

Table S1. List of plant species sequenced to construct the reference databases of the P6 loop of the chloroplast *trnL* (UAA) intron, and the first internal transcribed spacer (ITS1) of nuclear ribosomal DNA of Asteraceae and Poaceae plant families.

Plant ID	Species	Family
P047	<i>Blutaparon portulacoides</i>	Amaranthaceae
P056	<i>Blutaparon portulacoides</i>	Amaranthaceae
P077	<i>Blutaparon portulacoides</i>	Amaranthaceae
P122	<i>Blutaparon portulacoides</i>	Amaranthaceae
P070	<i>Chenopodium retusum</i>	Amaranthaceae
P232	<i>Gomphrena perennis</i>	Amaranthaceae
P147	<i>Centella asiatica</i>	Apiaceae
P218	<i>Eryngium sanguisorba</i>	Apiaceae
P210	<i>Mandevilla pinifolia</i>	Apocynaceae
P226	<i>Oxypetalum arnottianum</i>	Apocynaceae
P028	<i>Oxypetalum tomentosum</i>	Apocynaceae
P141	<i>Oxypetalum tomentosum</i>	Apocynaceae
P008	<i>Hydrocotyle bonariensis</i>	Araliaceae
P039	<i>Hydrocotyle bonariensis</i>	Araliaceae
P049	<i>Hydrocotyle bonariensis</i>	Araliaceae
P069	<i>Hydrocotyle bonariensis</i>	Araliaceae
P118	<i>Hydrocotyle bonariensis</i>	Araliaceae
P061	<i>Acanthospermum australe</i>	Asteraceae
P200	<i>Baccharis genistelloides</i>	Asteraceae
P095	<i>Baccharis gnaphalioides</i>	Asteraceae
P127	<i>Baccharis gnaphalioides</i>	Asteraceae
P238	<i>Baccharis leucopappa</i>	Asteraceae
P237	<i>Baccharis megapotamica</i>	Asteraceae
P209	<i>Chaptalia sinuata</i>	Asteraceae
P115	<i>Conyza blakei</i>	Asteraceae
P172	<i>Conyza primulifolia</i>	Asteraceae
P199	<i>Eupatorium ascendens</i>	Asteraceae
P062	<i>Gamochaeta americana</i>	Asteraceae
P117	<i>Gamochaeta americana</i>	Asteraceae
P121	<i>Gamochaeta americana</i>	Asteraceae
P126	<i>Gamochaeta americana</i>	Asteraceae
P032	<i>Gamochaeta falcata</i>	Asteraceae
P034	<i>Gamochaeta falcata</i>	Asteraceae
P072	<i>Gamochaeta subfalcata</i>	Asteraceae
P203	<i>Lucilia acutifolia</i>	Asteraceae
P202	<i>Lucilia nitens</i>	Asteraceae
P065	<i>Noticastrum calvatum</i>	Asteraceae
P094	<i>Noticastrum calvatum</i>	Asteraceae

