

Diversity and uses of flowering plants distributed in both Vietnam and Malaysia

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Abstract

The paper assessed the diversity of species, genera, families and classes of the flowering plants (Magnoliophyta) distributed in both Vietnam and Malaysia. Main contents of the study are building a list of plant species and evaluation of the diversity of taxa of Magnoliophyta. The study has enumerated 1840 species, 876 genera, 162 families, 2 classes of Magnoliophyta, distributed in both Vietnam and Malaysia. Diversity of useful plants with 2 classes, 150 families, 689 genera, 1213 species. Medicinal plants with 869 species (2 classes, 133 families, 553 genera). Plants for timber with 127 species (1 class, 39 families, 87 genera). Ornamental plants with 156 species (2 classes, 31 families, 104 genera). Edible plants (edible fruits, seeds) with 103 species (2 classes, 37 families, 78 genera). Plants for essential oil with 13 species (2 classes, 8 families, 12 genera). Vegetables with 92 species (2 classes, 44 families, 76 genera). Dyed plants with 31 species (1 class, 12 families, 20 genera). Plants for fibre with 3 species (2 classes, 3 families, 3 genera). Plants for food of animal and human with 79 species (2 classes, 15 families, 56 genera). A model built for research and development of those species based on comprehensive cooperations and supports from agriculture, construction, cosmetic, fashion, forestry, food, ornamental and pharmaceutical organizations. The results provide a lot of valuable information, contributing to the development of cooperation of Vietnam and Malaysia on plant diversity research and orientation for application.

Keywords: Magnoliophyta; Vietnam; Malaysia; Diversity; Development

1. Introduction

Scientific cooperations between Vietnam and Malaysia have been increasingly developed in recent years, including research on biodiversity in general and plant diversity in particular. In order to facilitate the support of Vietnamese scientists to study plant diversity in Malaysia, as well as contribute to the development and application of useful plant species, while most plant taxonomists of Vietnam only know about Vietnamese plants, it is necessary to select a list of plant species that are distributed in both Vietnam and Malaysia. For that reason, we have studied on the diversity of taxon ranks of Magnoliophyta distributed in both Vietnam and Malaysia.

Objectives: Compare taxa of Magnoliophyta (also known as flowering plants) which are distributed in both Vietnam and Malaysia, contributing to the development of cooperation for the 2 countries on plant diversity research and orientation for application.

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2. Material and methods

2.1 The material studied

Specimens stored at the herbaria (HN herbarium of Institute of Ecology and Biological Resources (IEBR), Vietnam Academy of Science and Technology (VAST); VNM herbarium of Institute of Tropical Biology (ITB), VAST).

2.2 Research subjects

The plant taxa of the Magnoliophyta distributed in both Vietnam and Malaysia.

2.3 Research content

Building a list of plant species belonging to the Magnoliophyta distributed in both Vietnam and Malaysia; Evaluation of the diversity of taxon levels in the Magnoliophyta distributed in both Vietnam and Malaysia (species, genera, families, classes).

2.4 Research methods

- Establish list of species in both Vietnam and Malaysia based on references [1-51], investigations and study on specimens at the herbaria. Identify species based on the morphological comparison method. Scientific names of species and families according to the Checklist of plants in Vietnam (Nguyen TB, 2003, 2005) [1]. Names of 49 diseases according to Vo VC (2012) [26].
- Coding uses/diseases: C: Ornamental plant; Ed: Edible (fruit, seed); Es: Essential oil; G: Timber; Nh: Dye; S: Fibre; R: Vegetable; T: Medicinal plant; ThA: Food for animal.

1: Tranquillizer; 2: Vaginitis; 3: Paralytic; 4: Obese; 5: Flu; 6: Eyesore; 7: Toothache; 8: Detoxify; 9: Syphilis; 10: Asthma; 12: Gonorrhea; 13: Dysentery; 14: Galactopoietic; 15: Diuretic; 16: Mumps; 17: Snake bite; 18: Urolithiasis; 19: Malaria; 20: Rheumatism; 21: Diabetes; 22: Heart and blood pressure diseases; 23: Hemorrhoids; 24: Cancer; 25: Gastritis; 26: Hepatitis; 27: Keratitis; 28: Sore throat; 29: Encephalitis; 30: Nephritis; 31: Sinusitis; 32: Sterile; 33: Cirrhosis; 34: Brain hemorrhage; 35: Pimple; 36: Hemostatic; 37: Fracture; 38: Burned; 39: Pneumonia; 40: Bronchitis; 41: Hurt fall; 42: Irregular menstruation; 43: Kidney stone; 44: Measles; 45: Headache; 46: Inflammatory bowel; 47: Oedema; 48: Otitis; 49: Pertussis; 50: Scrofulous (Note: 11: a disease is not mentioned, therefore, there are 49 diseases / medical uses).

- Coding families, order of families according to the Checklist of plants in Vietnam (Nguyen TB, 2003, 2005) (appendix 1) [1].
- Investigations in Vietnam from 2007 to 2021 based on cooperation between Institute of Ecology and Biological Resources (IEBR) and Korea Research Institute of Bioscience and Biotechnology (KRIBB). Study on 11826 specimens of 3336 species collected from the investigations.
- Study on 19369 specimens of 5166 species stored at herbaria of Vietnam (HN, VNM).
- Application of Microsoft Access for data management and analysis.
- Based on the plant data of Magnoliophyta in Vietnam, statistic species distributed in Malaysia.
- Based on the plant data of Magnoliophyta in some neighboring countries, perform additional statistics of species also distributed in Vietnam and Malaysia.
- Compile a list of plant species belonging to Magnoliophyta distributed in both Vietnam and Malaysia. Collect data on their use values.
- Nomenclature correction according to Checklist of Plant Species of Vietnam, vol. 2, 3 (Nguyen TB (editor) et al., 2003, 2005) [1], <http://www.theplantlist.org> [49], <http://www.plantsoftheworldonline.org> [50], www.tropicos.org [51].
- Evaluation of the diversity of plant taxon levels and the uses for Magnoliophyta (species, genera, families, classes).
- Proposing some solutions for development.

3. Results and discussion

3.1 List of flowering plants distributed in both Vietnam and Malaysia (appendix 2)

Diversity of species, genera, families and classes of Magnoliophyta distributed in both Vietnam and Malaysia

The study has enumerated 1840 species, 876 genera, 162 families, 2 classes of Magnoliophyta, distributed in both Vietnam and Malaysia.

3.1.1 Diversity of classes (2 classes)

Magnoliopsida has 1222 species, accounting for 66.4% of the total species. Liliopsida has 618 species, accounting for 33.6% of the total species.

3.1.2 Diversity of families (162 families)

The 10 species-rich families are ORCHIDACEAE (208 species, 11.3%), CYPERACEAE (154 species, 8.4%), POACEAE (118 species, 6.4%), FABACEAE (107 species, 5.8%), EUPHORBIACEAE (93 species, 5.1%), RUBIACEAE (75 species, 4.1%), MORACEAE (71 species, 3.9%), ASTERACEAE (45 species, 2.4%), APOCYNACEAE (34 species, 1.8%), SCROPHULARIACEAE (33 species, 1.8%). The 11th family, MELIACEAE, also has 33 species, 1.8%. A total of 10 families includes 938 species, 51.0%.

3.1.3 Diversity of genera (876 genera)

The 10 genera with the highest number of species are *Ficus* (55 species, 2.99%), *Fimbristylis* (39 species, 2.12%), *Dendrobium* (27 species, 1.47%), *Cyperus* (23 species, 1.25%), *Bulbophyllum* (17 species, 0.92%), *Desmodium* (16 species, 0.87%), *Hedyotis* (15 species, 0.82%), *Aglaiia* (13 species, 0.71%), *Carex* (13 species, 0.71%), *Syzygium* (13 species, 0.71%). The 11th genus, *Crotalaria*, also has 13 species (0.71%). A total of 10 genera including 231 species, accounting for 12.55%.

