

1 **Supplementary Online Information for Fertile Crescent crop progenitors gained a competitive advantage from large seedlings**

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5 **Table S1. List of grass accessions used, including domestication status, accession number on the GRIN database, country of origin and mean initial seed mass in mg**  
6 **( $\pm 1SE$ ).**  
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Species	Status	Accession numbers	Country of origin	Mean seed mass mg ( $\pm 1SE$ )	Used in growth experiment	Used in competition experiment
<i>Aegilops speltoides</i> Tausch	Wild	PI 170204	Turkey	6.8 $\pm$ 0.27	Yes	Yes
		PI 487231	Syria	6.3 $\pm$ 0.57	Yes	Yes
<i>Aegilops tauschii</i> Coss.	Wild	PI 486275	Turkey	8.7 $\pm$ 0.37	Yes	No
		PI 511370	Iran	16.1 $\pm$ 1.08	Yes	No
<i>Avena fatua</i> L.	Wild	PI 173584	Turkey	10.9 $\pm$ 0.60	Yes	No
		PI 432457	USA	10.5 $\pm$ 0.87	Yes	No
<i>Avena sterilis</i> L.	Wild	PI 309527	Israel	11.5 $\pm$ 0.72	Yes	No
		PI 220372	Afghanistan	16.1 $\pm$ 0.72	Yes	No
		PI 134251	Afghanistan	22.3 $\pm$ 1.09	No	Yes
		PI 309424	Israel	13.6 $\pm$ 1.31	No	Yes

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		PI 326955	Israel	11.2 ± 0.59	No	Yes
<i>Bromus brachystachys</i> Hornung	Wild	PI 220582	Afghanistan	2.4 ± 0.03	Yes	Yes
<i>Eremopyrum bonaepartis</i> (Spreng.) Nevski	Wild	PI 227345	Iran	3.1 ± 0.10	Yes	Yes
		PI 227343	Iran	1.8 ± 0.07	Yes	Yes
<i>Eremopyrum orientale</i> (L.) Jaub. & Spach	Wild	PI 229425	Iran	3.1 ± 0.08	Yes	No
		PI 219963	Iran	2.8 ± 0.06	Yes	No
<i>Hordeum marinum</i> subsp. <i>gussoneanum</i> (Parl.) Thell.	Wild	PI 401358	Iran	2.9 ± 0.21	Yes	No
<i>Hordeum vulgare</i> L. subsp. <i>spontaneum</i> (K. Koch) Thell.	Progenitor	PI 282656	Israel	12.9 ± 0.79	Yes	Yes
		PI 466126	Syria	28.8 ± 0.88	Yes	Yes
<i>Phalaris paradoxa</i> L.	Wild	PI 202684	Turkey	2.2 ± 0.29	Yes	No
		PI 380964	Iran	1.8 ± 0.04	Yes	No
<i>Secale strictum</i> (C. Presl) C. Presl	Wild	PI 383756	Turkey	5.5 ± 0.22	Yes	No
<i>Secale vavilovii</i> Grossh.	Secondary progenitor	PI 284842	Hungary	28.8 ± 0.71	Yes	Yes
		PI 573649	Afghanistan	21.7 ± 0.63	Yes	Yes
<i>Taeniatherum caput- medusae</i> (L.) Nevski	Wild	PI 577710	Turkey	7.8 ± 1.90	Yes	Yes
		PI 577709	Turkey	4.1 ± 0.11	No	Yes

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<i>Triticum monococcum</i> L. subsp. <i>aegilopoides</i> (Link) Thell.	Progenitor	PI 352503	Iran	14.2 ± 0.66	Yes	No
		PI 527697	Canada	12.4 ± 0.99	Yes	No
		PI 245726	Turkey	16.1 ± 2.25	No	Yes
		PI 427452	Turkey	14.5 ± 1.39	No	Yes
<i>Triticum turgidum</i> L. subsp. <i>dicoccoides</i> (Körn. ex Asch. & Graebn.) Thell.	Progenitor	PI 352324	Lebanon	32.1 ± 1.29	Yes	No
		PI 428022	Turkey	23.2 ± 0.98	No	Yes
		PI 300989	Israel	27.3 ± 1.04	No	Yes

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10 **Table S2. Species used in experiments 1 and 2 of the growth experiment.**

