附件

2024年云南省草品种名录

**（中英文）**

1. ‘泽生2号’灯盏花

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| 草种名称： | 灯盏花 | 学名： | Erigeron breviscapus ‘ZeshengNO.2’ |
| 品种类别： | 育成品种 | 编号： | 云S-BV-EB-001-2024 |
| 申报单位： | 云南省林业和草原科学院、红河学院、云南泽生生物科技有限公司 | | |
| 选 育 人： | 彭明俊、张传光、杨 旭、张 薇、李 河、李 莹、关德军、周文忠、袁 贵、袁朗瑜 | | |

品种特性

菊科，飞蓬属多年生草本。品种茎直立，直播种植单株基部叶平均12片，成熟叶18 cm左右，叶宽3 cm左右，全缘，匙状倒披针形，叶尖钝尖，基部渐狭；耐密植。干品产量平均为440 kg/亩左右；干品总黄酮平均含量为8.12%，野黄芩苷平均含量为1.93%。

主要用途

药用草，具有活血通络止痛和祛风散寒的功效。

栽培技术要点

一年可以播种两次，夏播适宜5～6月进行，冬播适宜10～11月进行。深翻地块，有机肥200～800 kg或普钙100～200 kg作基肥施入；平地整墒，墒面宽1.2～1.3 m，排水沟深0.3～0.4 m。播种量为9～12 kg/hm2。播前墒面除草透水，播后覆盖遮阳网和无纺布遮阳保湿，4～10天出苗，待苗生长至5～6叶可移除覆盖物。苗期60～90天，期间及时除草追肥。播种后，植株生长90～180天第一次采收，可连续多次采收，采收间隔期30～90天。追肥选择复合肥、尿素、过磷酸钙、硫酸钾等配合使用，播种至第一次采收追肥4次，此后追肥次数为2～3次/茬。最佳采收时间为抽薹期至初花期，晴天采收后及时除杂干燥。

适宜推广区域

适宜在海拔1500 ~ 2000 m，年降雨量800 ~ 1500 mm的地区种植。

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2. ‘林萱2号’萱草

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| 草种名称： | 萱草 | 学名： | *Hemerocallis fulva* ‘Linxuan NO.2’ |
| 品种类别： | 育成品种 | 编号： | 云S-BV-HF-002-2024 |
| 申报单位： | 西南林业大学、云南吉成园林科技股份有限公司、云南林业职业技术学院 | | |
| 选 育 人： | 辛培尧、李 伟、王 齐、段仕学、李启少、陈 伟、李建运、  金 李、王 飞、李子涵 | | |

品种特性

阿福花科萱草属植物。叶片中绿色，斜伸，长58～60 cm，宽1.6～1.7 cm。花瓣红色，带有红色花环，喉部绿色，单瓣型，花呈星形，花瓣椭圆形，向外翻卷，边缘具褶皱，脉纹明显，颜色稍深，花肋黄色。花径10～11 cm，花瓣宽3.5～4.1 cm，花萼宽2.0～2.5 cm。花莛高60～62 cm，单花莛平均分枝数5～6，单花莛花量50～53朵。花期为中花。

主要用途

观赏及环境美化。

栽培技术要点

萱草是喜光植物，开花需要光照6小时以上的太阳直射。耐旱，但要多开花、开花鲜艳、生长旺盛，则需要充足的水分供应。忌长期积水，种苗生产或园林应用时应选择排水良好地块。地栽时株行距保持在30 cm×40 cm。喜肥，除种植时施足基肥（以腐熟的牛粪或猪粪为宜）外，花前施氮磷钾复合肥一次，也可喷施0.2%的磷酸二氢钾，促使花朵肥大并可达到延长花期的效果，花期过后萱草长势差，需及时清理干枯的花莛和叶片。种苗生产或园林应用时，每2～3年将大丛老株分成每丛1～2芽栽植，9月份再次施用氮磷钾复合肥，促进分蘖，秋季或早春种植最为适宜。

叶枯病和锈病是萱草极易发生的两种病害。叶枯病发病初期用50%代森锰锌500～800倍液可有效防治叶枯病发生；锈病发病初期用15%粉锈宁可湿性粉剂1000～1200倍每隔10～15天喷洒1次，连续喷施2～3次，可有效控制病害发生。

适宜推广区域

适宜在海拔100～2300 m、年降雨量≥800 mm的温带、亚热带地区种植。

1. ‘吉萱2号’萱草

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| 草种名称： | 萱草 | 学名： | *Hemerocallis fulva* ‘Jixuan NO.2’ |
| 品种类别： | 育成品种 | 编号： | 云S-BV-HF-003-2024 |
| 申报单位： | 云南吉成园林科技股份有限公司、西南林业大学、 云南林业职业技术学院 | | |
| 选 育 人： | 李 伟、辛培尧、王 齐、段仕学、金 李、朱海燕、陈 伟、柴永飞、李云伟、李启少 | | |

品种特性

阿福花科萱草属植物。叶片中绿色，斜伸，长约80～87 cm，宽约2.0～3.5 cm。花柠檬黄色，喉部绿色，单瓣型，花呈星形，花瓣椭圆形，向外翻卷，边缘具褶皱，花肋白色。花径约14～17 cm，花瓣宽约6～7 cm，花萼宽约3～4.5 cm。花莛高约80～87 cm，单花莛平均分枝数5～7，单花莛花量40～45朵。花期为中花。

主要用途

观赏及环境美化。

栽培技术要点

萱草是喜光植物，开花需要光照6小时以上的太阳直射。耐旱，但要多开花、开花鲜艳、生长旺盛，则需要充足的水分供应。忌长期积水，种苗生产或园林应用时应选择排水良好地块。地栽时株行距保持在30 cm×40 cm。喜肥，除种植时施足基肥（以腐熟的牛粪或猪粪为宜）外，花前施氮磷钾复合肥一次，也可喷施0.2%的磷酸二氢钾，促使花朵肥大并可达到延长花期的效果，花期过后萱草长势差，需及时清理干枯的花莛和叶片。种苗生产或园林应用时，每2～3年将大丛老株分成每丛1～2芽栽植，9月份再次施用氮磷钾复合肥，促进分蘖，秋季或早春种植最为适宜。

叶枯病和锈病是萱草极易发生的两种病害。叶枯病发病初期用50%代森锰锌500～800倍液可有效防治叶枯病发生；锈病发病初期用15%粉锈宁可湿性粉剂1000～1200倍每隔10～15天喷洒1次，连续喷施2～3次，可有效控制病害发生。

适宜推广区域

适宜在海拔100～2300 m、年降雨量≥800 mm的温带、亚热带地区种植。

1. ‘云牧2号’象草

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| 草种名称： | 象草 | 学名： | *Pennisetum purpureum* ‘Yunmu NO.2’ |
| 品种类别： | 育成品种 | 编号： | 云S-BV-PP-004-2024 |
| 申报单位： | 云南省草地动物科学研究院、云南省农业科学院热 带亚热带经济作物研究所、曲靖市林业和草原局、 云南农业职业技术学院 | | |
| 选 育 人： | 钟 声、李世平、刘彦培、欧阳青、严 炜、张子奇、杨子姗、吴文荣、施丹丹、袁福锦 | | |

品种特性

禾本科狼尾草属多年生草本植物。四倍体（2n=28），多年生、丛生性高大禾草，全株被毛稀少。秆较纤细，直径0.5～1.5 cm，表面有明显的白粉,开花时秆高2.5～3 m。分蘖性强，株丛致密。苗期生长旺盛，再生性好，耐多次刈割，刈后再生性好。耐寒性好，在滇东北2200 m、滇西2500 m海拔能正常越冬，长势好，饲草产量优于‘热研4号’和‘德宏’等云南主栽国审狼尾草品种。

主要用途

牧草栽培或生态修复。

栽培技术要点

5月下旬至6月上旬，选择土层深厚、土壤肥沃、排灌方便的土壤种植。深松表土20 cm以上，晾晒数日后耙碎表土并平整地表。选择生长4月以上粗壮茎秆作为种茎，取种茎中下部2/3 段砍成含两个活性芽的小段，按株行距60 cm×80 cm斜插于苗床上，斜插深度以上部秆节刚接触土表为宜。苗期适时中耕除杂，间苗补苗，刈后根据长势适度追肥。种植当年，生长季节结束时刈割一次；次年7月和10月中旬各刈割一次。

适宜推广区域

适宜在滇东北、滇西北、滇中和滇东南海拔1800～2200 m的冷凉山区种植，滇西、滇南和滇西南种植上限海拔可至2500 m。

5. ‘林艺1号’莲花

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| 草种名称： | 莲花 | 学名： | *Nelumbo nucifera* ‘Linyi NO.1’ |
| 品种类别： | 育成品种 | 编号： | 云S-BV-NN-005-2024 |
| 申报单位： | 西南林业大学、南京艺莲苑花卉有限公司 | | |
| 选 育 人： | 陈龙清、胡慧贞、谯正林、丁跃生 | | |

品种特性

莲科莲属多年生水生草本。大株型品种，立叶高63~75cm，叶径（38 ~ 42）cm×（30 ~ 33）cm，花高98 ~ 115 cm；花期早，群体花期较长，约6月上旬始花至7月底。着花密，开花18~23朵/m2 ；成熟叶绿色、表面光滑，花蕾卵形，黄绿色、瓣尖红色；花显著高于立叶，花态碗状，花瓣数约122，重瓣型，花径20~24 cm，最大瓣12 cm×8.5 cm，最小瓣6.5 cm×2.5 cm；花色复色：外瓣瓣尖紫红色（Red-Purple Group 64B），中部浅绿色（Green-White Group 157B），基部黄色（Yellow Group 4B）；内瓣瓣尖紫红色（RedPurple Group 63C），中部浅绿色（Green-White Group 157C），基部黄色（Yellow Group 4A）。雄蕊数约162，有瓣化，雄蕊附属物乳白色，大小约5 mm。雌蕊正常，心皮13 ~ 19 枚。青熟花托侧面绿色（Green Group 139D），成熟花托扁圆形、顶面凸。部分结实，种子大小15.5 mm×11 mm。

主要用途

观赏及环境美化。

栽培技术要点

宜于静水栽植，土壤酸碱度pH6.5 ~ 7.5，光照充足。日均气温15℃以上，最低温度在12℃以上时定植。选择健壮具有１个以上顶芽，2 ~ 3个节间，且没有病虫害，藕芽完好的种藕。栽植时种藕呈20°斜栽入泥，尾部半截翘起，即“头低尾高”，以防藕尾进水。定植时保持基本无水，约一周后浇水保持5 ~ 10 cm水层，立叶长出后水位依其生长逐步提升至30 ~ 40 cm。适宜的盆栽间距（列距×行距）为25 cm×40 cm；池栽选择具有隔离和保水功能的水泥池或土池，填土深度不低于30 cm，株行距为1.0 m×1.5 m。整个生长期一般需追肥2 ~ 3次，分别在立叶期和现蕾期。追肥原则为“少量多次、宁淡勿浓”、“轻施苗肥、重施蕾花肥、看苗追施后劲肥”。种藕在泥水中可短暂忍耐0℃左右的天气。

适宜推广区域

适宜在海拔2000 m以下，年降雨量≥500 mm的地区种植。

6. ‘林艺2号’莲花

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| 草种名称： | 莲花 | 学名： | *Nelumbo nucifera* ‘Linyi NO.2’ |
| 品种类别： | 育成品种 | 编号： | 云S-BV-NN-006-2024 |
| 申报单位： | 西南林业大学、南京艺莲苑花卉有限公司 | | |
| 选 育 人： | 陈龙清、谯正林、杨自云、熊瑜 | | |

