

# Supplementary Tables

Table S1. Genotyping platforms with number clones

Genotyping Source	Number of Comments
GeneSeek : MN	133 MN18 & MN19 Chips:69, FM:27, Rus:37
WI	-
ND	-
Checks	-
DarTag MN	86 MN18 & MN19 Chips:46, FM:40
WI	7 WI17 Chips:2, Rus:5
ND	-
Checks	1 Atlantic
8k array MN	2 MN Chips:1, Rus:1
WI	11 WI17 Chips:11
ND	7 FM: 7
Checks	12 Chips:4, FM:6, Rus:2

Table S2. Genomic estimated total genotypic values for all traits

clone_id	yield	r2_yield	sg	r2_sg	roundness	r2_round
Atlantic	352.6027	0.30774	1.065052	0.46377	0.979857	0.460486
Cascade	299.737	0.457742	1.059884	0.477237	0.980819	0.325548
Lamoka	352.5297	0.406436	1.064513	0.349373	0.979297	0.346724
MN04844	290.0172	0.428794	1.061612	0.462443	0.98074	0.390812
MN18AF66	330.4759	0.291533	1.063593	0.449236	0.980168	0.427486
MN18AF66	347.6976	0.305897	1.063861	0.471685	0.979974	0.444323
MN18AF66	341.1736	0.333777	1.065304	0.477244	0.979085	0.471785
MN18AF66	339.7308	0.284637	1.06497	0.440859	0.978953	0.4152
MN18AF66	343.9868	0.279672	1.064918	0.446467	0.979608	0.4246
MN18AF66	303.2741	0.339773	1.063765	0.495135	0.97874	0.48241
MN18AF66	322.478	0.29259	1.0643	0.429639	0.978612	0.408045
MN18AF66	328.3541	0.300488	1.063849	0.440887	0.978936	0.420554
MN18AF66	322.0362	0.308379	1.063751	0.452182	0.978537	0.436706
MN18AF66	335.488	0.348803	1.063924	0.479134	0.979883	0.478061
MN18AF66	329.5614	0.261585	1.063833	0.392341	0.978685	0.372723
MN18AF66	339.7131	0.304446	1.063982	0.449164	0.980535	0.432203
MN18AF66	345.7433	0.313315	1.064214	0.466384	0.980189	0.444743
MN18AF66	338.7286	0.298342	1.065047	0.438292	0.979468	0.410395
MN18AF66	334.2132	0.276874	1.063364	0.431494	0.978992	0.407126
MN18AF67	317.4707	0.312374	1.063531	0.441809	0.978998	0.424861
MN18AF67	340.6236	0.333785	1.063127	0.466394	0.97869	0.444204
MN18AF67	346.8972	0.355815	1.063833	0.493124	0.978866	0.46911
MN18AF67	333.6639	0.340818	1.063142	0.481484	0.979298	0.45315
MN18AF67	336.5675	0.357725	1.062887	0.491638	0.979322	0.476936

