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Research Article



Diversity and Distribution of Wild Figs (Ficus L.) of Andhra Pradesh, India

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Article Info	Abstract						
Received: 10-08-2020,	Undeted townsmy, nomanalature and distribution of wild Figure town in						
Revised: 16-09-2020,	Updated taxonomy, nomenclature and distribution of wild <i>Ficus</i> taxa in the state of Andhra Pradesh are presented. The study based on primary						
Accepted: 22-09-2020	field data and published data revealed the occurrence of 23 wild species						
Keywords: Diversity and	of <i>Ficus</i> in the state.						
Distribution, Wild Figs,	of Ficus in the state.						
Andhra Pradesh							

INTRODUCTION

Genus *Ficus* L. belonging to the family Moraceae comprises 755 species (van Noort & Rasplus, 2020). Chaudhary *et al.* (2012) reported 115 taxa (89 species and 26 infraspecific taxa) of *Ficus* in India. Pullaiah et al. (2018) reported 27 taxa of *Ficus* belonging to 26 species, of which 24 species are wild and three (*Ficus benghalensis* var. *krishnae F. carica*, *F. elastica*) are cultivated.

Andhra Pradesh is the seventh largest state in Indian Union, extended to an area of 162, 970 sq. km and lies between 12°37′ and 19° 25′ NL and 76° 45′ and 84° 72′ EL. The state comprises 13 districts; four southern districts known as Rayalaseema and the other nine districts come under Coastal Andhra. Forest cover is 17.86 per cent of the total geographical area (FSI, 2019) and major portion of fall in Eastern Ghats hill ranges. The altitude is from sea level to 1680 m of above MSL.

In the present study, we explored intensively forested and non-forested areas of all districts of Andhra Pradesh for locating wild taxa of *Ficus* for the past four years and representative specimens were made into herbarium. Critical study of the primary data as well as published literature revealed the occurrence of 23 wild species of *Ficus* in the state of Andhra Pradesh. Of these 23 species, 13 belong to subgenus Urostigma (Chantarasuwan *et al.*, 2013); five species in the subgenus Sycomorus;

three species in the subgenus Sycidium; one each in the subgenera Ficus and Pharmacosycea.

All the species are systematically enumerated along with a key for easy identification. Individual species are presented with brief citation (with cross reference to the works of Fischer (1928); Pullaiah *et al.* (2018); Sudhakar *et al.* 2017), technical description; phenology, habitat and ecology, distribution at global, national and Andhra Pradesh level; along with voucher specimens. All the species are tabulated for their current distribution in the state of Andhra Pradesh districtwise (Table 1).

All the specimens are deposited in Sri Krishnadevaraya University Herbarium (SKU). Two photo plates comprising 13 significant species of Ficus are presented (Plate 1&2). Abbreviations for authors and districts are as follows: Authors: ANS: A. Narayanaswamy; BR: B. Ravi Prasad Rao; GVS: G.V.S. Murthy; JSG: J.S. Gamble; KJ: K. Joseph; NCMR: N. Chandra Mohan Reddy; PA: P. Anjaneyulu; PSPB: P. Surya Prakash Babu; SKB: S. Khadar Basha; SMN: S.M. Nagesh; TP: T. Pullaiah. Districts: ATP: Ananthapuramu; CTR: Chittoor; EG: East Godavari; GNT: Guntur KDP: Kadapa; KNL: Kurnool; KSN: Krishna; NLR: Nellore; PKM-Prakasam; SKLM: Srikakulam; VSKP: Visakhapatnam; VZN: Viziyanagaram; WG: West Godavari. Herbaria: MH (Madras Herbarium).

Key to wild Ficus taxa of Andhra Pradesh 1. Figs ramiflorous or axillary6 4. Receptacles glabrous variegata 4. Receptacles pubescent5 7. Receptacle more than 2 cm diam......benghalensis 8. Figs more than 2.0 cm diam......9 10. Petiole more than 3.5 cm long, up to 10 cmrumphii 11. Large trees up to 15 m highexasperata 12. Straggling shrubs. heterophylla 15. Leaves cordiform, with tail, up to 10 cm long...... religiosa 19. Petiole up to 10 cm long......virens 20. Figs densely tomentose......mollis

Taxonomic treatment

Ficus amplissima J.E. Sm. in Rees, Cyclop. 14: Ficus no. 68.1810; Sudhakar et al., Figs East. Ghats 26.2017; Pullaiah et al., Fl. Andhra Pr. 4: 1801. 2018. F.tsiela Roxb. Ex Buch.-Ham, Trans. Linn. Soc. London 15: 149.1827; C.E.C. Fischer in Fl.

Madras 3: 1362.1928; *Jatini, Gardabhande, Juvvi, Peddajuvi, Pittajuvvi.*

Deciduous tree, up to 20 m high; often epiphytic when young; aerial roots few, trunk cylindric; bark yellowish-grey, smooth. Leaves alternate, ovatelanceolate, 2-14 x 2-7.5. cm, base rounded, entire,

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apex short bluntly acuminate, lateral nerves 10-13 pairs, glabrous, green above, pale beneath, coriaceous; petiole up to 7 cm long. Figs axillary, solitary or in pairs on leafless branchlets, sessile; receptacles 1.8 cm diam., depressed-globose or pyriform, glabrous, purple when ripe.

Fl. & Fr.: Throughout the year.

Habitat & Abundance: Common, in deciduous and semi-evergreen forests, up to 1000 m in rocky habitats; along road sides, old walls, agricultural lands and human habitations.

Distribution: World: Sri Lanka, Maldives. **India:** Bihar, Central and South provinces, Goa, Gujarat, Maharashtra, Rajasthan. **AP:** Throughout

Repr. Spec.: Papavinasam Dam (CTR), NCMR & PA 56353; Istakameswari Temple (PKM), BR & PA 54639

Ficus arnottiana (Miq.) Miq., Ann. Mus. Bot. Ludg.-Bat. 3: 287. 1867; C.E.C. Fischer in Fl. Madras 3: 1363.1928; Sudhakar et al., Figs East. Ghats 30. 2017: Pullaiah et al., Fl. Andhra Pr. 4: 1803. 2018. Asti, Bandaraavi, Kalla-raavi, Konda raavi, Konkani.