P205	<i>Noticastrum gnaphalioides</i>	Asteraceae
P206	<i>Orthopappus angustifolius</i>	Asteraceae
P168	<i>Pluchea oblongifolia</i>	Asteraceae
P178	<i>Pterocaulon angustifolium</i>	Asteraceae
P208	<i>Pterocaulon lorentzii</i>	Asteraceae
P204	<i>Senecio brasiliensis</i>	Asteraceae
P007	<i>Senecio ceratophylloides</i>	Asteraceae
P031	<i>Senecio ceratophylloides</i>	Asteraceae
P052	<i>Senecio ceratophylloides</i>	Asteraceae
P063	<i>Senecio ceratophylloides</i>	Asteraceae
P105	<i>Senecio ceratophylloides</i>	Asteraceae
P128	<i>Senecio ceratophylloides</i>	Asteraceae
P024	<i>Soliva pterosperma</i>	Asteraceae
P201	<i>Sommerfeltia spinulosa</i>	Asteraceae
P207	<i>Stenachaenium megapotamicum</i>	Asteraceae
P030	<i>Tagetes minuta</i>	Asteraceae
P096	<i>Varronia curassavica</i>	Boraginaceae
P133	<i>Varronia curassavica</i>	Boraginaceae
P075	<i>Acicarpa procumbens</i>	Calyceraceae
P229	<i>Wahlenbergia linarioides</i>	Campanulaceae
P043	<i>Cardionema ramosissimum</i>	Caryophyllaceae
P088	<i>Cardionema ramosissimum</i>	Caryophyllaceae
P097	<i>Cardionema ramosissimum</i>	Caryophyllaceae
P092	<i>Polycarpon tetraphyllum</i>	Caryophyllaceae
P224	<i>Helianthemum brasiliense</i>	Cistaceae
P185	<i>Bulbostylis capillaris</i>	Cyperaceae
P196	<i>Bulbostylis juncooides</i>	Cyperaceae
P198	<i>Carex phalaroides</i>	Cyperaceae
P100	<i>Cyperus aggregatus</i>	Cyperaceae
P194	<i>Cyperus hermaphroditus</i>	Cyperaceae
P184	<i>Cyperus reflexus</i>	Cyperaceae
P191	<i>Eleocharis flavescens</i>	Cyperaceae
P192	<i>Eleocharis maculosa</i>	Cyperaceae
P189	<i>Fimbristylis autumnalis</i>	Cyperaceae
P197	<i>Fimbristylis spadicea</i>	Cyperaceae
P195	<i>Kyllinga odorata</i>	Cyperaceae
P188	<i>Rhynchospora barrosiana</i>	Cyperaceae
P187	<i>Rhynchospora brittonii</i>	Cyperaceae
P186	<i>Rhynchospora tenuis</i>	Cyperaceae
P216	<i>Croton lanatus</i>	Euphorbiaceae
P180	<i>Aeschynomene falcata</i>	Fabaceae
P243	<i>Aeschynomene falcata</i>	Fabaceae
P236	<i>Chamaecrista nictitans</i>	Fabaceae
P027	<i>Desmodium incanum</i>	Fabaceae
P073	<i>Desmodium incanum</i>	Fabaceae
P124	<i>Desmodium incanum</i>	Fabaceae
P025	<i>Lathyrus crassipes</i>	Fabaceae
P234	<i>Macroptilium psammodes</i>	Fabaceae
P235	<i>Sesbania punicea</i>	Fabaceae
P245	<i>Stylosanthes viscosa</i>	Fabaceae
P173	<i>Vigna luteola</i>	Fabaceae

P233	<i>Zornia reticulata</i>	Fabaceae
P017	<i>Hypoxis decumbens</i>	Hypoxidaceae
P022	<i>Hypoxis decumbens</i>	Hypoxidaceae
P219	<i>Sisyrinchium micranthum</i>	Iridaceae
P220	<i>Sisyrinchium palmifolium</i>	Iridaceae
P111	<i>Juncus kraussii</i>	Juncaceae
P193	<i>Juncus microcephalus</i>	Juncaceae
P019	<i>Juncus tenuis</i>	Juncaceae
P174	<i>Cuphea carthagenensis</i>	Lythraceae
P227	<i>Cuphea glutinosa</i>	Lythraceae
P183	<i>Tibouchina gracilis</i>	Melastomataceae
P222	<i>Tibouchina gracilis</i>	Melastomataceae
P221	<i>Tibouchina versicolor</i>	Melastomataceae
P037	<i>Oenothera parodiana</i>	Onagraceae
P134	<i>Oenothera parodiana</i>	Onagraceae
P130	<i>Pelexia bonariensis</i>	Orchidaceae
P175	<i>Agalinis communis</i>	Orobanchaceae
P080	<i>Bacopa monnieri</i>	Plantaginaceae
P225	<i>Mecardonia tenella</i>	Plantaginaceae
P074	<i>Plantago tomentosa</i>	Plantaginaceae
P104	<i>Plantago tomentosa</i>	Plantaginaceae
P171	<i>Agrostis montevidensis</i>	Poaceae
P090	<i>Andropogon arenarius</i>	Poaceae
P119	<i>Andropogon arenarius</i>	Poaceae
P138	<i>Andropogon arenarius</i>	Poaceae
P179	<i>Andropogon lateralis</i>	Poaceae
P239	<i>Andropogon selloanus</i>	Poaceae
P267	<i>Aristida circinalis</i>	Poaceae
P255	<i>Aristida jubata</i>	Poaceae
P254	<i>Aristida laevis</i>	Poaceae
P268	<i>Aristida laevis</i>	Poaceae
P162	<i>Axonopus fissifolius</i>	Poaceae
P260	<i>Axonopus sp.</i>	Poaceae
P038	<i>Briza subaristata</i>	Poaceae
P256	<i>Briza subaristata</i>	Poaceae
P247	<i>Calamagrostis viridiflavescens</i>	Poaceae
P060	<i>Cenchrus echinatus</i>	Poaceae
P114	<i>Cenchrus echinatus</i>	Poaceae
P145	<i>Cenchrus echinatus</i>	Poaceae
P098	<i>Chascolytrum erectum</i>	Poaceae
P242	<i>Digitaria connivens</i>	Poaceae
P064	<i>Digitaria eriantha</i>	Poaceae
P253	<i>Eleusine tristachya</i>	Poaceae
P262	<i>Elionurus muticus</i>	Poaceae
P252	<i>Eragrostis lugens</i>	Poaceae
P230	<i>Eragrostis neesii</i>	Poaceae
P018	<i>Eragrostis plana</i>	Poaceae
P125	<i>Eragrostis trichocolea</i>	Poaceae
P269	<i>Eragrostis trichocolea</i>	Poaceae
P116	<i>Gymnopogon legrandii</i>	Poaceae
P148	<i>Gymnopogon legrandii</i>	Poaceae