品种特性

莲科莲属多年生水生草本。大株型品种，立叶高90 ~ 108 cm，叶径（40 ~ 48）cm×（46 ~ 55）cm，成熟叶绿色、表面光滑，花高138 ~ 158 cm；花期早，群体花期长，6月中始花至8月下旬。着花密，开花16 ~ 22朵/m2 ；花蕾卵形，顶端红色、基部黄绿色；花显著高于立叶，花态碟状，重瓣-重台型，花瓣数约105，花径24 ~ 27 cm，最大瓣 15.5 cm×10 cm，最小瓣7 cm×2 cm；花色复色：外瓣瓣尖紫红色（Red-Purple 58A），上部粉红色（Red-Purple 63D），基部淡黄色（Yellow 4D）；内瓣上部深粉红色（Red-Purple 63C），基部黄色（Yellow 4C）；雄蕊数约253，有瓣化，雄蕊附属物淡黄色，大小5 mm。 雌蕊部分正常、部分泡状或瓣化，心皮17 ~ 25枚；花托侧面黄绿色（Yellow-Green 144C），成熟花托伞形、顶面凸，种子纺锤形，大小：（11.5 ~ 13.5）mm×（20 ~ 22）mm。地下茎结藕，长圆筒形。

主要用途

观赏及环境美化。

栽培技术要点

宜于静水栽植，土壤酸碱度pH6.5 ~ 7.5，光照充足。日均气温15℃以上，最低温度在12℃以上时定植。选择健壮具有１个以上顶芽，2 ~ 3个节间，且没有病虫害，藕芽完好的种藕。栽植时种藕呈20°斜栽入泥，尾部半截翘起，即“头低尾高”，以防藕尾进水。定植时保持基本无水，约一周后浇水保持5 ~ 10 cm水层，立叶长出后水位依其生长逐步提升至30 ~ 40 cm。适宜的盆栽间距（列距×行距）为25 cm×40 cm；池栽选择具有隔离和保水功能的水泥池或土池，填土深度不低于30 cm，株行距为1.0 m×1.5 m。整个生长期一般需追肥2 ~ 3次，分别在立叶期和现蕾期。追肥原则为“少量多次、宁淡勿浓”、“轻施苗肥、重施蕾花肥、看苗追施后劲肥”。种藕在泥水中可短暂忍耐0℃左右的天气。

适宜推广区域

适宜在海拔2000 m以下，年降雨量≥500 mm的地区种植。

7. ‘林艺3号’莲花

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| 草种名称： | 莲花 | 学名： | *Nelumbo nucifera* ‘Linyi NO.3’ |
| 品种类别： | 育成品种 | 编号： | 云S-BV-NN-007-2024 |
| 申报单位： | 西南林业大学、南京艺莲苑花卉有限公司 | | |
| 选 育 人： | 谯正林、杨自云、陈龙清、林玉雪、丁跃生 | | |

品种特性

莲科莲属多年生水生草本。大株型品种，立叶高70 ~ 102cm，叶径（35 ~ 43）cm×（39 ~ 48）cm，成熟叶深绿色、表面光滑，花高105 ~ 160 cm；花期早，群体花期长，6月中始花至8月下旬。着花密，开花19~28朵/m2 ；花蕾卵形，上部红色、基部黄绿色；花显著高于立叶，花态随开放：酒杯状-飞舞状/扁平碟状，少瓣型，花瓣数约18，花径28~32 cm，最大瓣18.7 cm×8.2 cm，最小瓣10.6 cm×4 cm；花色复色、随开放变色，第一天：瓣尖紫红色（RedPurple 63A），中部橙色（Orange 27D，红色脉明显），基部黄色（Yellow 4B）；第二天：瓣尖紫红色（Red-Purple 63A），中部黄色（Yellow 11D，红色脉明显），基部淡黄色（Yellow 3D）；第三天：瓣尖紫红色（Red-Purple 63A），中部白色（White 155A），基部淡黄色（Yellow 4C）；雄蕊数约206，无瓣化，雄蕊附属物淡黄色，大小7.6 mm。 雌蕊正常，心皮13 ~ 19枚；花托侧面黄绿色（Yellow-Green 144B），成熟花托扁圆形、顶面平，部分结实。种子大小：15.9 mm×12.4 mm；可盆栽或池栽，青熟莲蓬可作切果。

主要用途

观赏及环境美化。

栽培技术要点

宜于静水栽植，土壤酸碱度pH6.5 ~ 7.5，光照充足。日均气温15℃以上，最低温度在12℃以上时定植。选择健壮具有１个以上顶芽，2 ~ 3个节间，且没有病虫害，藕芽完好的种藕。栽植时种藕呈20°斜栽入泥，尾部半截翘起，即“头低尾高”，以防藕尾进水。定植时保持基本无水，约一周后浇水保持5 ~ 10 cm水层，立叶长出后水位依其生长逐步提升至30 ~ 40 cm。适宜的盆栽间距（列距×行距）为25 cm×40 cm；池栽选择具有隔离和保水功能的水泥池或土池，填土深度不低于30 cm，株行距为1.0 m×1.5 m。整个生长期一般需追肥2 ~ 3次，分别在立叶期和现蕾期。追肥原则为“少量多次、宁淡勿浓”、“轻施苗肥、重施蕾花肥、看苗追施后劲肥”。种藕在泥水中可短暂忍耐0℃左右的天气。

适宜推广区域

适宜在海拔2000 m以下，年降雨量≥500 mm的地区种植。

8. ‘林艺4号’莲花

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| 草种名称： | 莲花 | 学名： | *Nelumbo nucifera* ‘Linyi NO.4’ |
| 品种类别： | 育成品种 | 编号： | 云S-BV-NN-008-2024 |
| 申报单位： | 西南林业大学、南京艺莲苑花卉有限公司 | | |
| 选 育 人： | 陈龙清、胡慧贞、谯正林、丁跃生 | | |

品种特性

莲科莲属多年生水生草本。大株型品种，立叶高75 ~ 92 cm，叶径（42 ~ 46）cm×（46 ~ 51）cm，花高85 ~ 115 cm；花期早，群体花期长，6月中旬始花至8月上旬。着花较密，开花12~19朵/m2 ；成熟叶绿色且叶尖红色、表面光滑，花蕾阔卵形，深紫红色；花显著高于立叶，花态碗状，花瓣数约137，重瓣型，花径20~22 cm，最大瓣12.6 cm×7.7 cm， 最小瓣5.9 cm×1.4 cm；花色：深紫红色（Red-Purple Group 59D），中下部紫红色（RedPurple Group 61B），基部淡黄色（Yellow Group 11D）；雄蕊数约264，有瓣化，雄蕊附属物紫红色、大小约5 mm，花药橙黄色中间红色，花丝淡黄色。雌蕊正常，心皮16~21 枚。青熟花托侧面黄绿色（Yellow-Green Group 145B），成熟花托扁圆形、顶面凸。能结实，种子大小约14.5 mm×10.5 mm。地下茎结藕，长圆筒形。

主要用途

观赏及环境美化。

栽培技术要点

宜于静水栽植，土壤酸碱度pH6.5 ~ 7.5，光照充足。日均气温15℃以上，最低温度在12℃以上时定植。选择健壮具有１个以上顶芽，2 ~ 3个节间，且没有病虫害，藕芽完好的种藕。栽植时种藕呈20°斜栽入泥，尾部半截翘起，即“头低尾高”，以防藕尾进水。定植时保持基本无水，约一周后浇水保持5 ~ 10 cm水层，立叶长出后水位依其生长逐步提升至30 ~ 40 cm。适宜的盆栽间距（列距×行距）为25 cm×40 cm；池栽选择具有隔离和保水功能的水泥池或土池，填土深度不低于30 cm，株行距为1.0 m×1.5 m。整个生长期一般需追肥2 ~ 3次，分别在立叶期和现蕾期。追肥原则为“少量多次、宁淡勿浓”、“轻施苗肥、重施蕾花肥、看苗追施后劲肥”。种藕在泥水中可短暂忍耐0℃左右的天气。

适宜推广区域

适宜在海拔2000 m以下，年降雨量≥500 mm的地区种植。

9. ‘林艺5号’莲花

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| 草种名称： | 莲花 | 学名： | *Nelumbo nucifera* ‘Linyi NO.5’ |
| 品种类别： | 育成品种 | 编号： | 云S-BV-NN-009-2024 |
| 申报单位： | 西南林业大学、中国科学院武汉植物园 | | |
| 选 育 人： | 陈龙清、谯正林、杨美、杨东、自远翔 | | |

品种特性

莲科莲属多年生水生草本。中株型，池栽条件下株高 89 ~ 123 cm，立叶32 ~ 47片/m2，幼叶绿色泛红，成熟叶绿色，浅凹形，叶径（26 ~ 49）cm×（21 ~ 37）cm，表面光滑，背刺多，叶鼻间距狭窄。花蕾绿色、卵圆锥形。花重瓣，蝶状，花朵高度113 ~ 135 cm，显著高于叶面，花径18 ~ 25 cm，着花密度16 ~ 21朵/m2，丰花，花被片134 ~ 185片，外被呈卵圆形，花白色，上部红紫色，中部白色，基部黄色。雄蕊多瓣化，花丝淡黄色，花药黄色，附属物白色。雌蕊正常，数量12 ~ 38。成熟花托绿色，扁球型，顶面近平行花托表面，边缘不规则波状。自然结实正常，成熟莲子卵形，黑色，灰暗。地下茎一般膨大成长筒状。群体花期一般，6月上旬至9月上旬，90天左右。

主要用途

观赏及环境美化。

栽培技术要点

宜于静水栽植，土壤酸碱度pH6.5 ~ 7.5，光照充足。日均气温15℃以上，最低温度在12℃以上时定植。选择健壮具有１个以上顶芽，2 ~ 3个节间，且没有病虫害，藕芽完好的种藕。栽植时种藕呈20°斜栽入泥，尾部半截翘起，即“头低尾高”，以防藕尾进水。定植时保持基本无水，约一周后浇水保持5 ~ 10 cm水层，立叶长出后水位依其生长逐步提升至30 ~ 40 cm。适宜的盆栽间距（列距×行距）为25 cm×40 cm；池栽选择具有隔离和保水功能的水泥池或土池，填土深度不低于30 cm，株行距为1.0 m×1.5 m。整个生长期一般需追肥2 ~ 3次，分别在立叶期和现蕾期。追肥原则为“少量多次、宁淡勿浓”、“轻施苗肥、重施蕾花肥、看苗追施后劲肥”。种藕在泥水中可短暂忍耐0℃左右的天气。

适宜推广区域

适宜在海拔2000 m以下，年降雨量≥500 mm的地区种植。

10.‘滇东南’蕉芋

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| 草种名称： | 蕉芋 | 学名： | *Canna edulis* ‘Diandongnan’ |
| 品种类别： | 地方品种 | 编号： | 云S-LV-CE-010-2024 |
| 申报单位： | 文山壮族苗族自治州农业科学院 | | |
| 选 育 人： | 钟正阳、黄兴粉、朱德颜、杨羚钰、胡 耀、严继猛、王 献、盘道兴、李 凡、张晓希 | | |

品种特性

美人蕉科美人蕉属多年生丛生草本植物。茎直立粗壮，株高248 cm，呈扁圆形淡紫色，茎径28～42 mm。分蘖10～12个，叶2列互生，长卵形，叶长59 cm，叶宽28 cm，基部下延包裹茎，叶尖较钝，叶脉淡紫，叶鞘淡红，主脉向叶背突起，叶缘边色带淡紫色。根着生于块茎上，白色、纤细、呈园筒形。根状茎膨大呈纺锤形，排列不规则，周围分枝形成子芋，白色，茎尖鳞片紫红色，表皮光滑。穗状花序顶生，红色，分叉少花疏，被腊脂粉霜，基部有1～2个管状抱茎阔鞘，孪生花，花萼浅红色，蒴果淡紫色，有蒴果无种子。

主要用途

一种粮饲兼用的作物。

栽培技术要点

蕉芋是喜温作物，春季气温回升，土壤温度稳定在10 ℃以上即可播种，最佳播种时期为3至5月种植规格：平地株行距以1m×0.6 m为宜，坡地株行距0.8 m×0.6 m，播种方式穴播或沟播。每亩块茎播种量在250 kg，施农家肥或有机肥作底肥750 kg/hm2。播种时幼芽朝上，播种深度20 cm 左右，盖土的深度以种茎不外露为宜。当土温达 16 ℃以上开始萌芽，播种后土壤潮湿20 ~ 30天萌芽。出苗后根据苗情除草施肥，在蕉芋根部每亩追肥60 kg/hm2尿素，在开花前第二次中耕培土施肥，在根部两侧施磷钾肥450 kg/hm2，以利于养分充分吸收和植株均衡生长，促进地下根茎快速膨大。蕉芋几乎无病害，偶尔会发生虫害，危害叶片，用一般的杀虫剂兑水喷雾防治即可。

