

Table S1 : Accessions used in this study, origin and characteristics

Genus	Species	Accession	Material type*	2C DNA content (pg)	Chromosome number	Ploidy level	Genome structure	Origin	Seed bank/herbarium
	<i>A. afraspera</i>	LSTM1	S	5.28 ± 0.03	2n=76	8x	AB	Senegal	LSTM
	<i>A. americana</i>	PI544122	S	1.24 ± 0.01	2n=20	2x		Venezuela	USDA
	<i>A. aspera</i>	IRRI013020	S	4.26 ± 0.04	2n=38	4x	AB	Sri Lanka	IRRI
	<i>A. ciliata</i>	IRRI 13078	S	1.08 ± 0.02	2n=20	2x		Colombia	IRRI
	<i>A. crassicaulis</i>	LSTM13	S	3.10 ± 0.03	2n=40	4x	AB	Senegal	LSTM
	<i>A. cristata</i>	ILRI16880	S	1.92 ± 0.02	2n=38	4x	AB	Central African Rep.	IRRI
	<i>A. deamii</i>	LSTM24	S	1.93 ± 0.05	2n=20	2x		Mexico	LSTM
	<i>A. deightonii</i>	Lopez Poveda 204	S	1.22 ± 0.01	-	-	-	Sierra Leone	RBG Kew (K)
	<i>A. denticulata</i>	IRRI13003	S	1.22 ± 0.01	2n=20	2x		Brazil	IRRI
	<i>A. evenia</i> ssp. <i>evenia</i>	CIAT22838	S	0.81 ± 0.00	2n=20	2x		Malawi	CIAT
	<i>A. evenia</i> ssp. <i>serrulata</i>	IRFL6945	S	0.95 ± 0.01	2n=20	2x		USA	USDA
	<i>A. filosa</i>	CIAT22466	S	0.82 ± 0.01	2n=20	2x		Mexico	CIAT
	<i>A. fluitans</i>	CPI052338	S	4.16 ± 0.04	2n=38	4x	AB	Zambia	AusPGRIS
	<i>A. fluminensis</i>	LSTM17	S	1.55 ± 0.04	2n=20	2x		Brazil	LSTM
	<i>A. indica</i> 4x	PI196206	S	1.71 ± 0.04	2n=40	4x		India	USDA
	<i>A. indica</i> 6x (Africa)	LSTM19	S	2.63 ± 0.02	2n=60	6x		Senegal	LSTM
	<i>A. indica</i> 6x (Australia)	PI 257662	S	2.55 ± 0.02	2n=60	6x		Australia	USDA
	<i>A. mediocris</i>	Bingham 10508	H	-	-	-	-	Zambia	RBG Kew (K)
	<i>A. montevidensis</i>	LSTM131	S	1.50 ± 0.02	2n=20	2x		Uruguay	LSTM
<i>Aeschynomene</i> subgenus	<i>A. nilotica</i>	IRRI014040	S	4.11 ± 0.03	2n=38	4x	AB	Senegal	IRRI
<i>Aeschynomene</i>	<i>A. paraguayensis</i>	T.M. Pedersen 9301	H	-	-	-		Paraguay	RBG Kew (K)
	<i>A. parviflora</i>	IRFL02854	S	1.57 ± 0.01	2n=20	2x		Colombia	AusPGRIS
	<i>A. pfundii</i>	LSTM54	S	3.64 ± 0.07	2n=38	4x	AB	Zimbabwe	LSTM
	<i>A. pratensis</i>	IRRI13006	S	3.19 ± 0.03	2n=40	4x		Brazil	IRRI
	<i>A. rostrata</i>	600445344	H	-	-	-		Brazil	CJB