3.1.4 Diversity of useful plants (2 classes, 150 families, 689 genera, 1213 species)

Diversity of classes

There are 2 classes. Magnoliopsida has 918 species, Liliopsida has 295 species.

Diversity of families

Among 150 families of useful plants, the 10 families with the highest number of species are FABACEAE (97 species), ORCHIDACEAE (85 species), EUPHORBIACEAE (64 species), POACEAE (60 species), POACEAE (60 species), CYPERACEAE (58 species), RUBIACEAE (52 species), MORACEAE (49 species), ASTERACEAE (43 species), APOCYNACEAE (27 species), VERBENACEAE (26 species). Each of the remaining families has less than 26 species.

Diversity of genera

Among 689 useful genera, the 10 genera with the highest number of species are *Ficus* 36 species, *Dendrobium* 16 species, *Desmodium* 14 species, *Fimbristylis* 12 species, *Crotalaria* 12 species, *Cyperus* 10 species, *Citrus* 9 species, *Hedyotis* 9 species, *Syzygium* 9 species, *Symplocos* 8 species. Each of the other genera has less than 8 species.

Diverse in use value

- Medicinal plants 869 species (2 classes, 133 families, 553 genera).

10 families with the highest number of species: FABACEAE 81 species, EUPHORBIACEAE 51 species, RUBIACEAE 41 species, ASTERACEAE 37 species, ORCHIDACEAE 33 species, CYPERACEAE 32 species, MORACEAE 30 species, POACEAE 27 species, APOCYNACEAE 26 species, VERBENACEAE 25 species. Each of the other families has less than 25 species.

10 genera with the highest number of species: *Ficus* 20 species, *Crotalaria* 12 species, *Desmodium* 12 species, *Hedyotis* 9 species, *Citrus* 8 species, *Lindernia* 7 species, *Alpinia* 6 species, *Ardisia* 6 species, *Clerodendrum* 6 species, *Dendrobium* 6 species. Each of the 2 genera *Fimbristylis* and *Phyllanthus* has 6 species. Each of the remaining genera has less than 6 species.

- Plants for timber 127 species (1 class, 39 families, 87 genera).

10 families with the highest number of species: EUPHORBIACEAE 23 species, MELIACEAE 10 species, DIPTEROCARPACEAE 9 species, LAURACEAE 8 species, RHIZOPHORACEAE 7 species, MIMOSACEAE 6 species,

CAESALPINIACEAE 5 species, FABACEAE 5 species, SYMPLOCACEAE 5 species, APOCYNACEAE 4 species (MYRTACEAE). Each of the other families has less than 4 species.

10 genera with the highest number of species: *Symplocos* 5 species, *Aglaias* 4 species, *Bruguiera* 4 species, *Cinnamomum* 4 species, *Syzygium* 4 species, *Albizia* 3 species, *Alstonia* 3 species, *Aporosa* 3 species, *Bridelia* 3 species, *Dillenia* 3 species. 4 genera also have 3 species: *Dysoxylum*, *Elaeocarpus*, *Shorea*, *Vatica*. Each of the other genera has less than 3 species.

- Ornamental plants 156 species (2 classes, 31 families, 104 genera).

10 families with the highest number of species: ORCHIDACEAE 70 species, FABACEAE 9 species, MORACEAE 9 species, ARECACEAE 7 species, CAESALPINIACEAE 7 species, ASTERACEAE 6 species, LILIACEAE 5 species, ACANTHACEAE 4 species, VERBENACEAE 4 species, ZINGIBERACEAE 4 species. Each of the other families has less than 4 species.

10 genera with the highest number of species: *Dendrobium* 15 species, *Ficus* 7 species, *Coelogyne* 6 species, *Bulbophyllum* 4 species, *Cymbidium* 4 species, *Clerodendrum* 3 species, *Erythrina* 3 species, *Ixora* 3 species, *Spathoglottis* 3 species, *Alpinia* 2 species. The other 12 genera also have 2 species: *Alpinia*, *Calanthe*, *Cassia*, *Dracaena*, *Eria*, *Eulophia*, *Habenaria*, *Nervilia*, *Phaius*, *Pholidota*, *Plectranthus*, *Plumbago*, *Saraca*. Each of the remaining genera has 1 species.

- Edible plants (edible fruits, seeds) 103 species (2 classes, 37 families, 78 genera).

10 families with the highest number of species: MORACEAE 16 species, EUPHORBIACEAE 8 species, MYRTACEAE 7 species, SAPINDACEAE 7 species, RUBIACEAE 6 species, RUTACEAE 6 species, FLACOURTIACEAE 5 species, ANACARDIACEAE 4 species, SAPOTACEAE 4 species, VERBENACEAE 4 species. Each of the other families has less than 4 species.

10 genera with many species: *Ficus* 5 species, *Syzygium* 5 species, *Artocarpus* 4 species, *Flacourtieae* 3 species, *Nephelium* 3 species, *Alpinia* 2 species, *Antidesma* 2 species, *Canthium* 2 species, *Chrysophyllum* 2 species, *Citrus* 2 species. Each of the 5 other genera also has 2 species: *Clausena*, *Mangifera*, *Morus*, *Rubus*, *Streblus*. Each of the remaining genera has 1 species.

- Plants for essential oil 13 species (2 classes, 8 families, 12 genera).

5 families with the highest number of species are ASTERACEAE, CYPERACEAE, LAURACEAE, MELIACEAE, ZINGIBERACEAE. Each of the 3 families has 1 species: LAMIACEAE, MYRTACEAE, POACEAE.

12 genera, of which *Cinnamomum* has 2 species, Each of the remaining 11 genera has 1 species.

- Vegetables 92 species (2 classes, 44 families, 76 genera).

10 families with the highest number of species: ASTERACEAE 21 species, EUPHORBIACEAE 8 species, MORACEAE 6 species, CUCURBITACEAE 5 species, SCROPHULARIACEAE 4 species, APOCYNACEAE 3 species, ARACEAE 3 species, APIACEAE 2 species, CAESALPINIACEAE 2 species, FABACEAE 2 species. 2 other families with 2 species are MIMOSACEAE, RUBIACEAE. Each of the remaining families has 1 species.

10 genera with the highest number of species: *Ficus* 6 species, 2 genera with 3 species, *Blumea*, *Limnophila*. 7 genera with 2 species are *Acacia*, *Artemisia*, *Claoxylon*, *Gymnopetalum*, *Phyllanthus*, *Rauvolfia*, *Zehneria*. Each of the remaining genera has 1 species.

- Dyed plants 31 species (1 class, 12 families, 20 genera).

12 families: RHIZOPHORACEAE 8 species, MIMOSACEAE 5 species, CAESALPINIACEAE 4 species, 2 genera with 3 species are COMBRETACEAE, EUPHORBIACEAE, FABACEAE 2 species. Each of the other families has 1 species.

12 genera: *Bruguiera* 4 species, *Albizia* 3 species, *Terminalia* 3 species, 4 genera with 2 species are *Caesalpinia*, *Ceriops*, *Excoecaria*, *Rhizophora*. Each of the remaining genera has 1 species.

- Plants for fibre 3 species (2 classes, 3 families, 3 genera).

Each of the 3 families has 1 species: MORACEAE, PANDANACEAE, STERCULIACEAE.

Each of the 3 genera with 1 species: *Ficus*, *Pandanus*, *Sterculia*.

- Plants for food of animal and human with 79 species (2 classes, 15 families, 56 genera).