Deciduous lithophytic tree, up to 15 m high; glabrous, often epiphytic, aerial roots absent; bark pale grey-brown, smooth; Leaves alternate, cordate-subcordate, ovate, 4-15 x 3-11 cm, base rounded or cordate, entire or undulate, apex shortly caudate-acuminate, lateral nerves 5-7 pairs, dark green and glossy above, light green and pale-yellowish beneath, sub-coriaceous; petiole up to 9.5 cm long. Figs in pairs or clusters on branches of fallen leaves or below the leaves, peduncle up to 0.6 cm; receptacles 1.5 cm diam., depressed-globose, glabrous, light green with white dots or purple with greenish dots when ripe.

Fl. & *Fr.*: Throughout the year.

Habitat & Abundance: Common in deciduous and semi-evergreen forests up to 700 m in rocky habitats.

Distribution: **World:** Nepal, Sri Lanka. **India:** Throughout **AP:** Throughout

Repr. Spec.: Horsley hills (CTR), BR & PA 51444; Sunkerametta (VSKP), NCMR & PA 52559.

Ficus auriculata Lour., Fl. Cochinch. 666. 1790; Sudhakar *et al.*, Figs East. Ghats 33.2017: Pullaiah *et al.*, Fl. Andhra Pr. 4: 1803. 2018. *Raach bodda, Raj dummiri*. (**Plate 1**)

Deciduous or evergreen tree, up to 10 m high; aerial roots absent, bark greyish-brown or reddish-grey, smooth, branchlets hollow, moderately hard, pubescent when young. Leaves broadly elliptic-ovate or oblong, suborbicular-orbicular, cordiform

16.5-25 x 13-23 cm, base cordate, slightly toothed or serrate, apex shortly acuminate, lateral nerves 5-7 pairs, glossy and glabrescent above, pale and shortly-softly pubescent beneath, subcoriaceous; petiole up to 6 cm long. Figs in pendulous clusters on stem, peduncle up to 5 cm long; rreceptacles 6.5 cm diam., pyriform, pubescent, purplish- red when ripe.

Fl. & Fr.: Throughout the year.

Habitat & Abundance: Rare in semi-evergreen and moist deciduous forests up to 1500 m, along streams and moist localities.

Distribution: **World:** Bangladesh, Malesia, Myanmar, Pakistan to South China, Thailand, cultivated in Taiwan. **India:** Outer Himalaya ascending up to 2,000 m, Arunachal Pradesh, Assam, Bihar, Jammu & Kashmir, Jharkhand, Maharashtra, Manipur, Meghalaya, Mizoram, Orissa, Sikkim, South India, W. Bengal **AP:** WG, EG & VSKP.

Repr. Spec.: Pamuleeru vagu (EG), NCMR & BR 56661.

Ficus benghalensis L., Sp. Pl. 1059. 1753; C.E.C. Fischer in Fl. Madras 3: 1361.1928; Sudhakar et al., Figs East. Ghats 36.2017; Pullaiah et al., Fl. Andhra Pr. 4: 1804. 2018. Marri chettu, Marri, Pedda marri & Vata.

Evergreen tree, up to 25 m high; aerial roots numerous, form accessory trunks to spread branches, thus extending the growth of the tree indefinitely; bark greyish-white, smooth, branchlets softly pubescent. Leaves alternate, ovate or ovate-oblong, orbicular-elliptic 5-9 x 2.5-5 cm, base subcordate-rounded, entire, apex obtuse, lateral nerves 4-7 pairs, glabrous above glabrescent-puberulous beneath, coriaceous; petiole up to 6 cm long. Figs axillary, solitary or pairs, sessile; receptacles 3 cm diam., pyriform- rounded, slightly hairy, bright red or orange red when ripe.

Fl. & Fr.: Throughout the year

Habitat & Abundance: Common in all forests up to 1000 m; along road sides, agricultural lands and human habitations in urban and rural areas.

Distribution: World: Bangladesh, Malesia, Nepal, Pakistan, Sri Lanka. Introduced and widely cultivated in tropics and elsewhere. **India:** Planted in all parts, wild in the sub-himalayan forests and on the lower slopes of the Deccan hills, Andaman Islands **AP:** Throughout.

Repr. Spec.: Tatipudi reservoir (VZN), NCMR & PA 56071.

Ficus benjamina L., Mant. Pl. 129. 1767; C.E.C. Fischer in Fl. Madras 3: 1367.1928; Sudhakar *et al.*,

Figs East. Ghats 40.2017: Pullaiah *et al.*, Fl. Andhra Pr. 4: 1806. 2018. *Konda-juvvi, Kanda golugu, Putta-juvvi.* (**Plate 1**)

Evergreen epiphytic tree, up to 28 m high, crown spreading, aerial roots few, trunk cylindric; bark whitish-grey, smooth. Leaves alternate, elliptic-obovate or ovate, 7-19 x 4-11 cm, base rounded or acute, wavy, tip abruptly acuminate, lateral nerves 6-14 pairs, dark green and shining above, light green beneath, glabrous, coriaceous; petiole up to 2.5 cm long. Figs axillary, paired or rarely solitary, sessile; receptacles 3.0 cm diam., obovoid, ellipsoid-globose, pyriform, glabrous, turning from light green to yellow, orange-dark red when ripe.

Flowering & Fruiting: Oct.-March.

Habitat & Abundance: Rare in semi-evergreen forests, up to 1000 m.

Distribution: World: Bangladesh, Bhutan, Indochina, Malesia, Myanmar, S. China, Thailand. India: Andaman Islands, Assam, Bihar, Jharkhand, Madhya Pradesh, Meghalaya, Orissa, Sikkim. AP: VSKP.

Representative specimens: NCMR & PA 56873; Lambasingi Ghats (VSKP).