P099	<i>Imperata brasiliensis</i>	Poaceae
P149	<i>Imperata brasiliensis</i>	Poaceae
P264	<i>Ischaemum minus</i>	Poaceae
P257	<i>Melica rigida</i>	Poaceae
P246	<i>Melinis repens</i>	Poaceae
P161	<i>Panicum aquaticum</i>	Poaceae
P009	<i>Panicum racemosum</i>	Poaceae
P010	<i>Panicum racemosum</i>	Poaceae
P012	<i>Panicum racemosum</i>	Poaceae
P050	<i>Panicum racemosum</i>	Poaceae
P079	<i>Panicum racemosum</i>	Poaceae
P029	<i>Paspalum arenarium</i>	Poaceae
P103	<i>Paspalum arenarium</i>	Poaceae
P143	<i>Paspalum arenarium</i>	Poaceae
P177	<i>Paspalum dilatatum</i>	Poaceae
P249	<i>Paspalum distichum</i>	Poaceae
P164	<i>Paspalum leptum</i>	Poaceae
P167	<i>Paspalum leptum</i>	Poaceae
P091	<i>Paspalum leptum</i>	Poaceae
P266	<i>Paspalum notatum</i>	Poaceae
P261	<i>Paspalum pauciciliatum</i>	Poaceae
P163	<i>Paspalum plicatulum</i>	Poaceae
P003	<i>Piptochaetium montevidense</i>	Poaceae
P258	<i>Piptochaetium montevidense</i>	Poaceae
P144	<i>Schizachyrium microstachyum</i>	Poaceae
P089	<i>Setaria parviflora</i>	Poaceae
P101	<i>Setaria parviflora</i>	Poaceae
P160	<i>Sorghastrum setosum</i>	Poaceae
P078	<i>Spartina densiflora</i>	Poaceae
P240	<i>Sporobolus indicus</i>	Poaceae
P250	<i>Sporobolus jacquemontii</i>	Poaceae
P166	<i>Stenotaphrum secundatum</i>	Poaceae
P181	<i>Urochloa arrecta</i>	Poaceae
P071	<i>Polygala cyparissias</i>	Polygalaceae
P112	<i>Polygala cyparissias</i>	Polygalaceae
P142	<i>Polygala cyparissias</i>	Polygalaceae
P170	<i>Polygala linoides</i>	Polygalaceae
P215	<i>Borreria eryngioides</i>	Rubiaceae
P176	<i>Galium richardianum</i>	Rubiaceae
P212	<i>Hedyotis verticillata</i>	Rubiaceae
P066	<i>Richardia brasiliensis</i>	Rubiaceae
P213	<i>Richardia humistrata</i>	Rubiaceae
P211	<i>Richardia stellaris</i>	Rubiaceae
P214	<i>Spermacoce capitata</i>	Rubiaceae
P228	<i>Smilax cognata</i>	Smilacaceae
P068	<i>Petunia integrifolia</i>	Solanaceae
P011	<i>Solanum americanum</i>	Solanaceae
P081	<i>Solanum americanum</i>	Solanaceae
P021	<i>Solanum commersonii</i>	Solanaceae
P169	<i>Solanum glaucophyllum</i>	Solanaceae
P059	<i>Glandularia selloi</i>	Verbenaceae

P102	<i>Glandularia selloi</i>	Verbenaceae
P131	<i>Glandularia selloi</i>	Verbenaceae
P084	<i>Phyla canescens</i>	Verbenaceae
P109	<i>Phyla canescens</i>	Verbenaceae

Table S2. Proportion of samples, in each habitat/region and species category, presenting in their diet composition at least one sequence identified in the Asteraceae family for the ITS1 molecular marker. The taxonomic identification and the best match sequence identifier from GenBank are shown for each sequence obtained. The number of samples for each category is within parentheses.

