***New Phytologist* Supporting Information Figs S1–S5 and Tables S1–S4**

Article title: **Were Fertile Crescent crop progenitors higher yielding than other wild species that were never domesticated?**

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Table S1 List of grass accessions used, including the seed bank it was obtained from, country of origin and mean individual seed mass in mg (± 1SE)

Species	Group	Seed bank	Accession numbers	Country of origin	Mean seed mass (mg) (± 1SE)	Experiment
Aegilops crassa Boiss.	Other wild	GRIN	PI 487286	Jordan	13.77 ± 1.28	2013
		GRIN	PI 219863	Iraq	15.36 ± 1.37	2013
		GRIN	PI 245725	Turkey	19.50 ± 1.00	2013
Aegilops speltoides Tausch	Other wild	GRIN	PI 170204	Turkey	6.81 ± 0.27	2011
		GRIN	PI 487231	Syria	6.26 ± 0.57	2011
		GRIN	PI 487234	Syria	6.58 ± 1.19	2013
		JIC	2140006	Israel	8.56 ± 0.64	2013
		JIC	2140015	Turkey	9.77 ± 1.74	2013
Aegilops tauschii Coss.	Other wild	GRIN	PI 486275	Turkey	8.68 ± 0.37	2011
		GRIN	PI 511370	Iran	16.11 ± 0.90	2011
Avena fatua L.	Other wild	GRIN	PI 126259	Afghanistan	16.06 ± 0.68	2011
		GRIN	PI 173584	Turkey	10.85 ± 0.60	2011
Avena sterilis L.	Other wild	GRIN	PI 326955	Israel	11.18 ± 0.59	2011
		GRIN	PI 134251	Afghanistan	22.32 ± 0.19	2011
		GRIN	PI 309424	Israel	13.64 ± 1.31	2011
Bromus brachystachys Hornung	Other wild	GRIN	PI 220582	Afghanistan	2.49 ± 0.13	2011 & 2013
		GRIN	PI 229598	Iran	2.47 ± 0.15	2013
Bromus tectorum L. subsp. *lucidus* Sales	Other wild	GRIN	PI 317422	Afghanistan	3.39 ± 0.20	2013
Eremopyrum bonaepartis (Spreng.) Nevski	Other wild	GRIN	PI 227343	Iran	1.78 ± 0.07	2011 & 2013
		GRIN	PI 227345	Iran	3.08 ± 0.10	2011
		IPK	GRA 791	Iran	2.53 ± 0.14	2013
		GRIN	PI 203442	Turkey	2.29 ± 0.27	2013
Eremopyrum distans (K. Koch) Nevski	Other wild	JIC	6060001	Afghanistan	2.91 ± 0.09	2013
		JIC	6060002	Afghanistan	3.43 ± 0.52	2013
Eremopyrum orientale (L.)	Other wild	GRIN	PI 219963	Afghanistan	2.79 ± 0.06	2011