适宜推广区域

适宜在海拔500 ~ 1800 m，年降雨量960 ~ 1300 mm的滇东南亚热带地区种植。

11. ‘滇东南’千穗谷

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| 草种名称： | 千穗谷 | 学名： | *Amaranthus hypochondriacus* ‘Diandongnan’ |
| 品种类别： | 地方品种 | 编号： | 云S-LV-AH-011-2024 |
| 申报单位： | 文山壮族苗族自治州农业科学院 | | |
| 选 育 人： | 钟正阳、黄兴粉、朱德颜、李 凡、盘道兴、杨羚钰、王 献、胡 耀、严继猛、罗 文 | | |

品种特性

苋科苋属一年生草本植物，株高240～280 cm，茎直立，主根粗大，侧根多，主茎粗壮，分枝多，叶片互生且宽大茂盛，伞状花序。茎呈浅绿色、主茎上条纹非常明显，呈黄绿色。叶片卵圆形，叶片正面、背面绿色，嫩梢淡紫色、叶脉明显，叶柄无花青苷显色。花序呈紫色、直立。种子细小，白色，千粒重0.66 g。

主要用途

是一种粮饲兼用的作物。

栽培技术要点

春、夏、秋季都可以播种，播种前施750 kg/hm2有机肥或腐熟的农家肥作为底肥，最佳播期4～7月，直播或育苗移栽。播种前需翻耕，深耕20 cm，因种子细小，播种时可按1:3的比例掺入沙土或者腐熟的有机肥播种。点播、条播，播种深度2～3 cm，覆土深度1～2 cm，每亩用种量300 g, 株行距0.2 m×0.3 m,撒播每亩用种量500 g。育苗移栽，出苗后20天即可移栽，移栽后及时浇透水。管理：苗高15 cm左右进行间苗，补苗，除草，追肥，追施尿素375 kg/hm2，株高在1 m进行刈割，留茬高0.4 m，每次刈割后及时施尿素375 kg/hm2。病虫害较少，常见的虫害有菜青虫、蚜虫、地老虎等，用5%高效氟氯氰菊酯喷雾防治菜青虫和蚜虫，用90 %敌百虫或50 %辛硫磷乳油扮成毒土防治地老虎等地下害虫。

适宜推广区域

适宜在海拔500 ~1800 m，年降雨量960 ~1300 mm的滇东南亚热带地区种植。

12. ‘滇西’箭筈豌豆

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| 草种名称： | 箭筈豌豆 | 学名： | *Vicia sativa* ‘Dianxi’ |
| 品种类别： | 地方品种 | 编号： | 云S-LV-VS-012-2024 |
| 申报单位： | 云南省草地动物科学研究院，洱源县畜牧工 作站，文山壮族苗族自治州农业科学院，洱源县草山饲料工作站，曲 靖市饲草饲料工作站 | | |
| 选 育 人： | 李世平、施丹丹、吴文荣、张晓娟、黄兴粉、刘彦培、袁福锦、李 成、汪芳军、王 馨 | | |

品种特性

豆科野豌豆属一年生草本。茎细软，斜升或攀缘，有条棱，多分枝。羽状复叶，花冠蝶形，种子球形，黑褐色，千粒重64.5 g。叶相对偏长，尤其是苗期不完全叶（2 ~ 4 小叶）的小叶细长，呈线形至披针状矩圆形，喜温暖和排水良好的壤土和砂质壤土，耐酸能力强，也耐短期水淹。耐旱性强，干季不需灌溉即可顺利完成全生育期。耐瘠薄能力强，耐寒性强，营养期能耐-6℃的冷冻。

主要用途

牧草，兼作地被覆盖和绿肥作物。

栽培技术要点

前茬大春作物收割后，及时深翻土壤，翻耕深度20 cm以上，施农家肥30～45 t/hm2作基肥，然后轻耙表土 1～2 次。9月下旬至10月下旬播种，春播则在雨季来临后进行。单播时容易倒伏，可与燕麦、大麦等混播，混播时，种子按‘洱源’箭筈豌豆与禾草种子2:1或3:1的比例混合，单播用种量60～70 kg/hm2，混播总用种量75～90 kg/hm2。行距 20～30 cm左右条播，播种深度一般为3～4 cm，播后覆土。及时中耕除杂。用于调制干草，最好在盛花至结荚期刈割；草种兼收，在种子成熟期刈割；利用再生草，盛花期刈割时，留茬不得低于4 cm。作绿肥利用时，一般在初花期翻压或刈割。利用种子作饲料时，必须进行脱毒处理，脱毒方法较简单，一般只需炒熟或浸泡6～12小时即可。用于种子生产时注意种子裂荚性较强，收种后的秸秆可作肉牛粗饲料。

适宜推广区域

适宜在海拔2500 m以下，水分条件相对较好的地区种植。

13. ‘小哨’弯叶画眉草

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| 草种名称： | 弯叶画眉草 | 学名： | *Eragrostis curvula* ‘Xiaoshao’ |
| 品种类别： | 地方品种 | 编号： | 云S-LV-EC-013-2024 |
| 申报单位： | 云南省草地动物科学研究院、中国林业科学研究院高原林业研究所、云南省林业和草原科学院、曲靖市林业和草原局、昆明市林业种苗管理站 | | |
| 选 育 人： | 袁福锦、廖声熙、欧阳青、吴文荣、李世平、尹 俊、张子奇、宋升治、徐 驰、侯洁琼 | | |

品种特性

禾本科画眉草属多年生草本植物。根系发达，分蘖性强，秆密丛生， 基生叶纤细、坚韧、密集，形成致密株丛，固土保水能力强。在贫瘠及新垦土地上能良好生长。耐践踏。播种当年生长快，覆盖能力强。北亚热带开花结实性能好，种子产量375-525 kg/hm 2。无明显病虫害发生。

主要用途

生态修复草。

栽培技术要点

依据土壤肥力状况，撒施18000 ~ 27000kg/hm2农家肥或氮磷钾复合肥300 ~ 450 kg/hm2后翻耕土地，翻土深度以20～25cm。 耙碎土块，平整地面，清除地面杂草、石块等杂物。雨季开始时播种，一般在5 ~ 6（7）月播种。撒播、条播或穴播均可。条播行距30 ~ 35cm；穴播穴心距25 ~ 30 cm。播种量12 ~ 18kg/hm2。播种后进行覆土，覆土不宜过深，以不露种为宜，一般0.3 ~ 0.5 cm，播种后要适当镇压。出苗注意杂草防控。苗期依据幼苗表观缺肥程度，施120~ 180kg/hm2尿素进行壮苗。

适宜推广区域

适宜在海拔800 ~ 2300 m，降雨量800 ~ 1100 mm，年均气温12.1 ~ 17.4℃的暖温至亚热带气候区种植。

14. ‘腾越’狼尾草

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| 草种名称： | 狼尾草 | 学名： | *Pennisetum alopecuroides* ‘Tengyue’ |
| 品种类别： | 野生驯化品种 | 编号： | 云S-WDV-PA-014-2024 |
| 申报单位： | 腾冲市草原监督管理所、云南林业职业技术学院 | | |
| 选 育 人： | 严海燕、王 齐、许洪盛、谢金敏、万浩楠、尹其尧、张缘宏、杜建龙、刘 源、张玉雯 | | |

品种特性

禾本科狼尾草属多年生草本植物。丛生，须根发达；株高65 ~ 120 cm，在花穗下密生柔毛；茎秆直立，秆上部长于节间。叶片线形，绿色，长10 ~ 80 cm，宽3 ~ 8 mm，先端长渐尖，基部生疣毛；叶鞘光滑，两侧压扁，秆上部者长于节间；叶舌具长约2.5 mm纤毛；圆锥花序直立，长5 ~ 18 cm，宽1.5 ~ 3.5 cm；主轴密生柔毛；刚毛粗糙，深紫色，长1.5 ~ 3 cm；小穗通常单生，偶有双生；颖果长圆形，长约3.5 mm，千粒重3.8 ~ 4.5 g。

主要用途

观赏和美化环境。

栽培技术要点

采用条播或撒播，条播行距50 cm，用种量22.5 ~ 30 kg/hm2，5 ~ 6月播种。播种时土壤水分适宜，播后覆土深度1 ~ 2 cm，播种后6 ~ 10天可出苗。野生植株移栽密度为每亩4000 ~ 5000株，行距为45 cm，株距为20 ~ 25 cm。每亩使用农家肥500 kg作底肥，每次刈割之后需追肥一次，每亩使用尿素5 kg。定期清除杂害草。

适宜推广区域

适宜在海拔1000 ~ 2400 m的热带、亚热带地区种植。

15. ‘狮山’金雀花

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| 草种名称： | 金雀花 | 学名： | *Caragana sinica* ‘Shishan’ |
| 品种类别： | 野生驯化品种 | 编号： | 云S-WDV-CS-015-2024 |
| 申报单位： | 云南省林业和草原科学院 | | |
| 选 育 人： | 孟 梦、付玉嫔、周 云、李云琴、陈 伟、邱 琼、刘恒鹏、周 晓、李国昌、张 梅 | | |

品种特性

豆科锦鸡儿属灌木。喜光照，耐瘠薄，根蘖能力极强，叶量大，叶片密生，花期长，花量大。栽植3～5年，横走的根系可萌发出大量的植株，距离母本1.5 m范围内可萌生出10～20株根蘖植株，按50 cm的株距密植，能快速形成绿篱，固土护坡能力极强。株高可达2.5 m，冠幅1.5～2.0 m，羽状复叶，叶片3～4片（偶5片）簇生，托叶硬化成的针刺变软或脱落，叶轴硬化成的针刺变软或脱落，小叶革质，耐修剪，多次修剪后可形成密生分枝；花单生或2～4朵簇生，花间距（或簇生叶间距）0.7～1.3 cm，20 cm小枝花量约15～43朵，单花0.23～0.28 g，单株花量可达300～400朵（约80 g）；花期早，2月下旬或3月初始花，盛花期3月15日～3月30日，种植在高海拔地区的植株，则5～8月陆续有开放；须根系发达，主根系深达1 m，耐旱能力极强。

主要用途

食用、药用、观赏、美化环境等多用途灌木。

栽培技术要点

用埋根和扦插培育苗木。埋根：作床，床面宽1 m，间隔20 cm挖沟，沟深5 cm，挖取粗≥0.5 cm的根，制成10～15 cm长的根段放入沟中，盖土。扦插：选取粗≥0.4 cm枝条制成15～25 cm插条,用多菌灵溶液消毒1 h，再用1 g/LABT1号生根液速蘸扦插，基质用河沙或生土，插后搭建塑料拱棚。苗木长至50 cm以上时出圃。作绿篱和观花，采用丛植或带状栽植，株距50 cm。冬季或花期过后将主干和侧枝断稍。花前期叶面喷施0.3%磷酸二氢钾溶液，花后叶面喷施氮肥或距根约25 cm开沟施腐熟有机肥复壮。

适宜推广区域

适宜在海拔1400～2200 m，温带及亚热带土壤深厚的山地至土壤贫瘠的公路沿线、石质山地、喀斯特岩溶区栽植。

16. ‘碧溪’刺五加

|  |  |  |  |
| --- | --- | --- | --- |
| 草种名称： | 刺五加 | 学名： | *Acanthopanax trifoliatus* ‘Bixi’ |
| 品种类别： | 野生驯化品种 | 编号： | 云S-WDV-AT-016-2024 |
| 申报单位： | 云南省林业和草原科学院 | | |
| 选 育 人： | 孟 梦、付玉嫔、周 云、李云琴、尹 俊、邱 琼、陈 伟、刘恒鹏、周 晓、奎连敏 | | |

