

SUPPLEMENTARY DATA

TABLE S1. Summary of wild *P. vulgaris* BRWN and BRN screening results. Average whorl and basal root number are based on the screening of five replicates per genotype.

Genotype/ RIL	Average number of whorls	Average number of roots	Standard deviation for number of roots	Average seed weight (g)
PI318695	2.20	8.80	1.79	0.035
PI417680	2.00	8.00	0.00	0.125
PI430217	2.00	8.00	0.00	0.085
PI417692	2.00	8.00	0.00	0.110
PI346956	2.00	8.00	0.00	0.047
PI417695	2.00	8.00	0.00	0.128
PI417710	2.00	8.00	0.00	0.016
PI533383	2.00	8.00	0.00	0.091
PI535403	2.00	8.00	0.00	0.092
PI207431	2.00	8.00	0.00	0.070
PI273452	2.00	8.00	0.00	0.104
PI317349	2.00	8.00	0.00	0.051
PI318696	2.00	8.00	0.00	0.054
PI318698	2.00	8.00	0.00	0.041
PI318703	2.00	8.00	0.00	0.029
PI325677	2.00	8.00	0.00	0.033
PI325679	2.00	8.00	0.00	0.107
PI325683	2.00	8.00	0.00	0.052
PI325684	2.00	8.00	0.00	0.026
PI325696	2.00	8.00	0.00	0.033
PI325687	2.00	8.00	0.00	0.024
PI325690	2.00	8.00	0.00	0.043

PI326091	2.00	8.00	0.00	0.051
PI346955	2.00	8.00	0.00	0.109
PI346957	2.00	8.00	0.00	0.071
PI390720	2.00	8.00	0.00	0.108
PI417621	2.00	8.00	0.00	0.050
PI417623	2.00	8.00	0.00	0.109
PI417624	2.00	8.00	0.00	0.056
PI417627	2.00	8.00	0.00	0.137
PI417628	2.00	8.00	0.00	0.151
PI318691	2.00	8.00	0.00	0.067
PI325691	2.00	7.40	1.34	0.034
PI317350	2.00	7.20	1.10	0.049
PI417659	2.00	6.60	1.34	0.047
PI417704	2.00	6.40	1.14	0.134
PI417644	2.00	5.80	1.10	0.089
PI329247	2.00	8.00	0.00	0.045
PI417699	1.80	7.20	1.79	0.164
PI318699	1.80	7.20	1.79	0.051
PI325682	1.80	7.20	1.79	0.050
PI417771	1.80	6.80	1.79	0.056
PI318694	1.80	6.60	1.95	0.034
PI318697	1.80	5.60	0.89	0.038
PI318700	1.60	6.00	2.00	0.028
PI417626	1.60	6.00	2.00	0.049
PI325688	1.60	5.80	2.05	0.028
PI417622	1.60	5.80	2.05	0.046
PI417644	1.60	5.20	1.30	0.075

PI325689	1.60	5.20	1.10	0.034
PI325685	1.60	4.80	0.84	0.036
PI417625	1.60	4.60	0.55	0.068
PI318702	1.40	5.60	2.19	0.062
PI325678	1.40	5.60	2.19	0.037
PI325680	1.40	5.60	2.19	0.038
PI417620	1.40	5.60	2.19	0.053
PI325676	1.40	4.80	1.10	0.043
PI417782	1.40	4.40	0.55	0.050
PI318692	1.20	4.80	1.79	0.023
PI343950	1.20	4.80	1.79	0.052
PI325687	1.00	4.00	0.00	0.021
PI226910	1.00	4.00	0.00	0.064
PI417634	1.00	4.00	0.00	0.080

TABLE S2. Data from all the materials (wild, cultivated and breeding lines) included in the study.

Genotype/RIL	Average number of whorls	Average number of roots	Standard deviation for number of roots	Average seed weight (g)
37	3.2	11.60	0.89	0.39
74	3.2	10.80	0.45	0.21
51	3.2	10.20	1.48	0.25
6	3	11.80	0.45	0.24
62	3	11.80	1.30	0.24
4	3	11.40	0.55	0.25
G19833	3	10.80	0.45	0.39
10	3	10.67	1.53	0.30
2	3	9.60	0.55	0.40
9	2.8	10.80	1.79	0.27
34	2.8	10.60	1.67	0.30
19	2.8	9.20	1.10	0.29
21	2.6	9.60	1.67	0.23
69	2.4	9.40	1.52	0.25
63	2.4	9.20	1.64	0.29
20	2.4	8.40	0.55	0.31
16	2.2	8.80	1.30	0.32
86	2.2	8.60	1.34	0.30
23	2.2	8.40	0.89	0.31
25	2.2	8.40	0.89	0.27
57	2.2	8.20	0.45	0.33
28	2.2	8.00	0.00	0.19
27	2	8.40	0.89	0.21
36	2	8.40	0.89	0.18

