

附件

2024年度林木良种名录

(中英文)

审定通过品种

1. ‘中桐1号’泡桐

树种：泡桐
类别：品种
编号：国S-SV-PF-001-2024
申报单位：中国林业科学研究院经济林研究所
选育人：冯延芝、李玲、王保平、乔杰、朱彤、夏宏义、钱世江、王红静、赵冬、李彦民、张荣洋、李芳东、杨超伟、庞宏东、赵阳、徐闪闪、李俊霞、司园园、王志勇

学名：*Paulownia fortunei* ‘Zhongtong 1’

通过类别：审定

品种特性

树干通直，树皮光滑。树冠卵圆形，分枝角度60°~70°。在河南孟州8年生平均胸径、主干高和单株材积分别为16.61 cm、5.4 m和0.0877 m³，较对照‘9501’泡桐分别提高8.91%、24.21%和31.09%。7年生木材明度82.56，全干密度0.2463 g/cm³，端面、径切面、弦切面的硬度分别为218.9 kgf/cm²、92.6 kgf/cm²、128 kgf/cm²，较对照‘9501’泡桐分别提高3.41%、5.8%、13.77%、15.17%和2.48%。在湖北、河南试验点‘中桐1号’泡桐丛枝病发病率低于对照品种。

主要用途

用材林品种。

栽培技术要点

选择光照充足、土层肥厚、质地疏松、排水良好的造林地，挖地整穴，规格为60 cm×60 cm×60 cm以上，株距3 m~5 m，行距5 m~8 m，平原地区采用植苗造林、低山丘陵区采用容器苗或根桩进行造林。幼龄林加强水肥管理。

适宜种植范围

河南、湖北等泡桐适宜栽培区。

2. ‘中桐16号’泡桐

树种：泡桐
类别：品种
编号：国S-SV-PF-002-2024
申报单位：中国林业科学研究院经济林研究所
选育人：赵阳、王保平、庞宏东、乔杰、王红玲、冯延芝、孟伟、李玲、霍建军、毕全勇、施士争、李芳东、周瑜、罗桂杰、郭澄澄、朱彤

学名：*Paulownia fortunei*×*P. tomentosa* ‘Zhongtong 16’

通过类别：审定

段 伟、钱世江、司园园、王志勇

品种特性

树干通直，树皮褐色。树冠卵圆形，分枝角度60°~70°。在河南孟州6年生平均胸径、主干高和单株材积分别为17.72 cm、7.66 m和0.1402 m³，较对照‘9501’泡桐分别提高10.52%、43.55%和30.42%。7年生木材明度80.47，全干密度0.2499 g/cm³，端面、径切面和弦切面的硬度分别为201.9 kgf/cm²、95.5 kgf/cm²和141.8 kgf/cm²，较对照品种分别提高0.79%、7.35%、4.94%、18.78%和13.53%。在湖北、河南、江苏试验点‘中桐16号’泡桐丛枝病发病率低于对照品种。

主要用途

用材林品种。

栽培技术要点

选择光照充足、土层肥厚、质地疏松、排水良好的造林地，挖地整穴，规格为60 cm×60 cm×60 cm以上，株距3 m~5 m，行距5 m~8 m，平原地区采用植苗造林、低山丘陵区采用容器苗或根桩进行造林。幼龄林加强水肥管理。

适宜种植范围

河南、湖北和江苏等泡桐适宜栽培区。

3. 欧洲云杉捷克种源

树种：欧洲云杉

学名：*Picea abies*

类别：种源

通过类别：审定

编号：国S-SP-PA-003-2024

申报单位：中国林业科学研究院林业研究所、甘肃省小陇山林业科学研究所、湖北省宜昌市林业科学研究所、黑龙江省林业科学研究所

选 育 人：王军辉、麻文俊、安三平、高本旺、王福德、王丽芳、陶双勇、祁万宜、马建伟、杨桂娟、田开春、高 晗、王毅敏

品种特性

中国林业科学研究院1978年从捷克引进。树干通直，树冠圆锥形，树皮深灰色。在甘肃天水市小陇山13年生平均树高、胸径分别为7.90 m、13.3 cm，分别比对照青海云杉提高61%和101%。40年生树干中部木材气干密度0.398 g/cm³，抗弯强度50.3 MPa，纤维素含量70.92%。

主要用途

可作为用材林品种、园林绿化品种。

栽培技术要点

选择海拔1800 m以下，土壤深厚、肥沃和水分充足的造林地。株行距1.5 m×2 m、2 m×2.5 m、2.5 m×2.5 m，穴状整地50 cm×50 cm×40 cm。春季造林，容器苗造林成活率高，裸根苗造林须采用保水剂蘸根，鼠害严重地区做好防治。

适宜种植范围

甘肃、湖北、黑龙江等海拔1000 m~1800 m、年降水量600 mm以上云杉适宜栽培区。

4. ‘热林518’尾叶桉

树种：尾叶桉

学名：*Eucalyptus urophylla* 'Relin 518'

类别：无性系

通过类别：审定

编号：国S-SC-EU-004-2024

申报单位：中国林业科学研究院热带林业研究所、中林集团雷州林业局有限公司林业科学研究分公司

选育人：徐建民、李光友、陆钊华、陈文平、赵汝玉、黄宏健、胡杨、陈应彪、何普林、杨德明、钟珍、李孔生、罗成学、粟国磊、张磊、姜成

品种特性

树干通直，树冠窄。在广东雷州6年生平均树高、胸径分别为12.65 m、10.35 cm，木材含水率、全干密度、顺纹抗压强度、顺纹抗剪强度、抗弯强度、抗弯弹性模量、冲击韧性和端面硬度、弦面硬度、径面硬度分别为13.8%、0.505 g/cm³、44.4 MPa、10.9 MPa、84.2 MPa、14903 MPa、104.4 kJ/m²、4246 N、3182 N和2200 N；纤维长、宽分别为740 μm和17.4 μm，综纤维素含量、木质素含量、粗浆得率、细浆得率和卡伯值分别为83.14%、25.35%、50.3%、46.32%和23.25%。

主要用途

用材林品种。

栽培技术要点

在低山丘陵区，种植密度1667株/hm²，株穴规格为50 cm×50 cm×40 cm。广东、广西沿海春季造林，云南雨季造林，造林后3周内补植。适宜株行距为2 m×3 m、3 m×3 m或2 m×4 m。

适宜种植范围

适宜华南沿海及云南南部年降雨量1000 mm以上，年均气温16℃~20℃，最低气温不高于-5℃地区种植。

5. '京丰2号' 杨

树种：杨树

学名：*Populus* 'Jingfeng 2'

类别：无性系

通过类别：审定

编号：国S-SC-PJ-005-2024

申报单位：北京林业大学、北京市园林绿化科学研究所

选育人：张平冬、康向阳、李赞、杜康、彭玉信、吴创业、李金忠、张恒月、段美红、李攀

品种特性

三倍体雌株。树形开展，宽卵形，树干通直，树皮灰绿色。在河北、河南、北京地区，8年生平均材积生长量229.35 m³/hm²，木材基本密度0.3627 g/cm³，纤维长850 μm，分别超过对照品种'三毛杨8号' 37%、2%和16.9%。

主要用途

用材林品种。

栽培技术要点

春季造林为主，密度500株/hm²~1500株/hm²。选用地势平坦、土层深厚的平川地。当年生苗造林，起苗后重度修剪或截干。采用穴植造林，造林后及时浇水，第三年开始追肥。

适宜种植范围

河北、河南、北京等杨树适宜栽培区。

6.火炬松家系 W11

树种：火炬松

学名：*Pinus taeda* ‘W11’

类别：家系

通过类别：审定

编号：国S-SF-PT-006-2024

申报单位：华南农业大学

选育人：刘天颐、宁华琪、黎志强、何可权、班龙海、黄少伟、许金文、彭小兵
陆跃堂、狄新令、李慧玲、张方友、肖平江、冉学珍、黄宝宇

品种特性

由广东英德火炬松1.5代种子园中选育。在广东、江西、贵州3个试验点材积遗传增益分别比对照提高32.64%、60%、37.78%；8年生木材纤维素含量68.24%，总木质素含量31.76%，酸溶木质素含量2.72%，klason木质素含量29.04%。在贵州独山海拔1000 m地区生长良好。

主要用途

用材林品种。

栽培技术要点

种子低温层积15 d~21 d，秋季播种后次年春末夏初造林，或春季催芽后秋季造林。造林用半年或1年生苗，穴规格40 cm×40 cm×40 cm或50 cm×50 cm×50 cm；春末或秋季造林，株行距3 m×3 m。

适宜种植范围

广东、江西、贵州、河南等年均气温14.6℃~21.7℃，年降水量918 mm~2510 mm的火炬松适宜栽培区。

7.火炬松家系 W14

树种：火炬松

学名：*Pinus taeda* ‘W14’

类别：家系

通过类别：审定

编号：国S-SF-PT-007-2024

申报单位：华南农业大学

选育人：刘天颐、宁华琪、黎志强、何可权、班龙海、黄少伟、许金文、彭小兵
陆跃堂、狄新令、李慧玲、张方友、肖平江、冉学珍、黄宝宇

品种特性

由广东英德火炬松1.5代种子园中选育。在广东、江西、贵州、河南4个试验地点材积遗传增益分别比对照提高24.09%、42.11%、63.83%、3.68%，平均遗传增益33.43%。8年生木材综纤维素含量68.98%，总木质素含量31.02%，酸溶木质素含量2.69%，klason木质素含量28.33%。在贵州独山海拔1000 m地区生长良好。

主要用途

用材林品种。

栽培技术要点

种子低温层积15 d~21 d，秋季播种后次年春末夏初造林，或春季催芽后秋季造林。造林用半年或1年生苗，穴规格40 cm×40 cm×40 cm或50 cm×50 cm×50 cm；春末或秋季造林，株行距3 m×3 m。