15 families: POACEAE 25 species, FABACEAE 20 species, CYPERACEAE 18 species, 4 families have 2 species ASTERACEAE, COMMELINACEAE, MIMOSACEAE, MORACEAE. Each of the other families has 1 species.

56 genera: *Cyperus* has 6 species, 2 genera have 5 species *Desmodium*, *Fimbristylis*. 10 genera have 2 species *Albizia*, *Capillipedium*, *Cyrtococcum*, *Dendrocalamus*, *Indigofera*, *Panicum*, *Pueraria*, *Sesbania*, *Setaria*, *Sporobolus*. Each of the other genera has 1 species.

3.2 Proposing some solutions for development (figure 1)

Although the proposals are theoretically, but if the cooperations and comprehensive support from many agencies are achieved, the development of the plants will bring positive results. However, in our opinion, it is necessary to have a group that understands plants, obtains the results of this study, and connects cooperations, supports of agencies to uses of plants.

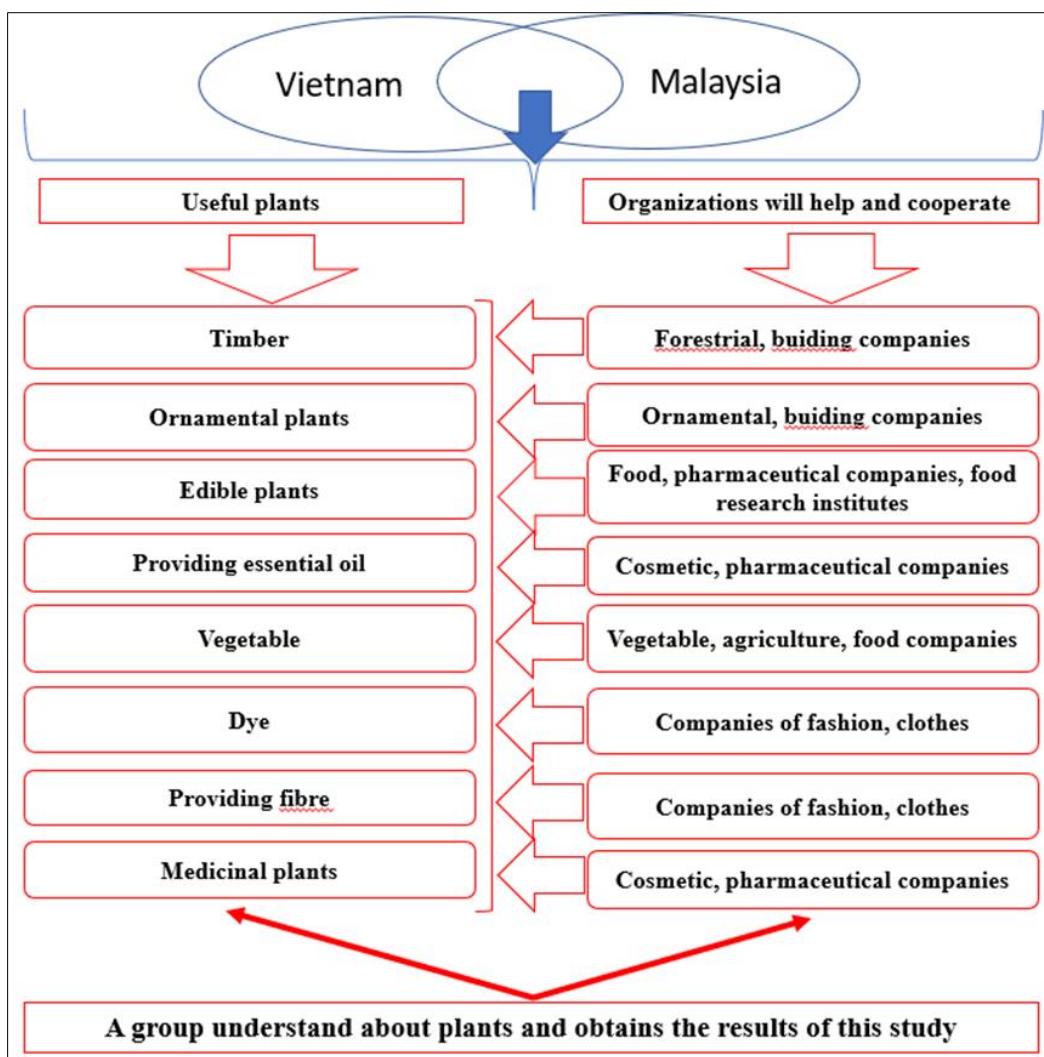


Figure 1 Cooperations and comprehensive supports from many organizations

Appendices

Appendix 1. Coding families, order of families according to the Checklist of plants in Vietnam (Nguyen TB, 2003, 2005) [1]. Families coded from 1 to 219 belong to Magnoliopsida, families coded from 220 to 265 belong to Liliopsida.

1: MAGNOLIACEAE. 2: ANNONACEAE. 5: HERNANDIACEAE. 6: CHLORANTHACEAE. 8: LAURACEAE. 9: SAURURACEAE. 10: PIPERACEAE. 11: ARISTOLOCHIACEAE. 14: NYMPHAEACEAE. 16: CERATOPHYLLACEAE. 17: ILLICIACEAE. 19: NELUMBONACEAE. 21: SARGENTODOXACEAE. 22: MENISPERMACEAE. 23: RANUNCULACEAE. 24: BERBERIDACEAE. 25: PAPAVERACEAE. 26: FUMARIACEAE. 28: ALTINGIACEAE. 29: PLATANACEAE. 31: ULMACEAE. 32: MORACEAE. 33: CANNABACEAE. 34: URTICACEAE. 35: CASUARINACEAE. 36: FAGACEAE. 37: BETULACEAE. 40: JUGLANDACEAE. 42: NYCTAGINACEAE. 43: MOLLUGINACEAE. 47: PORTULACEAE. 48: BASELLACEAE. 49: CARYOPHYLLACEAE. 50: AMARANTHACEAE. 51: CHENOPODIACEAE. 52: POLYGONACEAE. 54: DILLENIACEAE. 57: DIPTEROCARPACEAE. 59: THEACEAE. 62: CLUSIACEAE. 63: HYPERICACEAE. 64: ELATINACEAE. 65: FLACOURTIACEAE. 67: VIOLACEAE. 70: PASSIFLORACEAE. 72: CARICACEAE. 73: CUCURBITACEAE. 75: BEGONIACEAE. 76: CAPPARACEAE. 78: BRASSICACEAE. 80: SALICACEAE. 87: STYRACACEAE. 88: SYMPLOCACEAE. 89: EBENACEAE. 90: SAPOTACEAE. 91: MYRSINACEAE. 92: PRIMULACEAE. 94: TILIACEAE. 95: STERCULIACEAE. 96: BOMBACACEAE. 97: MALVACEAE. 100: EUPHORBIACEAE. 102: THYMELEACEAE. 105: ITEACEAE. 106: HYDRANGEACEAE. 109: CRASSULACEAE. 111: ROSACEAE. 113: MIMOSACEAE. 114: CAESALPINIACEAE. 115: FABACEAE. 116: CONNARACEAE. 120: LYTHRACEAE. 123: RHIZOPHORACEAE. 125: COMBRETACEAE. 126: MYRTACEAE. 127: MELASTOMATACEAE. 128: ONAGRACEAE. 131: HALORAGACEAE. 132: ANACARDIACEAE. 133: SIMAROUBACEAE. 134: RUTACEAE. 135: MELIACEAE. 136: STAPHYLEACEAE. 138: SAPINDACEAE. 139: HIPPOCASTANACEAE. 141: SABIACEAE. 143: LINACEAE. 148: OXALIDACEAE. 151: BALSAMINACEAE. 152: POLYGALACEAE. 156: AUCUBACEAE. 157: ALANGIACEAE. 161: ARALIACEAE. 162: APIACEAE. 163: AQUIFOLIACEAE. 164: ICACINACEAE. 166: CELASTRACEAE. 168: RHAMNACEAE. 169: VITACEAE. 170: LEEACEAE. 171: OLEACEAE. 174: OPILIACEAE. 175: ERYTHROPALACEAE. 176: CARDIOPTERIDACEAE. 179: LORANTHACEAE. 182: ELAEAGNACEAE. 183: PROTEACEAE. 184: CAPRIFOLIACEAE. 185: VALERIANACEAE. 187: LOGANIACEAE. 189: APOCYNACEAE. 190: ASCLEPIADACEAE. 191: GENTINIACEAE. 192: MENYANTHACEAE. 193: RUBIACEAE. 195: CONVOLVULACEAE. 196: CUSCUTACEAE. 197: HYDROPHYLLACEAE. 198: BORAGINACEAE. 199: SOLANACEAE. 200: BUDDLEJACEAE. 201: SCROPHULARIACEAE. 202: BIGNONIACEAE. 203: PEDALIACEAE. 205: GESNERIACEAE. 207: LENTIBULARIACEAE. 209: ACANTHACEAE. 211: VERBENACEAE. 212: LAMIACEAE. 213: CALLITRICHACEAE. 214: CAMPANULACEAE. 219: ASTERACEAE. 221: ALISMATACEAE. 229: CONVALLARIACEAE. 229: LILIACEAE. 230: HYPOXIDACEAE. 232: SMILACACEAE. 233: STEMONACEAE. 234: DIOSCOREACEAE. 235: TACCACEAE. 238: IRIDACEAE. 244: COSTACEAE. 245: ZINGIBERACEAE. 246: CANNACEAE. 247: MARANTACEAE. 248: ORCHIDACEAE. 249: JUNCACEAE. 250: CYPERACEAE. 251: BROMLELIACEAE. 252: COMMELINACEAE. 259: POACEAE. 260: ARECACEAE. 261: ARACEAE. 262: LEMNACEAE. 265: TYPHACEAE.