Ficus dalhousiae (Miq.) Miq., Ann. Mus. Bot. Lugd.-Bat. 3: 285. 1867; C.E.C. Fischer in Fl. Madras 3: 1364.1928; Sudhakar *et al.*, Figs

East. Ghats 45.2017; Pullaiah *et al.*, Fl. Andhra Pr. 4: 1807. 2018. *Kondamarri chettu*. (**Plate 1**)

Deciduous tree up to 15 m high, bark brownish-grey, branchlets glabrescent when young. Leaves alternate, ovate-elliptic, broadly ovate - oblong, 10.5-21.5 x 7.5-13.5 cm, base cordate, entire, apex shortly acuminate, lateral nerves 8-12 pairs, glabrous or puberulous above, white pubescent beneath, coriaceous to leathery; petiole 1.5-6 cm long. Figs axillary, paired or rarely solitary, peduncle up to 0.4 cm long; receptacles to 1.8 cm diam., oblong-ovate, obovoid, pubescent, vellow

Flowering & Fruiting: January-July.

Habitat & Abundance: Rare, in deciduous forests, up to 1200 m in rocky areas on hills.

Distribution: World: China (S. Yunnan, Guangdong) to Tropical Asia and N. Queensland. **India:** Andhra Pradesh, Kerala, Tamil Nadu **AP:** ATP, CTR & KDP.

Representative Specimens: Horsley hills (CTR), NCMR & PA 51882; Samrajyamkonda (ATP), BR & ANS 38477; Gundumala Fort (ATP).

Ficus exasperata Yahl, Enum. Pl. 2: 197 & 402. 1805; Sudhakar *et al.*, Figs East. Ghats 52.2017;

Pullaiah *et al.*, Fl. Andhra Pr. 4: 1808. 2018; *F. asperima* Roxb., Fl. Ind. 3: 554. 1832; C.E.C. Fischer in Fl. Madras 3: 1366.1928; *Karaka booda, Karakaboddu, Kara-Karbuda, Krasaana, Pindichettu, Siribodda*. (**Plate 1**)

Deciduous tree, up to 15 m high; aerial roots absent, bark brown-pale, whitish-grey, smooth; branchlets scabrous. Leaves alternate, crowded at the tips of branchlets, oblong-elliptic to obovate-lanceolate, 10-16 x 5-6.5 cm, base acute, serrate, toothed, apex blunt to acuminate scabrous, hispid on both surfaces with calcareous hairs, raised dots conspicuous on upper surface, more or less densely tomentose beneath, drying grey-green, chartaceous; lateral nerves 3-5 pairs; petiole up to 7 cm long. Figs in axillary, solitary or pairs, pedunculate, up to 2 cm long; receptacles 2.5 cm diam., pyriform, scabrous, yellow with purple spots when ripe. **Fl. & Fr.:** January - July.

Habitat & Abundance: Rare, in semi-evergreen and moist deciduous forests up to 750 m.

Distribution: **World:** China, Malesia to the Solomon Islands and N. Australia. Introduced elsewhere. **India:** Wild occurrence in North East India and Andhra Pradesh. Cultivated as ornamental, elsewhere. **AP:** WG, EG, VSKP &SKLM.

Repr. Spec.: Lingavaram (EG) and NCMR & BR 56669.

Ficus concinna (Miq.) Miq., Ann. Mus. Bot. Lugduno-Batavi 3: 286 (1867); Sudhakar *et al.*, Figs East. Ghats 43.2017. (**Plate 1**)

Deciduous tree, up to 15 m high, early epiphytic; aerial roots few, bark grey, pale- yellowish; Leaves alternate, elliptic, oblong to lanceolate, 5–10.5 x 2–3.8 cm; sub-coriaceous, base rounded to cuneate, entire, apex acute, lateral nerves 8-14 pairs, glabrous, green and shining above, pale beneath; petiole 0.4-1.4 cm long. Figs paired or solitary, sometimes in clusters, sessile; receptacles 1 cm in diameter, subglobose or globose, glabrous pinkish with yellowish spots or purplish-black when ripe.

Fl. & Fr.: Oct.-March.

Habitat & Abundance: Rare in semi-evergreen forests, up to 1000 m.

Distribution: **World:** Bangladesh, Bhutan, Indochina, Malesia, Myanmar, S. China, Thailand. **India:** Andaman Islands, Assam, Bihar, Jharkhand, Madhya Pradesh, Meghalaya, Orissa, Sikkim. **AP:** VSKP

Repr. Spec.: NCMR & PA 56873; Lambasingi Ghats (VSKP).

Ficus dalhousiae (Miq.) Miq., Ann. Mus. Bot. Lugd.-Bat. 3: 285. 1867; C.E.C. Fischer in Fl. Madras 3: 1364.1928; Sudhakar et al., Figs East. Ghats 45.2017; Pullaiah et al., Fl. Andhra Pr. 4: 1807. 2018. Kondaarri chettu. (Plate 1)

Deciduous tree, up to 15 m high, bark brownish-grey, branchlets glabrescent when young. Leaves alternate, ovate-elliptic, broadly ovate-oblong, 10.5-21.5 x 7.5-13.5 cm, base cordate, entire, apex shortly acuminate, lateral nerves 8-12 pairs, glabrous or puberulous above, white pubescent beneath, coriaceous to leathery; petiole 1.5-6 cm long. Figs axillary, paired or rarely solitary, peduncle up to 0.4 cm long; receptacles to 1.8 cm diam., oblong-ovate, obovoid, pubescent, yellow.

Fl. & Fr.: January-July.

Habitat & Abundance: Rare, in deciduous forests, up to 1200 m in rocky crevices on hills.

Distribution: **World:** China (S. Yunnan, Guangdong) to Tropical Asia and N. Queensland. **India:** Andhra Pradesh, Kerala, Karnataka, Tamil Nadu **AP:** ATP, CTR & KDP.