MN18AF67	319.4766	0.320851	1.063564	0.430894	0.978238	0.404673
MN18AF67	339.4855	0.327512	1.063642	0.466412	0.978598	0.442035
MN18AF67	328.5124	0.329249	1.063783	0.459587	0.979631	0.419377
MN18AF67	308.4202	0.315958	1.063945	0.476449	0.979578	0.453424
MN18AF67	326.4288	0.306021	1.064562	0.462539	0.978553	0.44883
MN18AF67	324.43	0.308409	1.06419	0.428252	0.978427	0.400209
MN18AF67	318.2678	0.307222	1.064194	0.424314	0.979001	0.393051
MN18AF67	314.3965	0.291946	1.064294	0.417744	0.979012	0.386472
MN18AF67	329.0308	0.317846	1.064516	0.421547	0.979088	0.394517
MN18AF67	326.9438	0.300796	1.063361	0.440921	0.980161	0.415627
MN18AF67	318.6541	0.302714	1.063405	0.449466	0.980205	0.430559
MN18AF67	335.8022	0.290197	1.063342	0.440023	0.980168	0.423995
MN18AF67	340.3972	0.304082	1.063915	0.435768	0.980044	0.439442
MN18AF67	310.7886	0.273284	1.062712	0.404361	0.98043	0.387568
MN18AF67	325.8182	0.314055	1.062632	0.452637	0.980817	0.435739
MN18AF67	336.4202	0.3123	1.063602	0.454112	0.980807	0.448774
MN18AF67	322.108	0.379161	1.06347	0.634725	0.979224	0.61647
MN18AF67	315.5821	0.296635	1.06271	0.44517	0.980499	0.42324
MN18AF67	326.5467	0.261312	1.064113	0.406049	0.979679	0.360933
MN18SR00	379.5941	0.09608	1.06576	0.104832	0.984527	0.247098
MN18SR00	390.9099	0.087349	1.066349	0.0931	0.982152	0.250576
MN18TX17	376.4728	0.225925	1.066253	0.226097	0.983391	0.215215
MN18TX17	378.6157	0.355732	1.06365	0.339001	0.981827	0.31059
MN18W17	375.4862	0.382461	1.065363	0.3548	0.985976	0.327702
MN18W17	375.5263	0.361002	1.065749	0.331463	0.98509	0.302868
MN18W17	342.9566	0.477193	1.066854	0.424681	0.983954	0.404586
MN18W17	374.0852	0.40879	1.068501	0.383051	0.983378	0.334814
MN18W17	329.5604	0.501746	1.067277	0.443638	0.98409	0.432342
MN18W17	357.6144	0.463869	1.067164	0.382848	0.983402	0.389954
MN18W17	433.4639	0.340217	1.063421	0.326007	0.982303	0.28128
MN18W17	375.1383	0.517936	1.06779	0.427112	0.98297	0.452351
MN18W17	368.688	0.377426	1.066753	0.353266	0.985939	0.336637
MN18W17	334.0638	0.294128	1.063479	0.447405	0.979846	0.43393
MN18W17	374.4905	0.403597	1.068555	0.376579	0.982927	0.358744
MN18W17	338.8337	0.285992	1.064148	0.421072	0.980153	0.403338
MN18W17	326.396	0.27951	1.063828	0.42961	0.97969	0.415588
MN18W17	378.3293	0.396074	1.070385	0.377192	0.985236	0.350696
MN18W17	401.3807	0.543098	1.071282	0.463671	0.984656	0.466011
MN18W17	406.6943	0.336224	1.067436	0.304557	0.98389	0.269421
MN18W17	467.8	0.482648	1.07026	0.404334	0.982973	0.427973
MN18W17	349.8619	0.275607	1.064032	0.416476	0.979686	0.375996
MN18W17	333.1699	0.347783	1.064006	0.467027	0.98046	0.461843
MN18W17	384.66	0.487089	1.070924	0.418723	0.984179	0.456108
MN18W17	372.0544	0.462965	1.069069	0.428182	0.985626	0.420864
MN18W17	409.3341	0.492108	1.068639	0.417164	0.983578	0.449931
MN18W17	435.0984	0.368344	1.068409	0.341391	0.982672	0.31799
MN18W17	442.1413	0.318702	1.064721	0.295508	0.982987	0.095069