Jaub. & Spach		GRIN	PI 229425	Iran	3.05 ± 0.08	2011
Hordeum marinum subsp.	Other wild	GRIN	PI 204582	Turkey	3.67 ± 0.25	2011
gussoneanum (Parl.) Thell.		GRIN	PI 220522	Afghanistan	2.09 ± 0.18	2011
Hordeum murinum subsp.	Other wild	GRIN	PI 401361	Iran	3.69 ± 0.54	2013
glaucum (Steud.) Tzvelev		GRIN	PI 204874	Turkey	4.69 ± 0.38	2013
		GRIN	PI 223371	Israel	3.48 ± 0.36	2013
Hordeum vulgare L. subsp.	Confirmed	GRIN	PI 282628	Israel	19.37 ± 1.34	2011
spontaneum (K. Koch) Thell.	Progenitor	GRIN	PI 466114	Syria	26.76 ± 1.08	2011
		GRIN	PI 236387	Syria	28.67 ± 0.74	2013
		GRIN	PI 354944	Israel	33.27 ± 2.30	2013
		GRIN	HOR2688	Iran	25.45 ± 2.18	2013
Lolium rigidum Gaudin	Other wild	GRIN	PI 254899	Iraq	2.20 ± 0.19	2013
		GRIN	PI 545595	Turkey	1.29 ± 0.09	2013
Phalaris minor Retz.	Other wild	Kew	113968	Jordan	1.43 ± 0.09	2013
		GRIN	PI 170628	Turkey	1.24 ± 0.08	2013
		GRIN	PI 226519	Iran	2.05 ± 0.12	2013
Phalaris paradoxa L.	Other wild	GRIN	PI 202684	Turkey	2.24 ± 0.29	2011
		GRIN	PI 380964	Iran	1.76 ± 0.04	2011 & 2013
		GRIN	PI 233268	Israel	0.57 ± 0.03	2013
		GRIN	PI 170618	Turkey	0.94 ± 0.07	2013
Secale strictum (C. Presl) C.	Other wild	GRIN	PI 383756	Turkey	5.51 ± 0.22	2011
Presl		GRIN	PI 240286	Turkey	18.12 ± 0.46	2011
Secale vavilovii Grossh.	Putative	GRIN	PI 284842	Hungary	28.81 ± 0.72	2011
	progenitor	GRIN	PI 573649	Afghanistan	21.74 ± 0.63	2011
Stipa capensis Thunb.	Other wild	GRIN	PI 170808	Turkey	1.31 ± 0.38	2013
		GRIN	PI 226672	Iran	1.49 ± 0.21	2013
Taeniatherum caput-medusae	Other wild	GRIN	PI 577709	Turkey	4.13 ± 0.11	2011
(L.) Nevski		GRIN	PI 577710	Turkey	7.80 ± 1.90	2011
		GRIN	PI 227665	Iran	6.80 ± 0.38	2013
		GRIN	PI 561095	Turkey	3.59 ± 0.12	2013
Triticum araraticum Jakubz.	Putative	JIC	1150001	USSR	18.03 ± 2.01	2013
	progenitor	JIC	1150002	Azerbaijan	35.15 ± 4.39	2013

Triticum monococcum L. subsp. *aegilopoides* (Link) Thell.	Confirmed progenitor	GRIN	PI 427452	Turkey	14.51 ± 1.39	2011
		GRIN	PI 245726	Turkey	16.13 ± 2.25	2011
		GRIN	PI 554577	Turkey	13.41 ± 2.43	2013
		GRIN	PI 427997	Lebanon	14.97 ± 1.25	2013
		IPK	TRI17105	Iran	20.26 ± 0.61	2013
Triticum turgidum L. subsp. *dicoccoides* (Körn. ex Asch. & Graebn.)Thell.	Confirmed progenitor	GRIN	PI 300989	Israel	27.28 ± 1.04	2011
		GRIN	PI 428022	Turkey	23.23 ± 0.98	2011
		GRIN	PI 352324	Lebanon	26.71 ± 1.09	2013
		GRIN	PI 428017	Turkey	43.11 ± 4.33	2013
		GRIN	PI 487242	Syria	27.55 ± 2.50	2013
Triticum urartu Tumanian ex Gandilyan	Putative progenitor	JIC	1010004	Turkey	16.36 ± 1.10	2013
		JIC	1010042	Iran	19.05 ± 2.22	2013
		JIC	1010044	Lebanon	10.68 ± 1.22	2013

Seed banks used were the USDA Germplasm Resources Information System (GRIN), IPK Gatersleben Genebank (IPK), John Innes Centre Germplasm Resources Unit (JIC) and Kew Royal Botanic Gardens' Millennium Seed Bank (Kew).

Table S2 List of legume accessions used, including the seed bank it was obtained from, country of origin and mean individual seed mass in mg (± 1SE)