Appendix 2. Data of flowering plants in both Vietnam and Malaysia for each species are “Coded family- Scientific name-Coded Use (present or absent)- Coded Medical value (present or absent) /”

115-Abrus precatorius- T 35 / 115-Abrus pulchellus- T 15 20 26 / 113-Acacia concinna- T Ed R / 113-Acacia donnaiensis- / 113-Acacia pennata- T R 17 / 113-Acacia pluricapitata- T 17 / 100-Acalypha grandis- T / 100-Acalypha lanceolata- T / 100-Acalypha siamensis- T 15 / 248-Acampe rigida- C 17 37 41 / 161-Acanthopanax lasiogyne- T / 161-Acanthopanax trifoliatus- T 2 18 20 32 35 41 46 / 248-Acanthophippium striatum- / 209-Acanthus ebracteatus- T / 252-Aclisia secundiflora- / 126-Acmena acuminatissima- Ed / 248-Acriopsis indica- / 248-Acriopsis javanica- / 212-Acrocephalus indicus- T Ed 15 / 259-Acroceras zizanioides- / 113-Adenanthera microsperma-G T C Nh 13 / 113-Adenanthera pavonina-G T 20 / 70-Adenia cordifolia- / 70-Adenia parviflora- T / 70-Adenia penangiana- / 248-Adenoncos vesiculos- / 201-Adenosma caeruleum- T 3 17 20 26 / 201-Adenosma hirsutum- / 201-Adenosma indiana- T 46 / 201-Adenosma javanicum- / 219-Adenostemma lavenia- T R 17 / 59-Adinandra hainanensis- T / 59-Adinandra integerrima- T / 91-Aegiceras corniculatum- T / 206-Aeginetia indica- T 17 21 28 35 / 248-Aerides odorata- T C 17 / 205-Aeschynanthus longicaulis- C / 115-Aeschynomene indica- T / 115-Aganope thyrsiflora- T / 189-Agnosma acuminata- T / 116-Agelaea macrophylla- T 20 / 219-Ageratum conyzoides- T ThA 31 / 135-Aglia argentea-G / 135-Aglia crassinervia- / 135-Aglia elaeagnoidea-G T / 135-Aglia hiernii- / 135-Aglia lawii-G / 135-Aglia leptantha- / 135-Aglia macrocarpa- / 135-Aglia odorata- T C Es 10 41 / 135-Aglia odoratissima- / 135-Aglia oligophylla-G / 135-Aglia rufinervis- / 135-Aglia silvestris- T Ed 17 / 135-Aglia tomentosa- / 261-Aglaonema brevispathum- / 261-Aglaonema marantifolium- / 100-Agrostistachys indica- / 133-Ailanthes triphysa-G T 2 13 / 157-Alangium ridleyi- / 113-Albizia chinensis-G T Nh 17 / 113-Albizia corniculata- T C 17 / 113-Albizia lebbekoides-G T Nh 17 / 113-Albizia lucidior- ThA / 113-Albizia procera-G T Nh ThA 17 / 100-Alchornea rugosa- T / 201-Alectra arvensis- T 26 41 / 100-Aleurites moluccana-G T / 229-Allium odorum- T R 2 / 138-Allophylus cobbe- T / 259-Alloteropsis semialata- / 261-Alocasia evrardii- / 261-Alocasia indica- / 261-Alocasia longiloba- T R / 245-

