

Table S1. Studied genera of the Canary Islands

Genus	N endemic species	N species used for C-val. measurements	1 C (pg) mean	1 C (pg) st. dev.
Adenocarpus	3	2	0.87	0.02
Aeonium (including Greenovia)	32	13	0.56	0.07
Aichryson	10	2	0.68	0.00
Allagopappus	2	1	0.88	NA
Andryala	2	1	1.79	NA
Argyranthemum	19	10	6.96	0.17
Arrhenatherum	1	1	4.81	NA
Artemisia	2	1	5.71	NA
Asparagus	3	1	1.28	NA
Atractylis	2	1	3.99	NA
Avena	1	20	8.21	3.74
Bosea	1	1	1.65	NA
Brachypodium	1	1	0.35	NA
Brassica	1	9	0.91	0.39
Bryonia	1	1	1.05	NA
Bupleurum	1	1	0.79	NA
Bystropogon	5	1	0.55	NA
Campylanthus	1	1	0.76	NA
Canarina	1	1	2.86	NA
Carduus	4	1	4.28	NA
Carex	2	36	0.42	0.22
Carlina	3	2	3.52	0.03
Ceballosia	1	1	1.19	NA
Cerastium	1	10	1.88	0.83
Ceropegia	2	2	0.44	0.01
Chamaecytisus	1	1	1.25	NA
Cheirolophus	16	2	0.70	0.01
Chenopodium	1	1	0.48	NA
Cicer	1	8	1.21	0.16
Cistus	8	17	2.33	0.45
Convolvulus	10	4	1.05	0.02
Crambe	13	4	0.95	0.03
Crepis	1	35	4.05	1.94
Cryptotaenia	1	1	0.47	NA
Dactylis	1	1	2.18	NA
Descurainia	7	3	0.23	0.01
Dicheranthus	1	1	0.75	NA
Dorycnium	3	1	1.12	NA
Dracaena	1	1	0.93	NA
Dracunculus	1	1	3.89	NA
Echium	23	13	0.46	0.05
Erigeron	1	1	1.55	NA
Erysimum	2	2	0.56	0.03
Euphorbia	9	3	2.14	0.07
Ferula	3	1	1.45	NA
Festuca	1	120	5.57	2.60

Forsskaolea	1	1	0.32	NA
Fumaria	1	1	0.55	NA
Genista	1	1	2.30	NA
Gesnouiinia	1	1	0.51	NA
Globularia	2	1	0.42	NA
Gonospermum	7	2	6.13	0.02
Habenaria	1	2	11.59	3.89
Helianthemum	11	1	2.23	NA
Herniaria	2	1	0.53	NA
Hypericum	2	4	0.40	0.08
Hypochaeris	1	1	1.14	NA
Isoplexis	3	2	1.01	0.01
Ixanthus	1	1	1.04	NA
Justicia	1	1	2.91	NA
Kickxia	2	1	0.94	NA
Kleinia	1	1	9.05	NA
Lactuca	1	1	1.03	NA
Lavandula	4	2	0.51	0.00
Lavatera	1	1	1.68	NA
Limonium	16	3	4.28	1.48
Lolium	1	9	2.70	0.33
Lotus	15	7	0.97	0.33
Luzula	1	1	0.48	NA
Marcetella	1	1	0.39	NA
Matthiola	1	1	2.41	NA
Mercurialis	1	1	1.62	NA
Micromeria	14	5	0.39	0.03
Minuartia	2	1	1.50	NA
Monanthes	9	5	0.69	0.13
Neochamaelea	1	1	0.75	NA
Nepeta	1	1	0.28	NA
Olea	1	7	1.94	0.46
Orobanche	1	23	2.83	1.01
Oropetium	1	2	0.39	0.14
Pancratium	1	2	24.10	5.95
Parietaria	1	1	0.57	NA
Parolinia	6	1	1.02	NA
Paronychia	1	1	1.34	NA
Pericallis	12	8	0.63	0.07
Phagnalon	1	1	1.10	NA
Phelipanche	2	14	4.36	0.48
Phoenix	1	1	0.90	NA
Phyllis	1	1	0.37	NA
Pimpinella	5	1	2.30	NA
Plantago	3	3	0.52	0.03
Plocama	1	1	1.39	NA
Poa	1	35	3.79	2.87
Polycarpaea	8	5	0.47	0.04
Portulaca	1	1	1.68	NA
Pterocephalus	4	3	1.73	0.06