MN18W17	315.8313	0.423826	1.068563	0.40472	0.987372	0.321722
MN18W17	378.5668	0.525648	1.072927	0.457959	0.986123	0.490465
MN18W17	369.7262	0.516856	1.070833	0.432845	0.984974	0.456245
MN18W17	325.104	0.450673	1.066819	0.421955	0.987272	0.38664
MN18W17	315.0761	0.419975	1.0686	0.394878	0.985957	0.383763
MN18W17	327.7788	0.45366	1.066965	0.422623	0.987269	0.386549
MN18W17	342.2037	0.465547	1.066989	0.339199	0.984122	0.387337
MN18W17	370.1792	0.305814	1.065027	0.280592	0.982222	0.211903
MN18W17	325.2802	0.292009	1.063278	0.447111	0.979285	0.428237
MN18W17	331.5089	0.291826	1.064053	0.446499	0.980266	0.404225
MN19AF68	330.8516	0.414076	1.065597	0.375713	0.982139	0.376783
MN19AF68	331.9578	0.376284	1.06593	0.417483	0.982794	0.387477
MN19AF68	335.0376	0.433313	1.065794	0.435288	0.983162	0.405947
MN19AF68	332.661	0.37336	1.065837	0.422162	0.982685	0.395158
MN19AF68	337.6635	0.440009	1.065836	0.440612	0.983075	0.4134
MN19AF68	316.7852	0.305427	1.067039	0.360281	0.983379	0.344519
MN19AF68	350.7831	0.372365	1.066874	0.331777	0.979731	0.257626
MN19AF68	335.5019	0.322815	1.065848	0.342294	0.985421	0.296344
MN19AF68	307.4652	0.316799	1.066803	0.338185	0.983865	0.284763
MN19AF68	336.1118	0.233255	1.065631	0.249921	0.984373	0.210967
MN19AF68	321.9578	0.332881	1.065458	0.345686	0.984656	0.300335
MN19AF68	324.8727	0.312004	1.065682	0.335255	0.984564	0.286214
MN19AF68	304.274	0.347273	1.066262	0.364356	0.984299	0.241435
MN19AF68	324.9331	0.436442	1.067278	0.402041	0.985186	0.392222
MN19AF68	383.4704	0.305103	1.069115	0.316514	0.983131	0.271207
MN19AF68	365.7489	0.307575	1.069254	0.325878	0.984334	0.280395
MN19AF68	392.1779	0.400985	1.070552	0.376806	0.982885	0.360131
MN19TX18	380.6668	0.265857	1.064318	0.292138	0.982213	0.242816
MN19TX18	321.7702	0.253367	1.065001	0.260408	0.983184	0.214966
MN19TX18	345.8491	0.232059	1.065466	0.242115	0.983546	0.092153
MN19TX18	390.7593	0.249405	1.064893	0.280515	0.982564	0.233666
MN19TX18	360.949	0.420304	1.063246	0.38873	0.983258	0.393252
MN19TX18	328.1835	0.413839	1.061494	0.386904	0.983207	0.393486
MN19TX18	378.6297	0.404034	1.062996	0.377109	0.983151	0.377943
MN19TX18	363.2698	0.286184	1.062244	0.30651	0.982842	0.27296
MN19TX18	376.0473	0.317602	1.062991	0.334402	0.983033	0.296533
MN19TX18	369.5377	0.329105	1.064722	0.311224	0.982405	0.294285
MN19TX18	499.7457	0.3897	1.066171	0.359027	0.980956	0.349302
MN19TX18	377.6338	0.321566	1.066066	0.300823	0.982718	0.309612
MN19TX18	366.8509	0.207488	1.065327	0.217	0.981979	0.182532
MN19TX18	369.2321	0.215581	1.065329	0.23778	0.981353	0.194049
MN19TX18	341.0656	0.391623	1.060747	0.370583	0.983254	0.361351
MN19TX18	414.5654	0.341405	1.06482	0.335437	0.98136	0.322669
MN19TX18	375.1944	0.372948	1.06276	0.342889	0.982649	0.329898
MN19TX18	403.6396	0.274797	1.063922	0.294031	0.982875	0.243285
MN19TX18	371.8141	0.352875	1.067428	0.307453	0.982882	0.316817
MN19TX18	396.7872	0.404439	1.063783	0.384879	0.981479	0.316821

MN19TX18	447.0289	0.37687	1.065887	0.33192	0.979911	0.335751
Snowden	364.7682	0.325998	1.066129	0.292664	0.981896	0.284392
Superior	296.4383	0.461675	1.060949	0.476451	0.980797	0.3917
W17037-3	368.7165	0.293511	1.06709	0.279344	0.983374	0.242718
W17039-3	342.5609	0.285725	1.064162	0.438512	0.980025	0.408423
W17039-7	416.4603	0.337882	1.068663	0.316712	0.983223	0.287279
W17043-3	346.0287	0.314479	1.064157	0.492224	0.980139	0.465442
W17049-1	399.1712	0.221104	1.066574	0.217065	0.981426	0.177743
W17060-2	406.9902	0.341845	1.069024	0.319692	0.983527	0.286715
W17065-2	367.2267	0.223829	1.066298	0.217117	0.98241	0.171986
W17066-1	375.0221	0.281672	1.065699	0.267185	0.982025	0.159592
W17066-3	379.9569	0.294252	1.066469	0.283386	0.982451	0.216864
W17067-1	413.3053	0.246494	1.068496	0.237798	0.982373	0.198294
W17067-1	395.6945	0.204141	1.0672	0.198638	0.982484	0.16132
W17AF667	399.687	0.24128	1.068187	0.233884	0.981222	0.196983
W17AF668	386.19	0.211901	1.065561	0.204734	0.98133	0.168171