适宜种植范围

广东、江西、贵州、河南等年均气温14.6℃~21.7℃，年降水量918 mm~2510 mm的火炬松适宜栽培区。

8. ‘红粉’大岛樱

树种：大岛樱 学名：*Prunus speciosa* × *P. campanulata* ‘Hongfen’
类别：品种 通过类别：审定
编号：国S-SV-PS-008-2024
申报单位：浙江省林业科学研究院、福建省林业科学研究院、山东省林草种质资源中心
青岛樱花谷科技生态园有限公司、滁州中樱生态农业科技有限公司
选育人：柳新红、李因刚、洪志猛、沈鑫、鲁仪增、蒋冬月、王松、王宇
周琦、诸葛菲、水春雷、胡晓敏、聂超仁、伊贤贵、陈高坤

品种特性

树冠宽卵状，先花后叶。花色粉红艳丽，花瓣近平展，花量密集，集束枝顶，20 cm花枝着生花序数45~60个，每序花朵数4~6朵，花径3.8 cm~4.3 cm。在浙江2月下旬至3月上旬开花，在安徽、山东3月上旬开花，较对照品种‘染井吉野’樱提前20 d；花期长15 d~20 d，较对照品种‘染井吉野’樱长10 d。

主要用途

观赏品种。

栽培技术要点

选择土层深厚、土质和肥力较好的中低山缓坡地栽培。落叶期移植，适度施肥、松土除草和整形修剪，保持良好的干形和冠形。栽植后注意密度控制、肥水管理和修剪整形。

适宜种植范围

浙江、安徽、山东等樱花适宜栽培区。

9. ‘华仲30号’杜仲

树种：杜仲 学名：*Eucommia ulmoides* ‘Huazhong 30’
类别：品种 通过类别：审定
编号：国S-SV-EU-009-2024
申报单位：中国林业科学研究院经济林研究所
选育人：杜庆鑫、刘丹、王璐、刘攀峰、杜笑林、牛红云、杜红岩、孙志强
朱景乐、王雁、张森森、郭伟、王运钢、王会娜、岳慧

品种特性

雌株，树势中庸，树姿半开张。在河南9月中旬至10月上旬果实成熟，果实椭圆形，果顶无明显卷曲，果实平均千粒重100 g。嫁接苗或高接换雌后2~3年开花，第4~6年进入盛果期，盛果期年产量可达2625 kg/hm²~3450 kg/hm²。种仁粗脂肪中α-亚麻酸含量66%，较对照‘华仲7号’杜仲提高4%。

主要用途

可用于营建杜仲果园。

栽培技术要点

栽植株行距4 m×5 m或2 m×3 m，规模化机械化示范基地可以种植成宽窄行，宽行5 m~6 m，窄行2 m~3 m，株距3 m。配置‘华仲5号’‘华仲11号’‘华仲22号’杜仲等授粉品种，授粉品种比例3%~5%。适宜树形为自然开心形、两层疏散开心形、自然纺锤形。在结果大年时对主干或主枝进行环剥、环割。加强水肥管理，每年萌动前15 d、夏季5~7月份追肥3~4次，采用条状沟施肥法，施用 N:P₂O₅:K₂O=1:1.2:0.55的复合肥。

适宜种植范围

河南、山东等杜仲适宜栽培区。

10. ‘凤选1号’花椒

树种：花椒

学名：*Zanthoxylum bungeanum* ‘Fengxuan 1’

类别：品种

通过类别：审定

编号：国S-SV-ZB-010-2024

申报单位：西北农林科技大学

选育人：魏安智、刘永红、费希同、曹永红、刘玉林、王卫平、魏国银、杨途熙

品种特性

树势强旺，树姿半开张。果实深红色，平均穗粒数51粒，平均干皮千粒重21 g，盛果期干花椒产量达1218.45 kg/hm²，较对照‘凤县大红袍’花椒提高15.25%。果皮挥发油、醇溶提取物、乙醚提取物含量分别为5.3 mL/100 g、19.25%、12%，分别比对照品种提高13.12%、21.37%、8.89%。

主要用途

经济林品种。

栽培技术要点

选择海拔1300 m以下、土壤厚度80 cm以上、地下水位低于1 m、土壤质地疏松的沙壤土或壤土上建园，株行距3 m×4 m或4 m×4 m。采用自然开心形树形，以“春抹芽、夏摘心、秋拉枝”为主要整形修剪措施，并辅助冬季剪枝。果实采收后，株施农家肥40 kg~50 kg、磷肥0.5 kg~2 kg，开花后，株追施尿素0.5 kg~1 kg。6月中旬果熟前，株追施尿素0.2 kg、磷肥和钾肥各0.5 kg。在早春萌芽前，全园普遍喷1次5度石硫合剂，注意防治跳甲、吉丁虫、红蜘蛛、花椒凤蝶和锈病。

适宜种植范围

陕西、甘肃等花椒适宜栽培区。

11. ‘宝光’葡萄

树种：葡萄

学名：*Vitis vinifera* × *V. labrusca* ‘Baoguang’

类别：品种

通过类别：审定

编号：国S-SV-VV-011-2024

申报单位：河北省农林科学院昌黎果树研究所

选育人：李敏敏、韩斌、尹勇刚、贾楠、王建萍、雷龔、孙艳、刘长江、赵艳丽、韩树立、王新宇、陈文朝、赵胜建、郭紫娟、袁军伟、马爱红、张璘、张昂、楚紫辉

品种特性

生长势中等。果实紫黑色，果粉较厚，果肉较脆，果皮较薄。平均穗重716.9 g；平均粒重13.7 g，超对照品种‘巨峰’葡萄2 g；果实具有玫瑰香与草莓香的混合香味，可溶性固

形物含量18%，超过对照品种9.5%，可滴定酸含量0.47%。在河北昌黎盛果期平均产量30940 kg/hm²，比对照品种提高29.4%。

主要用途

鲜食。

栽培技术要点

可采用小棚架或篱架种植，小棚架采用独龙干整形，株距0.8 m~1 m，行距4 m，篱架可采用单干单臂龙干形整枝，或“V”字形整形，株距0.6 m~0.8 m，行距2.2 m~2.5 m。每株留1~2个主蔓，冬季以中短梢修剪为主，副梢易萌发，注意抹梢和摘心。定植时亩施优质基肥4000 kg~5000 kg，产量24000 kg/hm²~27000 kg/hm²为宜。

适宜种植范围

河北、山东等葡萄适宜栽培区。

12. ‘蜜光’葡萄

树种：葡萄

学名：*Vitis vinifera* × *V. labrusca* ‘Miguang’

类别：品种

通过类别：审定

编号：国S-SV-VV-012-2024

申报单位：河北省农林科学院昌黎果树研究所

选 育 人：韩 斌、李敏敏、刘长江、孙 艳、唐美玲、赵旗峰、贾 楠、尹勇刚
赵艳丽、王新宇、韩树立、陈文朝、赵胜建、郭紫娟、袁军伟、马爱红
袁洪丰、张 昂、楚燕杰

品种特性

生长势较强。果实紫红色，果粉中等厚，果肉硬而脆。平均穗重720.6 g，平均粒重9.5 g，果实具有玫瑰香味，可溶性固形物含量19%~22.8%，可滴定酸含量为0.49%。在河北昌黎，8月上旬果实成熟，比对照品种‘巨峰’葡萄早熟10 d~14 d，盛果期平均产量27100 kg/hm²，比对照品种提高17.22%。果粒附着力较强，耐贮运。

主要用途

鲜食。

栽培技术要点

可采用小棚架或篱架种植，小棚架采用独龙干整形，株距0.8 m~1 m，行距4 m，篱架可采用单干单臂龙干形整枝，或“V”字形整形，株距0.6 m~0.8 m，行距2.2 m~2.5 m。每株留1~2个主蔓，冬季以中短梢修剪为主，副梢易萌发，注意抹梢和摘心。定植时亩施优质基肥4000 kg~5000 kg，控制产量，产量24000 kg/hm²~27000 kg/hm²为宜。

适宜种植范围

河北、山东等葡萄适宜栽培区。

13. ‘礼品2号’核桃

树种：核桃

学名：*Juglans regia* ‘Lipin 2’

类别：品种

通过类别：审定

编号：国S-SV-JR-013-2024

申报单位：辽宁省经济林研究所、中国林业科学研究院林业研究所

选 育 人：刘 枫、张俊佩、梁德军、赵宝军、贺有超、李冬生、张彩红、王红霞
武 静、周 晔、王云飞、马瑞峰、刘广平、孙 阳、姚春雷、李丕夫

常亚辉、刘振盼、杨云博、王秀峰、白志贵、王仕海、陈琦、**刘万生**

品种特性

树势中庸，树姿半开张。坚果长圆形，纵径4.1 cm，横径3.6 cm，侧径3.7 cm，壳厚0.7 mm。平均单果重13.5 g，平均核仁重9.1 g，出仁率67.4%。核仁脂肪含量68.6%，蛋白质含量13.8%。在河北赞皇盛果期平均产量3228 kg/hm²，比对照品种‘礼品1号’核桃提高32.3%。

主要用途

鲜食、炒食。

栽培技术要点

选择坡度小于15°、向阳、地下水位超2 m、排水良好的土地栽培。株距6 m，行距6 m~8 m，配置‘礼品1号’核桃作为授粉树，配置比例为(8~2):1。整形修剪采用疏散分层形，定干高度80 cm~100 cm。秋施基肥，采收后或春季发芽前施用厩肥和堆肥，生长季追肥。萌芽前、果实硬核期和冬季封冻前灌水。进入盛果期，加强肥水管理。辽宁地区1~2年生幼树，11月下旬需压倒培土或用土包防寒。

适宜种植范围

辽宁、山西、河北等核桃适宜栽培区。

14. ‘辽宁1号’核桃

树种：核桃

学名：*Juglans regia* ‘Liaoning 1’

类别：品种

通过类别：审定

编号：国S-SV-JR-014-2024

申报单位：辽宁省经济林研究所、中国林业科学研究院林业研究所

选育人：刘枫、张俊佩、梁德军、赵宝军、贺有超、李冬生、张彩红、王红霞、武静、白永超、王云飞、马瑞峰、刘广平、孙阳、姚春雷、李丕夫、常亚辉、刘振盼、杨云博、王秀峰、白志贵、王仕海、陈琦、**刘万生**

品种特性

生长势强，树姿半开张。坚果圆形，果基平或圆，纵径3.5 cm，横径3.4 cm，侧径3.5 cm，壳厚0.9 mm~1 mm。平均单果重9.4 g，平均核仁重5.6 g，出仁率59.6%，核仁脂肪含量68%，蛋白质含量14.2%。在河北赞皇盛果期平均产量3103.5 kg/hm²，比对照品种‘辽宁5号’核桃提高38.4%。

