

Table S1. Normalized leaf-level isoprene and monoterpene emission rates of 149 shrub and grass genera in China ($\mu\text{g C gdw}^{-1} \text{h}^{-1}$).

| No | Genera | Family | Isoprene | Monoterpene | No | Genera | Family | Isoprene | Monoterpene |
|----|-----------------------------------|----------------|----------|-------------|----|--|--------------|----------|-------------|
| 1 | <i>Allium L.</i> | Liliaceae | 1 | 0.6 | 26 | <i>Vaccinium spp</i> | Ericaceae | 0.1 | 0.1 |
| 2 | <i>Sabina Mill.</i> | Cupressaceae | 0.1 | 1.6 | 27 | <i>Desmos Lour.</i> | Annonaceae | 0.1 | 1.6 |
| 3 | <i>Thuja Linn.</i> | Cupressaceae | 0.1 | 1.6 | 28 | <i>Pteris L.</i> | Pteridiaceae | 0.1 | 0.2 |
| 4 | <i>Helianthemum Mill.</i> | Cistaceae | 0.1 | 0.1 | 29 | <i>Tamarix Linn.</i> | Tamaricaceae | 1 | 0.2 |
| 5 | <i>Primula Linn.</i> | Primulaceae | 0.1 | 0.1 | 30 | <i>Reaumuria Linn.</i> | Tamaricaceae | 1 | 0.2 |
| 6 | <i>Scaevola L.</i> | Goodeniaceae | 1 | 0.2 | 31 | <i>Myricaria Desv.</i> | Tamaricaceae | 1 | 0.2 |
| 7 | <i>Thymus Linn.</i> | Lamiaceae | 1 | 0.6 | 32 | <i>Imperata Cyrillo</i> | Poaceae | 1 | 0.6 |
| 8 | <i>Flacourtia Comm.exL'Herit.</i> | Flacourtiaceae | 1 | 0.2 | 33 | <i>Agropyron Gaertn.</i> | Poaceae | 1 | 0.6 |
| 9 | <i>Croton L.</i> | Euphorbiaceae | 1 | 0.2 | 34 | <i>Triarrhena Nakai</i> | Poaceae | 0.1 | 0.6 |
| 10 | <i>Euphorbia Linn.</i> | Euphorbiaceae | 1 | 0.2 | 35 | <i>Roegneria C. Koch.</i> | Poaceae | 1 | 0.6 |
| 11 | <i>Macaranga Thou.</i> | Euphorbiaceae | 1 | 0.2 | 36 | <i>Calamagrostis Adans.</i> | Poaceae | 1 | 0.6 |
| 12 | <i>Phyllanthus Linn.</i> | Euphorbiaceae | 1 | 0.2 | 37 | <i>Cynodon Rich.</i> | Poaceae | 1 | 0.6 |
| 13 | <i>Alchornea Sw.</i> | Euphorbiaceae | 1 | 0.2 | 38 | <i>Orinus Hitchc.</i> | Poaceae | 1 | 0.6 |
| 14 | <i>Aporusa Bl.</i> | Euphorbiaceae | 1 | 0.2 | 39 | <i>Eulalia Kunth</i> | Poaceae | 1 | 0.6 |
| 15 | <i>Juncus Linn.</i> | Juncaceae | 0.1 | 0.1 | 40 | <i>Achnatherum Beauv.</i> | Poaceae | 1 | 0.2 |
| 16 | <i>Glycyrrhiza Linn.</i> | Fabaceae | 8 | 1.6 | 41 | <i>Themeda Forssk.</i> | Poaceae | 1 | 0.6 |