Species	Group	Seed bank	Accession	Country of origin	Mean seed mass (mg) (± 1SE)	Experiment
Cicer judaicum Boiss.	Other wild	GRIN	PI 510662	Israel	18.26 ± 0.03	2011
		GRIN	PI 593710	Syria	17.9 ± 0.39	2011 &2013
		GRIN	PI 510659	Israel	23.7 ± 0.89	2013
		GRIN	PI 599078	Jordan	24.08 ± 1.67	2013
Cicer reticulatum Ladiz.	Confirmed	GRIN	PI 489777	Turkey	127.2 ± 5.41	2011 & 2013
	Progenitor	GRIN	PI 510656	Turkey	141.0 ± 4.51	2011
		GRIN	PI 599092	Turkey	156.69 ± 15.32	2013
Coronilla scorpioides (L.) W. D. J. Koch	Other wild	Kew	25225	Greece	2.23 ± 0.12	2013
Lathyrus aphaca L.	Other wild	GRIN	W6 2747	Syria	40.70 ± 4.85	2013
		GRIN	PI 227511	Iran	21.13 ± 1.75	2013
		GRIN	PI 358822	Israel	18.33 ± 4.44	2013
Lathyrus cicera L.	Other wild	GRIN	PI 174236	Turkey	88.36 ± 16.86	2013
		GRIN	PI 237639	Syria	77.46 ± 10.35	2013
		GRIN	PI 250758	Iran	56.15 ± 5.46	2013
Lathyrus inconspicuus	Other wild	Kew	10975	Greece	23.79 ± 1.26	2013
Lens culinaris Medik subsp. *odemensis* (Ladiz.)	Other wild	GRIN	PI 572364	Turkey	8.6 ± 0.26	2011 & 2013
		GRIN	PI 572360	Israel	16.5 ± 0.25	2011 & 2013
Lens culinaris subsp. *orientalis* (Boiss.)	Confirmed progenitor	GRIN	PI 572371	Israel	8.2 ± 0.25	2011 & 2013
		GRIN	PI 572379	Turkey	10.6 ± 0.24	2011
		GRIN	PI 572374	Iran	19.03 ± 1.56	2013
		GRIN	PI 572366	Turkey	8.71 ± 0.69	2013
Lens nigricans (M. Bieb.) Godr.	Other wild	GRIN	PI 572359	Turkey	7.47 ± 0.37	2013
		GRIN	PI 615676	Turkey	7.79 ± 0.82	2013
		GRIN	PI 615677	Turkey	7.43 ± 0.74	2013
Lupinus angustifolius L.	Other wild	Kew	78690	Greece	96.09 ± 5.67	2013

Melilotus indicus L.	Other wild	GRIN	MEL 22	unknown	0.56 ± 0.03	2013
		GRIN	MEL 28	Egypt	0.83 ± 0.06	2013
Medicago polymorpha L.	Other wild	GRIN	W6 2092	Turkey	5.53 ± 0.53	2013
		GRIN	W6 5311	Lebanon	3.43 ± 0.44	2013
		GRIN	W6 5332	Turkey	3.18 ± 0.34	2013
Pisum fulvum Sm.	Other wild	GRIN	PI 560065	Israel	67.2 ± 3.79	2011
		GRIN	PI 595946	Turkey	48.2 ± 1.99	2011 & 2013
		JIC	2514	Syria	73.77 ± 4.25	2013
		GRIN	PI 595944	Israel	62.85 ± 5.17	2013
Pisum sativum L. subsp. *elatius*	Confirmed	GRIN	PI 344004	Turkey	62.0 ± 1.65	2011
(Steven ex M. Bieb.) Asch. & Graebn.	Progenitor	GRIN	PI 343972	Turkey	87.7 ± 2.31	2011
Pisum sativum L. subsp.*elatius*	Confirmed	GRIN	W6 2107	Turkey	120.7 ± 5.68	2011
(Steven ex M. Bieb.) Asch. &	progenitor	GRIN	W6 12613	Turkey	76.4 ± 3.08	2011
Graebn. var. *pumilio* Meikle		GRIN	W6 2101	Turkey	70.29 ± 6.14	2013
		JIC	3273	Israel	82.6 ± 4.79	2013
		JIC	3274	Israel	72.9 ± 2.63	2013
Scorpiurus muricatus L.	Other wild	GRIN	W6 2758	Syria	15.6 ± 1.26	2013
		GRIN	PI 226484	Iran	9.33 ± 1.07	2013
		GRIN	PI 330680	Israel	15.23 ± 1.19	2013
Vicia ervilia (L.) Willd.	Confirmed	GRIN	PI 229733	Iran	36.2 ± 1.42	2011
	Progenitor	GRIN	PI 206489	Turkey	41.8 ± 1.34	2011
Vicia narbonensis L.	Other wild	GRIN	PI 294300	Israel	62.5 ± 15.36	2011
		GRIN	PI 206927	Turkey	206.8 ± 8.50	2011
		GRIN	PI 294298	Israel	91.5 ± 8.60	2013
		GRIN	PI 466295	Israel	151.25 ± 38.70	2013
Vicia peregrina L.	Other wild	GRIN	PI 227472	Iran	48.83 ± 4.53	2013
		GRIN	PI 343956	Turkey	38.11 ± 4.34	2013
		GRIN	PI 407641	Turkey	54.47 ± 4.67	2013