Repr. Spec.: Horsley hills (CTR), NCMR & PA 51882; Samrajyamkonda (ATP), BR & ANS 38477; Gundumala Fort (ATP), NCMR & PA 56773.

Ficus exasperata Vahl, Enum. Pl. 2: 197 & 402. 1805; Sudhakar et al., Figs East. Ghats 52.2017; Pullaiah et al., Fl. Andhra Pr. 4: 1808. 2018; F. asperrima Roxb., Fl. Ind. 3: 554. 1832; C.E.C. Fischer in Fl. Madras 3: 1366.1928; Karaka booda, Karakaboddu, Kara-Karbuda, Krasaana, Pindichettu, Siribodda. (Plate 1)

Deciduous tree, up to 15 m high; aerial roots absent, bark brown-pale, whitish-grey, smooth; branchlets scabrous. Leaves alternate, crowded at the tips of branchlets, oblong-elliptic to obovate-lanceolate, 10-16 x 5-6.5 cm, base acute, serrate, toothed, apex blunt to acuminate scabrous, hispid on both surfaces with calcareous hairs, raised dots conspicuous on upper surface, more or less densely tomentose beneath, drying grey-green, chartaceous; lateral nerves 3-5 pairs; petiole up to 7 cm long. Figs in axillary, solitary or pairs, pedunculate, up to 2 cm long; receptacles 2.5 cm diam., pyriform, scabrous, yellow with purple spots when ripe.

Fl. & Fr.: December-July.

Habitat & Abundance: Occasional, in moist deciduous and semi-evergreen forests up to 900 m. **Distribution**: World: Arabia, East Africa, Sri Lanka. India: Andaman & Nicobar Islands, Central

and Southern regions. **AP**: EG & VSKP.

Repr. Spec.: Chaparai (EG), NCMR & BR 56667.

Ficus geniculata Kurz, J. Asiat. Soc. Bengal, pt. 2, Nat. Hist. 42(2): I 05. 1873 & For. Fl. Brit. Burma 2: 447. 1877; Sudhakar *et al.*, Figs East. Ghats 55.2017: Pullaiah *et al.*, Fl. Andhra Pr. 4: 1809. 2018. (**Plate 1**)

Semi-evergreen tree, up to 20 m high, epiphytic in early stage, aerial roots absent; branchlets stout, glabrous-silky pubescent when young, bark brownish grey. Leaves, alternate, ovate- elliptic, 6.8-15 x 2.6-8 cm Iong, base broadly cuneate to rounded, narrowed, entire or subundulate, apex shortly or abruptly acuminate, acumen 1-1.7 cm long, coriaceous, glabrous, lateral nerves 6-12 pairs; petiole up to 10 cm long, glabrous. Figs clustered on old twigs and axils of leaf scars, peduncle 0.4 cm long; receptacles 8 mm diam., glabrous, greenyellowish, red with white dots when ripe.

Fl. & Fr.: March- November.

Habitat & Abundance: Rare, in evergreen and deciduous forests up to 450 m.

Distribution: **World**: Bangladesh, China, Indochina, Myanmar, Nepal, Thailand. **India**: Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Jharkhand, Meghalaya, Orissa, Sikkim, Tamil Nadu, W. Bengal. **AP**: EG, VSKP & SKLM.

Repr. Spec.: Maredumilli (EG), 56106 NCMR & BR.

Ficus heterophylla L.f., Suppl. Pl. 442. 1781; C.E.C. Fischer in Fl. Madras 3: 1366.1928; Sudhakar et al., Figs East. Ghats 59.2017; Pullaiah et al., Fl. Andhra Pr. 4: 1810. 2018. Buroni. (Plate 1)

Evergreen or deciduous shrub, up to 5 m long, creeping, sarmentose; branchlets more or less hollow, brown hairy, hispid or with dense spreading pubescence. Leaves heterophyllous, linear or linear-lanceolate or ovate or elliptic to broadly oblong, shallowly or deeply pinnatified, 5-9 x 0.5-3 cm, base obtuse, rounded, subcordate, shallowly serrate or dentate, apex acute or shortly acuminate, more or less hispid or scabrid above, softly pubescent, glabrescent or scabrous beneath, petiole 0.5-1 cm long. Figs axillary, solitary, peduncle up to 10 mm long; receptacles 2.5 cm diam. young more or less pyriform or ellipsoid and hispid, mature subglobose, green when young, yellow- orange, dark red when ripe.

Fl. & Fr.: Throughout the year.

Habitat & Abundance: Rare in semi-evergreen forests up to 100 m along streams and rivers.

Distribution: **World**: China, Indochina, Malesia, Myanmar, Sri Lanka. **India**: Throughout the hotter parts of India. **AP**: WG, EG & VSKP.

Repr. Spec.: On the banks of Godavari, Vadapalle (WG), NCMR & PA 56257; Donkarayi near Mangapadu (VSKP), GVS 29660 (MH); Godavari, JSG 15850 (MH); Araku forest (VSKP), KJ 12546 (MH).

Ficus hispida L.f., Suppl. PL 442. 1781; C.E.C. Fischer in Fl. Madras 3: 1367.1928; Sudhakar et al., Figs East. Ghats 61.2017: Pullaiah et al., Fl. Andhra Pr. 4: 1818. Bemmadu, Bondamamidi, Boddamarri, Brahmamedi, Kakimedi, Kukka bodda.

Evergreen shrub or tree, up to 10 m high, without aerial roots, bark greenish- grey, peeling off in irregular flakes, rough; Leaves opposite-sub opposite, variable, ovate-elliptic or oblong 4-28 x 2-13 cm, base shortly apiculate, entire, obtuse-rounded, lateral nerves up to 10 pairs, coriaceous-chartaceous, scabrous on both surfaces, white pubescence above, hispid beneath; petiole up to 6.5 cm long. Figs axillary, solitary or pairs or clusters, peduncle up to 2.0 cm long; receptacles 3.5 cm diam., obovate-depressed globose, pubescent; green to yellow when ripe.

Fl. & Fr.: Throughout the year.

