

Supplementary table 2. QTL positions and effect in the three different intercrosses. Model indicates whether an additive, additive+dominance, or sex interaction model was used. Where two columns for additive and dominance effects are given, the first refers to males and the second to females.

Cross	type	trait	full	chr	position(Mb)	pos(cM)	model	LOD	r squared	add	s.e	dom	s.e	add	s.e	dom	s.e	lower CI cM	Upper CI cM	Lower CI Mb	Upper CI Mb	
F8	comb	comb mass (g)	a	1	35.5	503	a+d s.i.	6.2	0.03	2.16	2.02	-15.03	3.88					491	521	29	36.7	
F8	comb	comb mass (g)	a	1	123	1508	a+d	11.0	0.08	1.81	0.52	-3.60	0.80					1499	1517	120	127	
F8	comb	comb mass (g)	a	1	172	1842	a+d s.i.	7.4	0.03	-5.99	1.52	6.04	2.13					1821	1849	166.9	177.2	
F8	comb	comb mass (g)	a	2	33.4	2171	a+d	11.2	0.08	-1.85	0.43	-1.62	0.56					229	288	28.9	38.5	
F8	comb	comb mass (g)	a	3	16	147	a+d s.i.	37.7	0.22	-10.91	1.03	-3.22	1.50					144	155	15.6	16	
F8	comb	comb mass (g)	a	4	68	427	a+d s.i.	5.4	0.03	-2.25	1.71	-5.04	2.22					421	468	64.8	71.8	
F8	comb	comb mass (g)	a	5	32.70	232	a+d	4.7	0.03	0.70	0.35	-1.87	0.47					220	237		36.00	
F8	comb	comb mass (g)	a	8	20.60	118	a+d s.i.	9.5	0.05	-4.24	1.59	7.82	2.70					107	126	19.60	21.60	
F8	comb	comb mass (g)	a	13	17	209	a+d s.i.	5.9	0.03	-4.52	1.13	-4.47	1.54					199	213	15.1	18.9	
OS/RJF	dia.cort	diaphyseal cortical thickness (mm)	a	4	68.9	133	a+d s.i.	5.1	0.04	0.04	0.01	-0.01	0.01	0.01	0.01	0.00	0.01	0.01	116	156	15.1	86.2
OS/RJF	dia.cort	diaphyseal bone coverage (%)	a	5	10.00	44	a+d	3.7	0.06	0.03	0.01	-0.01	0.01					27	67	6.40	13.90	
OS/RJF	dia.cort	diaphyseal cortical density (mg/cm3)	a	1	141.1	305	a+d	3.2	0.03	4.40	1.15	0.51	1.59					280	347	123	172.7	
OS/RJF	dia.cort	diaphyseal cortical density (mg/cm3)	a	2	22.5	62	a+d s.i.	4.6	0.04	4.50	1.63	0.24	2.43	1.65	1.50	-7.72	2.20	46	85	10.9	35	
OS/RJF	dia.cort	diaphyseal cortical area (mm2)	a	1	63.6	169	a+d	3.6	0.06	0.39	0.10	-0.10	0.16					103	183	32.9	70.8	
OS/RJF	dia.cort	diaphyseal cortical area (mm2)	a	1	176.9	357	a+d	3.6	0.03	-0.38	0.10	-0.21	0.14					314	374	141.1	185.9	
OS/RJF	dia.cort	diaphyseal cortical area (mm2)	a	2	133.00	245	a+d s.i.	5.0	0.04	-0.40	0.14	-0.65	0.20	-0.24	0.13	0.10	0.18	224	255	120.00	141.6	
OS/RJF	dia.cort	diaphyseal cortical area (mm2)	a	4	73.90	148	a+d s.i.	3.9	0.03	0.43	0.14	-0.49	0.21	0.17	0.13	0.26	0.19					
OS/RJF	dia.cort	diaphyseal cortical content (mg/mm)	a	1	53.6	167	a+d	3.9	0.03	0.58	0.14	-0.02	0.21					135	182	50.4	70.8	
OS/RJF	dia.cort	diaphyseal cortical content (mg/mm)	a	1	176.9	357	a+d	3.7	0.03	-0.46	0.13	-0.25	0.18					315	374	141.1	183.7	