| 17 | <i>Lespedeza Michx.</i> | Fabaceae | 1 | 1.6 | 42 | <i>Agrostis Linn.</i> | Poaceae | 1 | 0.2 |
| 18 | <i>Sophora Linn.</i> | Fabaceae | 1 | 0.2 | 43 | <i>Zoysia Willd.</i> | Poaceae | 1 | 0.6 |
| 19 | <i>Piptanthus D. Don ex Sweet</i> | Fabaceae | 1 | 0.2 | 44 | <i>Bothriochloa Kuntze</i> | Poaceae | 1 | 0.6 |
| 20 | <i>Oxytropis DC.</i> | Fabaceae | 1 | 0.2 | 45 | <i>Leymus Hochst.</i> | Poaceae | 1 | 0.2 |
| 21 | <i>Caragana Fabr.</i> | Fabaceae | 1 | 0.2 | 46 | <i>Phragmites Adans.</i> | Poaceae | 0.1 | 0.6 |
| 22 | <i>Alhagi Gagneb.</i> | Fabaceae | 1 | 0.2 | 47 | <i>Neyraudia Hook. f.</i> | Poaceae | 0.1 | 0.6 |
| 23 | <i>Hedysarum Linn.</i> | Fabaceae | 1 | 0.2 | 48 | <i>Miscanthus Anderss.</i> | Poaceae | 1 | 0.6 |
| 24 | <i>Halimodendron Fisch.</i> | Fabaceae | 1 | 0.2 | 49 | <i>Spartina Schreb. ex J. F. Gmel.</i> | Poaceae | 1 | 0.6 |
| 25 | <i>Rhododendron Linn.</i> | Ericaceae | 0.1 | 0.1 | 50 | <i>Elymus Linn.</i> | Poaceae | 1 | 0.6 |

Table S1. To be continued.

| No | Genera | Family | Isoprene | Monoterpene | No | Genera | Family | Isoprene | Monoterpene |
|----|-------------------------------|----------------|----------|-------------|-----|---|----------------|----------|-------------|
| 51 | <i>Heteropogon Pers.</i> | Poaceae | 1 | 0.6 | 76 | <i>Rhodiola L.</i> | Crassulaceae | 0.1 | 0.2 |
| 52 | <i>Bromus L.</i> | Poaceae | 1 | 0.2 | 77 | <i>Brachanthemum DC.</i> | Asteraceae | 1 | 0.6 |
| 53 | <i>Ptilagrostis Griseb.</i> | Poaceae | 1 | 0.6 | 78 | <i>Saussurea DC.</i> | Asteraceae | 1 | 0.1 |
| 54 | <i>Festuca L.</i> | Poaceae | 1 | 0.2 | 79 | <i>Artemisia Linn. Sensu stricto, excl. Sect. Seriphidium Bess.</i> | Asteraceae | 8 | 0.6 |
| 55 | <i>Dactylis L.</i> | Poaceae | 1 | 0.6 | 80 | <i>Karelinia Less.</i> | Asteraceae | 1 | 0.6 |
| 56 | <i>Arundinella Raddi</i> | Poaceae | 1 | 0.6 | 81 | <i>Seriphidium (Besser ex Less.) Fourr.</i> | Asteraceae | 1 | 0.6 |
| 57 | <i>Deyeuxia Clarion</i> | Poaceae | 1 | 0.6 | 82 | <i>Ligularia Cass.</i> | Asteraceae | 1 | 0.6 |