Habitat & Ecology: Common in semi-evergreen and moist deciduous forests up to 650 m, along water bodies.

Distribution: **World**: Bhutan, China, Indochina, Malesia, Nepal, Queensland in Australia, Sri Lanka. **India**: Throughout up to 3500 m **AP**: All districts

Repr. Spec.: Ubbalamadugu Waterfalls (CTR), NCMR & PA 56405; Peddachama (PKM), BR & PA 54795.

Ficus microcarpa L.f., Suppl. Pl. 442. 1782; C.E.C. Fischer in Fl. Madras 3: 1362.1928; Sudhakar et al., Figs East. Ghats 64.2017: Pullaiah et al., Fl. Andhra Pr. 4: 1813. 2018. Banda juvvi, Billa juvi, Kali Juvvi, Konda juvvi, Pitta marri, Plaksha, Yerrajuvvi.

Deciduous tree, up to 20 m high; aerial roots numerous, sometimes becoming pillar like accessory trunks, spreading with dense crown, epiphytic when young; bark brown, nearly smooth; Leaves alternate elliptic or obovate or broadly ovate-rhomboid, 2-10.5 x 1.7-5.6 cm, base narrowed or cuneate, entire, apex rounded to acute or retuse, shining, glabrous, lateral nerves inconspicuous, closely and reticulately veined; petiole up to 4 cm long. Figs axillary, solitary or pairs, sessile; receptacles 1.5 cm diam., globose or

pyriform-subglobose, glabrous, pale green when young, yellowish-red when ripe.

Fl. & Fr.: March-October.

Habitat & Abundance: Common in mixed deciduous and semi-evergreen forests up to 1200 m in moist rocky areas on hills and along streams.

Distribution: **World**: Australia, Bhutan, China, Indochina, Japan, Malesia, Nepal, Sri Lanka, Taiwan. **India**: Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Peninsular **AP**: All districts.

Repr. Spec.: Horsley hills (CTR), NCMR & PA 51465; Obuleshuni penta, Nallamalais (PKM), NCMR & PA 54491; Sunkarametta (VSKP), NCMR & BR 56034.

Ficus mollis Yahl, Symb. Bot. 1:82. 1790; C.E.C. Fischer in Fl. Madras 3: 1361.1928; Sudhakar et al., Figs East. Ghats 67.2017; Pullaiah et al., Fl. Andhra Pr. 4: 1814. 2018. Jivi, Juvvi, Kali juvi, Pittamarri. Evergreen or deciduous tree up to 15 m high; epiphytic or lithophytic, aerial roots few or absent bark greenish-white, smooth, young branches densely, yellowish tomentose; Leaves alternate, crowded towards the ends of branchlets, variable, ovate-elliptic or obovate-oblong, 3.5-18 x 2.0-11 cm, base cordate with a gland at the base of the midrib beneath, entire, apex obtuse to sub-acute, densely tomentose on both sides, lateral nerves 5-6 pairs; petiole up to 6 cm long. Figs solitary or pairs or clusters at ends of the branchlets, sessile; receptacles 1.0 cm diam., tomentose, greenish when young and brownish when ripe.

Fl. & Fr.: throughout the year.

Habitat & Abundance: Common, in all forests on hills up to 1300 m.

Distribution: **World**: India to Bangladesh, Sri Lanka, Nicobar Islands. **India**: Andaman & Nicobar Islands, Bihar, Central and Southern provinces, Jharkhand, Maharashtra, Rajasthan, Uttar Pradesh **AP**: All districts.

Repr. Spec.: Gampamallayyaswami cave temple (ATP), NCMR & PA 56727, Polavaram (WG), NCMR & BR 56695;

Ficus nervosa B. Heyne ex Roth, Nov. Pl. Sp. 388. 1821; C.E.C. Fischer in Fl. Madras 3: 1364.1928; Sudhakar *et al.*, Figs East. Ghats 70.2017; Pullaiah *et al.*, Fl. Andhra Pr. 4: 1815. 2018. *Vonjar*. (**Plate 1**) Evergreen tree, up to 25 m high; aerial roots absent; bark brown, mottled white; branches minutely pubescent when young. Leaves alternate, rarely sub-opposite, elliptic, oblong-lanceolate or oblanceolate, 4-16.5 x 2.6-6.2 cm, base narrowed-

rounded, subequilateral, entire to slightly undulate, apex abruptly and narrowly acuminate or obtuse, glabrous, shining, lateral nerves 9-11 pairs, prominently raised; petiole 1-1.5 cm long. Figs in axillary, solitary or pairs, peduncle to 1 cm; receptacles 1.3 cm diam., subglobose, glabrous, greenish-yellow, orange red when ripe.

Fl. & Fr.: September- May.

Habitat & Abundance: Rare, in semi-evergreen forests up to 700 m along streams.

Distribution: World: Bangladesh, Bhutan, China, Indochina, Malaya Peninsula, Nepal, Sri Lanka. New Guinea, Australia. **India**: Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Jharkhand, Meghalaya, Peninsular region, Sikkim. **AP**: EG & VSKP.

Repr. Spec.: Lingavaram (EG), NCMR & BR 56670; Maredumilli (EG), NCMR & PA 56111; Vaiyar (VSKP), PSPB 1181.

Ficus palmata Forssk. subsp. virgata (Roxb.) P.Browicz in Rechinger, Fl. Iranica 153. 12. 1982; C.E.C. Fischer in Fl. Madras 3: 1364.1928; Sudhakar et al., Figs East. Ghats 73.2017; Pullaiah et al., Fl. Andhra Pr. 4: 1816. 2018. Manjimedi, Mansimedi. (Plate 1)

Deciduous shrub or small tree, up to 5 m high; aerial roots absent, bark dull ash- grey or brownish, soft-tomentose when young. Leaves alternate, variable, orbicular-ovate or broadly ovate, sometime lobed, 6.0-10.5 x 6.0-9.5cm, base broad truncate or cordate, dentate, apex acute, pubescent above, softly tomentose below, chartaceous, petiole to 3-6 cm long. Figs in axillary, solitary, pedunculate, to 2.5 cm long; receptacles 2.2 cm diam., obovoid-globose or subglobose-pyriform, tomentose, yellowish or purple when ripe.