OS/RJF	dia.cort	diaphyseal cortical content (mg/mm)	a	2	133.00	245	a+d s.i.	4.9	0.04	-0.52	0.19	-0.87	0.27	-0.35	0.17	0.17	0.25	208	257	111.10	141.6	
OS/RJF	dia.cort	diaphyseal cortical content (mg/mm)	a	4	72.60	138	a+d s.i.	4.0	0.03	0.68	0.19	-0.46	0.29	0.21	0.17	0.23	0.26	88	161	39.20	86.20	
OS/RJF	dia.cort	diaphyseal cortical content (mg/mm)	a	8	14.40	47	a+d s.i.	3.7	0.03	-0.47	0.18	0.82	0.26	0.07	0.17	-0.20	0.24	39	50	6.90	19.50	
OS/RJF	dia.cort	diaphyseal cortical thickness (mm)	a	1	61.2	161	a+d	4.7	0.04	0.02	0.01	0.00	0.01					139	181	50.3	68.4	
OS/RJF	dia.cort	diaphyseal cortical thickness (mm)	a	2	120.1	225	a+d	3.5	0.03	-0.02	0.01	-0.01	0.01									
OS/RJF	dia.cort	diaphyseal cortical thickness (mm)	a	3	75.2	161	a+d	3.9	0.03	0.02	0.01	-0.01	0.01					123	179	46.1	89.3	
OS/RJF	dia.gen	endosteal circumference (mm)	a	1	63.60	165	a+d	3.8	0.03	-0.29	0.08	-0.22	0.12					140	187	50.40	70.80	
OS/RJF	dia.gen	endosteal circumference (mm)	a	3	57.2	140	a+d	8.7	0.07	-0.50	0.08	-0.08	0.11					133	165	51.3	80.5	
OS/RJF	dia.gen	diaphyseal total bone area (mm2)	a	3	57.2	140	a+d	8.6	0.07	-1.37	0.21	-0.30	0.31					133	162	51.3	75.2	
OS/RJF	dia.gen	diaphyseal total bone density (mg/cm3)	a	1	61.2	163	a+d	3.0	0.03	17.54	4.82	5.78	7.64					108	185	32.9	70.8	
OS/RJF	dia.gen	diaphyseal total bone density (mg/cm3)	a	2	116.6	216	a+d s.i.	4.4	0.04	-8.54	6.48	3.13	9.36	-24.55	6.05	-12.02	8.39	203	237	108.00	130.90	
OS/RJF	dia.gen	diaphyseal total bone density (mg/cm3)	a	3	75.2	162	a+d	3.5	0.03	17.58	4.40	-3.99	6.32					134	181	51.3	91.7	
OS/RJF	dia.med	diaphyseal medullary density (mg/cm3)	a	1	127.8	287	a+d	3.4	0.05	19.16	5.57	18.01	7.96					260	294	112	132.9	
OS/RJF	dia.med	diaphyseal medullary density (mg/cm3)	a	2	32	79	a+d	3.2	0.05	4.63	6.52	41.22	10.74					69	98	27.7	40.3	
OS/RJF	dia.med	diaphyseal medullary area (mm2)	a	8	16.6	50	a	2.4	0.04	-0.81	0.24							30	85	4.5	24.6	
OS/RJF	met.gen	metaphyseal bone coverage (%)	a	3	25.8	75	a+d	5.4	0.05	0.02	0.00	0.02	0.01					52	86	9	31.9	
OS/RJF	met.gen	metaphyseal total bone area (mm2)	a	1	46.1	124	a+d	4.7	0.04	3.02	0.69	0.93	1.10					106	156	32.9	58.6	
OS/RJF	met.gen	metaphyseal total bone area (mm2)	a	1	172.7	355	a+d	5.0	0.04	-3.23	0.67	0.49	0.93					346	361	159.4	183.7	
OS/RJF	met.gen	metaphyseal total bone area (mm2)	a	2	15.1	47	a+d	3.2	0.03	2.41	0.68	1.84	1.03					35	90	8.4	37.4	
OS/RJF	met.med	metaphyseal medullary area (mm2)	a	1	53.4	146	a+d	3.1	0.03	2.39	0.77	-2.67	1.19					106	168	32.9	63.6	
