Table S1. The effect of *Arabidopsis* genotypic diversity and different growing conditions on seed productivity in the four-way mixture experiments. In each case, a linear mixed model was used to analyse each factor and the interactions between them. Fixed effects included growing season (autumn, winter, summer), nutrient level (high/low) and cultivation (monoculture/mixture) and genotype. Non-significant interaction terms were removed from each model. F: variance ratio for use in F-test; n.d.f.: numerator degrees of freedom; d.d.f.: denominator degrees of freedom.

a) Analysis of combined data from all three experiments. N=1880.

Fixed effect	F	n.d.f.	d.d.f.	P
season	305.66	2	63.5	<0.001
nutrient level	0.92	1	60.3	0.3
cultivation	5.52	1	61.7	0.02
genotype	153.45	3	940.5	<0.001
season x nutrient	11.99	2	65.3	<0.001
season x cultivation	13.39	2	66.9	<0.001
genotype x season	56.17	6	888.6	<0.001
genotype x nutrient level	5.26	3	921.1	0.001
genotype x cultivation	25.29	3	135.4	<0.001
genotype x season x nutrient level	4.48	6	834.9	<0.001
genotype x season x cultivation	2.48	6	157.4	0.03
genotype x nutrient level x cultivation	3.68	4	108.4	0.007

b) Analysis of data from the autumn and winter seasons of the four-way mixture experiment. N=1260.

Fixed term	F	n.d.f.	d.d.f.	P
season	2.12	1	47.5	0.02
nutrient level	12.53	1	46.5	<0.001
cultivation	2.39	1	47.3	0.1
genotype	67.7	3	750.4	<0.001
season x nutrient level	5.43	1	47.1	0.02
genotype x nutrient level	3.14	3	751.4	0.03
genotype x cultivation	16.23	3	105.4	<0.001

c) Analysis of data from the summer season of the four-way mixture experiment. N= 620.

Fixed term	F	n.d.f.	d.d.f.	P
nutrient level	10.66	1	21.0	0.004
cultivation	39.17	1	23.0	<0.001
genotype	156.92	3	184.8	<0.001
genotype x nutrient level	7.43	3	159.1	<0.001
genotype x cultivation	11.82	3	62.0	<0.001
genotype x nutrient level x cultivation	3.22	4	49.9	0.02

Table S2. The effect of *Arabidopsis* genotypic diversity and different growing conditions on days to flowering in all three growing seasons of a four-way mixture experiment. A linear mixed model analysed each factor individually and the interactions between them. Fixed factors include experimental season, nutrient level (high/low) and cultivation (monoculture/mixture) and genotype. N=1880. F: variance ratio for use in F-test; n.d.f.: numerator degrees of freedom; d.d.f.: denominator degrees of freedom.

Fixed effect	F	n.d.f.	d.d.f.	P
season	284.45	2	55.5	<0.001
nutrient level	9.60	1	52.9	0.003
cultivation	0.01	1	56.9	0.9
genotype	876.13	3	1125.3	<0.001
season x nutrient level	20.58	2	53.8	<0.001
season x genotype	45.47	6	1204.2	<0.001
nutrient x genotype	3.80	3	1124.0	0.01
cultivation x genotype	10.30	3	124.6	<0.001
season x nutrient level x genotype	7.46	6	1097.0	<0.001
season x cultivation x genotype	13.17	8	105.0	<0.001
season x nutrient level cultivation x genotype	2.01	12	102.5	0.03

Table S3. The effect of *Arabidopsis* genotypic diversity and different growing conditions on seed productivity in a pair-wise interaction experiment. A linear mixed model was used to analyse each factor and all interactions between them. Fixed effects included genotype, competition type (above ground only/above and below ground) and cultivation (mixture/monoculture). Non-significant terms were eliminated from the model. *F* and *P* values refer to ANOVA tests of each factor separately and the interactions between them. N=639.

Fixed term	F	n.d.f.	d.d.f.	P
genotype	137.76	7	275.3	<0.001
competition type	23.47	2	173.2	<0.001
cultivation	9.87	1	287.2	<0.001
genotype x competition type	7.91	14	176.7	<0.001

Table S4. The effect of competitive group of the focal and competing plant, competition type (above ground only/above and below ground) on seed productivity of *Arabidopsis* plants in the pair-wise interaction experiments. A linear mixed model was used to analyse each factor and the interactions between them. Fixed effects included growing season, competition type (above/below-ground), competitive group of focal plant competitive group of competing plant. Non-significant interaction terms were removed from each model. *F* and *P* values refer to ANOVA tests of each factor separately and the interactions between them. N=639.

Fixed term	F	n.d.f.	d.d.f.	P
competition type	4.58	1	295.5	0.03
competitive group of focal plant	143.6	3	295.6	<0.001
competitive group of competing plant	6.16	3	295.5	<0.001
competition type x competitive group of focal plant	19.92	3	295.7	<0.001
competition type x competitive group of competing plant	3.77	3	295.5	0.01

Table S5. The effect of competition (presence/absence of competitors) and competitive group of the focal plant on seed productivity of *Arabidopsis* plants in a pair-wise interaction experiment. A linear mixed model was used to analyse each factor and all interactions between them. Fixed effects included growing season, competition type (above/below-ground), competitive group of focal plant competitive group of competing plant. Non-significant interaction terms were removed from each model. *F* and *P* values refer to ANOVA tests of each factor separately and the interactions between them. N=639.

Fixed term	F	n.d.f.	d.d.f.	P
competition (presence/absence)	18.39	1	212.0	<0.001
competitive group of focal plant	347.7	3	308.5	<0.001
competition (presence/absence) x competitive group of focal plant	16.1	3	212.1	0.001