Fl. & Fr.: March-November.

Habitat & Ecology: Occasional, in semi-evergreen forests up to 1000 m, along village roads and human habitations.

Distribution: **World**: Afghanistan, Arabian Peninsula, Ethiopia, S. Egypt, Iran, Nepal, Pakistan, Somalia, Sudan. **India**: Andhra Pradesh, Bihar, Kerala, Madhya Pradesh, North-West Himalaya up to 1700 m, Orissa, Rajasthan, Uttar Pradesh. **AP**:

Repr. Spec.: Galikonda (VSKP), BR 40984.

Ficus racemosa L., Sp. Pl. 1060. 1753. F. glomerata Roxb., Pl. Coromandel 2: 13. t.123. 1799; C.E.C. Fischer in Fl. Madras 3: 1364.1928; Sudhakar et al., Figs East. Ghats 75.2017: Pullaiah et al., Fl. Andhra Pr. 4: 1817. 2018. Atti chettu,

Bodda chettu, Medi chettu, Paidi chettu & Udambaramu.

Deciduous tree, up to 30m high, with few or no aerial roots; bark smooth, rusty green-grey, reddishbrown, peeling off; branchlets minutely pubescent. Leaves alternate ovate-elliptic or oblong-lanceolate, 3-12.5 x 1.5-5.0 cm, base oblique, entire, apex acute or obtuse, lateral nerves 6-8 pairs, dark green and shining above, pale dotted and scaberulous beneath, petiole to 6.0 cm long. Figs in clusters, pendulous, on trunk from base to top, peduncle, to 1 cm long; receptacles 3.5 cm diam., globose or subglobose-subpyriform, hairy or grabrescent, light pink-red, orange when ripe.

Fl. & Fr.: Throughout the year.

Habitat & Ecology: Common in semi-evergreen and deciduous forests up 600 m, along streams; agricultural fields, around human habitations.

Distribution: **World**: Australia, Bangladesh, China, Indochina, Malesia, Myanmar, Nepal, Pakistan, Sri Lanka. **India**: throughout, from the outer Himalaya to plains and low hills. **AP**: Throughout.

Repr. Spec. : Ahobilam (KNL), BR & PA 55054; Maredumilli (EG), TP & KJ12503.

Ficus religiosa L., Sp. Pl. 1059. 1753; C.E.C. Fischer in Fl. Madras 3: 1363.1928; Sudhakar et al., Figs East. Ghats, India 77.2017: Pullaiah et al., Fl. Andhra Pr. 4: 1818. 2018. Ashwarthamu, Aswathamu, Bodhi, Pippali, Raavi, Ragi, Rai

Deciduous tree, up to 30 m high; often epiphytic when young; aerial roots absent; bark grey or ash color, irregularly peeling off, branchlets yellowishgrey, glabrous. Leaves alternate, broadly ovate-suborbicular, cordiform, 4-19 x 2.8-13 cm, base truncate or sometimes cordate, entire- wavy, apex long caudate acuminate, with up to 10 cm long tail, shining above, pale beneath, glabrous on both surfaces, coriaceous, lateral nerves 8 pairs; petiole up to 9 cm long. Figs paired or clustered or rarely solitary at ends of the branches, sessile; receptacles 1.5 cm diam., globose-subglobose or depressed globose, glabrous, green-purple or black when ripe.

Fl. & Fr.: March- July.

Habitat & Ecology: Common, throughout as an avenue tree and revered as a scared plant in temple yards; in all forest peripheries, along road sides, agricultural lands, on walls and structures, and in human habitations. **Distribution**: World: Bangladesh, China, Indochina, Myanmar, Nepal, Pakistan, Sri Lanka. Introduced and cultivated elsewhere India: Wild in sub Himalayan regions, cultivated throughout. AP: All districts

Repr. Spec.: GBM Guest house (KNL), BR & PA 54047; Anantagiri (VSKP), NCMR & BR 56688.

Ficus rumphii Blume, Bijdr. 437. 1825; Sudhakar *et al.*, Figs East. Ghats 80. 2017: Pullaiah *et al.*, Fl. Andhra Pr. 4: 1819. 2018. (**Plate 2**)

Evergreen tree, up to 20 m high; aerial roots absent, at first usually epiphytic, embracing other tree trunks; bark yellowish grey- grey, black, smooth; branchlets glabrous. Leaves alternate, ovate-broadly ovate, or elliptic, 4-14.5 x 2.5-9 cm, base subcordate, undulate, apex acuminate, dark green and shining above, pale beneath, glabrous on both surfaces, lateral nerves 6-8 pairs, subcoriaceous; petiole up to 10 cm long. Figs axillary pairs at fallen leaf scars, sessile; receptacles 3 cm diam., globose-obovoid or globular, puberulous, whitish or pale green with white spots when young, turn yellow to purple when ripe.

Fl. & Fr.: September-June.

Habitat & Ecology: Rare, in semi-evergreen forests up to 650 m.

Distribution: **World**: Bhutan, China, Indochina, Malesia, Myanmar, Nepal, Thailand. **India**: Throughout, ascending to 1700 m. **AP**: EG & VSKP.

Repr. Spec.: Maredumilli coffee plantation (EG), NCMR & BR 56682; Satwa near Araku (VSKP), NPBK 10858 (MH).

