-6 years. With an annual production of 150-230 kg/ mu.

Main use:

It can be used as oil plant, fresh fruit used for extracting linolenic acid oil.

Silvicultural techniques:

‘Huazhong 5’, ‘Huazhong 11’ and ‘Huazhong 22’ were selected as pollinators, with a proportion of 3%-5%. Plant row spacing was 2-4 m \times 3-5 m, or plants were planted in wide and narrow rows with 5-6 m wide and 2-3 m narrow rows, 3 m apart. Tree shape should adopt natural open heart shape, two layers of open heart shape, natural spindle shape. Sprout until July, topdressing 3-4 times. In top-grafted orchard, 100 g of N, P and K compound fertilizers were applied per plant in the first year, and then increased by 50-100 g per plant every year. After 8 years, 400 g of N, P and K compound fertilizers were applied per plant.

Suitable areas for planting:

Areas suitable for growing *Eucommia ulmoides* in Henan, Shandong.

15. Huazhong 22

Species: *Eucommia ulmoides*

Scientific name: *Eucommia ulmoides* ‘Huazhong 22’

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-EU-015-2022

Applicants: Institute of Economic Forestry, Chinese Academy of Forestry

Breeders: Liu Panfeng, Du Qingxin, Tong Boqiang, Wang Lu, Du Lanying, Du Hongyan, Sun Zhiqiang, Zhu Jingle, Wang Yungang, Wang Huina, Xing Yonggang, Liu Dan, Yang Fei, Xun Kaimin, Yue Hui, Qing Jun

Characteristics:

Green and oval-shaped Leaf, 13-17 cm long and 5-8 cm wide. In the flowering period of Henan Province from late March to early April, the male flowers are clustered at the base of the branches of the current year, with an average diameter of 2.32 cm, height of 2.38 cm, length of stamen 1.24 cm, number of stamen per bud 112-145, and content of amino acids in male flowers up to 20.4%. The grafted seedlings or top-grafted seedlings start flowering 2-3 years after planting, and enter full flowering period in 5-6 years, with the production of fresh male flowers 240-380 kg/ mu.

Main use:

It can be used to make male flower tea.

Silvicultural techniques:

As a male tea garden, the planting density is 2 m×3 m-2 m×4 m. In spring, when male flowers are collected in full bloom, 3-8 buds of flowering branches are left and cut off. From May to June in summer, ring stripping or ring cutting was performed at the base of the current year branches with a width of 0.3-1.0 cm and a nutrient band of 0.2-0.5 cm. Every 3-5 years, the flowering branch group will be gradually shortened back to cut one round.

Suitable areas for planting:

Areas suitable for growing *Eucommia ulmoides* in Henan, Shandong.

16. Yujin 1

Species: *Lonicera japonica*

Scientific name: *Lonicera japonica* ‘Yujin 1’

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-LJ-016-2022

Applicants: Henan Normal University. Fengqiu County Jia Zhuang honeysuckle planting professional cooperative.

Breeders: Li Jianjun, Zhao Xiting, Chang Cuifang, Wang Lan, Liu Baobin, Zhang Guangtian, Jia Guolun, Wang Jun, Ren Meiling, Lian Xiaoya, Ye Chenglin, Cheng Ting, Dong Qianqian, Chang Xiaopei, Huang Qian

Characteristics:

The trunk is erect, and the stem branches are stout. Leaf shape is broad or oval, leaf color is light green. The mass of Qianrui Huacheng was 23.95 g, 15.64% higher than that of the control variety ‘Fengqiu Damaohua’. The content of chlorogenic acid was 4.38% , Total phenolic acid content (chlorogenic acid、 Isochlorogenic acid A and Isochlorogenic acid C) 6.55%, luteoloside content 0.088%, respectively. In Henan Xinxiang 5 years of dry flower per mu yield up to 77.2 kg.

Main use:

It can be used as traditional Chinese medicinal materials.

Silvicultural techniques:

The planting density is 3150-6150 plants /hm². In early spring germination period and drought, timely watering, rainy season timely drainage; Pour frozen water once in winter. Applying fertilizer 4 times a year, applying compound fertilizer about 375 kg/hm² each time. In the spring, remove the top part of the honeysuckle stem or branch in time to promote the growth of branches

and remove the dense branches. Pay attention to pest control, the last application time between the harvest days should not be less than 20 days.

Suitable areas for planting:

Areas suitable for growing *Lonicera japonica* in Henan, Hebei provinces.