Table S3 Sample ubiquity (number of samples in which taxon occurs) list for the grass taxa used in this study, acquired from the archaeobotanical database

Site	Total samples	*Hordeum spontaneum*	*Phalaris*	*Phalaris paradoxa*	*Triticum boeoticum/Secale montanum/vavilovii*	*Stipa*	*Taeniatherum caput-medusae*	*Triticum boeoticum*	*Triticum dicoccoides*
Abu Hureyra	42	0	0	0	21	21	0	0	0
Demirkoy	8	5	0	0	1	0	2	0	0
Douara Cave	0	0	0	0	0	0	0	0	0
el-Hemmeh	3	1	1	0	0	1	0	0	0
Gesher	1	1	0	0	0	0	0	0	0
Gesher Benot Yaaqov	0	0	0	0	0	0	0	0	0
Gilgal	0	0	0	0	0	0	0	0	0
Göbekli Tepe	2	1	0	0	1	0	0	0	0
Hallan Çemi	179	49	0	0	13	41	76	0	0
Hayonim Cave	0	0	0	0	0	0	0	0	0
Iraq ed-Dubb	21	9	10	0	1	0	0	1	0
Jerf el Ahmar	538	258	0	0	233	14	1	32	0
Jericho	0	0	0	0	0	0	0	0	0
Kebara Cave	1	1	0	0	0	0	0	0	0
Kortik Tepe	2	0	0	0	1	0	1	0	0
Mlefaat	8	0	0	0	4	0	4	0	0
Mureybet	32	31	0	0	1	0	0	0	0
Nahal Oren	0	0	0	0	0	0	0	0	0
Nemrik 9	0	0	0	0	0	0	0	0	0
Netiv Hagdud	17	8	1	0	0	8	0	0	0
Ohalo II	4	4	0	0	0	0	0	0	0
Qermez Dere	37	18	0	0	15	1	3	0	0
Tell Abr	60	17	0	0	25	5	0	13	0
Tell Qaramel	179	40	1	0	50	13	0	75	0
Wadi al-Hammeh 27	5	3	0	0	0	2	0	0	0

Wadi el-Jilat 6	1	0	0	0	0	1	0	0	0
Wadi Faynan 16	1	0	0	0	0	1	0	0	0
Zahrat adh-Dhra 2	23	15	0	0	0	8	0	0	0

Table S4 Sample ubiquity (number of samples in which taxon occurs) list for the legume taxa used in this study, acquired from the archaeobotanical database

Site	Total samples	*Cicer*	*Lens*	*Pisum elatius/sativum*	*Vicia* spp. excluding *V. ervilia*	*Vicia ervilia*
Abu Hureyra	10	0	8	0	0	2
Demirkoy	1	0	0	1	0	0
Douara Cave	0	0	0	0	0	0
el-Hemmeh	3	1	1	0	1	0
Gesher	2	0	0	0	2	0
Gesher Benot Yaaqov	0	0	0	0	0	0
Gilgal	0	0	0	0	0	0
Göbekli Tepe	1	0	1	0	0	0
Hallan Çemi	75	0	11	41	0	23
Hayonim Cave	1	0	0	1	0	0
Iraq ed-Dubb	7	0	5	0	2	0
Jerf el Ahmar	292	0	228	5	58	54
Jericho	2	1	1	0	0	0
Kebara Cave	12	1	4	0	4	3
Kortik Tepe	0	0	0	0	0	0
Mlefaat	8	0	4	0	0	4
Mureybet	34	0	16	13	2	3
Nahal Oren	3	0	0	0	3	0
Nemrik 9	0	0	0	0	0	0
Netiv Hagdud	8	0	7	0	0	1
Ohalo II	1	0	1	0	0	0
Qermez Dere	31	0	27	0	1	3
Tell Abr	22	0	22	0	0	0
Tell Qaramel	102	0	85	2	9	6