主要用途

鲜食、炒食。

栽培技术要点

选择坡度小于15°、向阳、地下水位超2 m、排水良好的土地栽培。株行距4 m×5 m或4 m×6 m，配置‘辽宁6号’核桃作为授粉树，配置比例为(8~2):1。整形修剪采用疏散分层形，定干高度60 cm~80 cm。秋施基肥，采收后或春季发芽前施用厩肥和堆肥，生长季追肥。萌芽前、果实硬核期和冬季封冻前灌水。进入盛果期，加强肥水管理。辽宁地区1~2年生幼树，11月下旬需压倒培土或用土包防寒。

适宜种植范围

辽宁、山西、河北等核桃适宜栽培区。

15. ‘中宁奇’核桃

树种：核桃

学名：*Juglans hindsii* × *J. regia* ‘zhongningqi’

类别：品种

通过类别：审定

编号：国S-SV-JH-015-2024

申报单位：中国林业科学研究院林业研究所

选育人：裴东、宋晓波、张俊佩、徐虎智、刘鹏飞、奚声珂、李秀珍、王少明
张建武

品种特性

生长势旺盛，主干通直，树冠圆形，分枝角度30°。坚果厚壳，难取仁。作为砧木嫁接核桃、泡核桃、魁核桃成活率95%以上。在河南洛宁10年生平均树高11.3 m，胸径23.73 cm，胸径生长量高于对照品种‘北加州黑核桃’84%，木材气干密度0.534 g/cm³，全干密度0.514 g/cm³，抗弯强度73.85 MPa。

主要用途

可用作核桃砧木、用材林品种。

栽培技术要点

作为砧木营建核桃果园时，通过芽接法进行嫁接，早实良种株距4 m~5 m，行距5 m~6 m，晚实良种株距6 m~8 m，行距10 m~12 m；营建果材兼用园时，使用3年以上‘中宁奇’核桃扦插苗，嫁接高度大于1.5 m，株距3 m~4 m，行距6 m~8 m。

适宜种植范围

河南、山西和重庆等核桃适宜栽培区。

16. ‘强桑3号’桑

树种：桑树

学名：*Morus alba* ‘Qiangsang 3’

类别：品种

通过类别：审定

编号：国S-SV-MA-016-2024

申报单位：浙江省农业科学院

选育人：吕志强、林天宝、刘岩、朱燕、魏佳、计东风

品种特性

鲁桑系，二倍体，生长势强。叶形大而叶肉厚，叶面平滑，100 cm²重2.4 g。在杭州春季发芽期为3月10日左右，开叶期3月17日左右，叶片成熟期5月初。叶片粗蛋白含量7.69%，超过对照品种‘荷叶白’桑5.8%。桑叶产量43582.8 kg/hm²~53460 kg/hm²，比对照品种增产16.77%~25.63%。

主要用途

饲育蚕。

栽培技术要点

平原和低丘缓坡种植，每公顷栽植12000株左右，2~3月种植，种植定干后，宜进行连续两年春伐，促进支干生长粗壮，公顷留条数在120000条左右。春季发芽后、夏伐后各施硫酸钾型复合肥75 kg/667 m²，秋季施50 kg/667 m²，冬施有机肥1000 kg/667 m²~1500 kg/667 m²。注意开沟排水，每年春节前进行整枝、修剪等管理。

适宜种植范围

浙江、安徽、江西、山东等桑树适宜栽培区。

17. ‘强桑5号’桑

树种：桑树

学名：*Morus alba* ‘Qiangsang 5’

类别：品种

通过类别：审定

编号：国S-SV-MA-017-2024

申报单位：浙江省农业科学院

选育人：吕志强、林天宝、刘岩、朱燕、魏佳、计东风

品种特性

鲁桑系，二倍体，生长势强。叶片心脏形，墨绿色，叶形大而叶肉厚，叶面微糙，100 cm²重2.3 g；在杭州春季发芽期3月7日左右，开叶期3月14日左右，叶片成熟期5月初。叶片粗蛋白含量8.27%，超过对照品种‘荷叶白’桑5.8%。桑叶产量40167.6 kg/hm² ~ 55979.9 kg/hm²，比对照品种提高8.49%~22.27%。

主要用途

饲育蚕。

栽培技术要点

平原和低丘缓坡种植，每公顷栽植12000株左右，2~3月种植，种植定干后，宜进行连续两年春伐，促进支干生长粗壮，公顷留条数在120000条左右。春季发芽后、夏伐后各施硫酸钾型复合肥75 kg/667 m²，秋季施50 kg/667 m²，冬施有机肥1000 kg/667 m² ~ 1500 kg/667 m²。注意开沟排水，每年春节前整枝、修剪等管理。

适宜种植范围

在浙江、安徽、江西、山东等桑树适宜栽植区。

18. ‘皖叶5号’桑

树种：桑

学名：*Morus alba* ‘Wanye 5’

类别：品种

通过类别：审定

编号：国S-SV-MA-018-2024

申报单位：安徽省农业科学院蚕桑研究所

选育人：汪泰初、耿兵、李兴、苏雪强、周荣、李瑞雪、毕会涛、许萃敏
高新文、胡钢、郭辉、刘国峰、刘军、钱淑昌、陈怀玉

品种特性

鲁桑系，二倍体，树形直立。叶型较开展，深绿色，叶长23.5 cm，叶幅16 cm。在安徽合肥春季发芽期4月6~11日，开叶期4月13~22日，成熟期4月28日~5月12日，属中生中熟偏晚品种。年产叶量37259 kg/hm²，100 kg春桑产茧量5.81 kg，叶片粗蛋白含量29.2%，分别比对照品种‘湖桑32号’桑提高18.58%、7.58%、35.81%。

主要用途

饲育蚕。

栽培技术要点

平原和低丘缓坡种植，行株距1.5 m×0.5 m，宽行密植或按宽窄行栽植，宽行2.3 m~2.5 m，窄行0.5 m~0.6 m，株距0.4 m~0.5 m。树型采用低干养成，一般3年可养成丰产桑园，每公顷枝条14.25万条至15万条左右。冬春剪梢要轻，以1/8~1/5为宜。春季多雨高湿时，要注意开沟排水。

适宜种植范围

山东、安徽等桑树适宜栽培区。

19. ‘皖叶6号’桑

树种：桑

学名：*Morus alba* ‘Wanye 6’

类别：品种

通过类别：审定

编号：国S-SV-MA-019-2024

申报单位：安徽省农业科学院蚕桑研究所

选育人：李瑞雪、汪泰初、李兴、苏雪强、周荣、毕会涛、许萃敏、耿兵、高新文、胡钢、郭辉、刘国峰、刘军、钱淑昌、陈怀玉

品种特性

鲁桑系，二倍体，树形较直立，侧枝少。叶心脏形，深绿色，叶长23.5 cm，叶幅19.5 cm，较厚。在安徽合肥春季发芽期4月3~8日，开叶期4月10~18日，成熟期4月23日~5月4日，属中生中熟品种。年产叶量37511.3 kg/hm²、100 kg春桑产茧量5.84 kg、叶片总黄酮含量为2.27%，分别比对照品种‘湖桑32号’桑提高19.38%、8.14%、66.91%。

主要用途

饲育蚕、制茶。

栽培技术要点

平原和低丘缓坡种植，行株距1.5 m×0.5 m，宽行密植或按宽窄行栽植，宽行2.3 m~2.5 m，窄行0.5 m~0.6 m，株距0.4 m~0.5 m。树型采用低干养成，一般3年可养成丰产桑园，每公顷枝条14.25万条至15万条左右。冬春剪梢要轻，以1/8~1/5为宜。春季多雨高湿时，要注意开沟排水。

适宜种植范围

山东、安徽等桑树适宜栽培区。

20. ‘豆果’油橄榄

树种：油橄榄

学名：*Olea europaea* ‘Arbequina’

类别：引种驯化品种

通过类别：审定

编号：国S-ETS-OE-020-2024

申报单位：中国林业科学研究院林业研究所、重庆市林业科学研究院、凉山州华泽农业科技有限公司、丹江口市兴源生橄榄油科技发展有限公司、陇南市经济林研究院油橄榄研究所、陇南市武都区油橄榄产业开发办公室、玉溪市润泽农业科技发展有限公司、冕宁元升农业科技有限公司

选育人：张建国、李金花、王兆山、朱恒星、黄飞逸、戴前莉、王贵德、雍巧宁、李娜、张涛、饶国栋、赵海云、谷秋微、马宏博、佟兆国、陈艳、陈勃、肖小华、吕龙强、赵加友、王敏、李庆华、苏光灿、胡伟、王安毅、付永平、黄勇、张波、杜晋城、范仕兵、张孝辉、张子晗、吕成华、谈召林、白小勇、肖剑、王文雄、邹军、杨海文、张正武、俞宁、邓煜、邓明全

品种特性

中国林业科学研究院1976年从西班牙引进，又名阿贝基娜。生长势中等偏弱，树冠开张向下垂。果实对称球形，平均单果重2.38 g。在湖北丹江口盛果期平均产量为

7883.7 kg/hm²。平均果肉率和鲜果含油率分别为83.23%、18.98%，较对照品种‘鄂植8号’油橄榄分别提高了17%、8%。橄榄油不饱和脂肪酸含量81.65%。

主要用途

油料品种，果实用于榨取橄榄油。

栽培技术要点

选择光照充足、土层较厚，pH值6.5~7.5的钙质沙壤土和壤土。低密度栽培株行距5 m×6 m、4 m×5 m，高密度栽培株行距2 m×4 m、4 m×4 m。在降雨量低的地区，穴状整地，在降雨量800 mm以上的地区，高垄或高台整地。配置‘阿波桑娜’或‘科罗莱卡’油橄榄以保证充分的异花授粉。定植时每穴施有机肥50 kg~100 kg，加强水肥管理。加强修剪提高通风透光，降低病害侵染。

适宜种植范围

甘肃、四川、湖北、重庆等油橄榄适宜栽培区。

21. ‘科罗莱卡’油橄榄

树种：油橄榄

学名：*Olea europaea* ‘Koroneiki’