Ficus semicordata Buch.-Ham. ex J.E. Smith, Rees Cyclop. 14: Ficus n. 84. 1810; C.E.C. Fischer in Fl. Madras 3: 1366.1928; Sudhakar et al., Figs East. Ghats 26.2017: Pullaiah et al., Fl. Andhra Pr. 4: 1820. 2018. Bodda, Bomma marri Bomma matti, Erubodda. (Plate 2)

Evergreen tree, up to 12 m high; aerial roots absent, bark rough, brown- dark grey; branchlets pubescent. Leaves alternate, variable, elliptic or oblong-lanceolate, one side with a large 3-4-ribbed lobe, the other side flattened below, 5.5-22 x 3.8-8 cm, base semicordate, entire or slightly serrate, apex shortly acuminate, lateral nerves 9-14 pairs, scabrid above, more or less pubescent beneath, coriaceous, petiole to 1.5 cm long. Figs cauliflorus, on leafless pendulous branches, up to 2 m long; peduncle up to 1 cm; receptacles 2.2 cm in diam., sub globose-globose, pyriform, hispid, pale green with white dots, reddish-brown when ripe.

Fl. & Fr.: Throughout the year.

Habitat & Abundance: Rare, in semi-evergreen forests up to 650 m, along streams.

Distribution: World: Bangladesh, Bhutan, China, Malaysia, Myanmar, Nepal, Pakistan, Thailand,

Vietnam. **India**: Throughout. **AP**: EG, VSKP, SKLM

Repr. Spec.: Maredumilli (EG), NCMR & PA 56107 & Valugudem (EG), NCMR & BR 56673; Anantagiri (VSKP), GVS 19557 (MH) and Gamperkot (SKLM), KCJ 1732 (MH).

Ficus tinctoria G. Forst. subsp. gibbosa Blume, Bijdr. Fl. Ned. Ind. 9: 466. 1825; Sudhakar et al., Figs East. . Ghats 89.2017: Pullaiah et al., Fl. Andhra Pr. 4: 1822. 2018; F. gibbosa Blume, Bijdr. Fl. Ned. Ind. 9: 466. 1825; C.E.C. Fischer in Fl. Madras 3: 1365.1928; Kondajuvvi, Pakki, Tella Barinka.

Deciduous or evergreen climbing bushy shrub or standing hemi-epiphytic tree, up to 10 m high; embracing the trunks of host plants forming network of branches, creeping along old walls, wells and rocks, aerial roots absent, bark greenishyellow or grey, smooth. Leaves alternate, variable, rhomboid - sub rhomboid or elliptic- ovate, 3-15 x 2.8-8 cm, base oblique, entire, apex acute, gibbose, scabrous, hispidulous, sparsely puberulous on both surfaces, dark green and shiny above, pale green and tuberculate beneath, petiole up to 2 cm long. Figs in axillary, solitary or umbellate fascicles, pedunculate, up to 1 cm long;, receptacles 1.2 cm diam., globose-sub-globose, depressed globose, pubescent, papillose, turning yellow- orange or red when ripe.

Fl. & Fr.: December-May.

Habitat & Abundance: Common, in deciduous and semi-evergreen forests, up to 780 m, along streams; and agricultural lands.

Distribution: **World**: Bhutan, China, Indonesia, Malaysia, Myanmar, Nepal, Philippines, Sri Lanka, Taiwan, Thailand, Timor, Vietnam. **India**: Andaman & Nicobar Islands, Bihar, Kerala, Madhya Pradesh, Meghalaya, Orissa, Tamil Nadu, Uttar Pradesh **AP**: All districts.

Repr. Spec. : Kondamusuru (VZN), NCMR & BR 52907; Lambashingi (VSKP), NCMR & BR 52956; Simhachalam temple (VSKP), NCMR & PA 56087; Nithyapooja kona (KDP), NCMR & PA 56548; Peddapeta, Burja (SKLM), NCMR & PA 56648.

Ficus tsjakela Burm. f., Fl. Ind. 227. 1768; C.E.C. Fischer in Fl. Madras 3: 1362.1928; Sudhakar *et al.*, Figs East Ghats 92.2017; Pullaiah *et al.*, Fl. Andhra Pr. 4: 1823. 2018. (**Plate 2**) Deciduous tree, up to 25 m high; aerial roots absent; early epiphytic, bark dark brown coloured, rough; Leaves alternate, oblong-elliptic or ovate-lanceolate, 5.5-21 x 2-10 cm, base truncate or rounded, entire,

apex shortly acuminate, dark green and glossy above, pale beneath, young leaves reddish or pinkish, ashy grey when dry, lateral nerves 7-12 pairs; petiole to 10 cm long. Figs pairs or 4-6 clusters on tuberculate leaf branches, sessile; receptacles 1 cm diam., rounded, glabrous, green with white dots or white to yellowish with pale spots.

Fl. & Fr.: Throughout the year.

Habitat & Ecology: Rare, in semi-evergreen and moist deciduous forests up to 1300 m. Distribution: World: Myanmar, Sri Lanka New Guinea, Australia. India: Central, Western and Southern regions . AP: CTR

Repr. Spec.: Tirumala hills (CTR) NCMR & BR 56689

Ficus variegata Blume, Bijdr. Fl. Ned. Ind. 9: 459. 1825; Sudhakar et al., Figs East. Ghats 95.2017: Pullaiah et al., Fl. Andhra Pr. 4: 1825. 2018. (Plate 2)

Evergreen or deciduous tree, up to to 30 m high; trunk buttressed, straight; branches numerous on top, spreading in all directions; aerial roots absent; branchlets glabrous, pubescent when young; bark pale brown with reddish spots, smooth. Leaves alternate, simple, alternate, broadly ovate-elliptic, sometimes cordate, 8.5 - 22 x 5 -13.5 cm, base rounded or cordate to subcordate, entire, coarsely denticulate, apex acuminate to subacute, acumen up to 1 cm long, glabrous, dark green with ash color patches above, shining, pale beneath, puberulous when young, lateral nerves up to 8 pairs. Petiole up to 10 cm long. Figs in fascicles from woody tubercles, drooping from stem, peduncle, up to 5 cm long; recptacles globose or subglobose-pyriform, glabrous, light green when young, pink to red with white streaks and spots when ripe.

Fl. & Fr.: Throughout the year.

Habitat & Ecology: Rare in semi-evergreen forests up to 1000 m; along streams.