Alpinia chinensis- T 20 42 / 245-*Alpinia conchigera*- T 20 45 / 245-*Alpinia galanga*- T Ed 7 8 13 / 245-*Alpinia latilabris*- / 245-*Alpinia malaccensis*- T C Ed / 245-*Alpinia mutica*- T / 245-*Alpinia pinnanensis*- T C / 189-*Alstonia angustifolia*- G T / 189-*Alstonia macrophylla*-G T / 189-*Alstonia spathulata*-G T / 28-*Altingia excelsa*- T 10 19 / 115-*Alysicarpus bupleurifolius*- ThA / 252-*Amischotolype mollissima*- / 245-*Amomum aculeatum*- / 245-*Amomum biflorum*- T Es / 245-*Amomum lappaceum*- T / 245-*Amomum testaceum*- T / 169-*Ampelocissus barbata*- / 169-*Ampelocissus polythyrsa*- T 20 / 261-*Anadendrum angustifolium*- / 261-*Anadendrum latifolium*- C / 261-*Anadendrum montanum*- T R 17 19 / 58-*Ancistrocladus tectorius*- T / 209-*Andrographis paniculata*- T 8 11 13 28 35 / 212-*Anisochilus pallidus*- T 17 20 43 / 189-*Anodendron manubriatum*- T / 248-*Anoectochilus brevistylus*- / 248-*Anoectochilus setaceus*- T C 20 25 41 / 2-*Anomianthus dulcis*- T Ed / 32-*Antiaris toxicaria*- T Ed 13 / 100-*Antidesma acidum*- T / 100-*Antidesma bunius*- T Ed / 100-*Antidesma ghaesembilla*- T Ed R / 100-*Antidesma montanum*- T / 100-*Antidesma thwaitesianum*- G T / 100-*Antidesma velutinosum*- / 135-*Aphanamixis grandiflora*- T 17 / 135-*Aphanamixis polystachya*- T 20 / 248-*Aphyllorchis montana*- / 259-*Apluda mutica*- T ThA 17 / 259-*Apocopis courtallumensis*- / 100-*Aporosa dioica*-G T Ed / 100-*Aporosa planchoniana*-G / 100-*Aporosa tetrapleura*-G / 100-*Aporosa wallichii*- / 248-*Apostasia nuda*- / 248-*Apostasia odorata*- / 248-*Apostasia wallichii*- / 248-*Appendicula cornuta*- T C 17 / 248-*Appendicula reflexa*- / 102-*Aquilaria malaccensis*- T 17 / 248-*Arachnis hookeriana*- / 248-*Arachnis maingayi*- C / 161-*Aralia armata*- T R 17 19 20 26 28 30 35 47 / 161-*Aralidium pinnatifidum*- T / 113-*Archidendron clypearia*-G T Nh / 91-*Ardisia andamanica*- / 91-*Ardisia chinensis*- / 91-*Ardisia colorata*- T 12 / 91-*Ardisia crenata*- T Ed 37 41 / 91-*Ardisia crispa*- T R 7 13 35 / 91-*Ardisia elegans*- T 41 / 91-*Ardisia elliptica*- / 91-*Ardisia insularis*- / 91-*Ardisia quinquegona*- T 7 / 91-*Ardisia solanacea*- T 13 / 91-*Ardisia villosa*- T 41 / 260-*Areca triandra*- T C / 260-*Arenga pinnata*- T C 15 / 193-*Argostemma verticillatum*- / 198-*Argusia argentea*- T 17 / 195-*Argyreia lanceolata*- / 195-*Argyreia malabarica*- T / 259-*Aristida chinensis*- / 259-*Aristida cumingiana*- / 201-*Artanema longifolium*- T 6 9 18 20 / 219-*Artemisia carvifolia*- T R / 219-*Artemisia vulgaris*- T Es R 20 / 32-*Artocarpus gomezianus*- Ed / 32-*Artocarpus integer*- T Ed 1 14 22 / 32-*Artocarpus lowii*- / 32-*Artocarpus nitidus*- T Ed / 32-*Artocarpus rigidus*-G T Ed 17 / 248-*Arundina graminifolia*- T C 17 20 26 47 / 138-*Arytera littoralis*- / 11-*Asarum blumei*- T 40 / 248-*Ascocentrum miniatum*- C / 209-*Asystasia gangetica*- T C 8 / 134-*Atalantia ceylanica*- / 134-*Atalantia monophylla*- T 3 / 134-*Atalantia roxburghiana*- T Ed / 190-*Atherandra acutifolia*- / 148-*Averrhoa bilimbi*- T 23 / 211-*Avicennia alba*- / 211-*Avicennia marina*- T Ed Nh 13 / 259-*Axonopus affinis*- / 135-*Azadirachta excelsa*- / 135-*Azadirachta indica*- T 17 19 20 / 165-*Azima sarmentosa*- T Ed 20 35 / 100-*Baccaurea ramiflora*-G T Ed R / 201-*Bacopa floribunda*- / 181-*Balanophora abbreviata*- / 181-*Balanophora indica*- T / 181-*Balanophora latisepala*- T / 259-*Bambusa bambos*- T ThA / 259-*Bambusa lineata*- / 259-*Bambusa multiplex*- T C / 15-*Barclaya longifolia*- / 130-*Barringtonia acutangula*- T R 17 / 130-*Barringtonia asiatica*-G / 130-*Barringtonia macrocarpa*- / 130-*Barringtonia macrostachya*- / 130-*Barringtonia musiformis*- / 130-*Barringtonia pauciflora*-G / 130-*Barringtonia racemosa*- T 10 17 44 / 212-*Basilicum polystachyon*- T 2 20 / 114-*Bauhinia bassacensis*- T / 114-*Bauhinia curtisiae*- T 13 / 114-*Bauhinia glauca*- T / 114-*Bauhinia hirsuta*- T 17 / 75-*Begonia guttata*- T 17 / 75-*Begonia sinuata*- / 8-*Beilschmiedia robertsonii*- / 8-*Beilschmiedia tonkinensis*- / 252-*Belosynapsis ciliata*- / 166-*Bhesa robusta*- C / 219-*Bidens biternata*- T 17 46 / 219-*Bidens pilosa*- T R 23 / 148-*Biophytum adiantoides*- / 148-*Biophytum sensitivum*- T 12 15 21 35 43 46 / 100-*Bischofia javanica*-G T Ed R / 219-*Blumea balsamifera*- T Es 5 / 219-*Blumea fistulosa*- T R / 219-*Blumea lacera*- T R 8 35 / 219-*Blumea laevis*- / 219-*Blumea repanda*- R / 219-*Blumea sinuata*- T 5 8 20 35 / 222-*Blyxa alternifolia*- / 222-*Blyxa aubertii*- / 222-*Blyxa echinosperma*- / 222-*Blyxa lancifolia*- / 42-*Boerhavia erecta*- / 245-*Boesenbergia rotunda*- T 2 13 15 / 96-*Bombax ceiba*- T / 96-*Bombax thorelii*- T R 13 14 21 / 193-*Borreria ocymoides*- T 45 / 193-*Borreria stricta*- T R 17 41 / 132-*Bouea oppositifolia*-G T Ed 38 / 115-*Bowringia callicarpa*- T 20 / 248-*Brachypeza laotica*- T C 17 / 161-*Brassaiopsis mitis*- / 100-*Breynia angustifolia*- / 100-*Breynia fruticosa*- T / 100-*Breynia vitis-idaea*- T / 100-*Bridelia monoica*-G T / 100-*Bridelia ovata*-G T / 100-*Bridelia penangiana*-G Ed Nh / 100-*Bridelia retusa*- T / 100-*Bridelia stipularis*- T / 123-*Bruguiera cylindrica*-G T R Nh / 123-*Bruguiera gymnorhiza*-G T Nh ThA / 123-*Bruguiera parviflora*-G Nh / 123-*Bruguiera sexangula*-G Nh / 132-*Buchanania arborescens*- / 132-*Buchanania lucida*- / 200-*Buddleja asiatica*- T 6 20 35 37 44 / 248-*Bulbophyllum abbrevilabium*- / 248-*Bulbophyllum apodium*- / 248-*Bulbophyllum blepharistes*- / 248-*Bulbophyllum careyanum*- / 248-*Bulbophyllum concinnum*- T 25 40 / 248-*Bulbophyllum crassipes*- / 248-*Bulbophyllum ignivenosum*- / 248-*Bulbophyllum khasyanum*- / 248-*Bulbophyllum laxiflorum*- / 248-*Bulbophyllum lepidum*- C / 248-*Bulbophyllum lobbii*- / 248-*Bulbophyllum macranthum*- / 248-*Bulbophyllum putidum*- C / 248-*Bulbophyllum retusiusculum*- C / 248-*Bulbophyllum sessile*- / 248-*Bulbophyllum stenobulbon*- C / 248-*Bulbophyllum tortuosum*- / 250-*Bulbostylis densa*- T / 250-*Bulbostylis puberula*- / 239-*Burmannia oblonga*- / 239-*Burmannia wallichii*- / 114-*Caesalpinia andamanica*- / 114-*Caesalpinia crista*- T 15 / 114-*Caesalpinia cucullata*- T / 114-*Caesalpinia decapetala*- T 13 19 44 / 114-*Caesalpinia digyna*- T Nh 21 50 / 114-*Caesalpinia enneaphylla*- / 114-*Caesalpinia hymenocarpa*- / 114-*Caesalpinia latisiliqua*- / 114-*Caesalpinia major*- T / 114-*Caesalpinia pubescens*- / 114-*Caesalpinia sappan*-G T Nh 13 / 115-*Cajanus goensis*- T / 115-*Cajanus scarabaeoides*- T 20 / 115-*Cajanus volubilis*- T / 260-*Calamus scipionum*- / 260-*Calamus viminalis*- T Ed / 248-*Calanthe lyroglossa*- C / 248-*Calanthe rubens*- / 248-*Calanthe vestita*- T C / 221-*Caldesia parnassifolia*- / 219-*Calendula officinalis*- T C 1 38 / 115-*Callerya atropurpurea*-G T C / 115-*Callerya dasypylla*- / 211-*Callicarpa arborea*- T 20 41 / 211-*Callicarpa candicans*- T 35 49 / 211-*Callicarpa longifolia*- T 9 / 211-*Callicarpa rubella*- T Ed 2 8 20 / 213-*Callitricha stagnalis*- T R / 248-*Calostylis rigida*- / 62-*Calophyllum*