类别：引种驯化品种

通过类别：审定

编号：国S-ETS-OE-021-2024

申报单位：中国林业科学研究院林业研究所、陇南市武都区油橄榄产业开发办公室、陇南市经济林研究院油橄榄研究所、凉山州华泽农业科技有限公司、玉溪市润泽农业科技发展有限公司、丹江口市兴源生橄榄油科技发展有限公司、冕宁元升农业科技有限公司

选育人：张建国、王兆山、李金花、李娜、王贵德、雍巧宁、张涛、饶国栋、赵海云、张正武、谷秋微、马宏博、张波、佟兆国、陈艳、李庆华、杜晋城、陈勃、邹军、赵加友、王敏、苏光灿、胡伟、王安毅、付永平、黄勇、范仕兵、张孝辉、张子晗、祁海红、王鹏、吕成华、吕龙强、肖小华、谈召林、白小勇、肖剑、王文雄、杨海文、孙文勇、俞宁、邓煜、邓明全

品种特性

中国林业科学研究院1976年从希腊引进。定植第2~3年开始挂果，第4年开始进入盛产期。果实卵形，平均单果重1.62 g，在湖北丹江口盛果期平均产量为7494.3 kg/hm²，平均果肉率和鲜果含油率分别为86.51%、19.53%。鲜果含油率19%~21%，橄榄油不饱和脂肪酸含量84.22%。

主要用途

油料品种，果实用于榨取橄榄油。

栽培技术要点

选择光照充足、土层较厚，pH值6.5~7.5的钙质沙壤土和壤土。低密度栽培株行距5 m×6 m，高密度栽培株行距2 m×4 m、4 m×3 m和4 m×4 m。在降雨量低的地区，穴状整地，在降雨量800 mm以上的地区，高垄或高台整地。配置‘阿波桑娜’或‘豆果’油橄榄以保证充分的异花授粉。定植时每穴施有机肥50 kg~100 kg，加强水肥管理。加强修剪提高通风透光，降低病害侵染。

适宜种植范围

甘肃、四川、湖北等油橄榄适宜栽培区。

认定通过品种

1. 吴城油松一代无性系种子园种子

树种：油松 学名：*Pinus tabulaeformis* ‘wucheng yousong yidai wuxingxi zhongziyuan zhongzi’
类别：无性系种子园种子 通过类别：认定8年（2024年12月25日-2032年12月24日）
编号：国R-CSO(1)-PT-001-2024
申报单位：山西省关帝山国有林管理局吴城种子园
选育人：李广文、常素玲、成国强、董刚毅、张建钢、郝映星、冉娟、王晨巍、栗宇鹏、任文博

品种特性

树干通直，根系发达。种子饱满，千粒重48.5 g。9年生平均树高1.48 m，平均胸径4.4 cm，比普通油松平均树高、胸径分别提高18.4%和18.9%。27年生木材气干密度0.976 g/cm³，木材抗弯强度44.9 MPa，木材抗弯弹性模量7070 MPa。

主要用途

用材林和防护林兼用品种。

栽培技术要点

春播或秋播，催芽处理，经1%高锰酸钾消毒2 h、浸泡24 h~48 h后催芽，待1/3种子裂口（露白）时，即可进行播种。使用4~5年生容器苗进行造林，植穴整地40 cm×40 cm×30 cm，造林密度纯林为1650株/hm²。造林3年内注意割灌除草等抚育管理、封山禁牧及鼠兔危害。

适宜种植范围

山西、内蒙古、青海等油松适宜栽培区。

2. ‘中成4号’杨

树种：杨树 学名：*Populus deltoides* ‘Zhongcheng 4’
类别：无性系 通过类别：认定5年（2024年12月25日-2029年12月24日）
编号：国R-SC-PD-002-2024
申报单位：中国林业科学研究院林业研究所
选育人：胡建军、赵自成、张磊、李喜林、刘凯英、赵树堂、薛俊昌、周星鲁、苏雪辉、李善文、校丙申、吕建爽

品种特性

雄株，树干通直圆满。树冠中等大小，侧枝分枝角50°。在河南焦作4年生平均胸径、树高和单株材积分别为12.21 cm、10.58 m、0.0456 m³，分别超对照品种‘108’杨19.12%、11.32%和28.6%。在北京市10年生木材纤维长939.86 μm、纤维宽21.62 μm、微纤丝角13.06°，分别为对照品种‘创新杨 17-2’杨树的104.73%、96.34%、84.81%。

主要用途

用材林品种。

栽培技术要点

选用无病虫害壮苗用于栽植，带根苗木规格胸径2 cm以上，苗高3.5 m以上；插干规格胸径2 cm以上，长度3.5 m以上；截干规格直径2 cm以上，长度50 cm；深植，50 cm

~60 cm；造林前苗木浸泡2 d以上。造林密度300株/hm²~1250株/hm²，造林后1~3年可间作矮秆作物。

适宜种植范围

北京、河南、山东等杨树适宜栽培区。

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. Zhongtong 1

Species: *Paulownia*

Scientific name: *Paulownia fortunei* 'Zhongtong 1'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-PF-001-2024

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

Breeders: Feng Yanzhi, Li Ling, Wang Baoping, Qiao Jie, Zhu Tong, Xia Hongyi, Qian Shijiang, Wang Hongjing, Zhao Dong, Li Yanmin, Zhang Rongyang, Li Fangdong, Yang Chaowei, Pang Hongdong, Zhao Yang, Xu Shanshan, Li Junxia, Si Yuanyuan, Wang Zhiyong

Characteristics

The trunk is straight and the bark is smooth. Crown ovoid, branching angle 60°~70°. In Mengzhou City, Henan Province, the average diameter at breast height (DBH), trunk height and individual volume of 8-year-old trees are 16.61 cm, 5.4 m and 0.0877 m³, respectively, which are 8.91%, 24.21% and 31.09% higher than those of the control variety '9501'. The hardness and full dry density of the 7-year-old wood are 82.56 and 0.2463 g/cm³, respectively. The hardness of the end face, radial section, and chord section are 218.9 kgf/cm², 92.6 kgf/cm², and 128 kgf/cm², respectively, which are 3.41%, 5.8%, 13.77%, 15.17% and 2.48% higher than that of the control '9501'. In Hubei and Henan provinces, the incidence rate of withes broom 'Zhongtong 1' is lower than that of the control variety.

Main use

It can be used as timber tree.

Silvicultural techniques

Choose the afforestation site with sufficient sun light, fertile soil, loose texture and good drainage, Digging and shaping holes with specifications of more than 60 cm×60 cm×60 cm, spacing of 3 m~5 m, row spacing of 5 m~8 m. In plain areas seedlings are used for planting, and in low mountainous areas container raised seedlings or root stakes are used for planting. Paying attention to irrigation and fertilization at young age.

Suitable areas for planting

Areas suitable for growing *Paulownia fortunei* in Henan, Hubei.

2. Zhongtong 16

Species: *Paulownia*

Scientific name: *Paulownia fortunei* × *P. tomentosa* 'Zhongtong 16'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-PF-002-2024

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

Breeders: Zhao Yang, Wang Baoping, Pang Hongdong, Qiao Jie, Wang Hongling, Feng Yanzhi, Meng Wei, Li Ling, Huo Jianjun, Bi Quanyong, Shi Shizheng, Li Fangdong, Zhou Yu, Luo Guijie, Guo Chenchen, Zhu Tong, Duan Wei, Qian Shijiang, Si Yuanyuan, Wang Zhiyong

Characteristics

Trunk straight, bark brown. Crown ovoid, branching angle 60°~70°. In Mengzhou City, Henan Province, the average diameter at breast height (DBH), trunk height and individual volume of 6-year-old trees are 17.72 cm, 7.66 m and 0.1402 m³ respectively, which are 10.52%, 43.55% and 30.42% higher than that of the control '9501'. The wood brightness of 7-year-old tree is 80.47, the full dry wood density is 0.2499 g/cm³, and the hardness on end, radial and tangential sections are 201.9 kgf/cm², 95.5 kgf/cm² and 141.8 kgf/cm², which are 0.79%, 7.35%, 4.94%, 18.78% and 13.53% higher than that of the control variety. In Hubei Henan and Jiangsu provinces, the incidence rate of withes broom 'Zhongtong 16' is lower than that of the control variety.

Main use

It can be used as timber tree.

Silvicultural techniques

Choose the afforestation site with sufficient light, fertile soil, loose texture and good drainage, Digging and shaping holes with specifications of more than 60 cm×60 cm×60 cm, plant spacing of 3 m~5 m, row spacing of 5 m~8 m. The plains area adopts seedling afforestation, and the low mountainous area adopts container seedling or root stake for afforestation. Strengthen water and fertilizer management in young forests.

Suitable areas for planting

Areas suitable for growing *Paulownia fortunei* in Hubei Henan and Jiangsu.

3. Czech Provenance of Norway spruce

Species: *Picea abies*

Scientific name: *Picea abies* 'Czech Provenance'

Type of material: Provenance

Category of certification: Certified

Registration No.: Guo S-SP-PA-003-2024

Applicants: Research Institute of Forestry, Chinese Academy of Forestry; Gansu Province Xiaolongshan Institute of Forestry Science; Yichang Institute of Forestry Science; Heilongjiang Institute of Forestry Science

Breeders: Wang Junhui, Ma Wenjun, An Sanping, Gao Benwang, Wang Fude, Wang Lifang, Tao Shuangyong, Qi Wanyi, Ma Jianwei, Yang Guijuan, Tian Kaichun, Gao Han, Wang Yimin

Characteristics

Introduced from the Czech Republic by the Chinese Academy of Forestry in 1978. Trunk straight, crown conical, bark dark grey. The average height and diameter at breast height of 13-year-old trees in Xiaolongshan, Tianshui City, Gansu Province are 7.90 m and 13.3 cm, respectively, which are 61% and 101% higher than that of the control Qinghai spruce. The air-dry wood density in the middle part of the trunk at 40 years old is 0.398 g/cm³, the bending strength is 50.3 MPa, and the cellulose content is 70.92%.

Main use

It can be used as timber tree, landscaping tree.