品种特性

五加科五加属攀援状灌木，喜光照，也具有一定耐荫性；丛生，侧枝萌发能力极强，叶量大，叶片密生，新萌发嫩梢呈紫红色。株高可达2.0 m，冠幅1.5～2.0 m。指状复叶，有小叶3～5片，纸质，无毛或上面脉上疏生刚毛；枝上疏生扁平皮刺；伞形花序单生或多个组成复伞形或总状花序；果扁球形，成熟时黑色，径约5 mm。花期8～10月，果期10～12月。裸地至郁闭度0.6以下林地内均可正常生长，适应性强。

主要用途

观赏、美化环境。

栽培技术要点

清除地表杂草、石块等杂物，平整土地，精细耙耱。选择生长健壮，无病虫害，半年生以上半木质化或木质化的15～20 cm长枝条作为插穗；插条先用50%可湿性粉剂的多菌灵800～1000倍液或0.2%高锰酸钾溶液浸泡30 min，甩干后用ABT生根粉1.0 g/L的溶液速蘸扦插；扦插基质用生土；插后搭建塑料拱棚保湿、保温。生根成活后，撤掉塑料膜进行壮苗培育和炼苗。扦插后3～4个月，苗木生根良好，地上部分长至30 cm以上时出圃种植。采用丛植或带状栽植，3～4株为一丛栽植，穴规格：40 cm×40 cm×40 cm，带状栽植，株距50 cm，根据地形选择栽植行数。定植时每穴施底肥1 kg有机肥，与土充分混匀后栽植苗木。种植半年后修剪，二次定干后高度控制在1.2 m；每年冬季肥有机肥1 kg/株；旱季勤浇水，雨季少浇水或不浇水。

适宜推广区域

适宜在海拔600～2200 m北亚热带至温带区域的园地、庭院、道路沿线、疏林地林下种植。

17. ‘九龙’蔗茅

|  |  |  |  |
| --- | --- | --- | --- |
| 草种名称： | 蔗茅 | 学名： | *Saccharum rufipilum* ‘Jiulong’ |
| 品种类别： | 野生驯化品种 | 编号： | 云S-WDV-SR-017-2024 |
| 申报单位： | 云南省林业和草原科学院 | | |
| 选 育 人： | 陈鹏、冯丹、杨倩、李浩然 | | |

品种特性

属禾本科甘蔗属多年生草本植物，丛生，种子产量高，生长期长，可快速覆盖裸露地面。其生物量大，株高可达2.23 m，覆盖面积可达0.81 m2，经2～3年生长后单株的总生物量可达5.0-7.5 kg；繁殖能力强，经2～3年生长单株植株的分蘖数可达122以上，种子数量达到6.74×10 3 /株；在林下生长良好，抗寒、抗旱、耐瘠薄、抗绣病、宿根性强。

主要用途

生态修复草。

栽培技术要点

清除地表杂草、石块等杂物，对修复地块进行翻耕、平整、耙耱。气候湿润的地方可在3月至5月播种，干旱地在雨季来临时播种，即5月底至6月中下旬播种。立地条件差的地块采用穴播，立地条件好的地块采用条播，穴播时播 种深度1 ~ 1.5cm 左右，行距50～60 cm 。条播则覆土宜浅，播种后轻耙地表。其播种量为 15～20 kg/hm2。苗期需进行适时适量的灌溉和施肥，注意杂草的防除。植株幼苗生长期可施用少量尿素、钙镁磷肥等速效肥。蔗茅是圆锥花序狭长圆形或线形，在小穗顶部50%～ 70%的种子开始脱落时，剪下整个小穗的一半，下半部待种子成熟脱粒时再收割。晾晒剪下的小穗，翻晒、揉搓 2～3次，成熟种子从花序上脱落干净。分离花序，收集种子，再晾晒一天，进行杨灰，过筛清选，装袋入库。

适宜推广区域

适宜在海拔400～2500m、降雨量800 mm以上的热带、亚热带、温带地区，沟谷、撂荒地、采矿采石废弃地、建筑垃圾地、荒废地、公路偏坡、林下有害植物入侵地等区域种植。

18. ‘禄劝’箭筈豌豆

|  |  |  |  |
| --- | --- | --- | --- |
| 草种名称： | 箭筈豌豆 | 学名： | *Vicia sativa* ‘Luquan’ |
| 品种类别： | 野生驯化品种 | 编号： | 云S-WDV-VS-018-2024 |
| 申报单位： | 云南农业大学、昆明市种子管理站、巍山县饲草饲料工作站 | | |
| 选 育 人： | 段新慧、姜 华、何承刚、周 凯、杨天丽、熊景发、韩 博、赵志丽、肖 雪、张建贵 | | |

品种特性

豆科野豌豆属一年生或越年生草本植物，高30 ~ 100 cm，根茎匍匐，茎柔细斜升或攀援，具棱，被柔毛，偶数羽状复叶长7 ~ 12 cm，叶轴顶端卷须发达；托叶半戟形，有2 ~ 4裂齿；小叶5 ~ 7对，长卵圆形或长圆披针形，先端钝或平截，微凹，有短尖头，基部圆形，两面被柔毛，短总状花序，花2 ~ 4朵腋生；花萼钟状，萼齿披针形或锥形，短于萼筒；花冠红色或近紫色至浅粉红色，稀白色；旗瓣近提琴形，先端凹， 翼瓣短于旗瓣，龙骨瓣内弯，最短，荚果宽长圆状，近菱形，长2.1 ~ 3.9 cm，宽0.5 ~ 0.7 cm，成熟时亮黑色，先端具喙，微弯。种子5 ~ 7粒，扁圆球形，表皮棕色有斑。该品种完成生育期需150天左右。可食用、饲用、绿肥还田、入药，生育周期短，适应性较强，生产性能稳定，蛋白质含量高和适口性好，适于放牧、青饲、调制青干草，牛、马、羊等牲畜均喜食，是一种优质的饲草资源和绿肥作物。

主要用途

可食用、饲用、绿肥还田、入药。

栽培技术要点

播前精耕细耙，破碎土块，使土壤上虚下实，清除杂草，并注意地块排水。秋播最佳；撒播或条播，条播行距30 cm，播种深度3 ~ 4 cm。播种量为50 kg/hm2，播种时施12:11:18的氮磷钾复合肥，施肥量为625 kg/hm2。苗期植株矮小，地上部分生长缓慢，出苗后易受杂草侵害，须及时人工锄杂草， 并进行灌溉和施肥，可保证稳产、高产。 在初花期割草利用，夏季雨水较多时高度40 ~ 50 cm可刈割，冬季较干旱时高度50 cm左右可刈割，割草留茬5 cm。

适宜推广区域

适宜在海拔1000 ~ 2500 m，温度5 ~ 30℃的温暖地区种植。

List of Grass Varieties in Yunnan Province,2024

1. **Zesheng NO.2**

**Species**: *Erigeron breviscapus*

**Scientific name**: *Erigeron breviscapus* ‘Zesheng NO.2’

**Variety category**: Bred variety

**Registration NO.**: Yun S-BV-EB-001-2024

Applicant: Yunnan Academy of Forestry and Grassland, Honghe University, Yunnan Zesheng Biotechnology Co., Ltd

**Breeders**: Peng Mingjun, Zhang ChuanGuang, Yang Xu, Zhang Wei, Li He, Li Ying, Guan Dejun, Zhou Wenzhong, Yuan Gui, Yuan Langyu

**Characteristics:**

**‘Zesheng NO.2’** is an annual herb of *Compositae*. The stem is erect. On average, there are 12 leaves in the base of the stem, with a length of about 18cm and a width of about 3cm. The leaves are with margins, and spiculiform in shape. The tip of the leave is sharp but the base is narrow. It is suitable for close planting. The average dry product yield is about 440kg/mu. The average content of flavonoids is 8.12% and that of scutellarin is 1.93%.

**Main use:**

Medicinal grass, with the effects of promoting blood circulation, relieving pain, and facilitating flu recovery.

**Cultural techniques:**

Sowing can be done twice a year, suitable from May to June in summer, and from October to November in winter. The land is plowed with organic fertilizer of 200～800kg or calcium of 100～200kg. The fine plowing is recommended with a width of 1.2～1.3m, and the ditch is 0.3～0.4m in depth. The sowing rate is 9～12 kg/hm2. Before sowing, weeds should be removed and the soil should be thoroughly watered. After sowing, shading net and non-woven fabric are used to provide shade and keep moisture. Emergence will happen after 4～10 days, and when the seedlings grow with 5～6 leaves, these covers can be removed. The seedling stage can last for 60～90 days, during which timely weeding and fertilizer are required. After sowing, the plant can be harvested after 90～180 days’ growth, and then multi-timed harvests can be carried out, with a harvest interval of 30～90 days. Compound fertilizer, urea, calcium superphosphate, and potassium sulfate are used as fertilizers. From sowing to the first harvest, fertilization should be carried out 4 times and then 2～3 times per harvest. The best harvest time is from the bolting stage to the early flowering stage. After harvest, it is important to weed and dry the seeds.

**Suitable areas for planting:**

It is suitable for planting in regions with an altitude of 1500 ~ 2000m and an annual rainfall of 800 ~ 1500mm.

1. **Linxuan NO.2**

**Species**: *Hemerocallis fulva*

**Scientific name:** *Hemerocallis fulva* ‘Linxuan NO.2’

**Variety category:** Bred variety

**Registration No.:** Yun S-BV-HF-002-2024

**Applicant:** Southwest Forestry University, Yunnan Jicheng Landscape Technology Co., Ltd, Yunnan Forestry Technological College

**Breeders:** Xin Peiyao, Li Wei, Wang Qi, Duan Shixue, Li Qishao, Chen Wei, Li Jianyun, Jin Li, Wang Fei, Li Zihan

**Characteristics:**

**‘Linxuan NO.2’** belongs to the genus *Hemerocallis*, family Asphodelaceae. The leaves are green and obliquely spreading with a length of 58～60cm and a width of 1.6～1.7cm. The petals are red, with a red corona and green throat. The flower is single-petaled and star-shaped. The petals are elliptical and reflexed with ruffled edges. It has prominent veins, a slightly deep color, and yellow ribs. The flower diameter is 10～11cm, with a petal width of 3.5～4.1cm, a the calyx width of 2.0～2.5 cm, and a stamina height of 60～62 cm. The average branch number of an individual flower is 5～6 with flowers 50～53 in the medium size.

**Main use:**

Viewing and landscaping.

**Cultural techniques:**

*Hemerocallis fulva,* preferring sunlight, requires at least 6 hours of direct sunlight to bloom. It is drought-tolerant, but to bloom with bright colors and vigorous growth, adequate water supply is needed, but over-watering should be avoided. Therefore, seedling production centers or gardens should be built on well-drained lands. When planted, a spacing of 30cm × 40cm is suitable. Its growth requires fertilizers. In addition to applying sufficient fertilizers (preferably decomposed cow or pig manure) at the planting time, before flowering, the nitrogen, phosphorus, and potassium compound fertilizer as well as a 0.2% monopotassium phosphate spray can be applied to promote flowering and prolong the flowering time. After flowering, it will grow badly, so it is necessary to clean up the dried flowers and leaves in time. In seedling production or landscape creation, the big tufts of old plants are divided into 1～2 buds per tuft every 2～3 years. It is significant to apply the nitrogen, phosphorus and potassium compound fertilizer again in September to promote tillering. It is most suitable to plant it in autumn or early spring.

Leaf blight and rust are two diseases that are very likely to inflict on *Hemerocallis fulva*. In the early stage of leaf blight, 50% mancozeb (1g/500ml～1g/800ml of water) can be applied to effectively prevent and control leaf blight; in the early stage of rust, 15% triadimefon powder ( 1g/1000ml ～1g/1200ml of water) can be used for one spray for every 10～5 days with 2～3 times, which can effectively control the disease.

**Suitable areas for planting:**

It is suitable for planting in temperate and subtropical regions with an altitude of 100～2300 m and an annual rainfall of above 800mm.