Sequence ID	Taxonomic identification		Best match	<i>C. minutus</i>			<i>C. flamarioni</i>			
	Genus	Species		Dunes (n = 9)	Fields (n = 10)	Sympatry (n = 1)	All samples (n = 20)	Dunes (n = 13)	Sympatry (n = 2)	All samples (n = 15)
ast_0047	<i>Ambrosia</i>	<i>Ambrosia artemisiifolia</i>	EF065542	-	30%	-	15%	7.69%	-	6.67%
ast_0065	<i>Ambrosia</i>	<i>Ambrosia artemisiifolia</i>	EF065542	-	30%	-	15%	7.69%	-	6.67%
ast_0026	<i>Baccharis</i>	<i>Baccharis genistelloides</i>	P200	11.11%	20%	100%	20%	-	-	-
ast_0073	<i>Baccharis</i>	<i>Baccharis leucopappa</i>	P238	11.11%	20%	100%	20%	-	-	-
ast_0020	<i>Conyza</i>	<i>Conyza primulifolia</i>	P172	-	20%	-	10%	-	-	-
ast_0112	<i>Conyza</i>	<i>Conyza bonariensis</i>	AY875696	-	20%	-	10%	-	-	-
ast_0046	<i>Erigeron</i>	<i>Erigeron thunbergii</i>	AB250274	-	10%	-	5%	-	-	-
ast_0010	<i>Hypochaeris</i>	NA	AF528452	-	-	-	-	7.69%	-	6.67%
ast_0001	<i>Pterocaulon</i>	<i>Pterocaulon angustifolium</i>	P178	22.22%	10%	-	15%	-	-	-
ast_0103	<i>Pterocaulon</i>	<i>Pterocaulon lorentzii</i>	P208	22.22%	10%	-	15%	-	-	-
ast_0002	<i>Senecio</i>	NA	EF538299	-	-	-	-	-	-	-
ast_0008	<i>Senecio</i>	NA	EF538299	77.78%	-	100%	40%	84.62%	100%	86.67%
ast_0025	<i>Senecio</i>	NA	AF457434	-	-	-	-	-	-	-

ast_0052	<i>Senecio</i>	NA	EF538299							
ast_0051	<i>Sommerfeltia</i>	<i>Sommerfeltia spinulosa</i>	DQ479039	11.11%	-	-	5%	-	-	-
ast_0012	NA	NA	EF538299							
ast_0019	NA	NA	AF118513							
ast_0035	NA	NA	DQ478975							
ast_0037	NA	NA	AF046968							
ast_0063	NA	NA	AF115917	33.33%	80%	-	55%	30.77%	50%	33.33%
ast_0064	NA	NA	AB250266							
ast_0077	NA	NA	AB250266							
ast_0279	NA	NA	AB095080							
ast_1115	NA	NA	DQ478975							

Table S3. Proportion of samples in each habitat/region and species category, presenting in their diet composition at least one sequence identified in the Poaceae family for the ITS1 molecular marker. The taxonomic identification and the best match sequence identifier from GenBank are shown for each sequence obtained. The number of samples for each category is within parentheses.

Sequence ID	Taxonomic identification		Best match	<i>C. minutus</i>				<i>C. flamarioni</i>		
	Genus	Species		Dunes (n = 21)	Fields (n = 35)	Sympatry (n = 6)	All samples (n = 62)	Dunes (n = 83)	Sympatry (n = 13)	All samples (n = 96)
poa_0032	<i>Andropogon</i>	NA	P179	9.52%	2.86%	33.33%	8.06%	-	-	-
poa_0004	<i>Axonopus</i>	<i>Axonopus fissifolius</i>	P162							
poa_0057	<i>Axonopus</i>	<i>Axonopus fissifolius</i>	P162	-	68.57%	66.67%	45.16%	9.64%	-	8.33%
poa_0084	<i>Axonopus</i>	<i>Axonopus fissifolius</i>	P162							
poa_0024	<i>Centrochloa</i>	<i>Centrochloa singularis</i>	JQ320293	-	2.86%	-	1.61%	-	-	-
poa_0010	<i>Digitaria</i>	<i>Digitaria connivens</i>	P242	19.05%	8.57%	-	11.29%	14.46%	-	12.50%
poa_0143	<i>Digitaria</i>	<i>Digitaria connivens</i>	P242							
poa_0018	<i>Eragrostis</i>	NA	GU359287	14.29%	2.86%	-	6.45%	1.20%	-	1.04%
poa_0841	<i>Eragrostis</i>	NA	AM901000							
poa_0235	<i>Gymnopogon</i>	<i>Gymnopogon grandiflorus</i>	GU359200	-	-	16.67%	1.61%	1.20%	-	1.04%
poa_0133	<i>Imperata</i>	<i>Imperata cylindrica</i>	EU267071	4.76%	-	-	1.61%	-	-	-
poa_0066	<i>Ischaemum</i>	<i>Ischaemum minus</i>	P264	14.29%	5.71%	-	8.06%	2.41%	-	2.08%
poa_0087	<i>Ischaemum</i>	<i>Ischaemum minus</i>	P264							