17. Zhongshi 7

Species: Persimmon

Scientific name: *Diospyros kaki* 'Zhongshi 7'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-DK-017-2022

Applicants: Institute of Economic Forest, Chinese Academy of Forestry

Breeders: Diao Songfeng, Li Huawei, Fu Jianmin, Han Weijuan, Suo Yujing, Sun Peng, Jin Yu, Meng Haibo, Li Haoxian, Zhang Yue, Fan Changshan, Luo Xiang, Chen Lina, Li Yanmin, Zhang Jiajia

Characteristics:

Fruit bright red, small, long round, single fruit weight about 60g; Fruits enter ripening stage in mid-October, and will be on the tree until mid to late December. Fruit soluble solid content 19%, tannin total content 2.30 mg/g, soluble sugar content 29.71 mg/g, water soluble pectin 5.08 mg/g. The trees will enter the fertile period 4 to 5 years after planting in Henan Province, the production can reach 1900 kg/ mu in full productive age.

Main use:

The fruits are used for fresh-eating and processing.

Silvicultural techniques:

Two-year-old seedlings with *Diospyros lotus* as rootstock should be selected for afforestation. It is suitable to plant densely, a spacing of 1-4 m×3-5 m is used for planting according to site conditions. The trees was controlled by strengthening the bud picking in spring and pruning in summer. Foliar fertilizer mainly composed of nitrogen, potassium, magnesium and calcium can be added in mid to late May and mid to late July respectively to reduce the phenomenon of major and minor year phenomenon. Apply organic fertilizer after fruit ripening and before leaf fall.

Suitable areas for planting:

Areas suitable for growing persimmon trees in Henan and Shandong provinces.

18. Heishanzhai 7

Species: Chinese chestnut

Scientific name: *Castanea mollissima* 'Heishanzhai 7'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-CM-018-2022

Applicants: Beijing Academy of Agriculture and Forestry Sciences

Breeders: Lan Yanping, Cheng Lili, Hu Guanglong, Cheng Yunhe, Jiang Xibing, Huang Wugang, Zhou Zhijun, Cao Qingchang

Characteristics:

Strong growth potential, half open tree form. Involucre oval 2.3 nuts on average. Nuts oval, testa dark brown, fuzz very little on surface of fruit, shiny; A single grain weights 8.9 g on average, astringent skin is easy to peel. The flesh contains 8.6% total sugar, 39.6% starch, 1.60% crude fiber, 0.9% fat and 3.86% protein. Potassium content 405 mg/100 g. The yield in full productive age can reach 130 kg/ mu.

Main use:

The fruits are used for fried-eating or processing.

Silvicultural techniques:

It can be adaptive to the thin soil layer of mountain and beach land. A spacing of 4 m×5 m is used for planting in mountain and 5m×6 m in beach land. In the grafting year, the new shoot should be picked 4-5 times and the branch drawing should be carried out. Natural Open Center model 4-5 main branches. retain all the branches that bear fruit in winter pruning. When the trees in full bearing period are pruned in winter, 10-14 branches which bear fruits can be left per square meter of vertical projection area of crown when the length of branch in front of the fruit is about 7 cm. After falling leaves, the sunny part of the stem and main branches should be painted white in time to prevent sunburn.

Suitable areas for planting:

Areas suitable for growing Chinese chestnut in Beijing and Zhejiang provinces.

19. Yanping

Species: Chinese chestnut

Scientific name: *Castanea mollissima* ‘Yanping’

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-CM-019-2022

Applicants: Beijing Academy of Agriculture and Forestry Sciences

Breeders: Lan Yanping, Cheng Lili, Hu Guanglong, Cheng Yunhe, Jiang Xibing, Zhou Zhijun, Cao Qingchang, Lan Weizong

Characteristics:

Canopy open. Fruit ripens in mid to late September in Beijing. Fruit development period about 110 days. Involucre oval, weights 58.96 g and contains 2.8 nuts per Involucre on average. A single nut weights 8.9 g on average, fruit diameter 2.63cm × 3.30 cm × 2.3 cm on average, reddish-brown, shiny, endocarp is easy to peel, flesh yellow. The total sugar content of nuts is 7.7 %, starch content is 34.1%, crude fiber content is 1.60 %, fat content is 1.7 %, protein content is 5.12 %.

Main use:

The fruits are used for fried-eating or processing.

Silvicultural techniques:

A spacing of 3 m×4 m is suitable for planting in flat land and beach land, and 3 m×3.5 m in mountainous and thin hilly areas. Base fertilizer is applied after the fruit has been harvested. Irrigation in early March, late May to early June, late August to early September. The suitable model is sparse layer trunk delayed Open center shape or Natural Open Center mode, main branches of 4-5. There are 8-10 branches which bear fruits per square meter of canopy projection area. The main pests are red spider, peach pyralid moth and chestnut Blight.