1. **Jixuan NO.2**

**Species：***Hemerocallis fulva*

**Scientific name:** *Hemerocallis fulva* ‘Jixuan NO.2’

**Variety category:** Bred variety

**Registration No.:** Yun S-BV-HF-003-2024

**Applicant:** Yunnan Jicheng Landscape Technology Co., Ltd, Southwest Forestry University, Yunnan Forestry Technological College

**Breeders:** Li Wei, Xin Peiyao, Wang Qi, Duan Shixue, Jin Li, Zhu Haiyan, Chen Wei, Chai Yongfei, Li Yunwei, Li Qishao

**Characteristics:**

**‘Jixuan NO.2’** belongs to the genus *Hemerocallis*, family Asphodelaceae. The leaves are green and obliquely spreading with a length of 80～87cm and a width of 2.0～3.5 cm. The petals are lemon yellow, with green throat. The flower is single-petal and star-shaped. The petals are elliptical, reflexed with ruffled edges. It has a prominent vein, a slightly deep color, and white ribs. The flower diameter is 14～17 cm, with a petal width 6～7 cm, a calyx width 3～4.5 cm, and a stamina height 80～87 cm. The average branch number of an individual flower is 5～7 with flowers 40～45 in the medium size.

**Main use:**

Viewing and landscaping.

**Cultural techniques:**

*Hemerocallis fulva*, preferring sunlight, requires at least 6 hours of direct sunlight to bloom. It is drought-tolerant, but to bloom with bright colors and vigorous growth, adequate water supply is needed, but over-watering should be avoided. Therefore, seedling production centers or gardens should build in well-drained lands. When planted, a spacing of 30cm × 40cm is applied. Blooming requires more than 6 hours of direct sunlight. Its growth requires fertilizers. In addition to applying sufficient fertilizers (preferably decomposed cow or pig manure) at the planting time, before flowering, the nitrogen, phosphorus and potassium compound fertilizer, as well as a 0.2% monopotassium phosphate spray, can be applied to promote flowering and prolong the flowering time. After flowering, it will grow badly, so it is necessary to clean up the dried flowers and leaves in time. In seedling production or landscape creation, the big tufts of old plants are divided into 1～2 buds per tuft every 2～3 years. It is significant to apply the nitrogen, phosphorus and potassium compound fertilizer again in September to promote tillering. It is most suitable to plant it in autumn or early spring.

Leaf blight and rust are two diseases that are very likely to inflict on *Hemerocallis fulva*. In the early stage of leaf blight, 50% mancozeb (1g/500ml～1g/800ml of water) can be applied to effectively prevent and control leaf blight; in the early stage of rust, 15% triadimefon powder (1g/1000ml ~ 1g/1200ml of water) can be used for one spray for every 10～15 days with 2～3 times, which can effectively control the disease.

**Suitable areas for planting:**

It is suitable for planting in temperate and subtropical regions with an altitude of 100～2300 m and an annual rainfall of above 800mm.

1. **Yunmu NO.2**

**Species：***Pennisetum purpureum*

**Scientific name:** *Pennisetum purpureum* ‘Yunmu NO.2’

**Variety category:** Bred variety

**Registration No.:** Yun S-BV-PP-004-2024

**Applicant:** Yunnan Academy of Grassland Animals, Southwest Forestry University, Yunnan Institute of Tropical Crops, Yunnan Academy of Agricultural Sciences, Qujing Forestry and Grassland Administration, Yunnan Forestry Technological College

**Breeders:** Zhong Sheng**,** Li Shiping, Liu Yanpei, Ouyang Qing, Yan Wei, Zhang Ziqi, Yang Zishan, Wu Wenrong, Shi Dandan, Yuan Fujin

**Characteristics:**

**‘Yunmu NO.2’**, a perennial herb, belongs to the genus *Pennisetum*. It is a clustered tetraploid perennial tall grass (2n=28). The whole plant is rarely haired. The stem is relatively slender, with a diameter of 0.5～1.5 cm, and there is white powder on the surface. The stem can reach a height of 2.5～3 m when blooming. It has strong tillering ability and dense branches. It grows vigorously during the seedling stage. With its good regeneration ability, it can go through multiple cuttings. It is cold-resistant and can survive the winter at an altitude of 2200 m in northeastern Yunnan and 2500 m in western Yunnan. Due to its good performance, its grass yield is higher than that of the nationally certified *Pennisetum* grass varieties, which are mainly planted in Yunnan, such as ‘Heyan No. 4’ and ‘Dehong’.

**Main use:**

Used as ecological restoration grass and forage grass.

**Cultural techniques:**

From late May to early June, it is important to plant it in fertile soil with a deep soil layer and good drainage and irrigation. The soil with a depth of more than 20 cm should be plowed, and it needs to be dried for several days and compacted. The stems that have grown for more than 4 months can be selected as the seedling stems. 2/3 of the middle and lower of the seedling stems can be cut into small segments containing two active buds, which can be planted obliquely in the seedbed at a spacing of 60 cm x 80 cm, with the plating depth of the upper stem no higher than the soil surface. During the seedling stage, it is significant to carry out the timely weeding, thinning, and seedling replenishing. Top dressing should be applied according to the growth after cutting. In the planting year, cutting should be done once at the end of the growing season; in July and mid-October of the following year, cutting should be done.

**Suitable areas for planting:**

It is suitable for planting in the cold mountainous areas at an altitude of 1800～2200 m in northeastern, northwestern, central, and southeastern Yunnan, and with the highest altitude of 2500m in western, southern, and southwestern Yunnan.

1. **Linyi NO.1**

**Species**: *Nelumbo nucifera*

**Scientific name**: *Nelumbo nucifera* ‘Linyi NO.1’

**Variety category**: Bred variety

**Registration No.**: Yun S-BV-NN-005-2024

**Applicant**: Southwest Forestry University, Nanjing Yilianyuan Flower Co., Ltd

**Breeders**: Chen Longqing, Hu Huizhen, Qiao Zhenglin, Ding Yuesheng

**Characteristics:**

**‘Linyi NO.1’** is an aquatic perennial herb of the genus *Nelumbo,* the family Nelumbonaceae. It is large with a standing leaf height of 63 ~ 75 cm, a leaf size of (38 ~ 42) cm×(30 ~ 33) cm, and a flower height of 98 ~ 115 cm. The blooming period is early and lasts for a long time from early June to late July. It has a high flower density, producing 18 ~ 23 flowers /m2. The mature leaves are green and smooth on the surface. The flower buds are oval and yellow-green with red tips. The bowl-like shaped double flowers are significantly above the leaves and have about 122 petals. The flower diameter is 20 ~ 24 cm. The petals are of various sizes, with the largest being 12 cm×8.5 cm and the smallest being 6.5 cm×2.5 cm. The flower is with multiple colors: the outer petals have purple-red tips (Red-P Group 64B), a pale green middle (Green-White Group 157B), and a yellow base (Yellow Group 4B). The petals have purple-red tips (Red-Purple Group 63C), a pale green middle (Green-White Group 157C), and a yellow base (Yellow Group 4A). There are about 162 stamens, which are often petaloid, with milky white appendages of about 5 mm in size. The pistils are with 13 ~ 19 carpels. The slightly mature receptacles are green (Green Group 139D) on the sides, and the mature receptacles are oblate with a convex top. Not all of the plants produce seeds, with a size of about 15.5 mm×11 mm.

**Main use**:

Viewing and landscaping.

**Cultural techniques**:

It is suitable for planting in still water, with soil pH 6.5 ~ 7.5 and adequate sunlight. Planting can be done when the average daily temperature is above 15℃ and the lowest temperature is above 12℃. It is important to select the healthy seedling lotus root with least one apical bud, 2 ~ 3 internodes, being free of disease or pests, and with intact buds. When growing, the seedling lotus root, with the end slightly elevated, should be planted at an angle of 20° into the mud to prevent water from entering the end. The growing area should be kept dry for about a week and then watered to maintain a water level of 5 ~ 10 cm. After the standing leaves grow, the water level should be gradually raised to 30 ~ 40 cm. The appropriate spacing for pot growing is 25×40 cm; for pond growing, it is important to choose cement or soil ponds with isolation and water conservancy, with a soil depth of no less than 30 cm and a plant spacing of 1.0 m×1.5 m. During the entire growth period, fertilizers should be applied 2 ~ 3 times, mainly during the standing leaf growing period and the bud emerging period. The principle of fertilization is "low amount but high frequency, low concentration rather than high", "slight application of fertilizer in the seedling stage, heavy application of fertilizers in the budding and flowering stage, and appropriate application of fertilizers based on the seedling situation". The seedling lotus root can tolerate temperatures around 0℃ for a short time in water.

**Suitable areas for planting:**

It is suitable for planting in areas below 2000m in altitude with an annual rainfall of ≥500 mm.

1. **Linyi NO.2**

**Species:** *Nelumbo nucifera*

**Scientific name**: *Nelumbo nucifera* ‘Linyi NO.2’

**Variety category**: Bred variety

**Registration No.**: Yun S-BV-NN-006-2024

**Applicant**: Southwest Forestry University, Nanjing Yilianyuan Flower Co., Ltd

**Breeders**: Chen Longqing, Qiao Zhenglin, Yang Ziyun, Xiong Yu

Characteristics:

**‘Linyi NO.2’** is an aquatic perennial herb of the genus *Nelumbo,* the family Nelumbonaceae. It is large with a standing leaf height of 90 ~ 108cm, a leaf size of (40 ~ 48) cm×(46 ~ 55) cm. The leaf is green and smooth on the surface. A flower height is 138 ~ 158 cm. The blooming period is early and lasts for a long time from early June to late August. It has a high flower density, producing 16 ~ 22 flowers /m2. The flower buds are oval, with red tips and yellow-green base. The plate-like shaped double flowers are significantly above the standing leaves and have about 105 petals. The flower diameter is 24 ~ 27 cm. The petals are of various sizes, with the largest being 15.5 cm×10 cm and the smallest being 7 cm×2 cm. The flower is with multiple colors: the outer petals have purple-red tips (Red-Purple 58A), a pink upper (Red-Purple 63D), and a yellow base (Yellow 4D). The inner petals have dark pink tips (Red-Purple 63C) and a yellow base (Yellow 4C). There are about 253 stamens, which are often petaloid, with pale yellow appendages of about 5 mm in size. The pistil is partially normal, partially vesicular or petaloid, with 17 ~ 25 carpels. The receptacles are yellow-green (Green Group 144C) on the sides, and the mature receptacles are umbrella-shaped with a convex top. The seed is spindle-shaped with the size of (11.5 ~ 13.5) mm × (20 ~ 22) mm. The long cylindrical rhizome can produce the lotus root.

**Main use**:

Viewing and landscaping.

**Cultural techniques**:

It is suitable for planting in still water, with soil pH 6.5 ~ 7.5 and adequate sunlight. Planting can be done when the average daily temperature is above 15℃ and the lowest temperature is above 12℃. It is important to select the healthy seedling lotus root with at least one apical bud, 2 ~ 3 internodes, being free of disease or pests, and with intact buds. When growing, the seedling lotus root, with the end slightly elevated, should be planted at an angle of 20° into the mud to prevent water from entering the end. The growing area should be kept dry for about a week and then watered to maintain a water level of 5 ~ 10 cm. After the standing leaves grow, the water level should be gradually raised to 30 ~ 40 cm. The appropriate spacing for pot growing is 25×40 cm; for pond growing, it is important to choose cement or soil pond with isolation and water conservancy, with a soil depth of no less than 30 cm and a plant spacing of 1.0 m×1.5 m. During the entire growth period, fertilizers should be applied 2 ~ 3 times, mainly during the standing leaf growing period and the bud emerging period. The principle of fertilization is "low amount but high frequency, low concentration rather than high", "slight application of fertilizers in the seedling stage, heavy application of fertilizers in the budding and flowering stage, and appropriate application of fertilizers based on the seedling situation". The seedling lotus root can tolerate temperatures around 0℃ for a short time in the water.

**Suitable areas for planting:**

It is suitable for planting in areas below 2000m in altitude with an annual rainfall of ≥500 mm.

