

Pavisha P, Pradeep NS, Madhusoodanan PV. Comparative morphology and phenetics of *Nymphoides* species in Kerala. *Plant Science Today*. 2020;7(2):233–239. <https://doi.org/10.14719/pst.2020.7.2.735>

Supplementary Table 1. Comparative morphology of *Nymphoides* spp. in Kerala

Characters	<i>N. indica</i>	<i>N. macrosperma</i>	<i>N. krishnakesara</i>	<i>N. hydrophylla</i>	<i>N. parvifolia</i>	<i>N. balakrishnanii</i>	<i>N. palyii</i>
Habit	Herb	Herb	Herb	Herb	Herb	Herb	Herb
Rhizome	Stoloniferous, brown, 2–4 cm X up to 5 cm wide.	Stoloniferous, pale orange–brown, 3–7 cm long X 1–2 cm wide.	Non stoloniferous, pale orange–brown, 2–5 cm long X 1.2 cm wide.	Stoloniferous, 2–3 cm long X 1–2 cm wide.	Non stoloniferous, short, obconical, 1 cm long X 3 mm wide.	Non stoloniferous, cylindrical, 2 cm long X 7 mm wide.	Non stoloniferous, vertical, 1–2 cm long X 5 mm wide.
Shoot	Dimorphic, primary shoot arising from the rhizome, secondary shoot from the flowering region of primary shoot each bearing single leaf.	Dimorphic, primary shoot arising from the rhizome, secondary shoot from the flowering region of primary shoot each bearing single leaf.	Monomorphic, primary shoot arising from the rhizome. Secondary shoot absent	Dimorphic, primary shoot arising from the rhizome, secondary shoot from the flowering region of primary shoot each bearing single leaf.	Monomorphic, primary shoot arising from the rhizome. Secondary shoot absent.	Monomorphic, primary shoot arising from the rhizome. Secondary shoot absent.	Monomorphic, primary shoot arising from the rhizome. Secondary shoot absent.
Leaf	Monomorphic; floating, thick, entire, ovate-orbicular, rounded at apex, deeply cordate at base, glossy green above, pale-gland dotted below.	Monomorphic; floating, thick, entire, ovate–orbicular, rounded at apex, deeply cordate at base, green above, pale-gland dotted below.	Dimorphic; submerged leaves spatulate, rosulate, green, spongy petiolar part and ovate or oblong lamina; floating leaves ovate–orbicular, deeply cordate at base, obtuse at apex, entire, glossy green above.	Monomorphic; floating, ovate–orbicular, obtuse at apex, deeply cordate at base, entire, green above with purplish blotches or green with purplish margine, purple coloured with pale-gland dotted below.	Dimorphic; basal submerged leaves spatulate, rosulate, green, spongy petiolar part and ovate or oblong lamina;; floating leaves ovate–orbicular, rounded at apex, cordate at base, green or pink coloured.	Dimorphic; basal leaves submerged, spongy petiolar part and deltate–ovate lamina, green. Floating leaves orbicular–ovate, deeply cordate at base, rounded at apex, glossy green above.	Dimorphic; basal leaves submerged, spatulate, rosulate, green, spongy petiolar part and ovate–rhomboid lamina; floating leaves ovate, deeply cordate at base, obtuse at apex, dark green above.
Inflorescence	Umbel	Umbel	Umbel	Umbel	Umbel	Umbel	Umbel
Flower	Bisexual and heterostylous.	Unisexual and homostylous.	Unisexual and homostylous.	Bisexual and female flower in separate plants, homostylous..	Bisexual and homostylous.	Bisexual and homostylous.	Bisexual and homostylous.
Calyx	Gamosepalous, lobes 4–8, oblong–acute, greenish brown with hyaline margins, 5 X 2 mm.	Gamosepalous; 5 lobed; lobes pink, oblong–obtuse, 2 X 1 mm long.	Gamosepalous; 5 lobed; lobes oblong, obtuse, glabrous, 4 X 1 mm.	Gamosepalous; 5 lobed; lobes linear–lanceolate, acute, ca. 5 X 1.5 mm.	Gamosepalous; 3 or 4 lobed; lobes oblong–acute, pinkish at apex, hyaline at margine, up to 2 X 1 mm.	Gamosepalous; 4 lobed, green; lobes linear–lanceolate with hyaline margins, 4 X 1 mm long.	Gamosepalous; 4 or 3 lobed, green with pinkish apex, glabrous; lobes elliptic–lanceolate with hyaline margins, 2 X 1 mm.
Corolla	Gamopetalous; white with yellow throat; corolla tube ca. 2 mm; lobes 4–8, ovate-lanceolate, acute at apex, up to 16 X 4 mm, covered with long white hairs.	Gamopetalous; white without yellow throat; corolla tube short; lobes 5, oblong or elliptic, acute, up to 5 X 3 mm, hairy at base and centre, fimbriately toothed wings on the margins.	Gamopetalous; white without yellow throat; tube short; 5 lobed; lobes obtuse, without hairs, up to 6 X 2 mm, marginal and median wings fimbriate, median wings extend from the apex to the middle.	Gamopetalous; white with yellow throat; tube 2 mm with glandular hairs; lobes 5, oblong, obtuse or retuse at apex, 8 X 5 mm, with flexuous membranous wings on the margins and a median longitudinal crest	Gamopetalous; white with yellow throat and a ring of hyaline hairs at the throat, corolla tube 2 mm long; lobes 3 or 4, oblong or elliptic, 4 X 2 mm long, margin fimbriately toothed towards the apex.	Gamopetalous; white with yellow throat; tube 2 mm; lobes 4, ovate-lanceolate, hairy with fimbriately toothed wings on the margins, 5 X 4 mm	Gamopetalous; white with yellow throat, tube 0.8 mm; lobes 4 or 3, ovate–lanceolate, margins involuted and minutely fimbriately toothed towards the apex, 3 X 1 mm length.