Suitable areas for planting:

Areas suitable for growing Chinese chestnut in Beijing, Zhejiang provinces.

20. Huate

Species: Kiwi fruit

Scientific name: *Actinidia eriantha* ‘Huate’

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV- AE-020-2022

Applicants: Zhejiang Academy of Agricultural Sciences

Breeders: Zhang Huiqin, Xie Ming, Zhang Qingchao, Peng Shangjin, Jiang Guihua, Xu Yongping, Gu Xianbin, Lu Linghong, Zheng Zihong, Bao Jinping

Characteristics:

‘Huatae’ is vigorous. The fruit are long cylindrical, The fruit skin present green brown, with dense long gray white villi., The fruit flesh is green and fruit skin is easily peeled when fruit is soft and ripe. A single fruit weights 87.3 g on average and 132.2 g at maximum. The content of soluble solids, total acids, total sugars, and vitamin C is 14.7 %,1.24 %,9.0% and 628.37 mg/100 g fresh weight, respectively. The yield is 1700 kg/mu at full fruit stage.

Main use: The fruits are used for fresh-eating.

Silvicultural techniques:

Hills and slopes with elevation of 300-800 m are selected for cultivation. The spacing was 4 m×3-4 m, using the pergola system, with a single trunk and two permanent leaders.. ‘Maoxiong 1’ is recommended as pollenizer, the ratio of male to female could be 6-8:1. Base fertilizer and organic fertilizer should be applied more, and the pruning method of short cutting and thinning should be adopted in winter to renew and rejuvenate in time.

Suitable areas for planting:

Areas suitable for growing *Actinidia eriantha* in Zhejiang, Fujian, Hubei provinces.

21. Zhongmi 2

Species: *Actinidia chinensis*

Scientific name: *Actinidia chinensis* ‘Zhongmi 2’

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-AC-021-2022

Applicants: Zhengzhou Fruit Research Institute, Chinese Academy of Agricultural Sciences

Breeders: Qi Xiujuan, Fang Jinbao, Lin Miaomiao, Gu Hong, Zhong Yunpeng, Sun Leiming, Chen Jinyong, Wang Ran, Li Yukuo, Cheng Dawei

Characteristics:

Medium ripening, strong growth vigor. Fruit is cylindrical or short round, green peel..The fruit skin is evenly covered with yellow hard hair and difficult to shed. The average fruit weight is 108 g and 145g at its maximum. The longitudinal diameter is 6.5-7.8 cm, transverse diameter is 5.8-6.8 cm and stalk is 2.5-3.8 cm. Green flesh, Vc content is 91.8 mg/100 g, soluble solid content is 19.2%, dry matter content is 21.1%, soluble sugar content is 12.86%, total acid content is 1.60%. The yield of full fruiting is 2500 kg/ mu.

Main use:

The fruits are used for fresh-eating.

Silvicultural techniques:

Planting before fluid flowing and buds breaking, the plant spacing was 3 m×4 m. The male plant of *Actinidia chinensis* flowering at the same time is configured as the pollination tree, the female to male ratio is 5-8:1, and it can also be completely artificial pollination. Horizontal greenhouse frame, T shaped structure or A-frame pergolas can implement single trunk and double main vine management. The pruning management of trees in full fruiting period is combined with winter and summer pruning. Timely thinning of buds and fruits, keep 4-6 fruits on long fruiting branch, keep 3-4 fruits on medium fruiting branch, keep 1-2 fruits on short fruiting branch; In summer, the light transmittance under the canopy is controlled at 20%-30%, and the leaf/fruit ratio is 6:1. Soft rot should be prevented during growing period in years with more rain.

Suitable areas for planting:

Areas suitable for growing *Actinidia chinensis* in Henan, Hubei, Yunnan Sichuan provinces.

Pre-certified varieties

1. Yulin 2

Species: *Toona sinensis*

Scientific name: *Toona sinensis* 'Yulin 2'

Type of material: Clone

Category of certification: Pre-certified for 5 years (2022.12.23-2027.12.22)

Registration No.: Guo R-SC-TS-001-2022

Applicants: Research Institute of Forestry, Chinese Academy of Forestry

Breeders: Ma Wenjun, Wang Junhui, Zhai Wenji, Dong Yushan, Liu Junlong, Yang Guijuan, Xie Xiaoman, Xue Huifen, Jia Desheng, Zhao Penghui, Wang Fuyu, Miao Tingting, Yan Zeng, Ma Yongtao, Zhang Wuqiang

Characteristics:

Bark rough, dark brown, red heartwood. The height and DBH of 10-year-old trees in Nanyang, Henan were 12.9 m and 20.8 cm, respectively, and the genetic gain was 8.4% and 16.8%, respectively. The basic density of eight-year-old wood was 0.468 g/cm³, air-dry density was 0.579 g/cm³, the volume dry shrinkage coefficient was 0.417%, and the longitudinal compressive strength, flexural strength and flexural elastic modulus were 40.7 MPa, 82.7 MPa and 7574 MPa, respectively.