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fistula- T C Nh 17 / 114-Cassia grandis- T C Ed 13 17 19 44 / 166-Cassine glauca-G / 36-Castanopsis hystrix-G Nh / 36-Castanopsis scorechinii- / 189-Catharanthus roseus- T C / 169-Cayratia wrayi- T / 166-Celastrus paniculatus- T / 31-Celtis timorensis-G T 23 41 / 259-Centosteca longilamina- / 201-Centrathera tranquebarica- / 190-Centrostemma multiflorum- T 15 20 / 193-Cephalanthus tetrandra- / 248-Ceratostylis himalaica- / 248-Ceratostylis subulata- / 123-Ceriops decandra-G Nh / 123-Ceriops tagal- T Nh 19 / 100-Chaetocarpus castanocarpus-G / 114-Chamaecrista mimosoides- T ThA 17 30 47 / 114-Chamaecrista pumila- T / 193-Chasallia curviflora- T Ed 17 19 45 / 189-Chilocarpus denudans- T / 205-Chirita lavandulacea- / 135-Chisocheton divergens- / 135-Chisocheton erythrocarpus- / 135-Chisocheton glomeratus- / 6-Chloranthus elatior- T 18 20 41 / 259-Chloris barbata- T / 229-Chlorophytum malayense- / 115-Christia obcordata- T / 115-Christia vespertilionis- T C 17 19 / 219-Chrysanthemum 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discolor- / 248-Cleisostoma striatum- / 248-Cleisostoma williamsonii- / 100-Cleistanthus hirsutulus- / 100-Cleistanthus myrianthus- / 100-Cleistanthus sumatratus-G T / 211-Clerodendrum chinense- T C 2 17 20 22 35 42 / 211-Clerodendrum indicum- T C 10 20 / 211-Clerodendrum inerme- T 20 26 41 / 211-Clerodendrum japonicum- T C 2 13 20 22 23 35 42 / 211-Clerodendrum petasites- T 13 26 / 211-Clerodendrum serratum- T R 6 17 19 20 26 28 37 / 209-Clinacanthus nutans- T 38 / 212-Clinopodium gracile- T R 13 35 41 / 115-Clitoria ternatea- T C Nh / 100-Cnesmossa javanica- T / 116-Cnestis palala- T 13 35 / 260-Cocos nucifera- T 12 15 38 44 45 / 115-Codariocalyx gyroides- T ThA / 115-Codariocalyx motorius- T 20 37 / 248-Coelogyne fimbriata- T C / 248-Coelogyne massangeana- T C 17 / 248-Coelogyne nitida- T C 37 41 / 248-Coelogyne pallens- / 248-Coelogyne speciosa- T C 17 / 248-Coelogyne trinervis- T C 17 / 248-Coelogyne viscosa- T C 39 / 259-Coelorachis cancellata- / 259-Coelorachis muricata- / 193-Coelospermum truncatum- / 198-Coldenia procumbens- T 20 35 / 212-Colquhounia elegans- T 13 41 / 168-Colubrina asiatica- T 33 / 125-Combretum acuminatum- T / 125-Combretum latifolium- T / 125-Combretum punctatum- / 125-Combretum sundaicum- T / 125-Combretum tetralophum- T / 125-Combretum trifoliatum- T 13 28 / 252-Commelina obliqua- T 35 / 95-Commersonia platiphylla- / 116-Connarus cochinchinensis- T / 116-Connarus paniculatus- / 116-Connarus semidecandrus- T R / 219-Conzya canadensis- T 7 13 18 20 26 40 / 219-Conzya sumatrensis- T / 193-Coptosapelta flavescentia- T 20 31 47 / 198-Cordia subcordata- / 22-Coscinium blumeana- / 22-Coscinium fenestratum- T 13 17 46 / 244-Costus speciosus- T 17 33 35 49 / 219-Crassocephalum crepidioides- T R 17 / 63-Cratoxylum formosum- / 63-Cratoxylum maingayi- / 63-Cratoxylum pruniflorum-G T R 46 / 229-Crinum amabile- C / 115-Crotalaria alata- T / 115-Crotalaria albida- T 17 19 35 / 115-Crotalaria bracteata- T / 115-Crotalaria calycina- T / 115-Crotalaria chinensis- T / 115-Crotalaria ferruginea- T 30 35 / 115-Crotalaria incana- T ThA 13 17 / 115-Crotalaria montana- T / 115-Crotalaria nana- / 114-Crotalaria pallida- T 13 / 115-Crotalaria quinquefolia- T 17 / 115-Crotalaria sessilifolia- T 24 35 / 115-Crotalaria spectabilis- T / 100-Croton cascarilloides- T / 100-Croton caudatus- T / 100-Croton glandulosus- T / 100-Croton heterocarpus- / 8-Cryptocarya ferrea- / 8-Cryptocarya impressa-G / 8-Cryptocarya obovata- / 261-Cryptocoryne griffithii- / 248-Cryptostylis arachnites- / 115-Cullen corylifolium- T 42 / 230-Curculigo capitulata- T 15 20 30 43 / 230-Curculigo latifolia- T Ed / 230-Curculigo orchioides- T 20 30 / 245-Curcuma aeruginosa- T / 245-Curcuma zanthorrhiza- T / 245-Curcuma zedoaria- T 17 / 196-Cuscuta reflexa- T / 252-Cyanotis cristata- T C R ThA / 2-Cyathocalyx sumatrana- / 2-Cyathostemma argenteum- / 115-Cyclocarpa stellaris- / 248-Cymbidium atropurpureum- / 248-Cymbidium dayanum- C / 248-Cymbidium ensifolium- T 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pulcherrimus- / 250-Cyperus pygmaeus- / 250-Cyperus radians- / 250-Cyperus rotundus- T Es ThA / 250-Cyperus sphacelatus- / 250-Cyperus squarrosus- / 250-Cyperus tenuiculmis- / 250-Cyperus tenuispica- / 250-Cyperus trialatus- / 250-Cyperus zollingeri- / 259-Cyrtococcum oxyphyllum- / 259-Cyrtococcum patens- ThA / 259-Cyrtococcum trigonum- ThA / 248-Cyrtosia javanica- / 260-Cyrtostachys renda- C / 132-Dacryodes rostrata- / 260-Daemonorops geniculatus- / 260-Daemonorops longispathus- / 115-Dalbergia candenatensis- T 10 / 115-Dalbergia pinnata- T 20 41 / 115-Dalbergia velutina- / 102-Daphne composita- T / 34-Debregeasia squamata- / 126-Decaspermum montanum- / 8-Dehaasia curtisia- / 248-Dendrobium aloifolium- T C 17 / 248-Dendrobium anosmum- T C 17 / 248-Dendrobium aphyllum- T C 17 38 / 248-Dendrobium concinnum- C / 248-Dendrobium crumenatum- T C 17 35 / 248-Dendrobium excavatum- / 248-Dendrobium farmeri- T C 17 / 248-Dendrobium fimbriatum- T C / 248-Dendrobium hendersonii- / 248-Dendrobium 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trifoliata- T 7 13 19 / 115-Desmodium auricomum- T ThA / 115-Desmodium caudatum- T 13 20 26 / 115-Desmodium diffusum- T / 115-Desmodium gangeticum- T ThA 15 17 47 / 115-Desmodium heterocarpum- T ThA 13 17 28 29 35 41 43 / 115-Desmodium heterophyllum- T ThA 14 15 35 / 115-Desmodium laxiflorum- T 17 41 / 115-Desmodium laxum- T 17 26 / 115-Desmodium megaphyllum- / 115-Desmodium microphyllum- T 7 10 13 17 23 25 30 41 42 45 / 115-Desmodium reniforme- / 115-Desmodium repandum- ThA / 115-Desmodium sequax- T 10 / 115-Desmodium styracifolium- T 26 30 47 / 115-Desmodium velutinum- T / 115-Desmodium zonatum- T 7 45 / 2-Desmos chinensis- T 13 / 2-Desmos dumosus- T / 115-Dicerma biarticulatum- T / 101-Dichapetalum helferianum- / 106-Dichroa febrifuga- T ThA 19 / 219-Dichrocephala benthamii- T R 17 26 35 / 