Wadi al-Hammeh 27	1	0	1	0	0	0
Wadi el-Jilat 6	0	0	0	0	0	0
Wadi Faynan 16	0	0	0	0	0	0
Zahrat adh-Dhra 2	13	0	13	0	0	0

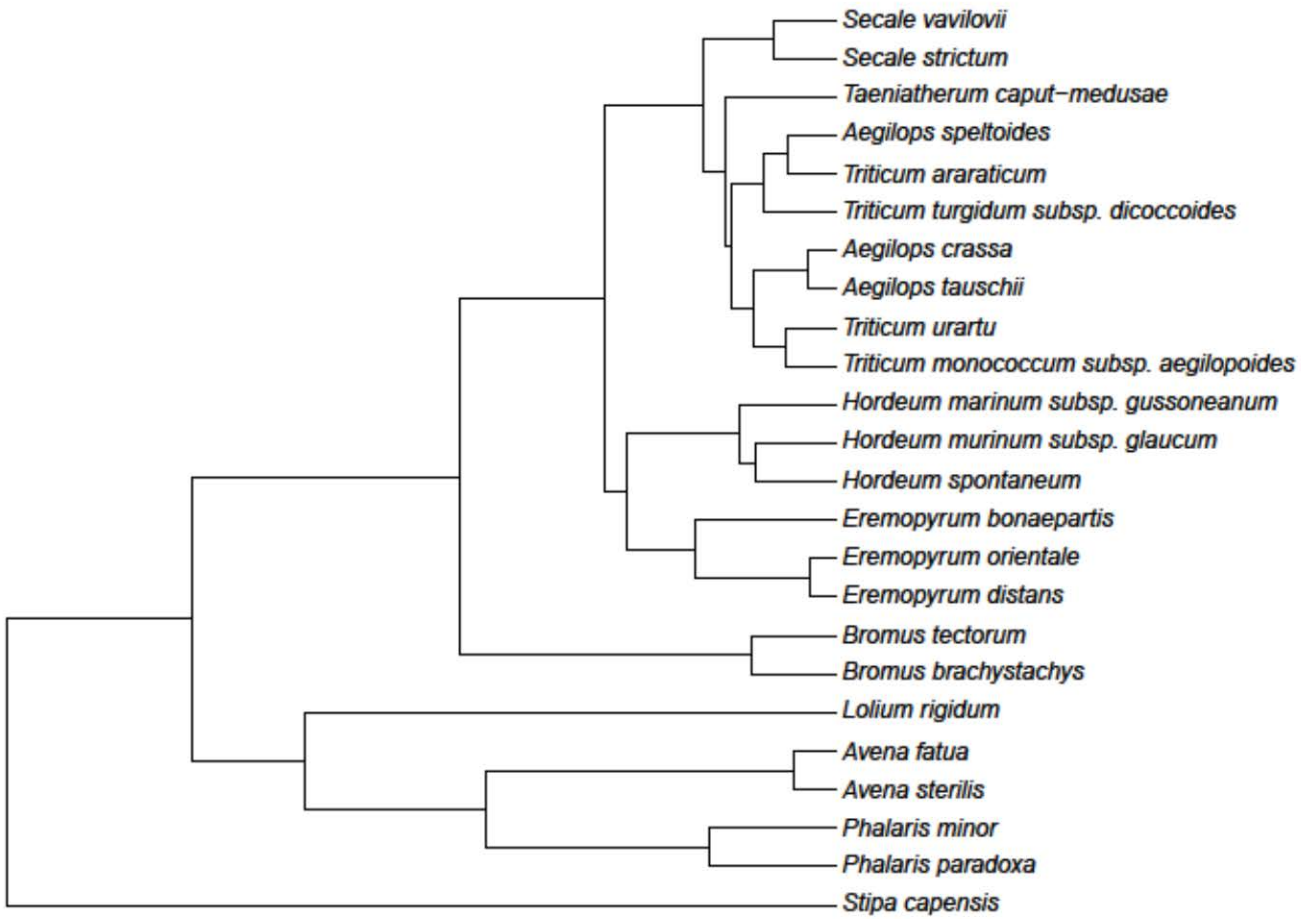

Fig. S1 Grass phylogeny for the 24 species used in our