**SUPPLEMENTARY INFORMATION**

**TITLE:** Patterns of tree-liana interactions: distribution and host preference of lianas in a tropical dry evergreen forest in India

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**Table S1.** List of liana species with their climbing mechanism, density and total abundance enumerated in four sites (KT, PC 1, PC 2 and SN) of tropical dry evergreen forest

**Table S2.** Functional traits, abundance (2 ha) and percentage of liana colonization on host tree species in two 1-ha plots of Point Calimere wildlife sanctuary.

**Table S3.** Percent colonization and mean liana infestation on tree families in Indian tropical dry evergreen forest

Table S1. List of liana species with their climbing mechanism, density and total abundance enumerated in four sites (KT, PC 1, PC 2 and SN) of tropical dry evergreen forest

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sl. No. | Liana species | Climbing mechanism | Study plot | | Total for 2 ha |
| PC 1 | PC 2 |
| 1 | *Carissa spinarum* L. (Apocynaceae) | SCR-A | 76 | 94 | 170 |
| 2 | *Jasminum angustifolium* (L.) Willd. (Oleaceae) | ST | 97 | 69 | 166 |
| 3 | *Scutia myrtina* (Burm. f.) Kurz (Rhamnaceae) | SCR-A | 49 | 61 | 110 |
| 4 | *Hugonia mystax* L. (Linaceae) | HC | 60 | 49 | 109 |
| 5 | *Wattakaka volubilis* (L.f) T. Cooke (Asclepiadaceae) | ST | 39 | 48 | 87 |
| 6 | *Strychnos lenticellata* (Dennst.) Hill (Loganiaceae) | ST | 75 | 0 | 75 |
| 7 | *Zizyphus oenoplia* (L.) Mill. (Rhamnaceae) | SCR-A | 12 | 60 | 72 |
| 8 | *Cissus quadrangularis* L. (Vitaceae) | TC | 11 | 55 | 66 |
| 9 | *Coccinia grandis* (L.) Voigt (Cucurbitaceae) | TC | 20 | 37 | 57 |
| 10 | *Toddalia asiatica* (L.) Lam. (Rutaceae) | SCR-A | 24 | 16 | 40 |
| 11 | *Asparagus racemosus* Willd. (Liliaceae) | SCR-A | 6 | 33 | 39 |
| 12 | *Sarcostemma acidum* (Roxb.) Voigt (Asclepiadaceae) | SCR-UA | 30 | 7 | 37 |
| 13 | *Cissus vitiginea* L. (Vitaceae) | TC | 27 | 6 | 33 |
| 14 | *Plecospermum spinosum* Trecul. (Moraceae) | SCR-A | 0 | 30 | 30 |
| 15 | *Rivea hypocrateriformis* (Desr.) Choisy (Convolvulaceae) | ST | 12 | 17 | 29 |
| 16 | *Grewia rhamnifolia* Heyne ex Roth (Tiliaceae) | SCR-UA | 18 | 9 | 27 |
| 17 | *Tinospora cordifolia* (Willd.) Hook. f. & Thoms. (Menispermaceae) | SCR-UA | 4 | 23 | 27 |
| 18 | *Capparis brevispina* DC. (Capparaceae) | SCR-A | 23 | 3 | 26 |
| 19 | *Azima tetracantha* Lam. (Salvadoraceae) | SCR-A | 15 | 10 | 25 |
| 20 | *Capparis rotundifolia* Rottl. (Capparaceae) | SCR-A | 1 | 23 | 24 |
| 21 | *Cansjera rheedii* Gmel. (Opiliacae) | SCR-UA | 22 | 1 | 23 |
| 22 | *Capparis zeylanica* L. (Capparaceae) | SCR-A | 4 | 17 | 21 |
| 23 | *Derris scandens* (Roxb.) Benth. (Papilionaceae) | ST | 18 | 0 | 18 |
| 24 | *Olax scandens* Roxb. (Olacaceae) | SCR-UA | 9 | 9 | 18 |
| 25 | *Clerodendrum inerme* (L.) Gaertn. (Verbenaceae) | SCR-UA | 0 | 13 | 13 |
| 26 | *Pachygone ovata* (Poir.) Miers ex Hook. (Menispermaceae) | ST | 0 | 9 | 9 |
| 27 | *Tylophora indica* (Burm. f.) Merr. (Asclepiadaceae) | ST | 0 | 7 | 7 |
| 28 | *Salachia chinensis* L. (Celastraceae) | SCR-UA | 6 | 0 | 6 |
| 29 | *Aristolochia indica* L. (Aristalochiacae) | ST | 0 | 5 | 5 |
| 30 | *Jasminum sessiliflorum* Vahl (Oleaceae) | ST | 4 | 0 | 4 |
| 31 | *Canavalia virosa* (Roxb.) Wight & Arn. (Papilionaceae) | ST | 0 | 3 | 3 |
| 32 | *Capparis sepiaria* L. (Capparaceae) | SCR-A | 3 | 0 | 3 |
| 33 | *Combretum albidum* G.Don (Combretaceae) | ST | 3 | 0 | 3 |
| 34 | *Gloriosa superba* L. (Liliaceae) | TC | 0 | 3 | 3 |
| 35 | *Tricosanthes tricuspidata* Lour. (Cucurbitaceae) | TC | 2 | 0 | 2 |
| 36 | *Abrus precatorius* L. (Papilionaceae) | ST | 0 | 1 | 1 |
| 37 | *Capparis divaricata* Lam. (Capparaceae) | SCR-A | 0 | 1 | 1 |
| 38 | *Gymnema sylvestre* (Retz.) R.Br. ex Schultes (Asclepiadaceae) | ST | 0 | 1 | 1 |