29	2	8.20	0.45	0.39
3	2	8.00	0.00	0.29
5	2	8.00	0.00	0.36
8	2	8.00	0.00	0.20
11	2	8.00	0.00	0.38
12	2	8.00	0.00	0.22
13	2	8.00	0.00	0.27
14	2	8.00	0.00	0.23
15	2	8.00	0.00	0.24
17	2	8.00	0.00	0.26
18	2	8.00	0.00	0.21
22	2	8.00	0.00	0.31
24	2	8.00	0.00	0.32
26	2	8.00	0.00	0.32
30	2	8.00	0.00	0.24
31	2	8.00	0.00	0.28
32	2	8.00	0.00	0.25
33	2	8.00	0.00	0.29
35	2	8.00	0.00	0.37
38	2	8.00	0.00	0.24
39	2	8.00	0.00	0.24
40	2	8.00	0.00	0.28
45	2	8.00	0.00	0.24
46	2	8.00	0.00	0.22
47	2	8.00	0.00	0.28
48	2	8.00	0.00	0.37
49	2	8.00	0.00	0.24

50	2	8.00	0.00	0.29
52	2	8.00	0.00	0.24
53	2	8.00	0.00	0.25
54	2	8.00	0.00	0.31
55	2	8.00	0.00	0.29
56	2	8.00	0.00	0.30
58	2	8.00	0.00	0.29
59	2	8.00	0.00	0.29
60	2	8.00	0.00	0.29
61	2	8.00	0.00	0.22
64	2	8.00	0.00	0.19
65	2	8.00	0.00	0.19
66	2	8.00	0.00	0.25
67	2	8.00	0.00	0.32
68	2	8.00	0.00	0.21
70	2	8.00	0.00	0.35
71	2	8.00	0.00	0.17
72	2	8.00	0.00	0.26
73	2	8.00	0.00	0.28
75	2	8.00	0.00	0.34
76	2	8.00	0.00	0.22
81	2	8.00	0.00	0.33
82	2	8.00	0.00	0.21
83	2	8.00	0.00	0.19
84	2	8.00	0.00	0.23
85	2	8.00	0.00	0.32
87	2	8.00	0.00	0.28

88	2	8.00	0.00	0.28
89	2	8.00	0.00	0.29
DOR364	2	8.00	0.00	0.23
22	3.00	12.00	0.00	0.43
41	3.00	12.00	0.00	0.39
G19839	3.00	11.50	1.00	0.38
39	3.00	11.40	0.89	0.32
24	3.00	10.60	1.14	0.41
80	3.00	10.40	0.58	0.40
26	2.80	9.80	1.64	0.53
25	2.80	9.20	0.84	0.34
30	2.67	10.67	2.31	0.41
67	2.60	10.00	2.00	0.36
32	2.60	9.80	1.64	0.40
43	2.60	9.40	0.58	0.39
82	2.40	8.80	1.10	0.44
31	2.33	8.67	1.15	0.34
28	2.20	8.40	0.89	0.38
G23333	2.00	8.00	0.00	0.27
3	2.00	8.00	0.00	0.27
4	2.00	8.00	0.00	0.50
5	2.00	8.00	0.00	0.45
7	2.00	8.00	0.00	0.31
8	2.00	8.00	0.00	0.31
9	2.00	8.00	0.00	0.33
10	2.00	8.00	0.00	0.40
11	2.00	8.00	0.00	0.37

12	2.00	8.00	0.00	0.34
14	2.00	8.00	0.00	0.28
15	2.00	8.00	0.00	0.30
16	2.00	8.00	0.00	0.33
18	2.00	8.00	0.00	0.40
21	2.00	8.00	0.00	0.31
23	2.00	8.00	0.00	0.34
32	2.00	8.00	0.00	0.37
37	2.00	8.00	0.00	0.40
38	2.00	8.00	0.00	0.42
40	2.00	8.00	0.00	0.37
42	2.00	8.00	0.00	0.33
44	2.00	8.00	0.00	0.26
45	2.00	8.00	0.00	0.43
49	2.00	8.00	0.00	0.31
51	2.00	8.00	0.00	0.44
52	2.00	8.00	0.00	0.36
55	2.00	8.00	0.00	0.33
56	2.00	8.00	0.00	0.33
59	2.00	8.00	0.00	0.35
60	2.00	8.00	0.00	0.37
63	2.00	8.00	0.00	0.35
64	2.00	8.00	0.00	0.30
65	2.00	8.00	0.00	0.30
66	2.00	8.00	0.00	0.49
68	2.00	8.00	0.00	0.26
69	2.00	8.00	0.00	0.26