experiments, based on the two plastid markers *ndhF* and *trnKmatK*.

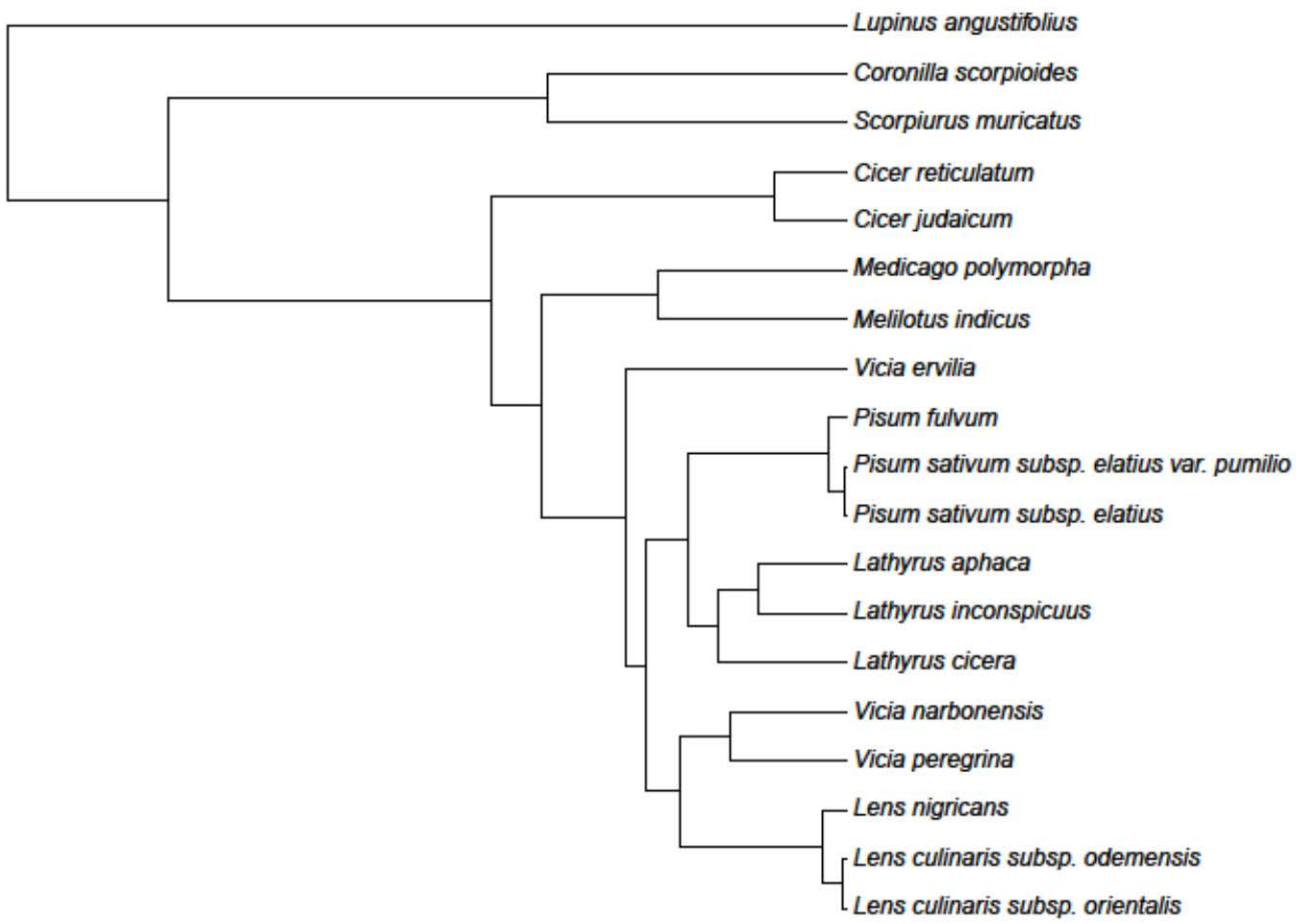

Fig. S2 Legume phylogeny for the 19 species used in our experiments, based on the plastid marker *trnKmatK*.