Species	Experiment 1	Experiment 2
<i>Aegilops speltoides</i> Tausch	X	X
<i>Aegilops tauschii</i> Coss.	X	X
<i>Avena fatua</i> L.	X	X
<i>Avena sterilis</i> L.	X	X
<i>Bromus brachystachys</i> Hornung	X	X
<i>Eremopyrum bonaepartis</i> (Spreng.) Nevski	X	X
<i>Eremopyrum orientale</i> (L.) Jaub. & Spach	X	X
<i>Hordeum marinum</i> subsp. <i>gussoneanum</i> (Parl.) Thell.	X	
<i>Hordeum vulgare</i> L. subsp. <i>spontaneum</i> K. Koch) Thell.		X
<i>Phalaris paradoxa</i> L.	X	X
<i>Secale strictum</i> (C. Presl) C. Presl	X	
<i>Secale vavilovii</i> Grossh.	X	X
<i>Taeniatherum caput-medusae</i> (L.) Nevski	X	
<i>Triticum monococcum</i> L. subsp. <i>aegilopoides</i> (Link)	X	X
<i>Triticum turgidum</i> L. subsp. <i>dicoccoides</i> (Körn. ex Asch. & Graebn.) Thell.	X	

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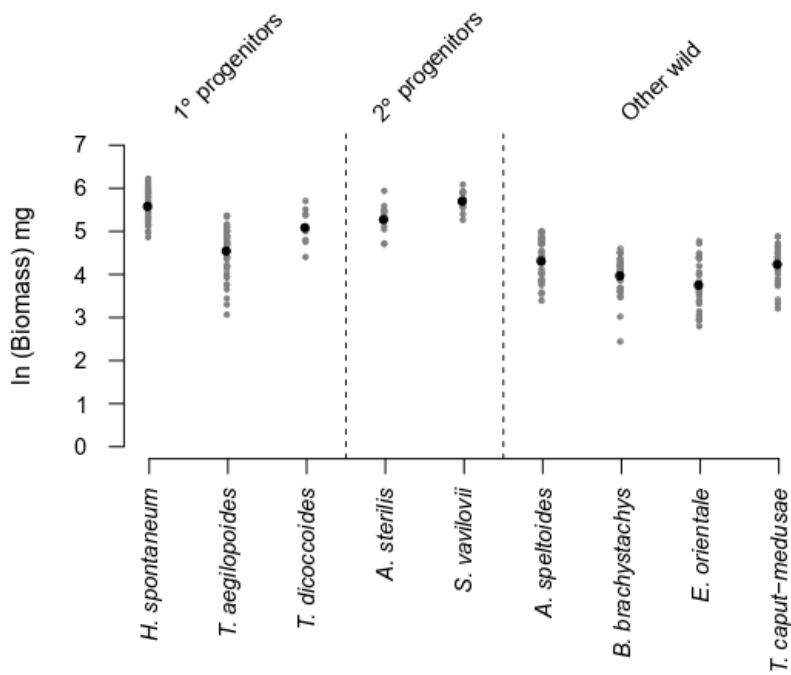
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17 **Table S3. Species used in the competition experiment showing the nine species grown as monocultures and the**  
 18 **eight combinations of wild-progenitor pairs.**

Monocultures	Mixtures		
<i>Aegilops speltoides</i> (wild)	<i>Aegilops speltoides</i> (wild)	and	<i>Hordeum vulgare</i> subsp. <i>spontaneum</i> (progenitor)
<i>Avena sterilis</i> (secondary progenitor)	<i>Bromus brachystachys</i> (wild)	and	<i>Hordeum vulgare</i> subsp. <i>spontaneum</i> (progenitor)
<i>Bromus brachystachys</i> (wild)	<i>Eremopyrum orientale</i> (wild)	and	<i>Hordeum vulgare</i> L. subsp. <i>spontaneum</i> (progenitor)
<i>Eremopyrum orientale</i> (wild)	<i>Taeniatherum caput-medusae</i> (wild)	and	<i>Hordeum vulgare</i> subsp. <i>spontaneum</i> (progenitor)
<i>Hordeum vulgare</i> subsp. <i>spontaneum</i> (primary progenitor)	<i>Aegilops speltoides</i> (wild)	and	<i>Triticum monococcum</i> subsp. <i>aegilopoides</i> (progenitor)
<i>Secale vavilovii</i> (secondary progenitor)	<i>Bromus brachystachys</i> (wild)	and	<i>Triticum monococcum</i> subsp. <i>aegilopoides</i> (progenitor)
<i>Taeniatherum caput-medusae</i> (wild)	<i>Eremopyrum orientale</i> (wild)	and	<i>Triticum monococcum</i> subsp. <i>aegilopoides</i> (progenitor)
<i>Triticum monococcum</i> subsp. <i>aegilopoides</i> (primary progenitor)	<i>Taeniatherum caput-medusae</i> (wild)	and	<i>Triticum monococcum</i> subsp. <i>aegilopoides</i> (progenitor)
<i>Triticum turgidum</i> subsp. <i>dicoccoides</i> (primary progenitor)			

**Fig. S1.** Mean natural logged plant biomass of species in the competition experiment (data for monocultures and mixtures pooled together where relevant).



**Fig. S2.** The relationship between natural logged plant biomass and natural logged individual seed mass ( $P < 0.01$ ). Colours of points show the combinations of domestication status (prog = progenitor) and stand type (mix = mixture, and mono = monoculture).