Climbing strategy: HC – hook climber; SCR-A – scrambler-armed; SCR-UA – scrambler-unarmed; ST – stem twiner; TC – tendril climber

**Table S2.** Functional traits, abundance (2 ha) and percentage of liana colonization on host tree species in two 1-ha plots of Point Calimere wildlife sanctuary.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Host tree species (Family) | Family | Tree functional trait | | | Abundance  (n) | No. of tree individuals infested by lianas (expressed in %) | Total number of lianas carried by infested trees (mean) | Frequency of liana distribution range\* |
| Bark type  (BT) | Physiognomic  type (PT) | Wood specific density (WSD)  g cm-3 |
| *Alangium salvifolium* (L.f.) Wangerin | Alangiaceae | R | D | 0.8 | 2 | 1 (50) | 1 (1) | 0–1 |
| *Allophyllus serratus* (Roxb.) Kurz | Sapindaceae | S | E | 0.6 | 7 | 4 (57) | 5 (1.3) | 0–2 |
| *Atalantia monopylla* (L.) Correa | Rutaceae | R | E | 0.79 | 121 | 69 (57) | 106 (1.5) | 0–4 |
| *Azadirachta indica* A. Juss. | Meliaceae | R | BD | 0.7 | 38 | 28 (74) | 52 (1.9) | 0–5 |
| *Borassus flabellifer* L. | Arecaceae | R | E | 0.95 | 6 | 1 (17) | 1 (1.0) | 0–1 |
| *Breynia vitis-idaea* (Burm.f.) C. Fischer | Euphorbiaceae | SR | E | 0.55 | 3 | 0 (0) | 0 (0.0) | 0 |
| *Cadaba trifoliata* (Roxb.) Wight & Arn. | Capparaceae | SR | E | 0.57 | 6 | 5 (83) | 7 (1.4) | 0–2 |
| *Canthium coromandelicum* (Burm.f.) Alston | Rubiaceae | R | D | 0.59 | 17 | 8 (47) | 14 (1.8) | 0–4 |
| *Canthium dicoccum* (Gaertn.) Teijsm. &Binn. | Rubiaceae | R | E | 0.82 | 40 | 29 (73) | 39 (1.3) | 0–4 |
| *Carmona retusa* (Vahl) | Boraginaceae | R | E | 0.96 | 6 | 2 (33) | 2 (1.0) | 0–1 |
| *Cassia auriculata* L. | Fabaceae | S | D | 0.61 | 1 | 0 (0) | 0 (0.0) | 0 |
| *Cassia fistula* L. | Fabaceae | S | D | 0.64 | 114 | 69 (61) | 122 (1.8) | 0–6 |
| *Catunaregam spinosa* (Thunb.) Triven. | Rubiaceae | R | D | 0.68 | 11 | 0 (0) | 0 (0.0) | 0 |
| *Cordia obliqua* Willd. | Cordiaceae | R | E | 0.51 | 4 | 4 (100) | 8 (2.0) | 0–3 |
| *Dichrostachys cinerea* (L.) Wight & Arn. | Mimosaceae | S | BD | 0.99 | 4 | 4 (100) | 4 (1) | 0–1 |
| *Diospyros ferrea* (Willd.) Bakh. var. *buxifolia* (Rottb.) Bakh. | Ebenaceae | R | E | 0.69 | 89 | 55 (62) | 83 (1.5) | 0–4 |
| *Dodonaea augustifolia* L.f. | Sapindaceae | SR | BD | 0.78 | 47 | 20 (43) | 22 (1.1) | 0–2 |
| *Drypetes sepiaria* (Wight and Arn.) Pax and Hoffm. | Euphorbiaceae | R | E | 0.92 | 71 | 37 (52) | 60 (1.6) | 0–4 |
| *Eugenia bracteata* (Willd.) Roxb. ex DC. | Myrtaceae | R | E | 0.73 | 4 | 2 (50) | 3 (1.5) | 0–2 |
| *Euphorbia antiquorum* L. | Euphorbiaceae | S | D | 0.38 | 16 | 10 (63) | 11 (1.1) | 0–2 |
| *Ficus benghalensis* L. | Moraceae | R | BD | 0.51 | 1 | 0 (0) | 0 (0.0) | 0 |
| *Ficus microcarpa* L.f. | Moraceae | R | BD | 0.58 | 7 | 0 (0) | 0 (0.0) | 0 |
| *Glycosmis mauritiana* (Lam.) Yuich. Tanaka | Rutaceae | S | E | 0.5 | 120 | 51 (43) | 60 (1.2) | 0–4 |
| *Gmelina asiatica* L. | Verbenaceae | S | E | 0.55 | 24 | 14 (58) | 19 (1.4) | 0–4 |
| *Ixora pavetta* T.Anderson | Rubiaceae | R | E | 0.8 | 12 | 8 (67) | 9 (1.1) | 0–2 |
| *Lepisanthes tetraphylla* (Vahl.) Radlk. | Sapindaceae | R | E | 0.77 | 9 | 4 (44) | 5 (1.3) | 0–2 |
| *Mallotus philippensis* (Lam.) Muell.-Arg. | Euphorbiaceae | R | D | 0.44 | 5 | 0 (0) | 0 (0.0) | 0 |
| *Manilkara hexandra* (Roxb.) Dubard | Sapotaceae | R | E | 0.79 | 135 | 93 (69) | 162 (1.7) | 0–6 |
| *Maytenus emarginata* (Willd.) Ding Hou | Rhamnaceae | S | E | 0.71 | 43 | 26 (60) | 37 (1.4) | 0–3 |
| *Memecylon umbellatum* Burm.f. | Melastomataceae | SR | E | 0.64 | 295 | 162 (55) | 223 (1.4) | 0–6 |
| *Ochna obtusata* DC. | Ochnaceae | SR | E | 0.76 | 35 | 20 (57) | 31 (1.6) | 0–3 |
| *Pongamia pinnata* (L.) Pierre | Fabaceae | SR | D | 0.82 | 65 | 50 (77) | 95 (1.9) | 0–8 |
| *Prosopis juliflora* (Sw.) DC. | Mimosaceae | R | E | 0.75 | 105 | 67 (64) | 104 (1.6) | 0–6 |
| *Salvadora persica* L. | Salvadoraceae | S | E | 0.59 | 14 | 5 (36) | 12 (2.4) | 0–4 |
| *Sapindus emarginatus* Vahl | Sapindaceae | R | D | 0.37 | 1 | 1 (100) | 3 (3.0) | 0–3 |
| *Securenega leucopyrus* (Willd.) Muell.-Arg. | Euphorbiaceae | S | D | 0.68 | 1 | 1 (100) | 1 (1.0) | 0–1 |
| *Syzygium cumini* (L.) Skeels | Myrtaceae | SR | E | 0.58 | 26 | 14 (54) | 23 (1.6) | 0–4 |
| *Tarenna asiatica* (L) Kuntz ex Schumann. | Rubiaceae | S | E | 0.91 | 44 | 15 (34) | 19 (1.3) | 0–2 |
| *Walsura trifolia* (A.Juss.) Harms | Meliaceae | R | E | 0.88 | 6 | 6 (100) | 18 (3.0) | 0–7 |
| *Zizyphus mauritiana* Lam*.* | Rhamnaceae | R | BD | 0.57 | 6 | 5 (83) | 9 (1.8) | 0–4 |