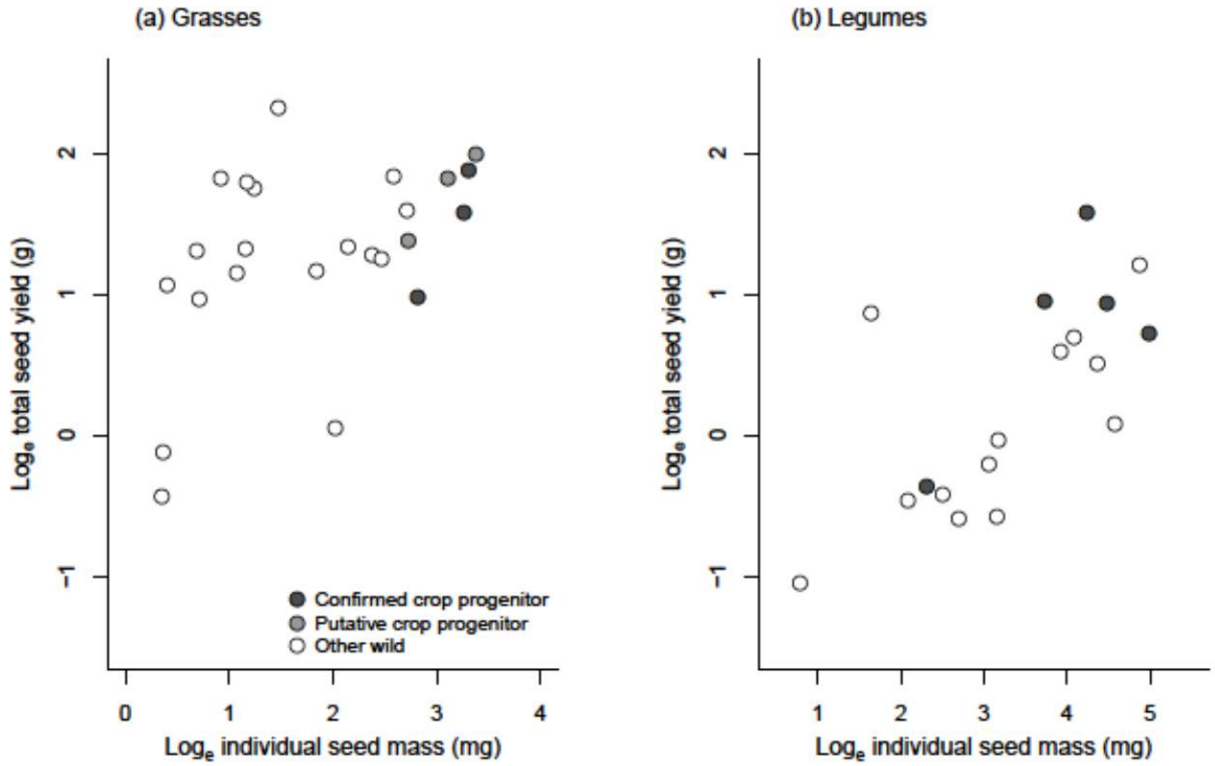

Fig. S3 Relationship between total seed yield and individual seed mass for (a) grasses and (b) legumes. Points are species means and are colour coded by category: dark grey circles, confirmed crop progenitors; light grey circles, putative crop progenitors; white circles, other wild species. Both axes are shown on a $\log_e$ scale. There was no correlation between these two traits for grasses, but there was a positive correlation for legumes ($P < 0.001$).