1. **Linyi NO.3**

**Species:** *Nelumbo nucifera*

**Scientific name**: *Nelumbo nucifera* ‘Linyi NO.3’

**Variety category**: Bred variety

**Registration No.**: Yun S-BV-NN-007-2024

**Applicant**: Southwest Forestry University, Nanjing Yilianyuan Flower Co., Ltd

**Breeders**: Qiao Zhenglin, Yang Ziyun, Chen Longqing, Lin Yuxue, Ding Yuesheng

**Characteristics**:

**‘Linyi NO.3’** is an aquatic perennial herb of the genus *Nelumbo,* the family Nelumbonaceae. It is large with a standing leaf height of 70 ~ 102 cm, and a leaf size of （35 ~ 43）cm×（39 ~ 48）cm. The mature leaf is green and smooth on the surface. Flower’s height is 105 ~ 160 cm. The blooming period is early and lasts for a long time from early June to late August. It has a high flower density, producing 19 ~ 28 flowers /m2. The flower buds are oval, with red tips and yellow-green base. The cup-like or plate-like shaped double flowers are significantly above the standing leaves and have about 18 petals. The flower diameter is 28 ~ 32 cm. The petals are of various sizes, with the largest being 18.7 cm×8.2 cm and the smallest being 10.6 cm×4 cm. The flower is with multiple colors which change with the opening days: first day, purple-red at the petal tip (RedPurple 63A), orange the middle (Orange 27D, with prominent red veins), and yellow at the base (Yellow 4B); second day, purple-red at the petal tip (Red-Purple 63A), yellow in the middle (Yellow 11D, with prominent red veins), and pale yellow at the base (Yellow 3D); third day, purple-red at the petal tip (Red-Purple 63A), white in the middle (White 15A), and pale yellow at the base (Yellow 4C). There are about 206 stamens, which are unpetaloid, with pale yellow appendages of about 7.6 mm in size. The pistil is with 13 ~ 19 carpels. The receptacles are yellow-green (Yellow-Green 144B) on the sides, and the mature receptacles are oval with a convex top. The size of the seed is 15.9 mm×12.4 mm. It can be planted in pots or ponds and the green and ripe lotus pods can be used as fruits.

**Main use**:

Viewing and landscaping.

**Cultural techniques**:

It is suitable for planting in still water, with soil pH 6.5 ~ 7.5 and adequate sunlight. Planting can be done when the average daily temperature is above 15℃ and the lowest temperature is above 12℃. It is important to select the healthy seedling lotus root with at least one apical bud, 2 ~ 3 internodes, being free of disease or pests, and with intact buds. When growing, the seedling lotus root, with the end slightly elevated, should be planted at an angle of 20° into the mud to prevent water from entering the end. The growing area should be kept dry for about a week and then watered to maintain a water level of 5 ~ 10 cm. After the standing leaves grow, the water level should be gradually raised to 30 ~ 40 cm. The appropriate spacing for pot growing is 25×40 cm; for pond growing, it is important to choose cement or soil pond with isolation and water conservancy, with a soil depth of no less than 30 cm and a plant spacing of 1.0 m×1.5 m. During the entire growth period, fertilizers should be applied 2 ~ 3 times, mainly during the standing leaf growing period and the bud emerging period. The principle of fertilization is "low amount but high frequency, low concentration rather than high", "slight application of fertilizers in the seedling stage, heavy application of fertilizers in the budding and flowering stage, and appropriate application of fertilizers based on the seedling situation". The seedling lotus root can tolerate temperatures around 0℃ for a short time in the water.

**Suitable areas for planting:**

It is suitable for planting in areas below 2000m in altitude with an annual rainfall of ≥500 mm.

1. **Linyi NO.4**

**Species:** *Nelumbo nucifera*

**Scientific name**: *Nelumbo nucifera* ‘Linyi NO.4’

**Variety category**: Bred variety

**Registration No.**: Yun S-BV-NN-008-2024

**Applicant**: Southwest Forestry University, Nanjing Yilianyuan Flower Co., Ltd

**Breeders**: Chen Longqing, Hu Huizhen, Qiao Zhenglin, Ding Yuesheng

**Characteristics**:

**‘Linyi NO.4’** is an aquatic perennial herb of the genus *Nelumbo,* the family Nelumbonaceae. It is large with a standing leaf height of 75 ~ 92cm, and a leaf size of （42 ~ 46）cm×（46 ~ 51）cm. Flower’s height is 85 ~ 115cm. The blooming period is early and lasts for a long time from early June to late August. It has a high flower density, producing 12~19 flowers /m2. The mature leaf is green with red tips and smooth on the surface. The flower buds are ovate and dark purplish red. The bowl-like double flowers are significantly above the standing leaves and have about 137 petals. The flower diameter is 20 ~ 22 cm. The petals are of various sizes, with the largest being 12.6 cm×7.7 cm and the smallest being 5.9 cm×1.4 cm. The flower color: dark purple-red (Red-Purple Group 59D), purple-red in the middle and lower parts (Red-Purple Group 6B), and pale yellow base (Yellow Group 11D). There are about 264 stamens, which are petaloid, with purple-red appendages of about 5 mm in size. The anthers are orange-yellow with a red middle, and the filaments are pale yellow. The pistil is with 16~21 carpels. The receptacles are yellow-green (Yellow-Green 145B) on the sides, and the mature receptacles are oval with a convex top. The size of the seed is 14.5 mm×10.5 mm. The long cylindrical rhizome can produce the lotus root.

**Main use**:

Viewing and landscaping.

**Cultural techniques**:

It is suitable for planting in still water, with soil pH 6.5 ~ 7.5 and adequate sunlight. Planting can be done when the average daily temperature is above 15℃ and the lowest temperature is above 12℃. It is important to select the healthy seedling lotus root with at least one apical bud, 2 ~ 3 internodes, being free of disease or pests, and with intact buds. When growing, the seedling lotus root, with the end slightly elevated, should be planted at an angle of 20° into the mud to prevent water from entering the end. The growing area should be kept dry for about a week and then watered to maintain a water level of 5 ~ 10 cm. After the standing leaves grow, the water level should be gradually raised to 30 ~ 40 cm. The appropriate spacing for pot growing is 25×40 cm; for pond growing, it is important to choose a cement or soil pond with isolation and water conservancy, with a soil depth of no less than 30 cm and a plant spacing of 1.0 m×1.5 m. During the entire growth period, fertilizers should be applied 2 ~ 3 times, mainly during the standing leaf growing period and the bud emerging period. The principle of fertilization is "low amount but high frequency, low concentration rather than high", "slight application of fertilizers in the seedling stage, heavy application of fertilizers in the budding and flowering stage, and appropriate application of fertilizers based on the seedling situation". The seedling lotus root can tolerate temperatures around 0℃ for a short time in the water.

**Suitable areas for planting:**

It is suitable for planting in areas below 2000m in altitude with an annual rainfall of ≥500 mm.

1. **Linyi NO.5**

**Species:** *Nelumbo nucifera*

**Scientific name**: *Nelumbo nucifera* ‘Linyi NO.5’

**Variety category**: Bred variety

**Registration No.**: Yun S-BV-NN-009-2024

**Applicant**: Southwest Forestry University, Wu Han Botanical Garden, Chinese Academy of Sciences

**Breeders**: Chen Longqing, Qiao Zhenglin, Yang Mei, Yang Dong, Zi Yuanxiang

**Characteristics**:

**‘Linyi NO.5’** is an aquatic perennial herb of the genus *Nelumbo,* the family Nelumbonaceae. Its size is medium with a height of 89 ~ 123cm. The number of the standing leaf is 32 ~ 47/m2. The young leaves are greenish with a red tinge, while the mature leaves are green and shallowly concave. The leaf dimension is（26 ~ 49）cm×（21 ~ 37）cm, with a smooth surface and numerous spines on the back. The space between the leaf nodes（in the center of the leaf）is narrow.The flower buds are ovate and green. The butterfly-like double flowers are significantly above the standing leaves and with a flower height of 113 ~ 135 cm. The flower diameter is 18 ~ 25 cm. The flower density is 16 ~ 21 /m2, with abundant amounts. The number of tepals is 134 ~ 185, with an ovate shape. The flowers are white, with red-purple upper parts, white middle parts, and yellow bases. Stamens are petaloid, with white appendages, yellow anthers, and pale yellow filaments. The pistil is with 12 ~ 38 carpels. The mature receptacle is green and oblate, with its top surface nearly parallel to the receptacle surface and wave-like margins. It fruits naturally, with mature lotus seeds being ovate, black, and dull. The rhizome is cylindrical. The flowering period is generally from early June to early September, about 90 days.

**Main use**:

Viewing and landscaping.

**Cultural techniques**:

It is suitable for planting in still water, with soil pH 6.5 ~ 7.5 and adequate sunlight. Planting can be done when the average daily temperature is above 15℃ and the lowest temperature is above 12℃. It is important to select the healthy seedling lotus root with at least one apical bud, 2 ~ 3 internodes, being free of disease or pests, and with intact buds. When growing, the seedling lotus root, with the end slightly elevated, should be planted at an angle of 20° into the mud to prevent water from entering the end. The growing area should be kept dry for about a week and then watered to maintain a water level of 5 ~ 10 cm. After the standing leaves grow, the water level should be gradually raised to 30 ~ 40 cm. The appropriate spacing for pot growing is 25×40 cm; for pond growing, it is important to choose a cement or soil pond with isolation and water conservancy, with a soil depth of no less than 30 cm and a plant spacing of 1.0 m×1.5 m. During the entire growth period, fertilizers should be applied 2 ~ 3 times, mainly during the standing leaf growing period and the bud emerging period. The principle of fertilization is "low amount but high frequency, low concentration rather than high", "slight application of fertilizers in the seedling stage, heavy application of fertilizers in the budding and flowering stage, and appropriate application of fertilizers based on the seedling situation". The seedling lotus root can tolerate temperatures around 0℃ for a short time in the water.

**Suitable areas for planting:**

It is suitable for planting in areas below 2000m in altitude with an annual rainfall of ≥500 mm.

1. **Diandongnan (*Canna edulis*)**

**Species:** *Canna edulis*

**Scientific name**: *Canna edulis* ‘Diandongnan’

**Variety category**: Indigenous variety

**Registration No.**: Yun S-LV-CE-010-2024

**Applicant**: Academy of Agriculture of Wenshan Zhuang and Miao Autonomous Prefecture

**Breeders**: Zhong Zhengyang, Huang Xingfen, Zhu Deyan, Yang Lingyu, Hu Yao, Yan Jimeng, Wang Xian, Pan Daoxing, Li Fan, Zhang Xiaoxi

**Characteristics**:

**‘Diandongnan’**, a perennial herb, belongs to the genus *Canna*, the family Cannaceae. The stem is erect and stout, with a height of 248 cm and a diameter of 28～42 mm. It is oval and pale purple in color. It has 10～12 tillers, with leaves arranged alternately, ovate in shape, 59 cm in length, and 28 cm in width. The base of the leaf is prolonged downward to wrap around the stem, with a blunt tip, pale purple veins, and a pale red sheath. The main vein protrudes on the back of the leaf and the leaf margin is pale purple. The roots, which are white, slender, and cylindrical, are from the tubers. The rhizome is spindle-like shaped, with irregular arrangement, and branches around form small taros, which are white, with purple-red scales at the stem tip, and smooth skin. Thyrsoid inflorescences, red, with few branches and sparse flowers, covered with wax powder, with 1-2 tubular sheaths at base, twin flowers, pale red sepals, pale purple capsules, and no seeds in the capsules.

**Main use**:

Used as grain and forage grass.