Silvicultural techniques

Select afforestation sites below 1800 m above sea level with deep, fertile soil and sufficient water. Plant spacing 1.5 m × 2 m, 2 m × 2.5 m, 2.5 m × 2.5 m, planting hole in size of 50 cm × 50 cm × 40 cm. Trees planted in spring, survival rate of container-raised seedlings is high, bare root seedlings must be treated with water retaining agent to keep moisture for the roots, measures are need to protect trees from rodent damages.

Suitable areas for planting

Areas with altitudes of 1000 m to 1800 m and annual precipitation of more than 600 mm in Gansu, Hubei and Heilongjiang..

4. Relin 518

Species: *Eucalyptus urophylla*

Scientific name: *Eucalyptus urophylla* 'Relin 518'

Type of material: Clone

Category of certification: Certified

Registration No.: Guo S-SC-EU-004-2024

Applicants: Research Institute of Tropical Forestry, Chinese Academy of Forestry; China Forestry Group Corporation Leizhou Forestry Bureau Limited Forestry Scientific Research Branch

Breeders: Xu Jianmin, Li Guangyou, Lu Zhaohua, Chen Wenping, Zhao Ruyu, Huang Hongjian, Hu Yang, Chen Yingbiao, He Pulin, Yang Deming, Zhong Zheng, Li Kongsheng, Luo Chengxue, Li Guolei, Zhang Lei, Zhang Lei, Jiang Cheng

Characteristics

The trunk is straight and the crown is narrow. The average height and diameter at breast height (DBH) of 6-year-old trees in Leizhou, Guangdong are 12.65 m and 10.35 cm, respectively. The wood moisture content, full dry wood density, compression strength of wood parallel to grain, shearing strength of wood parallel to grain, bending strength of wood, Bend-resistant elastic modulus, impact toughness and hardness on end, tangential and radial sections are 13.8%, 0.505 g/cm³, 44.4 MPa, 10.9 MPa, 84.2 MPa, 14903 MPa, 104.4 kJ/m², 4246 N, 3182 N and 2200 N. The fibre length and width are 740 mm and 17.4µm, and the synthesis cellulose, lignin content, crude pulp yield, fine pulp yield and kapper value are 83.14%, 25.35%, 50.3%, 46.32% and 23.25%, respectively.

Main use

It can be used as timber tree.

Silvicultural techniques

In the low hilly areas, the planting density is 1667 plants per hectare, and the size of planting holes is 50 cm×50 cm×40 cm. Afforestation in the spring along the coasts of Guangdong and Guangxi, afforestation during the rainy season in Yunnan, and replant within 3 weeks after afforestation.. The suitable planting spacing is 2 m×3 m, 3 m×3 m or 2 m×4 m.

Suitable areas for planting

It is suitable for planting in areas with annual rainfall of more than 1000 mm, average annual temperature of 16°C~20°C, and minimum temperature of not less than -5°C in coastal South China and southern Yunnan.

5. Jingfeng 2

Species: *Poplar*

Scientific name: *Populus* 'Jingfeng 2'

Type of material: Clone

Category of certification: Certified

Registration No.: Guo S-SC-PJ-005-2024

Applicants: Beijing Forestry University; Beijing Institute of Landscape Architecture

Breeders: Zhang Pingdong, Kang Xiangyang, Li Yun, Du Kang, Peng Yuxing, Wu Chuangye, Li Jinzhong, Zhang Hengyue, Duan Meihong, Li Pan

Characteristics

Triploid female tree. Open tree form, broad ovate, with a straight trunk and grey-green bark. In Hebei, Henan and Beijing, the average volume growth of 8-year-old trees is 229.35 m³/hm², the basic density of wood is 0.3627 g/cm³, and the fibre length is 850 μm, which exceeds that of the control variety, 'Sanmaoyang 8', by 37%, 2%, and 16.9%, respectively.

Main use

It can be used as a timber species.

Silvicultural techniques

Mainly planted in spring, with a density of 500 plants/hm² ~1500 plants/hm². Planting sites are selected in plain areas with flat terrain and deep soil layer. Current year seedlings are used for planting, and heavily pruned or topped after lifting. Trees are planted in planting holes, timely watering applied after planting, and fertilization started from the third year after planting.

Suitable areas for planting

Areas suitable for growing *Poplar* in Hebei, Henan and Beijing.

6. Family W11

Species: *Pinus taeda*

Scientific Name: *Pinus taeda* 'Family W11'

Category: Family

Category of certification: Certified

Registration No.: Guo S-SF-PT-006-2024

Applicant: South China Agricultural University

Breeders: Liu Tianyi, Ning Huagong, Li Zhiqiang, He Kequan, Ban Longhai, Huang Shaowei, Xu Jinwen, Peng Xiaobing, Lu Yuetang, Di Xinling, Li Huiling, Zhang Fangyou, Xiao Pingjiang, Ran Xuezhen, Huang Baoyu

Characteristics

Selected from a 1.5-generation seed orchard in Yingde, Guangdong. At trial sites in Guangdong, Jiangxi, and Guizhou, the genetic gain in wood volume is 32.64%, 60% and 37.78%, respectively, compared to commercial seeds imported from the United States. The cellulose content of 8-year-old wood is 68.24%, with total lignin at 31.76%, acid-soluble lignin at 2.72%, and Klason lignin at 29.04%. Grows well in regions such as Dushan County, Guizhou Province, at an altitude of 1000 m.

Main use

Used as timber species.

Silvicultural Techniques

Seeds should undergo cold stratification for 15~21 days. Autumn sowing followed by spring planting in late spring or early summer, or pre-germination treatment in spring and planting in autumn. Half to 1 year old seedlings are used for planting in planting holes in size of 40 cm × 40 cm × 40 cm or 50 cm × 50 cm × 50 cm. Planting spacing is 3 m × 3 m.

Suitable Planting Regions

Regions with annual average temperatures of 14.6~21.7°C and annual precipitation of 918~2510 mm, such as Guangdong, Jiangxi, Guizhou, and Henan.

7. Family W14

Species: *Pinus taeda*

Scientific Name: *Pinus taeda* Family 'W14'

Category: Family

Category of certification: Certified

Registration No.: Guo S-SF-PT-007-2024

Applicant: South China Agricultural University

Breeders: Liu Tianyi, Ning Huagong, Li Zhiqiang, He Kequan, Ban Longhai, Huang Shaowei, Xu Jinwen, Peng Xiaobing, Lu Yuetang, Di Xinling, Li Huiling, Zhang Fangyou, Xiao Pingjiang, Ran Xuezhen, Huang Baoyu

Characteristics

Selected from a 1.5-generation seed orchard of loblolly pine in Yingde, Guangdong. At trial sites in Guangdong, Jiangxi, Guizhou, and Henan, the genetic gains in wood volume are 24.09%, 42.11%, 63.83%, and 3.68%, respectively, compared to commercial seeds imported from the United States, with an average genetic gain of 33.43%. The comprehensive cellulose content of 8-year-old wood is 68.98%, with total lignin content of 31.02%, acid-soluble lignin content of 2.69%, and Klason lignin content of 28.33%. It grows well in Dushan, Guizhou, at an altitude of 1000 m.

Main use

Used as a timber species.

Silvicultural Techniques

Seeds should undergo cold stratification for 15~21 days. Planting can be carried out in late spring to early summer of the following year after autumn sowing, or in autumn after spring sprouting. Use seedlings aged half to 1 year for

afforestation. Planting holes are prepared in size of 40 cm × 40 cm × 40 cm or 50 cm × 50 cm × 50 cm. Trees planted in late spring or autumn, with a spacing of 3 m × 3 m.

Suitable Planting Regions

Suitable regions for growing *Pinus taeda* include Guangdong, Jiangxi, Guizhou, and Henan, where the annual average temperature ranges from 14.6°C to 21.7°C, and annual precipitation ranges from 918 mm to 2510 mm.

8. Hongfen

Species: *Prunus speciosa*

Scientific Name: *Prunus speciosa* × *P. campanulata* ‘Hongfen’

Category: Variety

Category of certification: Certified

Registration No.: Guo S-SV-PS-008-2024

Applicants: Zhejiang Academy of Forestry, Fujian Academy of Forestry, Shandong Provincial Center of Forest and Grass Germplasm Resources, Qingdao Oriental Cherry Valley Technology Ecological Park Co., Ltd., Chuzhou Zhongying Ecological Agriculture Technology Co., Ltd.

Breeders: Liu Xinhong, Li Yingang, Hong Zhimeng, Shen Xin, Lu Yizeng, Jiang Dongyue, Wang Song, Wang Yu, Zhou Qi, Zhuge Fei, Shui Chunlei, Hu Xiaomin, Nie Chaoren, Yi Xiangui, Chen Gaokun

Characteristics

Broad ovate crown, flowers appear before leaves. Bright pink petals, dense flower clusters at branch tips. Each branch with 20cm length has 45~60 inflorescences, with 4~6 flowers per inflorescence. Flower diameter is 3.8~4.3 cm. Blooms in late February to early March in Zhejiang and early March in Anhui and Shandong, with a flowering period of 15~20 days, 20 days earlier than the control variety ‘Somei-Yoshino’ and a 10-day longer flowering period.

Main use

Used as an ornamental species.

Silvicultural Techniques

Deep, fertile soil on gentle slopes of low to mid hilly areas used for planting. Transplanted during dormancy; apply appropriate fertilization, weeding, and pruning to maintain crown shape. Post-planting management includes density control, fertilizer and water management.

Suitable Planting Regions

Areas suitable for growing Cherry blossom-in Zhejiang, Anhui, and Shandong.

9. Huazhong 30

Species: *Eucommia ulmoides*

Scientific Name: *Eucommia ulmoides* ‘Huazhong 30’

Category: Variety

Category of certification: Certified

Registration No.: Guo S-SV-EU-009-2024

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

Breeders: Du Qingxin, Liu Dan, Wang Lu, Liu Panfeng, Du Xiaolin, Niu Hongyun, Du Hongyan, Sun Zhiqiang, Zhu Jingle, Wang Yan, Zhang Senshen, Guo Wei, Wang Yungang, Wang Huina, Yue Hui

Characteristics

A female variety with moderate growth vigor and semi-spreading tree form. In Henan Province, fruits mature from mid-September to early October. The fruits are elliptical with no significant curvature at the apex, and the thousand-seed weight is 100 g. The grafted seedlings or top-grafted female seedlings start flowering 2~3 years after planting, and enter full bearing period in 4~6 years. During peak fruiting, annual fruit yield can reach 2625~3450 kg/hm². The content of linolenic acid in crude fat of seed kernel was 66%, which is 4% higher than the control variety 'Huazhong 7'.