Stamen and stamiod	Dimorphic, epipetalous, 4 – 8; stamen longer than the pistil in short styled flowers and shorter than the pistil in long styled flowers. Anther colour pale purple.	Monomorphic, epipetalous, 5 stamen in male flower; 5 staminode in female flower. Anther colour pale purple.	Monomorphic, epipetalous, 5 stamen in male flower; 5 staminode in female flower. Anther colour blue.	Monomorphic, epipetalous, 5 stamen in bisexual flower; 5 staminode in female flower. Anther colour yellow.	Monomorphic, epipetalous, 3 or 4 stamen. Anther colour yellow.	Monomorphic, epipetalous, 4 stamen. Anther colour black along the dorsal side and yellow along the ventral side	Monomorphic, epipetalous, 3 or 4 stamen. Anther colour cream.
Pistil and pistillode	Pistil bottle shaped, 4 X 2 mm in short style 7 X 2 mm in long style; style stout 1 mm in short styled, 3mm in long styled flowers. Stigma sinuately 2 – 4 lobed; hypogynous disc glands as many as stamens, hairy,	Pistil bottle shaped, 3 X 1 mm, style very short, stigma yellowish white, bifid and long minutely papillate stigmatic hairs. hypogynous glands 5, glands hairy at the tip; pistillode bottle shaped, 3 mm long, stigmatic hairs short.	Pistil bottle – shaped, up to 3 mm; stigma sessile, 2 seriate, cream coloured, radiating, minutely papillose long hairs; hypogynous glands 5 without hairs; pistillode oblong, 3mm long; hypogynous glands 5 without hairs.	Pistil bottle – shaped, 3 X 2 mm, 5 hypogynous glands at the base, glands hairy on the upper side; style short; pistil 3 mm x 1 mm in female flower.	Pistil bottle – shaped, 2 X 1 mm; hypogynous gland 3 or 4 without hairs; style short; stigma bifid.	Pistil bottle shaped; 1.2 X 1 mm ; style 0.4 – 0.6 mm; stigma bifid, hypogynous glands with hairs; hypogynous glands 4, hairy at the tip.	Pistil bottle shaped, 1.1 mm long; style 0.3 mm; stigma bifid; hypogynous glands absent.
Fruit	Capsule - ellipsoid, torulose when ripe.	Capsules - sub globose, 7 mm x 5 mm long.	Capsule - obovoid, ca. 9 mm long.	Capsule -oblong, up to 5 mm long. Pedicel 3.1 cm long.	Capsule -ellipsoid, up to 4mm x 2 mm.	Capsule - oblong – obovoid, 4 X 2 mm, pedicel 2 cm long	Capsule - oblong, 3 X 2 mm; pedicel 6 mm long
Seed	Seeds 14- 22 per capsule, discoid, brown, 1- 1.5 mm across, smooth.	Seeds 2- 4, light brown or creamy, obovate or ellipsoid, 3.5 X 4.5 mm length, seed surface tuberculated.	Seeds 2 – 9, obovoid, rounded or obtuse at distal end, subacute at proximal end cream or brown in colour, surface tuberculated, 3.5 mm long and 2.5 mm wide.	Seeds 4 – 6, brown, discoid, up to 2 mm across; surface tuberculated.	Seeds 8 – 15, light brown, 1 mm across, discoid, surface tuberculated.	Seeds 5 – 13, discoid, brownish black, 1 mm across, tuberculate.	Seeds 4 – 10, discoid, brownish black, discoid, 0.8 mm across, smooth.
Pollen	Monad, triangular, heteropolar, radially symmetric, parasyncolpate and prolate spheroidal, Pollen wall is spiny in nature	monad, triangular, radially symmetric, tricolpate and prolate – spheroidal to sub – prolate in shape. Pollen surface is spinulose.	monad, triangular, heteropolar, radially symmetric, syncolpate and prolate – spheroidal in shape	Monad, triangular, radially symmetric, tricolpate and prolate – spheroidal in shape	Monad, triangular, heteropolar, radially symmetric, parasyncolpate and oblate – spheroidal in shape Pollen surface spinulose.	Monad, triangular, heteropolar, radially symmetric, syncolpate and prolate – spheroidal in shape. The pollen surface spinulose.	Monad, triangular, heteropolar, radially symmetric, oblate – spheroidal. The pollen surface was spinulose.