Main use:

It can be used as timber tree.

Silvicultural techniques:

It is better to choose sunny slope land with deep soil layer, loam and sandy loam are the best, and sticky loam is the second. The pH value is 6.5-7.5, the drainage was good, and the water table was is than 1 m. Acupoint preparation, acupoint size 50 cm×50 cm×50 cm. Planting before germination in spring, can also be planted in late autumn and early winter, autumn and winter after planting need to stubble. The afforestation density of large-diameter wood production should be small. Soil and water conservation afforestation density should be large. After afforestation, take measures such as sprouting, tiller cutting, weeding, loosening the soil, topdressing and irrigation in time. After afforestation, the branches should be pruned reasonably, and the trunk should be cultivated. After 5 years, the trunk height should be maintained to occupy 2/5 of the height of the tree, and the pruning height should be controlled between 7-8 m.

Suitable areas for planting:

Areas suitable for growing *Toona sinensis* in Henan, Anhui, Shandong and provinces.

2. Daqingshan 22

Species: *Betula alnoides*

Scientific name: *Betula alnoides* 'Daqingshan 22'

Type of material: Family

Category of certification: Pre-certified for 2 years (2022.12.23-2024.12.22)

Registration No.: Guo R-SF-BA-002-2022

Applicants: Research Institute of Tropical Forestry, Chinese of Academy Forestry; Research Center of Tropical Forestry, Chinese of Academy Forestry; Fujian Academy of Forestry; Baoshan Forestry and Grassland Technology Extension Station; Forestry and Grassland Administration of Mengla County

Breeders: Guo Junjie, Zeng Jie, Jia Hongyan, Chen Bihua, Zhao Zhigang, Yang Yanping, Zhu Xiancheng, Wang Chunsheng, Huang Jiacong, Lao Qingxiang, Guo Wenfu, Fang Bijiang, Cang Zhengwei, Zhang Jinsong, Li Zhizhen, Chen Wei, Han Jinfa, Wang Huan

Characteristics:

Trunk is straight. The annual mean height and DBH growth of nine-year-old trees are 1.24±0.07 m and 1.42±0.10 cm, respectively. The wood total-dry density, compressive strength parallel to grain,

modulus of rupture, modulus of elasticity, impact toughness and hardness are 0.687 g/cm³, 54.7 MPa, 114.9 MPa, 15440 MPa, 74 kJ/m² and 3330 N, respectively when 18-year-old. The wood volume shrinkage rates from wet to total dry and from wet to air-dry are 15.5% and 8.2%, respectively. The wood volume wet expansion rates from total-dry to wet and from total-dry to air-dry are 18.3% and 7.8%, respectively. The wood total-dry density is 0.687 g/cm³.

Main use:

It can be used as timber tree.

Silvicultural techniques:

It is recommended to be planted in spring and supplemented in rainy season in Guangxi, and mainly planted in the rainy season in Yunnan. The planting sites are completely cleared, and prepared 0.3-0.5 m deep in strips of 0.6-1.0 m wide or hole with diameter of 0.5-0.7 m. The sizes of planting holes are normally 40 cm×40 cm×30 cm or 50 cm×50 cm×40 cm. 200-300 g of superphosphate and 100 g of compound fertilizer are applied as base fertilizer. The planting spacing can be 2 m×3 m, 3 m×3 m or 2 m×4 m. The tree species can be mixed with *Castanopsis hystrix*, *Cunninghamia lanceolata*, and so on. Tending is usually conducted for early 3 years, and twice per year: before and after the rainy season. The amount of topdressing fertilizers depends on the economic situation.

Suitable areas for planting:

Areas suitable for growing *Betula alnoides* in Guangxi, western and southern Yunnan provinces.