poa_0078	<i>Leersia</i>	NA	AF019793	-	2.86%	-	1.61%	2.41%	-	2.08%
poa_0029	<i>Melinis</i>	<i>Melinis repens</i>	AY746595	-	2.86%	-	1.61%	-	-	-
poa_0001	<i>Panicum</i>	NA	AY129693							
poa_0007	<i>Panicum</i>	<i>Panicum aquaticum</i>	P161							
poa_0131	<i>Panicum</i>	NA	AY129693							
poa_0141	<i>Panicum</i>	NA	AY129693	85.71%	5.71%	83.33%	40.32%	90.36%	100%	91.67%
poa_0214	<i>Panicum</i>	<i>Panicum aquaticum</i>	P161							
poa_0267	<i>Panicum</i>	<i>Panicum dichotomiflorum</i>	HQ600503							
poa_1340	<i>Panicum</i>	NA	AY129693							
poa_0002	<i>Paspalum</i>	NA	P163							
poa_0003	<i>Paspalum</i>	<i>Paspalum notatum</i>	GQ870170							
poa_0006	<i>Paspalum</i>	NA	P163	9.52%	80%	16.67%	50%	7.23%	7.69%	7.29%
poa_0022	<i>Paspalum</i>	NA	JQ320297							
poa_0086	<i>Paspalum</i>	NA	P163							
poa_0014	<i>Setaria</i>	<i>Setaria parviflora</i>	AF019831	-	11.43%	-	6.45%	-	-	-
poa_0023	<i>Spartina</i>	<i>Spartina densiflora</i>	GU359206	4.76%	-	-	1.16%	19.28%	-	16.67%
poa_0025	<i>Spartina</i>	<i>Spartina ciliata</i>	AF372636							
poa_0005	<i>Stenotaphrum</i>	<i>Stenotaphrum secundatum</i>	AF521902	28.57%	28.57%	-	25.81%	3.61%	-	3.13%
poa_0454	<i>Stenotaphrum</i>	<i>Stenotaphrum secundatum</i>	AF521902							
poa_0067	<i>Urochloa</i>	NA	AY346341	4.76%	-	-	1.61%	-	-	-
poa_0013	NA	NA	GQ870170							
poa_0046	NA	NA	AF345218	9.52%	5.71%	16.67%	8.06%	15.66%	30.77%	17.70%
poa_0284	NA	NA	AJ301802							
poa_0802	NA	NA	FJ793097							

Table S4. Average distance to the group centroid (ADC) among male and female samples of each habitat/region and species category analyzed, based on betadisper analysis.

	ADC males	ADC females	P value
<i>C. minutus</i>			
whole dataset	0.62	0.61	0.56
dunes	0.53	0.57	0.68
sand fields	0.62	0.58	0.25
sympatric zone	0.47	0.49	0.95
<i>C. flamarioni</i>			
whole dataset	0.41	0.35	0.19
sympatric zone	0.26	0.25	0.96

Table S5. Number of identical sequences shared between specimens of *C. minutus* and *C. flamarioni* in different habitats/regions.

	<i>C. minutus</i> Dunes (N.S. = 19)	<i>C. minutus</i> Fields (N.S. = 30)	<i>C. minutus</i> Sympatry (N.S. = 11)	<i>C. flamarioni</i> Dunes (N.S. = 29)	<i>C. flamarioni</i> Sympatry (N.S. = 5)
<i>C. minutus</i> Dunes (N.S. = 19)	19				
<i>C. minutus</i> Fields (N.S. = 30)	10	30			
<i>C. minutus</i> Sympatry (N.S. = 11)	7	8	11		
<i>C. flamarioni</i> Dunes (N.S. = 29)	11	12	5	29	
<i>C. flamarioni</i> Sympatry (N.S. = 5)	4	4	3	5	5

N.S. – Number of different sequences found within each group