Main use

Suitable for establishing *Eucommia ulmoides* orchards.

Silvicultural Techniques

The planting row spacing was 4 m × 5 m or 2 m × 3 m. In large-scale mechanized demonstration bases, a wide-narrow row layout can be used, with wide rows spaced 5~6 m apart, narrow rows spaced 2~3 m apart, and a tree to tree spacing within rows of 3 m. Pollinator varieties such as 'Huazhong 5', 'Huazhong 11' and 'Huazhong 22' should be included, maintaining a pollinator proportion of 3%~5%. The recommended tree shapes include the natural open-center shape, two-layer sparse open-center shape, and natural spindle shape. During high-yield years, perform ring peeling or ring cutting on the main trunk or primary branches to promote fruit production. Fertilization 3~4 times annually, starting 15 days before bud germination and during the summer months (May to July).

Compound fertilizer with a ratio of N: P₂O₅: K₂O=1: 1.2: 0.55 applied by trenching

Suitable Planting Regions

Regions suitable for growing *Eucommia ulmoides* in Henan and Shandong.

10. Fengxuan 1

Species: *Zanthoxylum bungeanum*

Scientific Name: *Zanthoxylum bungeanum* 'Fengxuan 1'

Category: Variety

Category of certification: Certified

Registration No.: Guo S-SV-ZB-010-2024

Applicant Organization: Northwest A&F University

Breeders: Wei Anzhi, Liu Yonghong, Fei Xitong, Cao Yonghong, Liu Yulin, Wang Weiping, Wei Guoyin, Yang Tuxi

Characteristics

The variety has a strong vigor and a semi-spreading growth habit. The fruits are deep red, with an average of 51 fruits per cluster and a dry peel weight of 21 g per thousand fruits. During peak periods, the dry pepper yield reaches 1218.45 kg/hm², which is 15.25% higher than the control variety 'Fengxian Dahongpao'. The volatile oil content, alcohol-soluble extract, and ether-soluble extract in the peel are 5.3 mL/100 g, 19.25%, and 12%, respectively, representing increases of 13.12%, 21.37%, and 8.89% compared to the control.

Main use

Used as a non-wood product tree species.

Silvicultural Techniques

Zanthoxylum bungeanum 'Fengxuan 1' requires growing sites below 1300 m in altitude with soil depths of at least 80 cm and groundwater levels below 1 m. The soil should be sandy loam or loam with a loose texture. Planting spacing is recommended at 3 m × 4 m or 4 m × 4 m. Trees are pruned to a natural open-hearted form with "bud picking in spring, shoots removal in summer, and branch pulling in autumn" as the main pruning measures, and supplemented by winter pruning. After fruit harvest, each plant should be fertilized with 40~50 kg of farmyard manure and 0.5~2 kg of phosphate fertilizer. Following flowering, 0.5~1 kg of urea should be applied per plant. Before the fruit ripens in mid-June, 0.2 kg of urea and 0.5 kg each of phosphate and potassium fertilizers should be applied per plant. In early spring, before budding, spray the entire orchard with a 5% lime sulfur solution to control pests and diseases, such as flea beetles, jewel beetles, spider mites, pepper butterflies, and rust disease.

Suitable Planting Regions

This variety is recommended for *Zanthoxylum bungeanum* growing regions in Shaanxi and Gansu provinces.

11. Baoguang

Species: *Grape*

Scientific name: *Vitis vinifera* × *V. labrusca* 'Baoguang'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-VV-011-2024

Applicants: Changli Fruit Tree Research Institute, Hebei Academy of Agriculture and Forestry

Breeders: Li Minmin, Han Bin, Yin Yonggang, Jia Nan, Wang Jianping, Lei Yan, Sun Yan, Liu Changjiang, Zhao Yanli, Han Shuli, Wang Xinyu, Chen Wenzhao, Zhao Shengjian, Guo Zijuan, Yuan Junwei, Ma Aihong, Zhang Ying, Zhang Ang, Chu Zihui

Characteristics

The growth potential is medium. The fruit is purplish-black with thicker fruit powder, crisp flesh and thin peel. The average panicle weight is 716.9 g; the average fruit weight is 13.7 g, which is 2 g heavier than that of the control variety, 'Jufeng' grape; the fruit has a mixed aroma of rose and strawberry flavor, and the content of soluble solids is 18%, which exceeds 9.5% of the control variety; The titratable acid content is 0.47%. In Changli County, Hebei Province, the average yield is 30940 kg/hm² in the full fruit stage, which is 29.4% higher than that of the control variety.

Main use

It can be used as fresh fruit.

Silvicultural techniques

Small trellises or hedges can be used to grow the variety. Single-dragon stem shaping is used for the small trellises, with a plant spacing of 0.8~1.0 m and a row spacing of 4 m, and for the hedges dragon stem branching with single stem single arm is used, or 'V' shaping is used. Plant spacing is 0.6~0.8 m, row spacing is 2.2~2.5 m. 1 to 2 main

vines are retained for each plant, winter pruning is mainly for short and medium shoots, the secondary shoots are easy to bud, pay attention to bud picking and shoots removal. When planting, high-quality base fertilizers are applied at 4000~5000 kg/mu. The output of 24000~27000 kg/hm² is appropriate.

Suitable areas for planting

Areas suitable for growing grape in Hebei and Shandong.

12. Miguang

Species: *Grape*

Scientific name: *Vitis vinifera* × *V. labrusca* 'Miguang'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-VV-012-2024

Applicants: Changli Fruit Tree Research Institute, Hebei Academy of Agriculture and Forestry, China

Breeders: Han Bin, Li Minmin, Liu Changjiang, Sun Yan, Tang Meiling, Zhao Qifeng, Jia Nan, Yin Yonggang, Zhao Yanli, Wang Xinyu, Han Shanguo, Chen Wenchao, Zhao Shengjian, Guo Zijuan, Yuan Junwei, Ma Aihong, Yuan Hongfeng, Zhang Ang, Chu Yanjie

Characteristics

The growth potential is strong. The fruit is purplish red with medium thick powder and hard and crisp flesh. The average panicle weight is 720.6 g, the average kernel weight is 9.5 g, the fruit has rose fragrance, the soluble solid content is 19~22.8%, and the titrable acid content is 0.49%. In Changli County, Hebei Province, the fruits rippen in early August, 10~14 days earlier than the control variety 'Jufeng', and the average yield in peaking period is 27100 kg/hm², 17.22% higher than the control variety. The variety has a strong fruit adhesion and tolerable for storage and transportation.

Main use

It can be used as fresh fruit.

Silvicultural techniques

Small trellises or hedges can be used to grow the variety. Single-drgaon stem shaping is used for the small trellises, with a plant spacing of 0.8-1.0 m, row spacing of 4 m, and for the hedges dragon stem branching with single stem single arm is used, or 'V' shaping is used. Plant spacing is 0.6~0.8 m, row spacing is 2.2~2.5 m. 1 to 2 main vines are retained for each plant, winter pruning is mainly for the short and medium shoots, the secondary shoots are easy to bud, pay attention to bud picking and shoots removal. High-quality base fertilizer of 4000-5000 kg/mu is applied, and the output of 24000~27000 kg/hm² is appropriate.

Suitable areas for planting

Areas suitable for growing grape in Hebei and Shandong.

13. Lipin 2

Species: *Walnut*

Scientific name: *Juglans regia* 'Lipin 2'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-JR-013-2024

Applicants: Liaoning Institute of Economic Forestry and Research Institute of Forestry, Chinese Academy of Forestry

Breeders: Liu Feng, Zhang Junpei, Liang Dejun, Zhao Baojun, He Youchao, Li Dongsheng, Zhang Caihong, Wang Hongxia and Wujing, Zhou Ye, Wang Yunfei, Ma Ruifeng, Liu Guangping, Sun Yang, Yao Chunlei, Li Pifu Chang Yahui, Liu Zhenpan, Yang Yunbo, Wang Xiufeng, Bai Zhigui, Wang Shihai, Chen Qi, Liu Wansheng

Characteristics

Growth potential is moderate, and the tree posture is semi-open. The nuts are oblong, 4.1 cm in longitudinal diameter, 3.6 cm in transverse diameter, 3.7 cm in lateral diameter, and 0.7 mm in shell thickness. The average nut weight is 13.5 g, the average kernel weight is 9.1 g and the percent kernel is 67.4%. Kernel fat content is 68.6%, protein content is 13.8%, protein content is 13.8%. In Zhanhuang of Hebei the average yield of 3228 kg/hm² in peaking period, 32.3% higher than that of the control variety 'Lipin 1' walnut.

Main use

It can be used as fresh and fried food.

Silvicultural techniques

Sites with slope less than 15°, sunny direction, groundwater level exceeding 2 m and good drainage are selected for growing the variety with a plant spacing of 6 m and a row spacing of 6 ~ 8 m. Walnut 'Gift 1' is configured as pollinator tree with a ratio of (8/2): 1. Trees are pruned into sparse layers, and the trunk is fixed at a height of 80~100 cm. Base manure is applied in autumn, barnyard manure and compost are applied after harvest or before budding in spring, and topdressing in growing season. Irrigation before sprouting, fruit hardening stage and winter freezing. During the peak period of fruiting, the management of fertilizer and water is intensified. For 1-2-year-old young trees in Liaoning Province, it is necessary to bend the plants over and apply soil mulching or use soil to cover the plants in order to protect against the cold in late November.

Suitable areas for planting

Areas suitable for growing walnut in Liaoning, Shanxi and Hebei.