259-Digitaria abludens- / 259-Digitaria barbata- / 259-Digitaria bicornis- T 17 / 259-Digitaria mollicoma- / 259-Digitaria radicosa- / 259-Digitaria setigera- / 54-Dillenia indica-G T Ed 8 19 47 / 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cochininchinensis- T C / 100-Excoecaria indica- T Nh / 100-Excoecaria oppositifolia- / 188-Fagraea auriculata- T / 188-Fagraea ceylanica- T 12 / 188-Fagraea crenulata- / 188-Fagraea fragrans- T 13 19 / 32-Fatoua villosa- T / 202-Fernandoa adenophylla- T / 22-Fibraurea tinctoria- T R 13 19 46 / 32-Ficus altissima- T C 8 / 32-Ficus annulata- R / 32-Ficus aurantiacea- / 32-Ficus aurata- / 32-Ficus benghalensis- T C 12 13 20 21 / 32-Ficus benjamina- T C / 32-Ficus binnendykii- / 32-Ficus callophylla- / 32-Ficus callosa- / 32-Ficus chartacea- / 32-Ficus consociate- / 32-Ficus crassiramea- / 32-Ficus curtipes- Ed / 32-Ficus depressa- / 32-Ficus drupacea- T 33 / 32-Ficus elastica- T C 15 33 35 / 32-Ficus fistulosa- T Ed R / 32-Ficus fulva- T Ed ThA 20 23 / 32-Ficus glaberrima- / 32-Ficus glandulifera- / 32-Ficus globosa- / 32-Ficus henryi- T / 32-Ficus heterophylla- T 2 20 / 32-Ficus heteropleura- T 17 / 32-Ficus hirta- T 2 20 41 / 32-Ficus ischnopoda- T / 32-Ficus kurzii- / 32-Ficus lacor- / 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T / 250-Fimbristylis eragrostis- / 250-Fimbristylis fenestrata- / 250-Fimbristylis ferruginea- / 250-Fimbristylis fusca- T / 250-Fimbristylis fuscoidea- / 250-Fimbristylis globulosa- T / 250-Fimbristylis griffithii- / 250-Fimbristylis insignis- / 250-Fimbristylis leptoclada- / 250-Fimbristylis malayana- / 250-Fimbristylis microcarya- / 250-Fimbristylis nutans- / 250-Fimbristylis obtusata- / 250-Fimbristylis ovata- / 250-Fimbristylis pauciflora- / 250-Fimbristylis polytrichoides- / 250-Fimbristylis quinquangularis- ThA / 250-Fimbristylis rigidula- T / 250-Fimbristylis scaberrima- / 250-Fimbristylis schoenoides- / 250-Fimbristylis sericea- Es ThA / 250-Fimbristylis sieberiana- / 250-Fimbristylis subdura- / 250-Fimbristylis tetragona- T / 250-Fimbristylis thomsonii- / 250-Fimbristylis tomentosa- / 250-Fimbristylis trichophylla- / 250-Fimbristylis tristachya- / 190-Finlaysonia obovata- / 2-Fissistigma latifolium- / 2-Fissistigma rubiginosum- / 65-Flacourzia indica- T Ed 20 / 65-Flacourzia jangomas- T Ed / 65-Flacourzia montana- / 65-Flacourzia rukam- T Ed 6 13 / 115-Flemingia involucrata- / 115-Flemingia macrophylla- T 20 / 115-Flemingia stricta- T / 115-Flemingia strobilifera- T 20 / 248-Flickingeria angustifolia- / 248-Flickingeria bancana- / 248-Flickingeria fimbriata- T / 248-Flickingeria forcipata- / 263-Freycinetia sumatrana- / 2-Friesodielsia affinis- / 250-Fuirena ciliaris- / 250-Fuirena umbellata- T ThA / 250-Gahnia baniensis- / 250-Gahnia javanica- / 250-Gahnia tristis- T / 115-Galactia tenuiflora- / 100-Galearia fulva- / 248-Galeola nudifolia- / 62-Garcinia hainanensis- T 40 / 62-Garcinia merguensis-G T Ed / 62-Garcinia nigrolineata- / 193-Gardenia tubifera- / 132-Garuga pinnata- T Ed 10 35 38 / 248-Gastrochilus calceolaris- C / 248-Gastrorchis gracilis- / 187-Gelsemium elegans- T 23 41 50 / 248-Geodorum densiflorum- / 259-Gigantochloa atter- / 259-Gigantochloa levis- / 259-Gigantochloa pseudo-arundinacea- / 180-Ginalloa siamica- / 31-Gironniera nervosa- T / 43-Glinus oppositifolius- T R / 245-Globba pendula- T C 8 20 / 100-Glochidion glomerulatum- T / 100-Glochidion lutescens- T 17 / 100-Glochidion obscurum- T / 100-Glochidion zeylanicum-G T / 229-Gloriosa superba- T C / 219-Glossogyne tenuifolia- T 17 35 41 46 / 132-Gluta wrayi- / 134-Glycosmis crassifolia- / 134-Glycosmis parviflora- T Ed 41 / 134-Glycosmis puberula- / 134-Glycosmis rupestris- / 211-Gmelina arborea- T 12 17 / 211-Gmelina asiatica- T 12 20 / 211-Gmelina elliptica- T 7 / 211-Gmelina philippensis- T / 219-Gnaphalium polycaulon- T R 2 10 13 20 / 164-Gomphandra quadrifida- / 56-Gomphia serrata- T 7 / 73-Gomphogynne cissiformis- / 212-Gomphostemma crinitum- / 212-Gomphostemma javanicum- / 212-Gomphostemma parviflorum- / 2-Goniothalamus tenuifolius- / 34-Gonostegia pentadra- T R / 248-Goodyera hispida- / 168-Gouania javanica- T 38 / 168-Gouania leptostachya- T 38 / 248-Grammatophyllum speciosum- / 209-Graptophyllum pictum- T C T / 193-Greenea corymbosa- T 19 / 94-Grewia 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saribus- T C 2 / 215-Lobelia alsinoides- / 215-Lobelia griffithii- T 17 / 184-Lonicera acuminata- T / 184-Lonicera confusa- T 35 / 259-Lophatherum gracile- T 8 15 / 166-Lophopetalum wightianum- / 248-Ludisia discolor- T C 17 / 128-Ludwigia adscendens- T R 17 44 / 248-Luisia antennifera- / 248-Luisia curtisii- / 248-Luisia zollingeri- / 125-Lumnitzera littorea- T R / 134-Luvunga sarmentosa- T 7 / 134-Luvunga scandens- T 33 41 / 92-Lysimachia peduncularis- / 100-Macaranga andamanica- / 100-Macaranga auriculata-G / 100-Macaranga tanarius- T / 100-Macaranga trichocarpa-G / 250-Machaerina falcata- / 250-Machaerina maingayi- / 250-Machaerina rubiginosa- / 8-Machilus odoratissima-G T / 32-Maclura cochinchinensis- T Ed 17 20 35 41 / 179-Macrosolen avenis- / 179-Macrosolen cochininchinensis- / 179-Macrosolen dianthus- / 179-Macrosolen robinsonii- T 15 / 91-Maesia ramentacea- T / 248-Malaxis latifolia- T C 17 / 248-Malleola dentifera- / 248-Malleola insectifera- / 248-Malleola sylvestris- / 100-Mallotus barbatus- T / 100-Mallotus cuneatus- / 100-Mallotus floribundus- T / 100-Mallotus macrostachyus- T 17 / 100-Mallotus mollissimus- / 100-Mallotus oblongifolius- T / 100-Mallotus paniculatus- T / 100-Mallotus peltatus- / 100-Mallotus resinosus- / 132-Mangifera foetida- T Ed 7 / 132-Mangifera indica- T Ed 13 40 / 132-Mangifera longipes- T / 132-Mangifera odorata- / 90-Manilkara kauki- T Ed / 250-Mapania kurzii- / 250-Mapania macrocephala- / 250-Mapania palustris- / 100-Margaritaria indica- / 250-Mariscus compactus- T C / 250-Mariscus cyperinus- T 35 / 250-Mariscus dregeanus- / 250-Mariscus javanicus- / 250-Mariscus umbellatus-