OS/RJF	met.med	metaphyseal medullary area (mm2)	a	2	27.7	67	a+d	5.6	0.05	3.25	0.74	-2.52	1.10					58	85	19.4	35	
OS/RJF	met.med	metaphyseal medullary area (mm2)	a	3	25.8	73	a+d	6.1	0.05	3.90	0.81	2.69	1.30					51	85	16	31.9	
OS/RJF	comb	comb mass (g)	a	1	25.5	87	a+d s.i.	3.5	0.03	0.55	0.41	2.18	0.59	0.19	0.40	0.26	0.59	75	94	15.8	32.9	
OS/RJF	comb	comb mass (g)	a	1	183.7	384	a+d s.i.	6.1	0.05	-1.38	0.42	-2.76	0.65	-0.01	0.40	-0.92	0.62	367	389	176.9	204	
OS/RJF	comb	comb mass (g)	a	2	135.9	250	a+d s.i.	4.0	0.03	-0.31	0.40	-0.39	0.21	0.58	0.21	0.58	0.21	175/239	258	87.6/130.9	141.6	
OS/RJF	comb	comb mass (g)	a	3	13-16	52	a	1.5	0.02	-0.49	0.39	-1.57	0.58	0.05	0.39	-0.03	0.56			9.00	17.00	
OS/RJF	comb	comb mass (g)	a	4	51.3	103	a+d s.i.	8.0	0.06	2.44	0.41	0.32	0.61	0.49	0.39	-0.18	0.59	90	121	39.2	60.3	
OS/RJF	comb	comb mass (g)	a	7	34.6	84	a+d s.i.	4.8	0.04	-1.68	0.39	-1.06	0.59	-0.25	0.38	0.47	0.57	70	91	27.8	36.5	
OS/RJF	comb	comb mass (g)	a	8	14.4	47	a+d s.i.	2.5	0.02	-1.23	0.38	0.49	0.54	0.09	0.37	0.28	0.53	30	69	4.5	22.1	
OS/RJF	comb	comb mass (g)	a	13	9	28	a+d s.i.	5.9	0.04	-1.95	0.41	-1.47	0.60	-0.07	0.40	0.05	0.59	11	34	6.2	18.9	
OS/RJF	str	bone strength(displacement mm)	a	1	97.2	184	a	3.4	0.03	-0.31	0.08	-0.05	0.20					158	201	25	0	
OS/RJF	str	bone strength(displacement mm)	a	3	75.2	161	a+d	3.7	0.03	-0.19	0.05	-0.07	0.07					150	175	66.3	86.3	
OS/RJF	str	bone strength(energy to fail)	a	1	0	0	a+d	4.3	0.04	-89.97	20.10	3.93	50.88					0	15	0	2.2	
OS/RJF	str	bone strength(energy to fail)	a	3	51.3	130	a+d s.i.	5.5	0.05	-17.09	18.39	117.46	25.95	-35.24	17.56	-15.30	23.87	120	136	42.3	57.2	
OS/RJF	str	bone strength(energy to fail)	a	7	36.5/ end	91	a+d s.i.	5.9	0.05	79.90	18.07	18.07	26.97	32.24	16.72	-3.74	24.50	85	91	34.6	38.4	
OS/RJF	str	bone strength (load at fail)	a	1	0	0	a+d	4.2	0.04	-21.01	4.96	-13.51	12.53					0	21	0	2.2	
OS/RJF	str	bone strength (load at fail)	a	3	40.8	108	a+d	3.1	0.03	-1.86	0.21	17.21	4.58					92	129	31.9	51.3	
WL/RJF	str	bone strength(displacement mm)	a	6	5.5	30	a+d s.i.	4.3	0.07	-0.22	0.06	0.08	0.08	0.10	0.06	0.03	0.08	23	41	4	9.3	
WL/RJF	str	bone strength (yield point, N)	a	13	10.4	43	a+d s.i.	5.8	0.08	-5.08	7.11	50.08	10.40	0.73	6.54	-0.78	11.01	34	53	10.4	12.7	
WL/RJF	comb	comb mass (g)	a	1	173.4	486	a	2.7	0.03	-1.83	0.51							436	507	147.6	182	
WL/RJF	dia.cort	diaphyseal cortical content (mg/mm)	a	2	95.6	238	a+d s.i.	5.1	0.07	-0.38	0.24	-0.34	0.32	-1.09	0.25	-0.20	0.35	233	265	93.2	113.1	
WL/RJF	dia.med	diaphyseal medullary density (mg/cm3)	a	2																		