Reichardia	3	1	1.89	NA
Reseda	2	1	0.35	NA
Rhamnus	2	2	1.01	0.31
Rubus	1	25	0.37	0.22
Rumex	1	2	3.46	3.92
Ruta	3	3	0.43	0.24
Salsola	1	2	0.96	0.35
Salvia	3	2	0.47	0.05
Schizogyne	1	2	1.03	0.00
Scilla	2	2	9.48	0.06
Scrophularia	3	2	1.04	0.01
Semele	1	1	6.48	NA
Senecio	4	2	1.81	1.17
Seseli	1	1	1.89	NA
Sideritis	24	7	1.88	0.10
Silene	8	4	2.59	0.03
Solanum	2	40	1.40	0.74
Sonchus	18	9	1.44	0.11
Spartocytisus	2	2	1.13	0.02
Stemmacantha	1	1	1.08	NA
Teline	8	4	1.17	0.19
Thymus	1	2	1.09	0.31
Tinguarra	1	2	1.22	0.01
Todaroa	2	1	1.44	NA
Tolpis	7	4	1.37	0.04
Urtica	1	2	0.95	0.63
Viburnum	1	2	3.98	0.18
Vicia	5	2	2.90	0.01
Viola	3	1	1.31	NA
Volutaria	2	1	0.80	NA
Average	3.81	5.13	2.05	

Table S1. Studied genera of the Hawaiian Islands

Genus	N endemic species	N species used for C-val. measurements	1 C (pg) mean	1 C (pg) st. dev.
Astelia	3	1	1.27	NA
Abutilon	3	1	1.40	NA
Acacia	2	66	1.24	0.46
Acaena	1	1	0.33	NA
Agrostis	1	17	4.79	1.89
Amaranthus	1	10	0.78	0.26
Argemone	1	1	0.60	NA
Artemisia	3	67	4.82	2.15
Bidens	19	1	1.73	NA
Brighamia	2	1	1.05	NA
Caesalpinia	1	3	1.55	0.50
Calamagrostis	2	1	2.20	NA
Carex	4	36	0.42	0.22
Cenchrus	1	3	3.15	1.78
Chenopodium	1	15	1.20	0.57
Colubrina	1	1	0.93	NA
Coprosma	13	2	1.33	0.05
Cuscuta	1	15	7.50	9.43
Cyperus	9	5	0.74	0.34
Deschampsia	1	6	5.87	1.41
Eragrostis	8	1	0.68	NA
Erythrina	1	13	1.40	0.24
Euphorbia	1	15	7.19	5.60
Festuca	1	120	5.57	2.60
Fragaria	1	4	0.37	0.18
Gardenia	3	1	1.30	NA
Gossypium	1	41	1.74	0.67
Gunnera	2	1	7.44	NA
Hibiscus	5	1	1.53	NA
Ipomoea	1	25	1.18	0.39
Isachne	2	1	1.82	NA
Lepidium	5	4	0.58	0.28
Liparis	1	1	9.70	NA
Lobelia	13	1	6.38	NA
Luzula	1	22	1.07	0.83
Melicope	48	1	0.93	NA
Morinda	1	2	0.65	0.03
Myoporum	1	1	1.94	NA
Myrsine	19	1	1.23	NA
Panicum	12	6	1.65	0.42
Peperomia	23	9	1.96	0.96
Phyllanthus	1	1	1.00	NA
Phytolacca	1	5	1.65	0.57
Pittosporum	11	2	0.53	0.07
Plantago	3	21	1.03	0.37
Poa	3	35	3.79	2.87
Portulaca	3	1	1.68	NA
Psychotria	11	1	1.03	NA
Ranunculus	2	103	6.78	3.71
Rubus	2	25	0.37	0.22
Rumex	3	7	2.79	1.83
Santalum	6	1	0.29	NA

Sapindus	1	2	0.54	0.01
Schiedea	34	23	1.10	0.30
Sesbania	1	1	1.23	NA
Silene	7	12	2.37	0.77
Sisyrinchium	1	33	1.99	1.12
Smilax	1	1	5.00	NA
Solanum	3	40	1.40	0.74
Sophora	1	2	1.36	0.69
Syzygium	1	1	1.83	NA
Trisetum	2	10	5.48	1.74
Vaccinium	3	7	2.10	0.03
Vicia	1	87	5.60	3.63
Vigna	1	22	0.73	0.30
Viola	7	2	1.33	0.02
Zanthoxylum	4	2	6.15	2.55
Average	4.99	14.49	2.36	