| 58 | <i>Leucopoa Griseb.</i> | Poaceae | 1 | 0.6 | 83 | <i>Filifolium Kitam.</i> | Asteraceae | 0.1 | 0.6 |
| 59 | <i>Cleistogenes Keng</i> | Poaceae | 1 | 0.6 | 84 | <i>Anaphalis DC.</i> | Asteraceae | 1 | 0.6 |
| 60 | <i>Poa L.</i> | Poaceae | 0.1 | 0.6 | 85 | <i>Ajania Poljak.</i> | Asteraceae | 1 | 0.6 |
| 61 | <i>Aeluropus Trin.</i> | Poaceae | 1 | 0.6 | 86 | <i>Asterothamnus Novopokr.</i> | Asteraceae | 1 | 0.6 |
| 62 | <i>Stipa Linn.</i> | Poaceae | 0.1 | 0.6 | 87 | <i>Acantholimon Boiss.</i> | Plumbaginaceae | 0.1 | 0.2 |
| 63 | <i>Schizachyrium Nees</i> | Poaceae | 0.1 | 0.6 | 88 | <i>Iljinia Korov.</i> | Chenopodiaceae | 1 | 0.6 |
| 64 | <i>Kandelia Wight et Arn.</i> | Rhizophoraceae | 1 | 0.2 | 89 | <i>Sympegma Bunge</i> | Chenopodiaceae | 1 | 0.6 |
| 65 | <i>Rhizophora Linn.</i> | Rhizophoraceae | 1 | 0.2 | 90 | <i>Anabasis L.</i> | Chenopodiaceae | 1 | 0.6 |
| 66 | <i>Elaeagnus Linn.</i> | Elaeagnaceae | 1 | 0.2 | 91 | <i>Suaeda Forsk. ex Scop.</i> | Chenopodiaceae | 1 | 3 |
| 67 | <i>Hippophae Linn.</i> | Elaeagnaceae | 1 | 0.2 | 92 | <i>Haloxylon Bunge</i> | Chenopodiaceae | 1 | 0.6 |
| 68 | <i>Ostryopsis Decne.</i> | Betulaceae | 0.1 | 0.2 | 93 | <i>Agriophyllum Bieb.</i> | Chenopodiaceae | 1 | 0.6 |
| 69 | <i>Corylus L.</i> | Betulaceae | 0.1 | 0.2 | 94 | <i>Ceratooides (Tourn.) Gagnebin</i> | Chenopodiaceae | 8 | 0.2 |
| 70 | <i>Sarcozygium Bunge</i> | Zygophyllaceae | 0.1 | 0.2 | 95 | <i>Nanophyton Less.</i> | Chenopodiaceae | 1 | 0.6 |
| 71 | <i>Nitraria L.</i> | Zygophyllaceae | 0.1 | 0.2 | 96 | <i>Halocnemum Bieb</i> | Chenopodiaceae | 1 | 0.6 |
| 72 | <i>Tetraena Maxim.</i> | Zygophyllaceae | 0.1 | 0.2 | 97 | <i>Halogeton C. A. Mey.</i> | Chenopodiaceae | 1 | 0.6 |
| 73 | <i>Apocynum Linn.</i> | Apocynaceae | 0.1 | 0.2 | 98 | <i>Halostachys C. A. Mey.</i> | Chenopodiaceae | 1 | 0.6 |
| 74 | <i>Liquidambar Linn.</i> | Hamamelidaceae | 1 | 0.2 | 99 | <i>Kalidium Moq.</i> | Chenopodiaceae | 1 | 3 |
| 75 | <i>Loropetalum R. Brown</i> | Hamamelidaceae | 1 | 0.2 | 100 | <i>Camphorosma L.</i> | Chenopodiaceae | 1 | 0.6 |

Table S1. To be continued.