Bark type: R – rough bark, S – smooth bark, SR – slightly rough bark; Physiognomic type: BD – brevi-deciduous, D – deciduous, E – evergreen

\*The occurrence of minimum and maximum number of liana individuals on tree species.

Table S3. Percent colonization and mean liana infestation on tree families in Indian tropical dry evergreen forest

|  |  |  |  |
| --- | --- | --- | --- |
| Tree family | Abundance (n) | No. of individuals colonized by lianas (%) | Total number of lianas carried (mean per infested individual) |
| Alangiaceae | 2 | 1 (50) | 1 (1) |
| Arecaceae | 6 | 1 (17) | 1 (1) |
| Boraginaceae | 6 | 2 (33) | 2 (1) |
| Capparaceae | 6 | 5 (83) | 7 (1.4) |
| Cordiaceae | 4 | 4 (100) | 8 (2.0) |
| Ebenaceae | 89 | 55 (62) | 83 (1.5) |
| Euphorbiaceae | 96 | 48 (50) | 72 (1.5) |
| Fabaceae | 180 | 119 (66) | 217 (1.8) |
| Melastomataceae | 295 | 162 (55) | 223 (1.4) |
| Meliaceae | 44 | 34 (77) | 70 (2.1) |
| Mimosaceae | 109 | 71 (65) | 108 (1.5) |
| Moraceae | 8 | 0 (0) | 0 (0.0) |
| Myrtaceae | 30 | 16 (53) | 26 (1.6) |
| Ochnaceae | 35 | 20 (57) | 31 (1.6) |
| Rhamnaceae | 49 | 31 (63) | 46 (1.5) |
| Rubiaceae | 124 | 60 (48) | 81 (1.4) |
| Rutaceae | 241 | 120 (50) | 166 (1.4) |
| Salvadoraceae | 14 | 5 (36) | 12 (2.4) |
| Sapindaceae | 64 | 29(45) | 35 (1.2) |
| Sapotaceae | 135 | 93 (69) | 162 (1.7) |
| Verbenaceae | 24 | 14 (58) | 19 (1.4) |