	<i>A. rudis</i>	LSTM56	S	1.03 ± 0.01	2n=20	2x		USA	LSTM
	<i>A. scabra</i>	PI 296044	S	1.03 ± 0.03	2n=20	2x		Mexico	USDA
	<i>A. schimperi</i> 4x	ILRI000659	S	3.93 ± 0.04	2n=28	4x	AB	Tanzania	ILRI
	<i>A. schimperi</i> 4x "grandiflora"	IRRI012146	S	4.82 ± 0.12	2n=28	4x	AB	D.R. Congo	IRRI
	<i>A. schimperi</i> 8x race A	IRRI012156	S	8.54 ± 0.02	2n=56	4x	AB	Senegal	IRRI
	<i>A. schimperi</i> 8x race B	ILRI013814	S	9.20 ± 0.12	2n=56	4x	AB	Ethiopia	ILRI
	<i>A. selloi</i>	CPII04040	S	1.20 ± 0.01	2n=20	2x		Argentina	CIAT
	<i>A. sensitiva</i>	LSTM28	S	1.37 ± 0.06	2n=20	2x		Senegal	LSTM
	<i>A. sp</i> (328)	CIAT 8499	S	1.50 ± 0.01	2n=20	2x		Brazil	CIAT
	<i>A. sp</i> (353)	AusTCFC 84952	S	1.91 ± 0.03	2n=40	4x		Mexico	AusPGRIS
	<i>A. tambacoudensis</i>	LSTM60	S	0.77 ± 0.02	2n=20	2x		Senegal	LSTM
	<i>A. uniflora</i>	IRRI013158	S	2.62 ± 0.02	2n=40	4x	AB	DR. Congo	IRRI
	<i>A. unijuga</i>	Jalisco 1952	H	-	-	-		Mexico	RBG Kew (K)
	<i>A. villosa</i>	PI546550	S	1.23 ± 0.02	2n=20	2x		Mexico	USDA
	<i>A. virginica</i>	LSTM63	S	2.08 ± 0.02	2n=20	2x		USA	LSTM
<i>Aeschynomene</i> subgenus	<i>A. lateritia</i>	8384	H	-	-	-	-	Chad	Cirad herbarium
<i>Bakerophyton</i>	<i>A. pulchella</i>	32798	H	-	-	-	-	Mali	Cirad herbarium
	<i>A. abyssinica</i>	ILRI13761	S	3.98 ± 0.02	2n=72	8x	-	Ethiopia	ILRI
<i>Aeschynomene</i> subgenus	<i>A. abyssinica</i>	ILRI7705	S	2.06 ± 0.02	2n=36	4x	AB	Ethiopia	ILRI
<i>Rueppellia</i>	<i>A. bella</i>	ILRI18422	S	1.47 ± 0.01	2n=38	4x	AB	Tanzania	ILRI
	<i>A. heurckeana</i>	LSTM310	S	2.81 ± 0.04	2n=36	4x	-	Madagascar	LSTM
	<i>A. pygmaea</i>	LSTM321	S	6.71 ± 0.00	2n=76	8x	-	D.R. Congo	U. Liège
<i>Aeschynomene</i> unclassified	<i>A. patula</i>	CPI052332	S	0.58 ± 0.02	2n=20	2x		Madagascar	AusPGRIS
	<i>A. schindleri</i>	P001468	H	-	-	-		Madagascar	MNHN
<i>Bryaspis</i>	<i>B. humularioides</i>	Burgt 1734	S	3.93 ± 0.03	2n=40	4x	AB	Sierra Leone	RBG Kew (K)
	<i>B. lupulina</i>	KG369400	S	2.70 ± 0.01	2n=40	4x	AB	Mali	RBG Kew (K)
<i>Cyclocarpa</i>	<i>C. stellaris</i>	KG246518	S	1.89 ± 0.02	2n=28	4x	AB	Burkina faso	RBG Kew (K)
<i>Zoicaenic</i>	<i>G. cristata</i>		S	0.71 ± 0.01	2n=40	4x	AB	India	U. Calcutta

<i>Geissospermum</i>	<i>G. tenella</i>		S	0.71 ± 0.01	2n=40	4x	AB	India	U. Calcutta
<i>Humularia</i>	<i>H. descampsi</i>	ILRI16882	S	3.09 ± 0.04	-	4x	AB	Central African Rep.	LSTM
	<i>H. kapiensis</i>		S	4.09 ± 0.04	2n=38	4x	AB	D.R. Congo	U. Liège
<i>Kotschya</i>	<i>K. africana</i>		S	4.48 ± 0.01	2n=32	4x	-	Madagascar	LSTM
	<i>K. lutea</i>		S	2.99 ± 0.02	2n=36	4x	AB	Guinea	LSTM
	<i>K. strigosa</i>		S	4.46 ± 0.04	2n=36	4x	AB	Madagascar	LSTM
<i>Smithia</i>	<i>S. abyssinica</i>	ILRI8360	S	2.21 ± 0.01	2n=40	4x	AB	Ethiopia	ILRI
	<i>S. sensitiva</i>	ILRI23833	S	1.73 ± 0.01	2n=38	4x	AB	Papua New Guinea	ILRI
<i>Soemmeringia</i>	<i>S. semperflorens</i>	CIAT9844	S	1.66 ± 0.03	2n=20	2x		Brazil	CIAT

-: not determined

*: S, seeds ; H, herbarium specimen