

ANOVA for Days to Maturity

Source of Variations	df	Sum of Squares	Mean Squares	F Ratio	Probability	η^2	ηp^2	ω^2
Replicates	2	28.01904	14.00952	1.862	0.16294	0.017	0.051	0.008
Treatments	35	1122.02850	32.05796	4.261	0.00000 ***	0.669	0.681	0.307
Parents	7	390.98664	55.85523	7.425	0.00000 ***	0.233	0.426	0.164
Hybrids	27	720.67480	26.69166	3.548	0.00001 ***	0.430	0.578	0.216
Parent Vs. Hybrids	1	10.36707	10.36707	1.378	0.24441	0.006	0.019	0.002
Error	70	526.61017	7.52300					
Total	107	1676.65772	15.66970					

ANOVA for Days to Maturity

Source of Variations	df	Sum of Squares	Mean Squares	F Ratio	Probability
GCA	7	235.36090	33.62299	13.408	0.00000 ***
SCA	28	138.64860	4.95174	1.975	0.01150 *
Error	70	175.53672	2.50767		

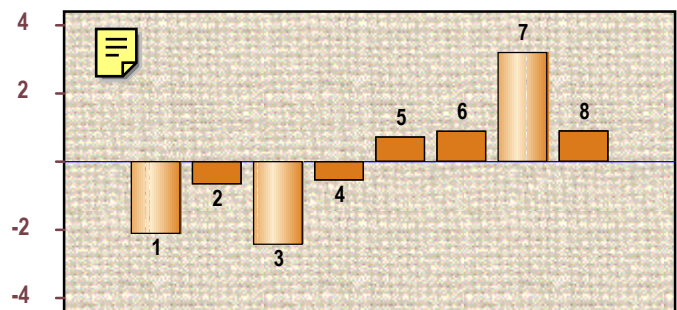
PARENTAL μ	111.70000	VoLo	18.61841
GENERAL μ	112.27963		
F1 μ	112.44524		
Av. Heterosis %	0.66718		

G.C.A. & S.C.A. Effects Table

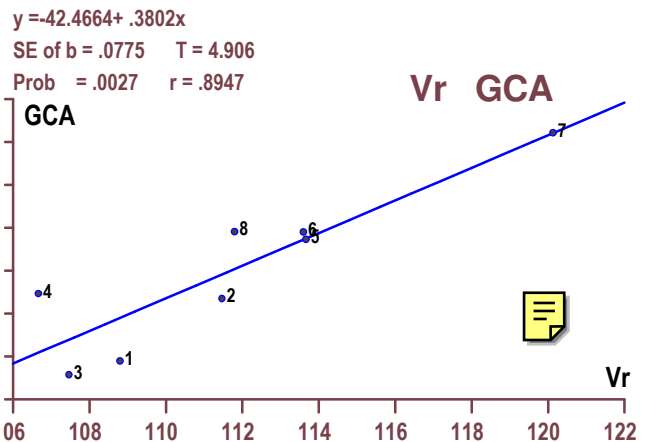
Parents	COGG -2	ML -267	PUSA -105	RMG -275	-89 - 221	LGG -460	LGG -410	COGG -22
COGG -2	0.744	1.154	2.464	-0.030	-2.693	0.070	-2.910	0.457
ML -267		0.497	2.274	1.547	-1.283	-0.386	-4.966	0.667
PUSA -105			0.050	-0.776	-0.773	0.257	-1.390	-2.156
RMG -275				-4.536	2.367	0.830	3.584	1.550
PDM -89 - 221					-0.063	1.300	-1.080	2.287
LGG -460						-0.470	0.484	-1.616
LGG -410							1.437	3.404
COGG -22								-2.296
GCA Effects	-2.112 ***	-0.655	-2.432 ***	-0.538	0.725	0.895	3.208 ***	0.908
Parental Means	108.800	111.467	107.467	106.667	113.667	113.600	120.133	111.800