Table S1. Studied genera of the Marquesas Islands

Genus	N endemic species	N species used for C-val. measurements	1 C (pg) mean	1 C (pg) st. dev.
Abutilon	1	1	1.40	NA
Astelia	1	1	1.27	NA
Bidens	8	1	1.73	NA
Carex	1	36	0.42	0.22
Coprosma	6	2	1.33	0.05
Cyperus	3	5	0.74	0.34
Hernandia	1	2	2.11	0.28
Hydrocotyle	1	1	0.98	NA
Ixora	7	1	1.39	NA
Melicope	7	1	0.93	NA
Myrsine	4	1	1.23	NA
Nicotiana	1	55	3.63	1.15
Oxalis	2	54	2.58	3.61
Pennisetum	4	20	2.20	0.85
Peperomia	3	9	1.96	0.96
Phyllanthus	1	1	1.00	NA
Santalum	1	1	0.29	NA
Average	3.06	11.29	1.48	

Table S1. Studied genera of the joint Hawaii-Marquesas dataset

Genus	N endemic species	N species used for C-val. measurements	1 C (pg) mean	1 C (pg) st. dev.
Abutilon	4	1	1.40	NA
Astelia	4	1	1.27	NA
Acacia	2	66	1.24	0.46
Acaena	1	1	0.33	NA
Agrostis	1	17	4.79	1.89
Amaranthus	1	10	0.78	0.26
Argemone	1	1	0.60	NA
Artemisia	3	67	4.82	2.15
Bidens	27	1	1.73	NA
Brighamia	2	1	1.05	NA
Caesalpinia	1	3	1.55	0.50
Calamagrostis	2	1	2.20	NA
Carex	5	36	0.42	0.22
Cenchrus	1	3	3.15	1.78
Chenopodium	1	15	1.20	0.57
Colubrina	1	1	0.93	NA
Coprosma	19	2	1.33	0.05
Cuscuta	1	15	7.50	9.43
Cyperus	12	5	0.74	0.34
Deschampsia	1	6	5.87	1.41
Eragrostis	8	1	0.68	NA
Erythrina	1	13	1.40	0.24
Euphorbia	1	15	7.19	5.60
Festuca	1	120	5.57	2.60
Fragaria	1	4	0.37	0.18
Gardenia	3	1	1.30	NA
Gossypium	1	41	1.74	0.67
Gunnera	2	1	7.44	NA
Hernandia	1	2	2.11	0.28
Hibiscus	5	1	1.53	NA
Hydrocotyle	1	1	0.98	NA
Ipomoea	1	25	1.18	0.39
Isachne	2	1	1.82	NA
Ixora	7	1	1.39	NA
Lepidium	5	4	0.58	0.28
Liparis	1	1	9.70	NA
Lobelia	13	1	6.38	NA
Luzula	1	22	1.07	0.83
Melicope	55	1	0.93	NA
Morinda	1	2	0.65	0.03
Myoporum	1	1	1.94	NA
Myrsine	23	1	1.23	NA
Nicotiana	1	55	3.63	1.15
Oxalis	2	54	2.58	3.61
Panicum	12	6	1.65	0.42
Pennisetum	4	20	2.20	0.85

Peperomia	26	9	1.96	0.96
Phyllanthus	2	1	1.00	NA
Phytolacca	1	5	1.65	0.57
Pittosporum	11	2	0.53	0.07
Plantago	3	21	1.03	0.37
Poa	3	35	3.79	2.87
Portulaca	3	1	1.68	NA
Psychotria	11	1	1.03	NA
Ranunculus	2	103	6.78	3.71
Rubus	2	25	0.37	0.22
Rumex	3	7	2.79	1.83
Santalum	7	1	0.29	NA
Sapindus	1	2	0.54	0.01
Schiedea	34	23	1.10	0.30
Sesbania	1	1	1.23	NA
Silene	7	12	2.37	0.77
Sisyrinchium	1	33	1.99	1.12
Smilax	1	1	5.00	NA
Solanum	3	40	1.40	0.74
Sophora	1	2	1.36	0.69
Syzygium	1	1	1.83	NA
Trisetum	2	10	5.48	1.74
Vaccinium	3	7	2.10	0.03
Vicia	1	87	5.60	3.63
Vigna	1	22	0.73	0.30
Viola	7	2	1.33	0.02
Zanthoxylum	4	2	6.15	2.55
Average	5.29	15.12	2.35	