| No | Genera | Family | Isoprene | Monoterpene | No | Genera | Family | Isoprene | Monoterpene |
|-----|-------------------------------|----------------|----------|-------------|-----|---------------------------------|-----------------|----------|-------------|
| 101 | <i>Salsola L.</i> | Chenopodiaceae | 1 | 0.6 | 126 | <i>Weigela Thunb.</i> | Caprifoliaceae | 0.1 | 0.2 |
| 102 | <i>Dicranopteris Bernh.</i> | Gleicheniaceae | 0.1 | 0.2 | 127 | <i>Heleocharis R. Br.</i> | Cyperaceae | 1 | 0.6 |
| 103 | <i>Polygonum L.</i> | Polygonaceae | 0.1 | 0.6 | 128 | <i>Scirpus Linn.</i> | Cyperaceae | 1 | 0.6 |
| 104 | <i>Calligonum L.</i> | Polygonaceae | 0.1 | 0.6 | 129 | <i>Blysmus Panz.</i> | Cyperaceae | 1 | 0.6 |
| 105 | <i>Pandanus Linn. f.</i> | Pandanaceae | 2 | 0.6 | 130 | <i>Cyperus Linn.</i> | Cyperaceae | 1 | 0.6 |
| 106 | <i>Ephedra Tourn ex Linn.</i> | Ephedraceae | 0.1 | 0.2 | 131 | <i>Carex</i> | Cyperaceae | 1 | 0.6 |
| 107 | <i>Vitex Linn.</i> | Verbenaceae | 0.1 | 0.2 | 132 | <i>Gymnocarpos Forssk.</i> | Caryophyllaceae | 1 | 0.6 |
| 108 | <i>Coriaria L.</i> | Coriariaceae | 1 | 0.6 | 133 | <i>Arenaria L.</i> | Caryophyllaceae | 1 | 0.6 |
| 109 | <i>Ranunculus L.</i> | Ranunculaceae | 1 | 1.6 | 134 | <i>Sageretia Brongn.</i> | Rhamnaceae | 0.1 | 1.6 |
| 110 | <i>Anemone L.</i> | Ranunculaceae | 1 | 1.6 | 135 | <i>Pinus Linn.</i> | Pinaceae | 0.1 | 3 |
| 111 | <i>Syringa Linn.</i> | Oleaceae | 0.1 | 0.6 | 136 | <i>Gleditsia Linn.</i> | Caesalpiniaceae | 0.1 | 0.2 |
| 112 | <i>Sphagnum Linn.</i> | Sphagnaceae | 0.1 | 0.1 | 137 | <i>Rhodomyrtus (DC.) Reich.</i> | Myrtaceae | 1 | 0.2 |
| 113 | <i>Cotinus (Tourn.) Mill</i> | Anacardiaceae | 1 | 0.2 | 138 | <i>Opuntia Mill.</i> | Cactaceae | 0.1 | 0.6 |
| 114 | <i>Potaninia Maxim.</i> | Rubiaceae | 1 | 0.6 | 139 | <i>Berberis Linn.</i> | Berberidaceae | 1 | 0.2 |
| 115 | <i>Exochorda Lindl.</i> | Rosaceae | 1 | 1.6 | 140 | <i>Convolvulus Linn.</i> | Convolvulaceae | 0.1 | 0.2 |
| 116 | <i>Sanguisorba L.</i> | Rosaceae | 8 | 0.2 | 141 | <i>Salix L.</i> | Salicaceae | 1 | 0.2 |
| 117 | <i>Malus Mill.</i> | Rosaceae | 1 | 1.6 | 142 | <i>Pteroceltis Maxim.</i> | Ulmaceae | 0.1 | 0.1 |
| 118 | <i>Rosa L.</i> | Rosaceae | 1 | 1.6 | 143 | <i>Iris L.</i> | Iridaceae | 0.1 | 0.2 |
| 119 | <i>Sibbaldia L.</i> | Rosaceae | 1 | 0.2 | 144 | <i>Zanthoxylum L.</i> | Rutaceae | 1 | 0.6 |
| 120 | <i>Amygdalus L.</i> | Rosaceae | 1 | 1.6 | 145 | <i>Litsea Lam.</i> | Lauraceae | 0.1 | 0.1 |
| 121 | <i>Potentilla L.</i> | Rosaceae | 1 | 0.2 | 146 | <i>Leptocarpus R. Br.</i> | Restionaceae | 0.1 | 0.1 |
| 122 | <i>Armeniaca Mill.</i> | Rosaceae | 1 | 1.6 | 147 | <i>Rapanea Aubl.</i> | Myrsinaceae | 0.1 | 0.2 |
| 123 | <i>Spiraea L.</i> | Rosaceae | 1 | 1.6 | 148 | <i>Myrsine Linn.</i> | Myrsinaceae | 0.1 | 0.2 |
| 124 | <i>Cotoneaster B. Ehrhart</i> | Rosaceae | 1 | 0.2 | 149 | <i>Ceodes J. et G. Forst.</i> | Nyctaginaceae | 0.1 | 0.2 |
| 125 | <i>Padus Mill.</i> | Rosaceae | 1 | 0.6 | | | | | |