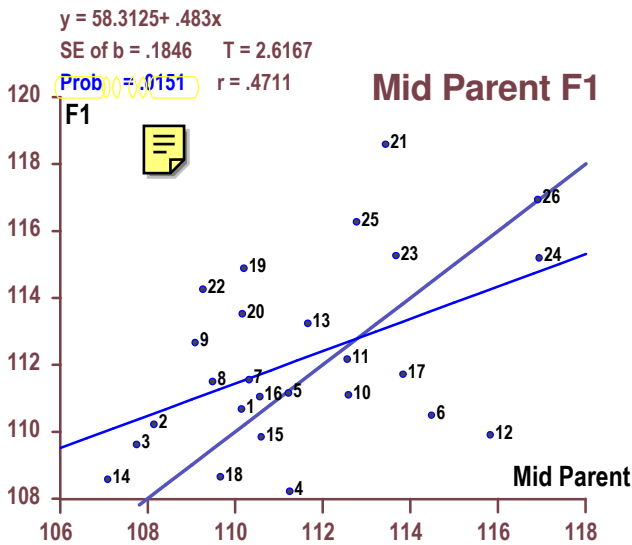
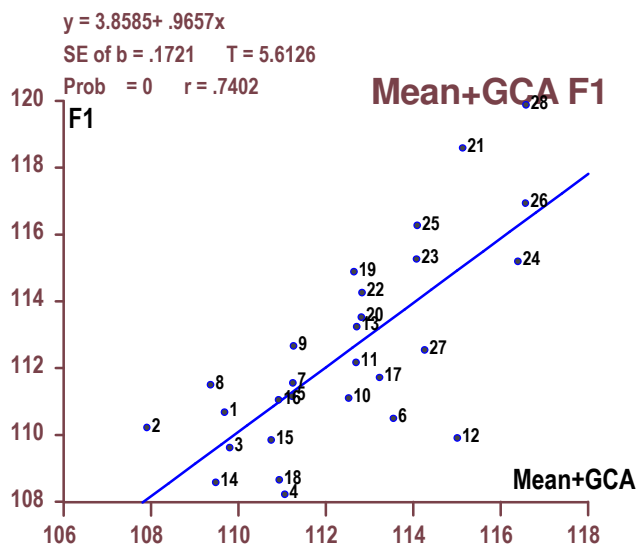
Genetic Component	Fixed Effect	Random Effect
$\sigma^2 g$	3.11153	2.86712
$\sigma^2 s$	2.44407	2.44407
σ^2 reciprocal	0.00000	0.00000
$\sigma^2 e$	2.50767	2.50767
$\sigma^2 a$	6.22306	5.73425
$\sigma^2 D$	2.44407	2.44407
$\sigma^2 p$	11.17480	10.68599
h^2 Narrow Sense	0.55688	0.53661
h^2 Broad Sense	0.77560	0.76533
GCA/SCA Ratio	1.27310	1.17310

GCA effects for Days to Maturity



Comparison	S. E. Mean	Critical Diff.
Mu	0.26393	
Gi	0.46842	0.93424
Sii	1.24913	2.49130
Sij	1.43592	2.86383
Gi--Gj	0.70819	1.41243
Sii--Sjj	1.73470	3.45974
Sij--Sik	2.12457	4.23730
Sij--Sk1	2.00306	3.99496