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polycarpa- / 202-Oroxylum indicum- T Ed Nh 13 17 26 28 40 49 / 212-Orthosiphon spiralis- T 18 30 43 / 212-Orthosiphon thymiflorus- T / 259-Oryza ridleyi- / 127-Osbeckia chinensis- T 13 17 35 40 46 49 / 100-Ostodes paniculata- / 259-Ottochloa nodosa- / 127-Pachycentria tuberculata- / 22-Pachygone dasycarpa- T / 1-Pachylarnax praecalva-G / 193-Paederia foetida- T R 13 20 25 43 46 / 90-Palaquium gutta- / 90-Palaquium obovatum- / 90-Palaquium ridleyi- / 263-Pandanus affinis- / 263-Pandanus amaryllifolius- ThA / 263-Pandanus horizontalis- / 263-Pandanus humilis- T / 263-Pandanus odoratissimus- T S 26 30 33 / 259-Panicum hayatae- / 259-Panicum luzonense- / 259-Panicum maximum- T ThA / 259-Panicum notatum- T / 259-Panicum paludosum- / 259-Panicum repens- T 20 30 42 / 259-Panicum sarmentosum- T ThA / 259-Panicum sumatrense- / 259-Panicum trichoides- / 259-Panicum walense- / 248-Paphiopedilum appletonianum- T C 17 / 248-Papilionanthe hookeriana- T C 17 / 189-Parabarium micranthum- T 17 / 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tankervilleae- T C 17 41 / 248-Phalaenopsis cornu-cervi- T C 17 / 248-Phalaenopsis fuscata- / 237-Philydrum lanuginosum- T / 8-Phoebe kunstleri- T 35 / 8-Phoebe lanceolata-G T / 248-Pholidota articulata- T C 17 45 / 248-Pholidota imbricata- T C 17 / 248-Pholidota ventricosa- / 259-Phragmites karka- T / 248-Phreatia laxiflora- / 248-Phreatia secunda- / 211-Phyla nodiflora- T 7 13 15 35 / 100-Phyllanthus acidus- T / 100-Phyllanthus chamaepeuce- / 100-Phyllanthus debilis- / 100-Phyllanthus elegans- T R 13 / 100-Phyllanthus emblica- T Ed R / 100-Phyllanthus pulcher- T / 100-Phyllanthus reticulatus- T 13 / 100-Phyllanthus roseus- / 100-Phyllanthus virgatus- T / 115-Phyllodium pulchellum- T 20 26 / 115-Phyllodium vestitum- T / 259-Phyllostachys aurea- C / 164-Phytocrene oblonga- Ed / 133-Picrasma javanica- T 17 / 201-Picria fel-terrae- T 17 19 37 39 / 260-Pinanga paradoxa- C / 10-Piper cf. caninum- / 10-Piper cubeba- T 12 13 / 10-Piper longum- T 7 13 45 / 10-Piper nigrum- T 10 / 10-Piper 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126-Syzygium chloranthum- / 126-Syzygium cinereum-G / 126-Syzygium claviflorum-G / 126-Syzygium cuminii- T Ed 10 15 21 / 126-Syzygium grande-G / 126-Syzygium jambos- T Ed Nh 6 13 21 / 126-Syzygium lineatum- / 126-Syzygium malaccense- T Ed / 126-Syzygium malayanum- / 126-Syzygium oblatum- / 126-Syzygium polyanthum- T Ed 13 / 126-Syzygium syzygioides- Ed / 126-Syzygium zeylanicum-G T R 9 13 20 / 189-Tabernaemontana corymbosa- / 189-Tabernaemontana crispa- / 189-Tabernaemontana pandacaqui- / 189-Tabernaemontana pauciflora- T / 189-Tabernaemontana peduncularis- / 235-Tacca chantrieri- T 7 20 22 26 / 235-Tacca integrifolia- T / 235-Tacca leontopetaloides- T / 235-Tacca palmata- T 17 / 115-Tadehagi triquetrum- T 13 26 28 30 46 / 248-Taeniophyllum obtusum- / 248-Taeniophyllum pahangense- / 248-Tainia pauciflora- / 219-Taraxacum officinale- T R 6 17 35 43 / 193-Tarennia asiatica- T / 95-Tarrietia javanica- / 179-Taxillus chinensis- T 20 22 / 179-Taxillus ferrugineus- T 22 / 179-Taxillus 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248-Thrixspermum merguense- / 248-Thrixspermum pauciflorum- / 248-Thrixspermum trichoglottis- / 259-Thuarea involuta- T ThA 45 / 209-Thunbergia fragrans- T / 209-Thunbergia laurifolia- T C / 248-Thunia alba- T C 17 25 41 / 193-Timonius jambosella- / 22-Tinomiscium petiolare- T 20 41 / 135-Toona microcarpa- T / 135-Toona surenii-G T 13 19 / 201-Torenia flava- T / 201-Torenia violacea- T 5 / 31-Trema angustifolia- T 41 / 31-Trema cannabina- T / 161-Trevesia burckii- T / 135-Trichilia connaroides- T 20 / 198-Trichodesma zeylanicum- / 248-Trichoglottis lanceolaria- / 248-Trichoglottis retusa- / 73-Trichosanthes cucumerina- T 35 / 73-Trichosanthes tricuspidata- T R 35 45 / 73-Trichosanthes villosa- T / 248-Trichotosia microphylla- T 17 / 248-Trichotosia pulvinata- / 248-Trichotosia velutina- / 250-Tricostularia undulata- / 36-Trigonobalanus verticillata- T 13 / 100-Tarostemon longifolius- T / 32-Trophis scandens- T C Ed ThA 17 / 248-Tropidia angulosa- / 248-Tropidia curculigooides- T 32 / 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4. Conclusion

The paper assessed the diversity of species, genera, families and classes of the Magnoliophyta distributed in both Vietnam and Malaysia. The results provide a lot of valuable information, contributing to the development of cooperation of Vietnam and Malaysia on plant diversity research and orientation for application.

Compliance with ethical standards

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Disclosure of conflict of interest

All authors have no conflict of interests to declare.

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