14. Liaoning 1

Species: *Walnut*

Scientific name: *Juglans regia* 'Liaoning 1'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-JR-014-2024

Applicants: Liaoning Institute of Economic Forestry and Research Institute of Forestry, Chinese Academy of Forestry

Breeders: Liu Feng, Zhang Junpei, Liang Dejun, Zhao Baojun, He Youchao, Li Dongsheng, Zhang Caihong, Wang Hongxia Wu Jing, Bai Yongchao, Wang Yunfei, Ma Ruifeng, Liu Guangping, Sun Yang, Yao Chunlei, Li Pifu Chang Yahui, Liu Zhenpan, Yang Yunbo, Wang Xiufeng, Bai Zhigui, Wang Shihai, Chen Qi, Liu Wansheng

Characteristics

Growth potential is vigorous, and the tree posture is semi-open. The nut is round, the fruit base is flat or round, the longitudinal diameter is 3.5 cm, the transverse diameter is 3.4cm, the side diameter is 3.5 cm, the shell thickness is 0.9~1.0 mm. The average nut weight is 9.4 g, the average kernel weight is 5.6 g, the percent kernel is 59.6%, the kernel fat content is 68%, and the protein content is 14.2%. In Zhanhuang of Hebei the average yield in the peak fruiting stage is 3103.5 kg/hm², which is 38.4% higher than that of the control variety 'Liaoning 5' walnut.

Main use

It can be used as fresh and fried food.

Silvicultural techniques

Sites with slope less than 15°, sunny direction, groundwater level exceeding 2 m and good drainage are used for growing the variety. The row spacing is 4 m × 5 m or 4 m × 6 m. 'Liaoning 6' walnut is used as pollinator tree with a ratio of (8-2):1. Trees are pruned into sparse layers and fixed at a height of 60~80 cm. Base manure is applied in autumn, barnyard manure and compost are applied after harvest or before budding in spring, and topdressing in growing season. Irrigation before sprouting, fruit hardening stage and winter freezing. During peak period of fruiting, the management of fertilizer and water is intensified. For 1-to 2-year-old young trees in Liaoning, it is necessary to bend the trees down and apply soil mulching or use soil to cover, in order to protect against the cold in late November.

Suitable areas for planting

Areas suitable for growing walnut in Liaoning, Shanxi and Hebei.

15.Zhongningqi

Species: *Walnut*

Scientific name: *Juglans hindsii* × *J. regia* 'zhongningqi'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-JH-015-2024

Applicants: Research Institute of Forestry, Chinese Academy of Forestry

Breeders: Pei Dong, Song Xiaobo, Zhang Junpei, Xu Huzhi, Liu Pengfei, Xi Shengke, Li Xiuzhen, Wang Shaoming and Zhang Jianwu

Characteristics

The tree grows vigorously, with a straight trunk, a round crown and a branching angle of 30°. The nut shell is thick and difficult to crack open to get the kernel. As rootstocks, the survival rate of grafted walnut, *Juglans sigillata* and *Juglans major* is more than 95%. In Luoning County, Luoyang City, Henan Province, the average height of 10-year-old trees is 11.3 m, DBH is 23.73 cm, DBH growth is 84% higher than that of the control Northern California Black Walnut, air-dry wood density is 0.534 g/cm³, the oven-dry wood density is 0.514 g/cm³, and the bending strength is 73.85 MPa.

Main use

It can be used as rootstocks and timber species.

Silvicultural techniques

When 'zhongningqi' walnut is used as rootstock to build walnut orchards, bud grafting is used, and the tree-to-tree spacing for early fruiting is 4~5 m with a row spacing of 5~6 m, and the tree-to-tree spacing for late fruiting is 6~8 m with a row spacing of 10~12 m. For building an orchard producing both fruits and timber, more than 3-year-old cutting propagated 'zhongningqi' plants are used as rootstock for grafting at the height of greater than 1.5 m, with a plant spacing of 3~4 m, and a row spacing of 6~8 m.

Suitable areas for planting

Areas suitable for growing walnut in Henan Shanxi and Chongqin.

16.Qiangsang 3

Species: *Mulberry*

Scientific name: *Morus alba* 'Qiangsang 3'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-MA-016-2024

Applicants: Zhejiang Academy of Agricultural Sciences

Breeders: Lv Zhiqiang, Lin Tianbao, Liu Yan, Zhu Yan, Wei Jia, Ji Dongfeng

Characteristics

Belonging to *Morus alba* var. *multicaulis* series, diploid, strong growth potential. Leaves are large with thick lamina, smooth surface, and weigh 2.4g per 100 cm². In Hangzhou, budding begins around March 10th, leaf unfolds around March 17th, and leaf matures by early May. The crude protein content in the leaves is 7.69%, exceeding that of the control variety 'Heyebai' mulberry (5.8%). Mulberry leaf yield ranges from 43,582.8 kg/hm² to 53,460 kg/hm², with a 16.77% to 25.63% increase over the control variety.

Main use

It can be used for feeding silkworms.

Silvicultural techniques

Planted in plain areas and gentle slopes in February to March, with about 12,000 individuals per hectare. After planting, carry out spring cut for two consecutive years to promote strong lateral growth, retaining about 120,000 shoots per hectare. Apply potassium sulfate compound fertilizer of 75 kg/667 m² in spring after sprouting and after summer pruning, 50 kg/667 m² in autumn and 1,000-1,500 kg/667 m² of organic fertilizer in winter. Ensure proper drainage, and perform pruning and management before the Spring Festival each year.

Suitable areas for planting

Areas suitable for growing mulberry in Zhejiang, Anhui, Jiangxi and Shandong provinces.

17.Qiangsang 5

Species: *Mulberry*

Scientific name: *Morus alba* 'Qiangsang 5'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-MA-017-2024

Applicants: Zhejiang Academy of Agricultural Sciences

Breeders: Lv Zhiqiang, Lin Tianbao, Liu Yan, Zhu Yan, Wei Jia, Ji Dongfeng

Characteristics

Belonging to *Morus alba* var. *multicaulis* series, diploid, strong growth potential. Leaves are heart-shaped, dark green, large with thick lamina, slightly rough surface, weighing 2.3 g per 100 cm². In Hangzhou, budding begins around March 7th, leaf unfolds around March 14th, and leaf matures by early May. The crude protein content in the leaves is 8.27%, exceeding that of the control variety 'He Ye Bai'(5.8%). Mulberry leaf yield ranges from 40167.6kg/hm² to 55979.9kg/hm², with a 8.49~22.27% increase over the control variety.

Main use

It can be used for feeding silkworms.

Silvicultural techniques

Planted in plains and gentle slopes in February to March, with about 12000 individuals per hectare. After planting, carry out spring cut for two consecutive years to promote strong lateral growth, retaining about 120,000 shoots per hectare. Apply potassium sulfate compound fertilizer of 75 kg/667 m² in spring after sprouting and after summer pruning, 50 kg/667 m² in autumn, and 1000~1500 kg/667 m² of organic fertilizer in winter. Ensure proper drainage, and perform pruning and management before the Spring Festival each year.

Suitable areas for planting

Areas suitable for growing mulberry in Zhejiang, Anhui, Jiangxi and Shandong provinces.

18.Wanye 5

Species: *Mulberry*

Scientific name: *Morus alba* 'Wanye 5'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-MA-018-2024

Applicants: Sericulture Research Institute, Anhui Academy of Agricultural Sciences

Breeders: Wang Taichu, Geng Bing, Li Xing, Su Xueqiang, Zhou Rong, Li Ruixue, Bi Huitao, Xu Cuimin, Gao Xinwen, Hu Gang, Guo Hui, Liu Guofeng, Liu Jun, Qian Shuchang, Chen Huaiyu

Characteristics

Belonging to *Morus alba* *multicaulis* series, diploid, with an upright tree form. Leaves are widely spread, dark green, 23.5 cm long, and 16 cm wide. In Hefei City, Anhui Province, the budding period is from April 6th to 11th, leaf unfolds from April 13th to 22nd, and matures from April 28th to May 12th, classifying it as a medium to late maturing variety. Annual leaf yield is 37259 kg/hm², 100 kg of spring mulberry produces 5.81 kg of cocoons, and the leaf crude protein content is 29.2%. These figures represent increases of 18.58%, 7.58%, and 35.81% respectively compared to the control variety 'Husang 32'.

Main use

It can be used for feeding silkworms.

Silvicultural techniques

Planted in plain areas and gentle slopes with row spacing of 1.5 m and plant spacing of 0.5 m, using wide-row dense planting or alternate wide and narrow rows, with wide rows of 2.3~2.5 m and narrow rows of 0.5~0.6 m, and plant spacing of 0.4~0.5 m. Trees are pruned into low stems, usually forming a productive mulberry orchard in 3 years, with about 142500 to 150000 shoots per hectare. Light pruns conducted in winter and spring, pruning about 1/8 to 1/5 of the branches. Pay attention to drainage during rainy and humid spring seasons.

Suitable areas for planting

Areas suitable for growing mulberry in Shandong and Anhui provinces.

19.Wanye 6

Species: *Mulberry*

Scientific name: *Morus alba* 'Wanye 6'

Type of material: Variety

Category of certification: Certified

Registration No.: Guo S-SV-MA-019-2024

Applicants: Sericulture Research Institute, Anhui Academy of Agricultural Sciences

Breeders: Li Ruixue, Wang Taichu, Li Xing, Su Xueqiang, Zhou Rong, Bi Huitao, Xu Cuimin, Geng Bing, Gao Xinwen, Hu Gang, Guo Hui, Liu Guofeng, Liu Jun, Qian Shuchang, Chen Huaiyu

Characteristics

Belonging to *Morus alba* multicaulis series, diploid, with a relatively upright tree form and few lateral branches. Leaves are heart-shaped, dark green, 23.5 cm long, and 19.5 cm wide, with a relatively thick texture. In Hefei City, Anhui Province, the budding period is from April 3rd to 8th, leaf unfolds from April 10th to 18th, and maturity from April 23rd to May 4th, classifying it as a mid-maturing variety. Annual leaf yield is 37511.3 kg/hm², 100 kg of spring mulberry produces 5.84 kg of cocoons, and the total flavonoid content in the leaves is 2.27%. These figures represent increases of 19.38%, 8.14%, and 66.91% respectively compared to the control variety 'Husang 32'.

Main use

It can be used for feeding silkworms and producing tea.