**Cultural techniques**:

*Canna edulis,* a warm-season crop, can be grown in spring when the temperature rises and the soil temperature stabilizes above 10℃. The optimal growing period is from March to May. In flat areas, the plant spacing should be 1m×0.6 m, while on slopes, the plant spacing should be 0.8m×0.6m. The sowing methods are hole sowing or furrow sowing. The sowing rate is 250 kg/mu, with 750 kg/hm2 of manure or organic fertilizers as the base fertilizer. When sowing, the young buds should be put upwards, with a sowing depth of around 20cm. The soil should fully cover the rhizome, which will begin to sprout when the soil temperature reaches above 16℃ and it will take 20 ~ 30 days for the sprouts to emerge in moist soil. After the sprouts emerge, weeding and fertilization should be carried out according to the growth of the sprouts. 60 kg/hm2 of urea should be applied around the base of *Canna edulis*. The second round of moderate plowing, earthing up, and fertilization should be carried out before it flowers, with 450 kg/hm2 of phosphate and potassium fertilizer being applied on both sides of the roots to facilitate nutrient absorption, balanced growth of the plants, and the rapid growth of the rhizome. *Canna edulis* is almost free of diseases, but occasionally pest infestation may emerge to damage the leaves, which can be controlled by spraying insecticides mixed with water.

**Suitable areas for planting**:

It is suitable for planting in sub-tropical regions in southeastern Yunnan at an altitude of 500 ~ 1800m and with an annual rainfall of 960 ~ 1300 mm.

1. **Diandongnan (*Amaranthus hypochondriacus*)**

**Species**: *Amaranthus hypochondriacus*

**Scientific name**: *Amaranthus hypochondriacus* ‘Diandongnan’

**Variety category**: Indigenous variety

**Registration No.**: Yun S-LV-AH-011-2024

**Applicant**: Academy of Agriculture of Wenshan Zhuang and Miao Autonomous Prefecture

**Breeders**: Zhong Zhengyang, Huang Xingfen, Zhu Deyan, Li Fan, Pan Daoxing, Yang Lingyu, Wang Xian, Hu Yao, Yan Jimeng, Luo Wen

**Characteristics**:

**‘Diandongnan’**, an annual herb, belongs to the genus *Amaranthus*, the family Amaranthaceae. The main root is stout, with many lateral roots. The main stem is stout and much-branched. The large and lush leaves are alternate and the inflorescence is umbrella-shaped. The stem is pale green, with very prominent yellowish green stripes on the main stem. Leaves are ovate, being green on both front and back. The young shoots are pale purple, with prominent veins. The petioles do not show anthocyanin coloring. The inflorescence is purple and erect. The seeds are small and white, and the weight of a thousand seeds is 0.66 g.

**Main use**:

Used as grain and forage grass.

**Cultural techniques**:

Seeds can be sown in spring, summer, and autumn. Before sowing, 750 kg/hm2 of organic fertilizers or well-rotted manure should be applied as base fertilizers. The optimal sowing period is from April to July. Both sowing and seedling transplantation are possible. Before sowing, the soil should be plowed and harrowed to a depth of 20 cm. Since the seeds are small, they can be mixed with sand or well-rotted organic fertilizers at a ratio of 1:3 for sowing. Sowing methods include hole sowing and drill sowing, with a sowing depth of 2～3 cm and a covering soil depth of 1～2 cm. The sowing rate is 300 g/mu, with a spacing of 0.2 m×0.3 m. For scattering, the sowing rate is 500 g/mu. For seedling transplantation, the seedlings can be transplanted 20 days after emergence, and then timely watering is needed. Management: When the seedlings are about 15 cm tall, thinning, replenishing, weeding, fertilization should be carried out. 375 kg/hm2 of urea should be applied. When the plants reach 1 m in height, cutting can be done, leaving a stubble of 0.4 m. After cutting, 375 kg/hm2 of urea should be applied in time. ‘Diandongnana’ is nearly free of diseases and pests, including cabbage caterpillars, aphids, cutworms, etc. For the control of cabbage caterpillars and aphids, 5% fluvalinate spray can be used, while for the control of underground pests like cutworms, it is recommended to mix the soil with 90% dichlorvos or 50% phoxim emulsion.

**Suitable areas for planting**:

It is suitable for planting in sub-tropical regions in southeastern Yunnan at an altitude of 500 ~ 1800 m and with an annual rainfall of 960 ~ 1300 mm.

1. **Dianxi**

**Species**: *Vicia sativa*

**Scientific name**: *Vicia sativa* ‘Dianxi’

**Variety category**: Indigenous variety

**Registration No.**: Yun S-LV-VS-012-2024

**Applicant**: Yunnan Academy of Grassland Animals, Animal Husbandry Workstation of Eryuan County, Academy of Agriculture of Wenshan Zhuang and Miao Autonomous Prefecture, Grassland Forage Grass Workstation of Eryuan County, Qujing Forage Grass Workstation

**Breeders**: Li Shiping, Shi Dandan, Wu Wenrong, Zhang Xiaojuan, Huang Xingfen, Liu Yanpei, Yuan Fujin, Li Cheng, Wang Fangjun, Wang Xin

**Characteristics**:

**‘Dianxi’**, an annual herb, belongs to the genus *Vicia,* the family Leguminosae. The stem is slender, soft, much-branched, ascending or climbing, with ridges. The leaves are pinnately compound, while the flowers are papilionaceous. The seeds are spherical and dark, with the 1000-grain weight of the seeds of 64.5 g. The leaves are relatively long, and especially in the seedling stage, the incomplete leaves (2 to 4 leaflets) are slender and linear to lanceolate in shape. It prefers warm and well-drained loam and sandy soil, with strong acid tolerance and periodic flooding tolerance. As it is drought tolerant, it can complete the entire growth period without irrigation during the dry season. It can also thrive on poor soil. Due to its cold resistance, it can withstand freezing at -6℃ during the nutritional stage.

**Main use**:

It can be used as forage grass as well as cover crops and green manure crops.

**Cultural techniques**:

After the crops that are grown in spring and summer are harvested, the soil should be deeply plowed in time, with a plowing depth of more than 20 cm and 30～45 t/hm2 of manure being applied as base fertilizer. Then the surface soil should be slightly raked 1～2 times. Sowing should be done from late September to late October, and spring sowing should be done after the rainy season. When monoculture is carried out, the plant is easy to lodge, so it can be mixed with oats, barley, etc. When mixed sowing is adopted, the seeds of ‘Dianxi’ should be mixed in a ratio of 2:1 or 3:1 to that of *Vicia sativa* 'Eryuan'. The sowing rate of monoculture is 60～70 kg/hm2, while for mixed sowing, the sowing rate is 75～90 kg/hm². The spacing is about 20～30 cm and generally the sowing depth is 3～4 cm. After sowing, the soil must be compacted. Timely weeding should be done. For haymaking, it is best to cut during the full bloom stage to the podding stage; for seed harvest, it should be harvested during the seed ripening stage; for utilization of regenerated grass, it should be cut during the full bloom stage, leaving a stubble of no less than 4 cm. When used as green manure, it should be cut during the early bloom stage When the seeds are used as fodder, detoxification treatment must be carried out. The detoxification method is simple, in which the seeds need to be fried or soaked for 6～12 hours. For the seed production, it should be noted that the seeds have a strong tendency to split. Straws can be used as coarse fodder for cattle after the seed harvest.

**Suitable areas for planting**:

It is suitable for planting in areas below 2500m in altitude with relatively good water conditions.

1. **Xiaoshao**

**Species**: *Eragrostis curvula*

**Scientific name**: *Eragrostis curvula* ‘Xiaoshao’

**Variety category**: Indigenous variety

**Registration No.**: Yun S-LV-EC-013-2024

**Applicant**: Yunnan Academy of Grassland Animals, Alpine Forestry Institute, Chinese Academy of Forestry, Yunnan Academy of Forestry and Grassland, Qujing Forestry and Grassland Administration, Kunming Forestry Seedling Management Station

**Breeders**: Yuan Fujin, Liao Shengxi, Ouyang Qing, Wu Wenrong, Li Shiping, Yin Jun, Zhang Ziqi, Song Shengzhi, Xu Chi, Hou Jieqiong

**Characteristics**:

**‘Xiaoshao’**, a perennial herb, belongs to the genus *Eragrostis*, the family Gramineae. It has a well-developed root system, strong tillering ability, and dense branches. The basal leaves are slender, resilient, and dense, forming a dense cluster, which leads to its strong soil and water conservation abilities. It can thrive on barren and newly reclaimed land. It is also tolerant to trampling. In the year of sowing, it grows quickly and can cover the land fast. It performs well in flowering and fruiting in the northern subtropical areas, with a seed yield of 375 ~ 525 kg/hm². It is free of diseases or pests.

**Main use**:

It is used for ecological restoration.

**Cultural techniques**:

Based on the soil fertility, manure of 8,000 ~ 27,000 kg/hm² or the nitrogen, phosphorus, and potassium compound fertilizer of 300 ~ 450 kg/hm² should be scattered, and then the land should be plowed with a depth of 20～25 cm. The soil should be raked and weeds and stones should be removed from the surface. It is important to sow the seeds at the beginning of the rainy season, usually in May to June (or July). Hole sowing, drill sowing, and scattering are all acceptable. For drill sowing, the row spacing should be 30 ~ 35 cm; for hole sowing, the spacing should be 25 ~ 30 cm, with a sowing rate of 12 ~ 18 kg/hm². After sowing, the seeds should be covered with soil with a depth of 0.3 ~ 0.5 cm, but not too deep. Then, the soil should be compacted. Weeding should be done during the emergence period. During the seedling stage, 120 ~ 180 kg/hm² of urea should be applied to promote growth based on the seedlings’ performance.

**Suitable areas for planting**:

It is suitable for planting in warm temperate and subtropical areas at altitudes of 800 ~ 2300 meters, with an annual rainfall of 800 ~ 1100 mm, and an average annual temperature of 12.1 ~ 17.4 ℃.

1. **Tengyue**

**Species**: *Pennisetum alopecuroides*

**Scientific name**: *Pennisetum alopecuroides* ‘Tengyue’

**Variety category**: Wild domesticated variety

**Registration No.**: Yun S-WDV-PA-014-2024

**Applicant**: Tengchong Grassland Supervision and Management Institute, Yunnan Forestry Technological College

**Breeders**: Yan Haiyan, Wang Qi, Xu Hongsheng, Xie Jinmin, Wan Haonan, Yin Qiyao, Zhang Yuanhong, Du Jianlong, Liu Yuan, Zhang Yuwen

**Characteristics**:

**‘Tengyue’**, a perennial herb, belongs to the genus *Pennisetum*, the family Gramineae. It is tufted and with well-developed fibrous root system. The plant height is 65 ~ 120 cm, with dense soft hairs below the inflorescence. The stems are erect, with the upper part longer than the internodes. The leaves are linear, green, 10 ~ 80 cm long, 3 ~ 8 mm wide with a long tapering tip and hairs at the base. The leaf sheaths are glabrous, flattened on both sides, with the upper part longer than the internodes; the ligules are with fine hairs of about 2.5 mm long; the panicles are erect, 5 ~ 18 cm long, 1.5 ~ 3.5 cm wide; the main axis is densely covered with soft hairs; the bristles are rough, dark purple, 1.5 ~ 3 cm long; the spikelets are usually solitary, occasionally in pairs; the caryopses are oval, about 3.5 mm long, with the 1000 grain weight of the seeds of 3.8 ~ 4.5 g.

**Main use**:

Mainly used for viewing and landscaping

**Cultural techniques**:

Sowing is done by either drill sowing or hole sowing, with a row spacing of 50 cm for drill sowing and a sowing rate of 22.5 ~ 30 kg/hm2, and sowing can be done in May to June. The soil moisture should be in an appropriate amount when sowing, and the sowing depth should be 1 ~ 2 cm. The seedlings will emerge after 6 ~ 10 days of sowing. The transplanting density for wild varieties is 4,000 ~ 5,000 plants/mu, with a row spacing of 5 cm and a plant spacing of 20 ~ 25 cm. 500 kg/mu of manure should be used as the base fertilizer and 5 kg/mu of urea should also be applied after cutting. Weeds and harmful grasses should be removed regularly.

**Suitable areas for planting**:

It is suitable for planting in tropical and subtropical areas at an altitude of 1000 ~ 2400 m.