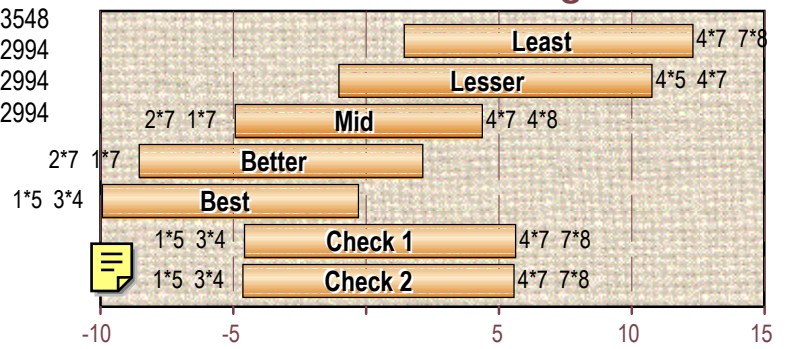


Heterosis Table

F1	Mean	Least	Lesser	Mid	Better	Best	Check 1	Check 2
1*2 COGG -2 * ML -267	110.67	3.75	1.53	0.39	-0.72	-7.88 **	-2.41	-2.47
1*3 COGG -2 * PUSA -105	110.20	3.31	2.54	1.82	1.10	-8.27 **	-2.82	-2.88
1*4 COGG -2 * RMG -275	109.60	2.75	2.75	1.64	0.55	-8.77 **	-3.35	-3.41
1*5 COGG -2 * PDM -89 - 221	108.20	1.44	-0.73	-2.81	-4.81 *	-9.93 **	-4.59 *	-4.64 *
1*6 COGG -2 * LGG -460	111.13	4.19 *	1.96	-0.15	-2.17	-7.49 **	-2.00	-2.06
1*7 COGG -2 * LGG -410	110.47	3.56	1.35	-3.58 *	-8.05 **	-8.05 **	-2.59	-2.64
1*8 COGG -2 * COGG -22	111.53	4.56 *	2.32	1.03	-0.24	-7.16 **	-1.65	-1.70
2*3 ML -267 * PUSA -105	111.47	4.50 *	3.72	2.04	0.42	-7.21 **	-1.70	-1.76
2*4 ML -267 * RMG -275	112.63	5.59 **	5.59 **	3.49	1.47	-6.24 **	-0.68	-0.73
2*5 ML -267 * PDM -89 - 221	111.07	4.13	0.06	-1.13	-2.29	-7.55 **	-2.06	-2.12
2*6 ML -267 * LGG -460	112.13	5.13 *	1.02	-0.15	-1.29	-6.66 **	-1.12	-1.18
2*7 ML -267 * LGG -410	109.87	3.00	-1.02	-4.93 **	-8.55 **	-8.55 **	-3.12	-3.17
2*8 ML -267 * COGG -22	113.20	6.12 **	1.98	1.62	1.25	-5.77 **	-0.18	-0.24
3*4 PUSA -105 * RMG -275	108.53	1.75	1.75	1.59	1.43	-9.66 **	-4.29 *	-4.35 *
3*5 PUSA -105 * PDM -89 - 221	109.80	2.94	2.62	-0.48	-3.40	-8.60 **	-3.17	-3.23
3*6 PUSA -105 * LGG -460	111.00	4.06	3.74	0.63	-2.29	-7.60 **	-2.12	-2.17
3*7 PUSA -105 * LGG -410	111.67	4.69 *	4.36 *	-1.67	-7.05 **	-7.05 **	-1.53	-1.59
3*8 PUSA -105 * COGG -22	108.60	1.81	1.50	-0.73	-2.86	-9.60 **	-4.23 *	-4.29 *
4*5 RMG -275 * PDM -89 - 221	114.83	7.66 **	7.32 **	4.08 *	1.03	-4.41 *	1.26	1.20
4*6 RMG -275 * LGG -460	113.47	6.38 **	6.04 **	2.87	-0.12	-5.55 **	0.06	0.00
4*7 RMG -275 * LGG -410	118.53	11.12 **	10.78 **	4.37 *	-1.33	-1.33	4.53 *	4.47 *
4*8 RMG -275 * COGG -22	114.20	7.06 **	6.73 **	4.39 *	2.15	-4.94 **	0.71	0.65
5*6 PDM -89 - 221 * LGG -460	115.20	8.00 **	1.41	1.23	1.05	-4.11 *	1.59	1.53
5*7 PDM -89 - 221 * LGG -410	115.13	7.94 **	0.99	-1.65	-4.16 *	-4.16 *	1.53	1.47
5*8 PDM -89 - 221 * COGG -22	116.20	8.94 **	3.94	2.92	1.93	-3.27	2.47	2.41
6*7 LGG -460 * LGG -410	116.87	9.56 **	2.51	-0.17	-2.72	-2.72	3.06	3.00
6*8 LGG -460 * COGG -22	112.47	5.44 *	0.60	-0.38	-1.35	-6.38 **	-0.82	-0.88
7*8 LGG -410 * COGG -22	119.80	12.31 **	7.16 **	3.36 *	-0.17	-0.28	5.64 **	5.58 **