70	2.00	8.00	0.00	0.37
73	2.00	8.00	0.00	0.48
74	2.00	8.00	0.00	0.38
75	2.00	8.00	0.00	0.36
76	2.00	8.00	0.00	0.31
77	2.00	8.00	0.00	0.31
78	2.00	8.00	0.00	0.28
83	2.00	8.00	0.00	0.43
85	2.00	8.00	0.00	0.38
86	2.00	8.00	0.00	0.28
27	2.00	8.00	0.00	0.46
G4494	3.20	12.00	2.55	0.58
CAL125	3.00	12.00	0.00	0.4
G14655	3.00	11.20	1.79	0.49
CERINZA	3.00	11.00	0.71	0.52
CAL149	3.00	10.20	0.84	0.53
ZPV292	3.00	9.60	0.89	0.36
TLP19	2.80	10.40	1.52	0.24
G19842	2.60	9.80	1.79	0.42
CRF61	2.60	9.20	1.30	0.24
MAR*1	2.60	9.00	1.00	0.25
AND696	2.20	8.60	1.34	0.45
VAX1	2.20	8.40	0.89	0.22
BF 29	2.00	8.00	0.00	0.23
BF19	2.00	8.00	0.00	0.24
DICTA17	2.00	8.00	0.00	0.32
BF54	2.00	8.00	0.00	0.27

TLP35	2.00	8.00	0.00	0.23
BF49	2.00	8.00	0.00	0.24
MD2324	2.00	8.00	0.00	0.23
VAX6	2.00	8.00	0.00	0.19
BAT881	2.00	8.00	0.00	0.17
SEA5	2.00	8.00	0.00	0.23
RAB651	2.00	8.00	0.00	0.2
BAT477	2.00	8.00	0.00	0.17
A774	2.00	8.00	0.00	0.41
G4825	2.00	8.00	0.00	0.22
G19227A	2.00	8.00	0.00	0.22
AFR475	2.00	8.00	0.00	0.2
SEQ7	2.00	8.00	0.00	0.27
AND774	2.00	8.00	0.00	0.41
MAM38	2.00	8.00	0.00	0.28
RAB655	2.00	8.00	0.00	0.26
G3513	2.00	8.00	0.00	0.23
G21212	2.00	8.00	0.00	0.23
PI417680	2.00	8.00	0.00	0.12
PI417644	2.00	5.80	1.10	0.09
PI325687	1.00	4.00	0.00	0.02
PI430217	2.00	8.00	0.00	0.09
PI417692	2.00	8.00	0.00	0.11
PI417680	2.00	8.00	0.00	0.12
PI430217	2.00	8.00	0.00	0.09
PI417692	2.00	8.00	0.00	0.11
PI346956	2.00	8.00	0.00	0.05

PI417695	2.00	8.00	0.00	0.13
PI417710	2.00	8.00	0.00	0.02
PI533383	2.00	8.00	0.00	0.09
PI535403	2.00	8.00	0.00	0.09
PI417659	2.00	6.60	1.34	0.05
PI417704	2.00	6.40	1.14	0.13
PI417644	2.00	5.80	1.10	0.09
PI417699	1.80	7.20	1.79	0.16
PI417771	1.80	6.80	1.79	0.06
PI318697	1.80	5.60	0.89	0.04
PI417644	1.60	5.20	1.30	0.07
PI417782	1.40	4.40	0.55	0.05
PI325687	1.00	4.00	0.00	0.02
PI226910	1.00	4.00	0.00	0.06
PI417634	1.00	4.00	0.00	0.08
G25954	3.25	13.75	4.35	0.30
G25798	3.00	12.00	0.00	0.44
G35341	3.00	11.80	1.48	1.04
G35372	3.00	11.60	0.55	0.60
G40142	3.00	11.00	2.83	0.16
carioca	2.40	8.80	1.10	0.16
G35877	2.20	8.40	0.89	0.22
G25914	2.00	8.25	0.50	0.14
G40151	2.00	8.00	0.00	0.17
G40148	2.00	8.00	0.00	0.15
W617479	2.00	8.00	0.00	0.23
W617480	2.00	6.80	0.82	0.23

G25704	1.20	4.40	0.89	0.12
G40054	1.00	4.00	0.00	0.02
PI1535294	0.00	0.00	0.00	0.01
PI1535304	0.00	0.00	0.00	0.01
PI1535303	0.00	0.00	0.00	0.01
PI535300	0.00	0.00	0.00	0.01
P26168	0.00	0.00	0.00	0.01