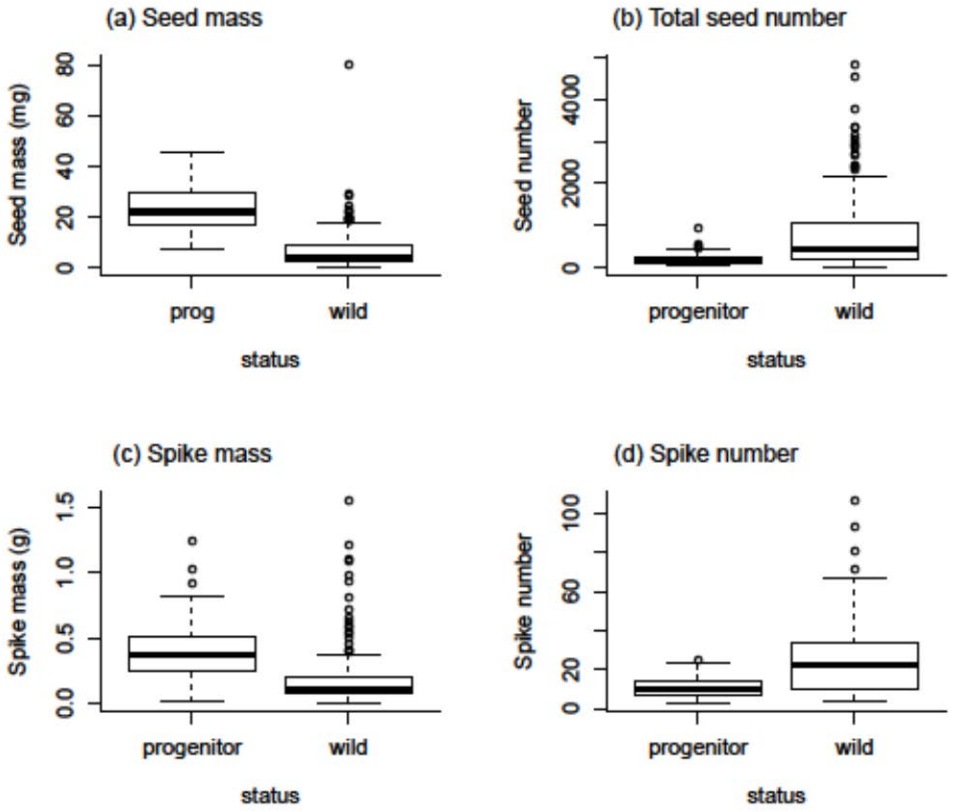

Fig. S4 Variability of traits relating to total seed yield in grasses, using the longlist of crop progenitors. Boxplots of (a) individual seed mass (mg), (b) total seed number per plant, (c) spike mass (g) and (d) spike number per plant are shown. Error bars represent 1.5 × the interquartile range.

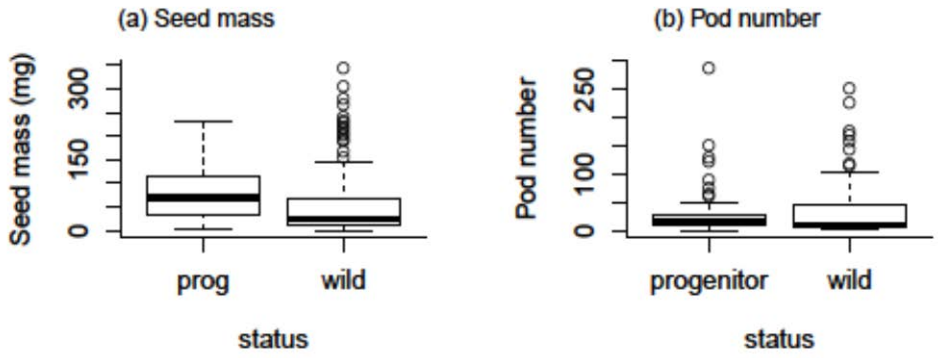

Fig. S5 Variability of traits relating to total seed yield in legumes. Boxplots of (a) individual seed mass (mg) and (b) pod number per plant are shown. Error bars represent 1.5 × the interquartile range.