1. **Shishan**

**Species**: *Caragana sinica*

**Scientific name**: *Caragana sinica* ‘Shishan’

**Variety category**: Wild domesticated variety

**Registration No.**: Yun S-WDV-CS-015-2024

**Applicant**: Yunnan Academy of Forestry and Grassland

**Breeders**: Meng Meng, Fu Yupin, Zhou Yun, Li Yunqin, Chen Wei, Qiu Qiong, Liu Hengpeng, Zhou Xiao, Li Guochang, Zhang Mei

**Characteristics**:

**‘Shishan’**, a shrub, belongs to the genus *Caragana*, the family Leguminosae. It prefers sunlight, can thrive in poor soil, and has strong tillering ability. It also has abundant leaf biomass, dense leaves, a long blooming period, and abundant flowers. After 3～5 years of growing, its horizontal roots can sprout a large number of plants, with 10～20 rhizome plants within 1.5 m from the parent plant. It should be planted densely at a row spacing of 50 cm so that it can quickly form a green hedge, with strong soil and slope conservation ability. The plant height can reach 2.5 m, with a crown width of 1.5～2.0 m, and the leaves are pinnate compound, with 3- leaflets (occasionally 5) in a cluster. The stipules and leaf axes are hardened into needle-like structures that will become soft or fall off. The leaves are leathery and can be pruned many times. After being pruned, it can form dense branches. The flowers are solitary or in clusters of 2～4, with a flower spacing (or clustered leaf spacing) of 0.7～1.3 cm, with about 15～43 flowers on a 20 cm branch. One single flower weighs 0.23～0.28 g and each plant has 300～400 flowers (about 80 g). The blooming period is early, starting in late February or March, with the full blooming period from March 15 to March 30. Plants grown in high-altitude areas bloom continuously from May to August. It has a well-developed fibrous root system, with the main roots reaching a depth of 1 m. It has strong drought resistance

**Main use**:

Used as edible and medicinal shrubs as well as for viewing and landscaping.

**Cultural techniques**:

The seedlings are cultivated by burying roots and cuttage. Burying roots: First, make seedbeds, with a width of 1 m, dig trenches at intervals of 20 cm, with a trench depth of 5 cm. Second, use roots with a diameter of ≥ 0.5 cm, cut them into root segments of 10～15 cm long, place them into the trenches, and cover them with soil. Cuttage: First, select a stem with a diameter of ≥ 0.4 cm to make it into cuttage seedlings of 15～25 cm long, disinfect them in a solution of Carbendazim for 1 hour, quickly dip in a 1 g/L of ABT1, a rooting growth promotion solution, and then finish the planting. The substrate can be river sand or raw soil. After planting, a plastic arch shed should be built. When the seedlings grow to the height of over 50 cm, they can be taken out of the nursery. When used as hedges and ornamental flowers, it should be planted in clusters or in rows, with a plant spacing of 50 cm. In winter or after the blooming period, the main trunk and lateral branches should be cut. Before blooming, 0.3% potassium dihydrogen phosphate solution should sprayed on the leaves, and after blooming, nitrogen fertilizer should be sprayed on the leaves or organic fertilizers should be applied about 25 cm away from the roots to promote the growth.

**Suitable areas for planting**:

It is suitable for planting in mountainous areas with deep soil in temperate and subtropical regions at altitudes of 1400～220m, as well as along roads with poor soil, in rocky mountains, and karst areas.

1. **Bixi**

**Species**: *Acanthopanax trifoliatus*

**Scientific name**: *Acanthopanax trifoliatus* ‘Bixi’

**Variety category**: Wild domesticated variety

**Registration No.**: Yun S-WDV-AT-016-2024

**Applicant**: Yunnan Academy of Forestry and Grassland

**Breeders**: Meng Meng, Fu Yupin, Zhou Yun, Li Yunqin, Yin Jun, Qiu Qiong, Chen Wei, Liu Hengpeng, Zhou Xiao, Kui Lianmin

**Characteristics**:

**‘Bixi’**, a climbing shrub, belongs to the genus *Acanthopanax*, the family Araliaceae. It prefers sunlight but also has some tolerance to shade. It grows in clusters, with strong lateral branch sprouting ability, abundant leaf biomass, and crowed leaves. The new sprouts are purple-red. It can reach a height of 2.0 m, with a crown width of 1.5～2.0 m. The leaves are palmately compound, with 3～5 leaflets, which are papery, glabrous or sparsely hairy on the upper veins; the branches are sparse with flat thorns; the inflorescences, solitary or multiple, are umbellate or racemose inflorescences; the fruits are oblate spheroid, black when ripe, about 5 mm in diameter. The flowering period is from August to October, and the fruiting period is from October to December. Due to its good adaptability, it can grow in open areas to forests with a canopy density of less than 0.6.

**Main use**:

Mainly used for viewing and landscaping

**Cultural techniques**:

Weeds, stones, and other debris should be removed and the soil should be compacted and raked. Select branches that are 15～20cm long, semi-lignified or lignified, healthy, and free of diseases and pests as cuttage seedlings; soak the cuttage seedlings in 50% carbendazim powder solution (1g/800ml of water~1g/1000ml of water) or a 0.2% potassium permanganate solution for 30 minutes, and then after drying the cuttage seedlings, quickly dip them in a 1 g/L of ABT1 solution, a rooting growth promotion solution, before planting; use raw soil as the planting substrate; after planting, build a plastic arch to retain moisture and warmth. After it takes root, remove the plastic film to increase its adaptability and resistance. After 3～4 months of planting, when the seedlings take root well and the aboveground part has reached more than 30 cm, they can be planted out. Plant in clusters or in rows, with 3～4 plants per cluster in a hole of 40 cm x 40 cm x 40 cm, or in rows, with a rowing spacing of 50 cm, and the number of rowing lines depending on the terrain. 1 kg of organic fertilizers per hole is applied as base fertilizers, which needs to be mixed thoroughly with the soil, and then the plant can be grown. After six months of growing, the plant needs to be pruned. The height should be controlled to 1.2 m after the second pruning. 1 kg of organic fertilizers per plant should be applied every winter. It is significant to water frequently during the dry season while during the rainy season watering should be stopped or be with a low amount.

**Suitable areas for planting**:

It is suitable for planting in gardens, courtyards, along roads, and under sparse forests in the northern subtropical to temperate regions at an altitude of 600～2200 m.

1. **Jiulong**

**Species**: *Saccharum rufipilum*

**Scientific name**: *Saccharum rufipilum* ‘Jiulong’

**Variety category**: Wild domesticated variety

**Registration No.**: Yun S-WDV-SR-017-2024

**Applicant**: Yunnan Academy of Forestry and Grassland

**Breeders**: Chen Peng, Feng Dan, Yang Qian, Li Haoran

**Characteristics**:

**‘Jiulong’**, a perennial herb, belongs to the genus *Saccharum*, the family Poaceae. It grows in clusters, with a high seed yield and long growth period, and can quickly cover the bare ground. It has a large biomass, with a plant height of up to 2.23 m and a coverage area of up to 0.81 m2. After 2～3 years of growth, the total biomass of a single plant can reach 5.～7.5 kg. It has strong reproductive ability, with the number of tillers per plant reaching more than 122 after 2～3 years of growth and the number of seeds reaching 6.74×10 3 /plant. It grows well under forest, with strong resistance to cold, drought, poor soil, rust disease, and strong perenniality.

**Main use**:

Used for ecological restoration.

**Cultural techniques**:

Weeds, stones, and other debris should be removed and the soil should be turned, compacted, and raked. In humid areas, sowing can be done from March to May, while in arid areas, sowing should be done during the rainy season, from late May to mid-June. For lands with poor soil conditions, hole sowing is used, while for lands with good soil conditions, drill sowing is adopted. The plowing depth for hole sowing is about 1 ~ 1.5 cm, with a row spacing of 50 ~ 60 cm. For row sowing, the covering soil should be shallow, and the surface soil should be lightly harrowed after sowing. The sowing rate is 15～20 kg/hm2. During the seedling stage, irrigation and fertilization are needed at a proper time with an appropriate amount, and weed control should be done. During the early seedlings growth period, a small amount of urea, calcium magnesium phosphate, and other immediate fertilizers can be applied. *Saccharum rufipilum* has narrowly ovate or linear panicle. When 50～70% of the seeds start to fall off at the top of the spike, half of the entire spike should be cut off, and the other half can be cut when the seeds are ripe. The cut spikes should be dried and rubbed 2～3 times so that the seeds will fall off from the panicles. The panicles should be separated and the seeds should be collected. After that, it is important to dry them for another day, dust, screen, and clean. Finally, the seeds can be put into bags and stored.

**Suitable areas for planting**:

It is suitable for planting in tropical, subtropical, and temperate regions at altitudes of 400～2500m and with rainfall of more than 800 mm as well as ravines, abandoned farmland, abandoned mining and quarrying sites, construction waste sites, wasteland, slopes, and areas under forest invaded by harmful plants.

1. **Luquan**

**Species**: *Vicia sativa*

**Scientific name**: *Vicia sativa* ‘Luquan’

**Variety category**: Wild domesticated variety

**Registration No.**: Yun S-WDV-VS-018-2024

**Applicant**: Yunnan Agricultural University, Kunming Seeds Management Station, Forage Grass and Fodder Workstation of Weishan County

**Breeders**: Duan Xinhui, Jiang Hua, He Chenggang, Zhou Kai, Yang Tianli, Xiong Jingfa, Han Bo, Zhao Zhili, Xiao Xue, Zhang Jiangui

**Characteristics**:

**‘Luquan’ is** an annual or biennial herb of the genus *Vicia sativa, the* family Leguminosae, with a height 30 ~ 100 cm. It has creeping rhizomes and its slender stems climb or sprawl. It is covered with fine hairs. The paripinnate leaves are 7 ~ 12 cm long, with a well-developed tendril at the tip of the leaf axis. The stipules are semi-lanceolate with 2 ~ 4 attenuate teeth. The leaflets are in 5-7 pairs, oblong or lanceolate, with a blunt or apex, slightly concave, with a short tip, and a round base. Both leaf sides are covered with fine hairs. With short racemes, it has 2 ~ 4 flowers in the axils. The calyx is awl-shaped to lanceolateor and shorter than the calyx tube. The corolla is red or purple to pale pink, pale white. The vexil is nearly fiddle-shaped, with a concave apex. The wing petals are shorter than the vexil, and the keel petals are the shortest and bent inwards. The pod is oblong and nearly rhombic, 2.1 ~ 3.9 cm long and 0.5 ~ 0.7 cm wide. It is bright black when ripe, with a beak at the apex and slightly curved. There are 5 ~ 7 seeds per fruit, spherical, and its brown skin are with spots. Its reproductive period is about 150 days. It is edible and can also be used as fodder, green manure, and medicine. It has a short growth period, strong adaptability, stable production performance, high protein content, and good palatability. It can be used for grazing and haymaking and as green fodder. Livestock like cattle, horses, and sheep prefer it, as it is a high-quality forage and green manure crop.

**Main use**:

It is edible and can be used as for fodder, green manure, and medicine.

**Cultural techniques**:

Before sowing, the soil should be thoroughly raked to break up clods, creating a loose topsoil layer and a compacted lower layer. Weeds should be removed and the land drainage should be carried out. Autumn is the best time for sowing. Scattering or drill sowing can be used, with a row spacing of 30 cm for drill sowing, a sowing depth of 3 ~ 4 cm, and a sowing rate of 50 kg/hm². The ratio of 12:11:1 of nitrogen, phosphorus and potassium compound fertilizer should be applied at a rate of 625 kg/hm² during sowing. The plants are small during the seedling stage, and the above-ground parts grow slowly. After emergence, they are vulnerable to weeds, so timely manual weeding is necessary. Irrigation and fertilization should also be carried out to ensure stable and high yields. It can be cut during the early flowering stage. In summer, when there is more rainfall, it can be cut at a height of 40 ~ 50 cm; in winter, when it is drier, it can be cut at a height of about 50 cm, leaving a stubble of 5 cm.

**Suitable areas for planting**:

It is suitable for planting in warm areas at an altitude of 1000 ~ 2500 m and temperatures of 5 ~ 0℃.