Table S3. List of clones based on selection index with equal weights

clone_ID	value	rank
MN18W17	1.464651	1
MN18W17	1.463839	2
MN18W17	1.463308	3
MN18W17	1.462284	4
MN18W17	1.462093	5
MN18W17	1.462069	6
MN18W17	1.461462	7
W17060-2	1.461168	8
MN18W17	1.461164	9
MN19AF68	1.461161	10
W17039-7	1.461052	11
MN18W17	1.461035	12
MN19TX18	1.460794	13
MN19AF68	1.46039	14
MN18W17	1.460366	15
MN18W17	1.460334	16
W17067-1	1.460191	17
MN19AF68	1.46006	18
MN18W17	1.460022	19
MN18W17	1.459635	20
MN18W17	1.459485	21
MN18W17	1.459439	22
MN18W17	1.459373	23
MN18W17	1.459279	24
MN18W17	1.459201	25

MN18W17	1.459196	26
MN18W17	1.458974	27
W17067-1	1.458753	28
MN18W17	1.458746	29
MN18SR00	1.458714	30
W17AF667	1.458623	31
W17037-3	1.45834	32
MN19TX18	1.458315	33
MN19AF68	1.458188	34
MN18TX17	1.458082	35
MN18W17	1.457998	36
MN19TX18	1.457869	37
MN18W17	1.457845	38
MN19AF68	1.457799	39
MN18SR00	1.45776	40
W17049-1	1.457677	41
MN18W17	1.457657	42
W17066-3	1.457656	43
MN18W17	1.457544	44
MN19TX18	1.457499	45
MN18W17	1.457497	46
MN19TX18	1.457149	47
MN19TX18	1.457088	48
W17065-2	1.457038	49
MN19TX18	1.457027	50
MN19AF68	1.456897	51
MN19AF68	1.456656	52
W17066-1	1.456641	53
MN19TX18	1.456534	54
MN19AF68	1.456467	55
Snowden	1.456452	56
W17AF668	1.456446	57
MN19AF68	1.456381	58
MN19AF68	1.456239	59
MN18W17	1.456159	60
MN19AF68	1.456126	61
MN19AF68	1.456082	62
MN19TX18	1.456068	63
MN19TX18	1.456068	64
MN19AF68	1.456066	65
MN19TX18	1.456055	66
MN19TX18	1.455807	67
MN19AF68	1.455768	68
MN19TX18	1.455763	69
MN19TX18	1.455679	70
MN19AF68	1.455651	71
MN19TX18	1.45562	72

MN19TX18	1.455397	73
MN18TX17	1.455258	74
MN19TX18	1.455148	75
MN19TX18	1.455059	76
MN19AF68	1.455017	77
MN19AF68	1.45482	78
MN19TX18	1.454504	79
Atlantic	1.453763	80
MN18AF66	1.453196	81
MN18AF66	1.453169	82
W17043-37	1.453131	83
MN18AF66	1.453074	84
MN19TX18	1.452985	85
Lamoka	1.452984	86
MN19TX18	1.452971	87
MN18AF66	1.452955	88
MN18AF66	1.452933	89
W17039-31	1.45292	90
MN18AF67	1.4529	91
MN18AF66	1.452873	92
MN18W170	1.452868	93
MN18W170	1.452853	94
MN18W170	1.452791	95
MN18AF67	1.452689	96
MN18W170	1.452617	97
MN18AF66	1.452558	98
MN18AF66	1.452394	99
MN18AF67	1.452228	100
MN18AF66	1.452198	101
MN18AF67	1.452035	102
MN18W170	1.452015	103
MN18AF67	1.451999	104
MN18AF67	1.451958	105
MN18AF67	1.451906	106
MN18AF67	1.451865	107
MN18AF67	1.451853	108
MN18W170	1.451848	109
MN18AF67	1.451661	110
MN18AF67	1.451493	111
MN18AF67	1.451398	112
MN18AF66	1.451373	113
MN18AF67	1.451368	114
MN18AF67	1.451324	115
MN18AF66	1.451309	116
MN18AF67	1.451301	117
MN18AF67	1.451277	118
MN18AF66	1.451221	119

MN18AF66	1.451216	120
MN18AF67	1.451209	121
MN18AF67	1.451175	122
MN18AF67	1.451164	123
MN18W17	1.451138	124
MN18AF67	1.451103	125
MN18AF67	1.451077	126
MN18AF67	1.451073	127
MN18AF67	1.450803	128
MN18AF66	1.450777	129
MN18AF67	1.450334	130
MN18AF66	1.450241	131
MN04844	1.449797	132
Superior	1.449635	133
Cascade	1.449062	134