3. Jinghong 1

Species: *Betula alnoides*

Scientific name: *Betula alnoides* 'Jinghong 1'

Type of material: Family

Category of certification: Pre-certified for 2 years (2022.12.23-2024.12.22)

Registration No.: Guo R-SF-BA-003-2022

Applicants: Research Institute of Tropical Forestry, Chinese of Academy Forestry; Research Center of Tropical Forestry, Chinese of Academy Forestry; Fujian Academy of Forestry; Baoshan Forestry and Grassland Technology Extension Station; Forestry and Grassland Administration of Mengla County

Breeders: Guo Junjie, Zeng Jie, Jia Hongyan, Yang Yanping, Zhu Xiancheng, Chen Bihua, Zhao Zhigang, Wang Chunsheng, Huang Jiacong, Cang Zhengwei, Zhang Jinsong, Lao Qingxiang, Guo Wenfu, Fang Bijiang, Li Zhizhen, Chen Wei, Han Jinfa, Wang Huan

Characteristics:

Trunk is straight. The annual mean height and DBH growth of nine-year-old trees can reach 1.30±0.08 m and 1.46±0.08 cm, respectively. The total-dry density, compressive strength parallel to grain, modulus of rupture, modulus of elasticity, impact toughness and hardness of wood are 0.688 g/cm³, 47.3MPa, 111.2MPa, 15270MPa, 66 kJ/m² and 3510N, respectively. The wood volume shrinkage rates from wet to total-dry and from wet to air-dry are 14.6% and 6.4%, respectively. The wood volume wet expansion rates from total-dry to wet and from total-dry to air-dry are 17.9% and 7.6%, respectively. The wood total-dry density is 0.688 g/cm³.

Main use:

It can be used as timber tree.

Silvicultural techniques:

It is recommended to be planted in spring and supplemented in rainy season in Guangxi, and mainly planted in the rainy season in Yunnan. The planting sites are usually completely cleared, and prepared 0.3-0.5m deep in strips of 0.6-1.0 m wide or holes with diameter of 0.5-0.7. The sizes of planting holes are normally 40 cm×40 cm×30 cm or 50 cm×50 cm×40 cm. 200-300 g of superphosphate and 100 g of compound fertilizer are applied as base fertilizer. The planting spacing can be 2 m×3 m, 3 m×3 m or 2 m×4 m. This species can be mixed with *Castanopsis*

hystrix, *Cunninghamia lanceolata*, and so on. Tending is usually conducted for early 3 years after planting, and twice per year: before and after the rainy season. The amount of topdressing fertilizers depends on the economic situation.

Suitable areas for planting:

Areas suitable for growing *Betula alnoides* in Guangxi, western and southern Yunnan provinces.

4. Huatong 1

Species: *Idesia polycarpa*

Scientific name: *Idesia polycarpa* ‘Huatong 1’

Type of material: Variety

Category of certification: Pre-certified for 5 years (2022.12.23-2027.12.22)

Registration No.: Guo R-SF-IP-004-2022

Applicants: HUBEI XUZHOU LINNONG Technology Co., LTD (National Forestry Grassland Engineering Technology Research Center of *Idesia polycarpa*)

Breeders: Liu Hanzhen, Dun Chunyao, Chen Jianying, Cao Jian, Wu Daikun, Gu Feiyun, Li Shuanglong, Yuan Bingwu, Zhang Yuanshuang, Li Bing, Wang Shengbin, Wan Songsheng

Characteristics:

The branch forming force is strong, the internode length of branches is 13.5 cm. Leaf dark green, oval. Fruit round, 0.75cm in transverse diameter and 0.72cm in longitudinal diameter. Fruit bright red, purple red at maturity stage, hard to fall off after maturity in winter. Fruit ripens in mid-October to early November. The grafted seedlings or high-grafted replacement trees blossomed in 3 years and entered the full fruit stage in 5 years. The average number of ear per plant was 352, and the yield of fresh fruit per mu after the full fruit stage reached 1050 kg. The fruit oil rate was 36.51% and linoleic acid content was 67.3%.

Main use:

It can be used as oil species.

Silvicultural techniques:

The semi sunny slope or sunny slope with a slope of more than 5 ° and the plot with deep soil layer are suitable for planting, and 1-year-old grafted seedlings with a ground diameter of more than 1 cm and a seedling height of more than 100 cm should be used for afforestation. The planting density can be 3-5 m × 3-6 m, 5% - 10% of pollinating trees in the same flowering period shall be configured. It is recommended to build frozen soil in winter and plant in spring, with the root no more than 3cm above the ground. The trunk of the plant was 1-1.5 m, and the height was controlled within 6 m. It is advisable to use compound fertilizer to supplement water and fertilizer in case of water shortage and fertilizer shortage, and to control tree growth. If conditions permit, it can be once a year to deep tillage between rows.

Suitable areas for planting:

Areas suitable for growing *Idesia polycarpa* in Hubei, Yunnan and Shanxi provinces.

Notes:

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