Silvicultural techniques

Planted in plain areas and gentle slopes with a row spacing of 1.5 m and a plant spacing of 0.5 m, using wide-row dense planting or alternate wide and narrow rows, with wide rows of 2.3~2.5 m and narrow rows of 0.5~0.6 m, and plant spacing of 0.4~0.5 m. Trees are pruned into low-stem shape, generally building a productive mulberry orchard in 3 years, with about 142500 to 150000 shoots per hectare. Light pruning carried out in winter and spring, pruning about 1/8 to 1/5 of the branches. Pay attention to drainage during rainy and humid spring seasons.

Suitable areas for planting

Areas suitable for growing mulberry in Shandong and Anhui provinces.

20. Arbequina

Species: *Olea europaea*

Scientific name: *Olea europaea* 'Arbequina'

Type of material: variety

Category of certification: Certified

Registration No.: Guo S-ETS-OE-020-2024

Applicants: Research Institute of Forestry, Chinese Academy of Forestry; Chongqing Academy of Forestry; Liangshan Huaze agricultural technology Co., LTD; Danjiangkou Xingyuan raw olive oil technology development Co., LTD; Research institute of olive, Longnan Economic Forest Research Institute; Wudu Area of Longnan City Office of Olive Industry Development; Yuxi Runze agricultural science and technology development Co., LTD; Mianning Yuansheng agricultural technology Co., LTD.

Breeders: Zhang Jianguo, Li Jinhua, Wang Zhaoshan, Zhu Hengxing, Huang Feiyi, Dai Qianli, Wang Guide, Yong Qiaoning, Li Na, Zhang Tao, Rao Guodong, Zhao Haiyun, Gu Qiuwei, Ma Hongbo, Tong Zhaoguo, Chen Yan, Chen Bo, Xiao Xiaohua, Lv Longqiang, Zhao Jiayou, Wang Min, Li Qinghua, Su Guangcan, Hu Wei, Wang Anyi, Fu Yongping, Huang Yong, Zhang Bo, Du Jincheng, Fan Shibing, Zhang Xiaohui, Zhang Zihan, Lv Chenghua, Tan Zhaolin, Bai Xiaoyong, Xiao Jian, Wang Wenxiong, Zou Jun, Yang Haiwen, Zhang Zhengwu, Yu Ning, Deng Yu, Deng Mingquan

Characteristics

Introduced from Spain by Chinese Academy of Forestry in 1976, also known as Abekina. Moderate and weak growth potential with open and drooping crown. The fruit is symmetrical and spherical, with an average fruit weight of 2.38 g. In Danjiangkou City, Hubei Province, the average yield is 7883.7 kg/hm². The average pulp percentage and fresh fruit oil content are 83.23% and 18.98%, respectively, which are 17% and 8% higher than those of the control variety 'Ezhi 8'. The unsaturated fatty acid content of olive oil is 81.65%.

Main use

Oil tree, fruit is used to extract olive oil.

Silvicultural techniques

Sites with calcareous sandy loam and loam with sufficient light, thick soil layer and pH value of 6.5~7.5 selected for growing the variety. Spacing for low-density cultivation is 5 m ×6 m, 4 m×5 m, and that for high-density cultivation is 2 m×4 m, 4 m×4 m. Sites prepared in planting holes in areas with low rainfall and with high ridges or high platforms in areas with rainfall of more than 800 mm. Configure varieties of 'Aposana' or 'Korolica' to ensure adequate cross-pollination. Organic fertilizer of 50~100 kg applied per hole at planting to intensify water and fertilizer management. Pruning enhanced to improve ventilation and light transmission and to reduce disease infection.

Suitable areas for planting

Areas suitable for growing olive in Gansu, Sichuan, Hubei and Chongqing.

21. Koroneiki

Species: *Olea europaea*

Scientific name: *Olea europaea* 'Koroneiki'

Type of material: variety

Category of certification: Certified

Registration No.: Guo S-ETS-OE-021-2024

Applicants: Research Institute of Forestry, Chinese Academy of Forestry; Wudu Area of Longnan City Office of Olive Industry Development; Research institute of olive, Longnan Economic Forest Research Institute; Liangshan Huaze agricultural technology Co., LTD; Yuxi Runze agricultural science and technology development Co., LTD; Danjiangkou Xingyuan raw olive oil technology development Co., LTD; Mianning Yuansheng agricultural technology Co., LTD.

Breeders: Zhang Jianguo, Wang Zhaoshan, Li Jinhua, Li Na, Wang Guide, Yong Qiaoning, Zhang Tao, Rao Guodong, Zhao Haiyun, Zhang Zhengwu, Gu Qiuwei, Ma Hongbo, Zhang Bo, Tong Zhaoguo, Chen Yan, Li Qinghua, Du Jincheng, Chen Bo, Zou Jun, Zhao Jiayou, Wang Min, Su Guangcan, Hu Wei, Wang Anyi, Fu Yongping, Huang Yong, Fan Shibing, Zhang Xiaohui, Zhang Zihan, Qi Haihong, Wang Peng, Lv Chenghua, Lv Longqiang, Xiao Xiaohua, Tan Zhaolin, Bai Xiaoyong, Xiao Jian, Wang Wenxiong, Yang Haiwen, Sun Wenyong, Yu Ning, Deng Yu, Deng Mingquan

Characteristics

Introduced from Greece by Chinese Academy of Forestry in 1976. Fruiting begins in the second to third year after planting and peaks in the fourth year. Ovoid fruit with an average single fruit weight of 1.62 g. In Danjiangkou City, Hubei Province, the average yield at the peaking stage is 7494.3 kg/hm². The average pulp percentage and fresh fruit oil content are 86.51% and 19.53%, respectively. The oil content of fresh fruit is 19~21%, and the unsaturated fat acid content of olive oil is 84.22%.

Main use

Oil tree, fruit is used to extract olive oil.

Silvicultural techniques

Sites with calcareous sandy loam and loam with sufficient light, a thick soil layer and a pH value of 6.5~7.5 are selected for growing the variety. The spacing for low-density cultivation is 5 m × 6 m, and that for high-density cultivation is 2 m×4 m, 4 m×3 m and 4 m×4 m. Site is prepared with planting holes in areas with low rainfall and with high ridges or high platforms in areas with rainfall of more than 800 mm. Configure varieties of ‘Aposana’ or ‘Douguo’ to ensure adequate cross-pollination. Organic fertilizer of 50~100 kg per hole is applied at planting to strengthen water and fertilizer management. Pruning is intensified to improve ventilation and light transmission and to reduce disease infection.

Suitable areas for planting

Areas suitable for growing olive in Gansu, Sichuan and Hubei.

Pre-certified varieties

1. Wucheng CSOS (clonal seed orchard seeds)

Species: *Pinus tabulaeformis*

Scientific name: *Pinus tabulaeformis* ‘wucheng yousong yidai wuxingxi zhongziyuan zhongzi’

Type of material: clonal seed orchard seeds

Category of certification: Pre-certified for 8 years (2024.12.25-2032.12.24)

Registration No.: Guo R-CSO(1)-PT-001-2024

Applicants: Wucheng seed orchard, Guandi Mountain National Forest Administration of Shanxi Province

Breeders: Li Guangwen, Chang Suling, Cheng Guoqiang, Dong Gangyi, Zhang Jiangang, Hao Yingxing, Ran Juan, Wang Chenwei, Li Yupeng, Ren Wenbo

Characteristics

Straight trunk, well developed root system. Seeds are full, with a 1000-seed weight of 48.5 g. The average height and average DBH of 9-year-old trees are 1.48 m and 4.4 cm, respectively, 18.4% and 18.9% higher than that of ordinary *Pinus tabulaeformis*. For 27-year-old trees, the air-dry wood density is 0.976 g/cm³, the bending strength is 44.9 MPa, and the bending elastic modulus is 7070 MPa.

Main use

Used as shelter forest tree and timber tree.

Silvicultural techniques

In spring or autumn, the seeds are treated with 1% potassium permanganate disinfection for 2 h, soaked 24–48 h for germination, and sowed when 1/3 of the seeds are cracked (exposed). Planting holes prepared in size of 40 cm×40 cm×30 cm, and 4~5 years old container seedlings used for planting. The stocking density of pure forest is 1650 plants/hm². Within 3 years after planting, attention paid to management such as irrigation and weeding, mountain closure, grazing ban and rodents preventing.

Suitable areas for planting

Areas suitable for planting *Pinus tabulaeformis* in Shanxi, Inner Mongolia and Qinghai.

2. Zhongcheng 4

Species: *Populus deltoides*

Scientific name: *Populus deltoides* ‘Zhongcheng 4’

Type of material: Clone

Category of certification: Pre-certified for 5 years (2024.12.25-2029.12.24)

Registration No.: Guo R-SC-PD-002-2024

Applicants: Research Institute of Forestry, Chinese Academy of Forestry

Breeders: Hu Jianjun, Zhao Zicheng, Zhang Lei, Li Xilin, Liu Kaiying, Zhao Shutang, Xue Junchang, Zhou Xinglu, Su Xuehui, Li Shanwen, Xiao Bingshen, Lv Jianshuang

Characteristics

Male plant, trunk straight and full. The crown is medium in size with branching angle at 50°. For 4-year-old trees, the average diameter at breast height (DBH), tree height and individual tree volume are 12.21 cm, 10.58 m and 0.0456 m³, respectively, in Jiaozuo City, Henan Province, 19.12%, 11.32% and 28.6% higher than that of the control variety *Populus × euramericana* Guariento (‘108’ poplar) . The fiber length, fiber width and microfibril angle of 10-year-old wood in Beijing are 939.86 μm, 21.62 μm and 13.06°, which are 104.73%, 96.34% and 84.81% of the control variety *Populus deltoides* ‘Chuangxin’, respectively.

Main uses

It is used as timber tree.

Silvicultural techniques

Plants with strong vigor and free from pests and diseases are selected for planting at a depth of 50~60 cm. Trees planted with root system should have a DBH larger than 2 cm and a height more than 3.5 m; trees planted with stem should have a DBH over 2 cm and a height over 3.5 m; trees planted with cut stem should have a diameter over 2 cm and a height over 50 cm. Deeply planted at 50~60 cm in depth. Trees soaked for more than 2 days before planting. Stocking density is 300 to 1250 plants per hectare, and dwarf crops can be interplanted 1 to 3 years after planting.

Suitable areas for planting

Areas suitable for planting poplar in Beijing, Henan and Shandong.

Notes:

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