Distribution: **World**: Australia, Bangladesh, China, Indochina, Japan, Malesia, Myanmar, Solomon Islands, Thailand. **India**: Andaman & Nicobar Islands, Assam, Bihar, Meghalaya. **AP**: EG, VSKP & SKLM.

Repr. Spec.: Gudem to seeleru (VSKP), NCMR & PA 55547 & Maredumilli (EG), BR & CMR 56127. F. virens Aiton, Hort, Kew. 3: 451. 1789; Sudhakar et al., Figs East. Ghats 97.2017: Pullaiah et al., Fl. Andhra Pr. 4: 1826. 2018. F. infectoria Roxb., var. lambertiana (Miq.) King, Ann. Roy.Bot. Gard. (Calcutta) 1: 63.t.76.1887; C.E.C. Fischer in Fl. Madras 3: 1363.1928; Bandajuvvi, Banda Juvvi, Gandhari, Jati, Juvvi.

Deciduous tree, up to 25 m high, early epiphytic, aerial roots few or absent; bark greenish-grey, brownish, smooth; Leaves, alternate, variable, elliptic or oblong- lanceolate, 5.5-14 x 2.5-10 cm, base acute, truncate or subcordate, entire to slightly undulate, apex abruptly acuminate with blunt tip, light to dark green above, pale beneath, glabrous on both surfaces, younger leaves red or pink, lateral nerves 7-12 pairs; petiole up to 10 cm long. Figs axillary, solitary or in pairs, just below the leaves, peduncle, to 0.8 mm long; receptacles 1.2 cm diam., rounded, pubescent, green, white with pink or red dots, pink- purple, red and even black when ripe.

Fl. & Fr.: October-June.

Habitat & Ecology: Common, in semi-evergreen and deciduous forests up to 900 m.

Distribution: **World**: Australia, Bangladesh, Bhutan, China, Indochina, Japan, Malesia, Myanmar, Nepal, Pakistan, Solomon Islands, Sri Lanka, Thailand, Vietnam. **India**: Throughout up to 1,700 m, also frequently planted. **AP**: All districts.

Repr. Spec.: Peddarutla (PKM), BR & PA 54017; Talakona Waterfalls (CTR) and PA & SMN 56327 Maredumilli- Darakoda Rd (EG), NCMR & BR 56660.

Discussion

Present study after critical analysis identified the wild occurrence of 23 species of Ficus in the state of Andhra Pradesh. Ten species (Table 1) were found in all the districts of the State; 11 species are confined to North coastal districts; F. concinna and palmata subsp. virgata found only Visakhapatnam district; F. nervosa, F. exasperata, F. rumphii, F.variegata only in East Godavari and Visakhapatnam districts; F. geniculata and F. semicordata only in East Godavari, Visakhapatnam and Srikakulam districts: F. auriculata and F. heterophylla nly from Godavari districts and Visakhapatnam district. F. benjamina in Godavari districts, Visakhapatnam and Srikakulam districts. Two species are exclusive to Rayalaseema region; F. tsjakela in Tirumala hills, Chittoor district; F. dalhousie only from Chittoor, Kadapa and Ananthapuramu districts. Pullaiah et al. (2018) reported the occurrence of F. alongensis, F. drupacea, F. talbotii; our work excluded these species from the wild fig flora of Andhra Pradesh. F. alongensis is reported by Sudhakar Reddy et al.(2008), but not cited without any herbarium

Table 1: Distribution of Wild Ficus taxa in Andhra Pradesh

C C	N. 0.1		Districts of Andhra Pradesh													
S.	Name of the	R	RAYALASEEMA				COASTAL ANDHRA PRADESH									
No.	Taxon	C	KA	A	KU	N	P	G	K	W	E	VS	VZ	SK		
1	F. amplissima	+	+	+	+	+	+	+	+	+	+	+	+	+		
2	F. arnottiana	+	+	+	+	+	+	+	+	+	+	+	+	+		
3	F. auriculata									+	+	+				
4	F. benghalensis	+	+	+	+	+	+	+	+	+	+	+	+	+		
5	F. benjamina									+	+	+		+		
6	F. concinna											+				
7	F. dalhousiae	+	+	+												
8	F. exasperata										+	+				
9	F. geniculata										+	+		+		
10	F. heterophylla									+	+	+				
11	F. hispida	+	+	+	+	+	+	+	+	+	+	+	+	+		
12	F. microcarpa	+	+	+	+	+	+	+	+	+	+	+	+	+		
13	F. mollis	+	+	+	+	+	+	+	+	+	+	+	+	+		
14	F. nervosa										+	+				
15	F. palmata subsp. virgata											+				
16	F. racemosa	+	+	+	+	+	+	+	+	+	+	+	+	+		
17	F. religiosa	+	+	+	+	+	+	+	+	+	+	+	+	+		
18	F. rumphii										+	+				
19	F. semicordata										+	+		+		
20	F. tinctoria subsp. gibbosa	+	+	+	+	+	+	+	+	+	+	+	+	+		
21	F. tsjakela	+														
22	F. variegata										+	+				
23	F. virens	+	+	+	+	+	+	+	+	+	+	+	+	+		

A: Ananthapuramu; C: Chittoor; KA: Kadapa; K: Kurnool; N: Nellore; P: Prakasam; G: Guntur; K: Krishna; W: W.Godavari. E: E. Godavari; VS: Visakhapatnam; VZ: Viziyanagaram; SK: Srikakulam.

specimen; *F. drupacea* is included without citing any locality and authentic herbarium specimen; *F. talbotii* is included based on two collections from SKU (1236 & 15517), which were studied and found to be *F. microcarpa*. Murugan *et al.* (2013) added *Ficus beddomei* to the fig flora of Andhra Pradesh, without citing any collection and hence excluded in the present study. *Ficus middletonii* is reported by Sudhakar and Murthy (2016) based on the herbarium specimens deposited in SKU (15934, 16168, and 38149), which after critical study were found to be *F. virens*.

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Plate 2 – Wild Ficus taxa of Andhra Pradesh



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