Comparison of F1 with	S.E.Difference	CD 95%	CD 99%
Mid Parent	1.93946	3.86811	5.13548
Lesser / Better Parent	2.23949	4.46650	5.92994
Least / Best Parent	2.23949	4.46650	5.92994
Checks	2.23949	4.46650	5.92994

Heterosis Ranges



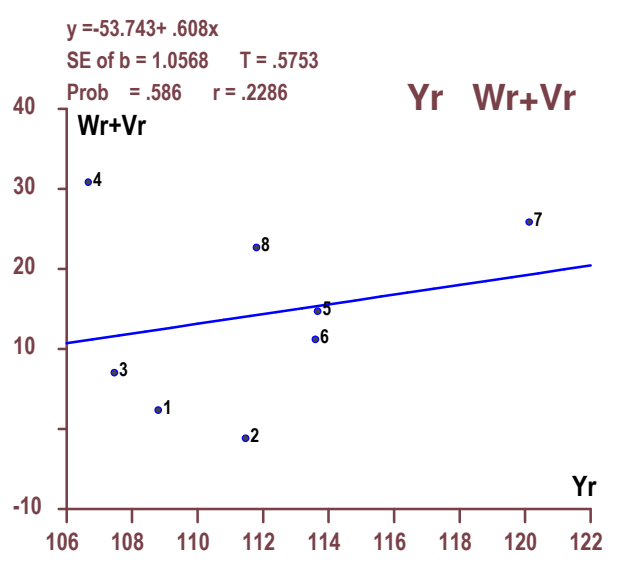
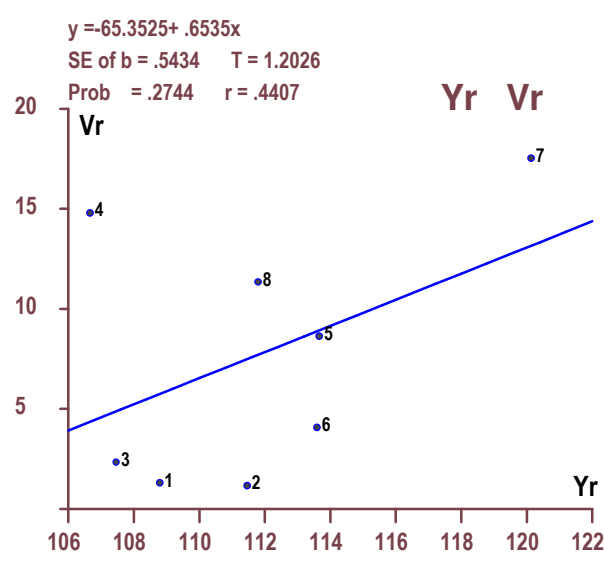
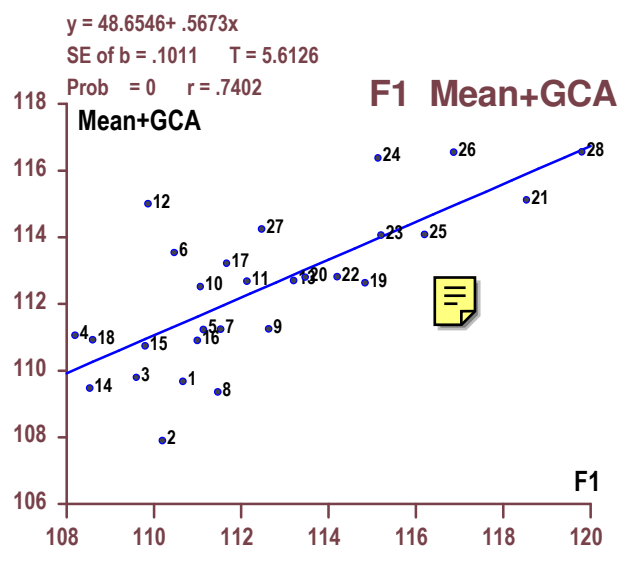
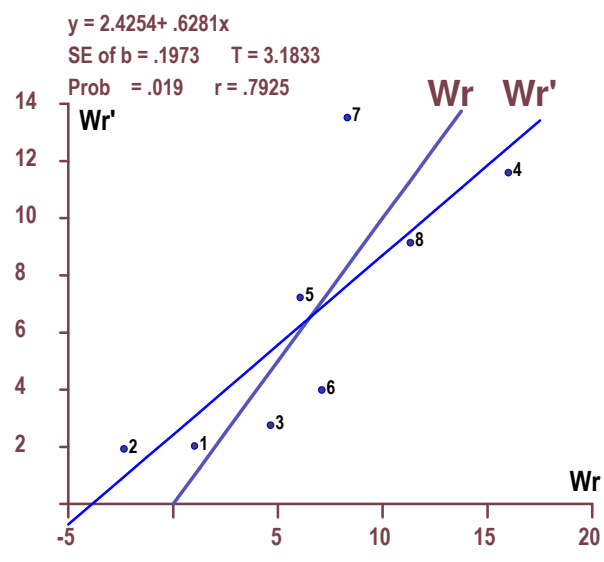
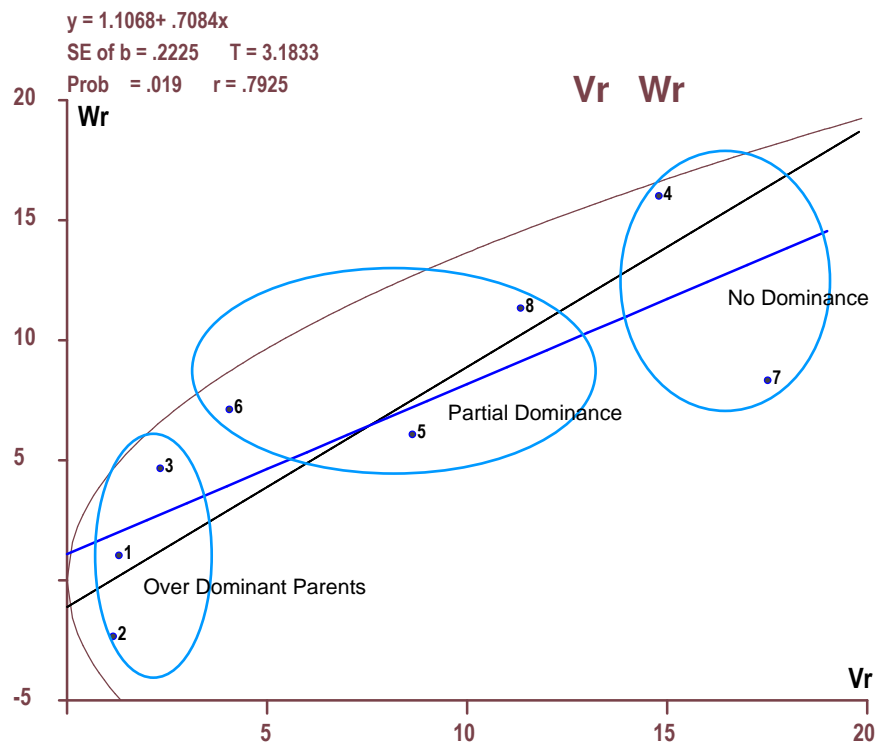
Genotype	Wr	Vr	Wr-Vr	Wr+Vr	Yr	Fr
COGG -2	1.028	1.305	-0.277	2.333	108.800	30.965
ML -267	-2.342	1.157	-3.498	-1.185	111.467	38.000
PUSA -105	4.658	2.334	2.324	6.992	107.467	21.646
RMG -275	16.001	14.795	1.206	30.796	106.667	-25.963
PDM -89 - 221	6.071	8.636	-2.566	14.707	113.667	6.216
LGG -460	7.107	4.065	3.043	11.172	113.600	13.285
LGG -410	8.321	17.519	-9.197	25.840	120.133	-16.050
COGG -22	11.329	11.342	-0.013	22.670	111.800	-9.711
Total	52.173	61.151	-8.978	113.325	893.600	58.389
Mean	6.522	7.644	-1.122	14.166	111.700	7.299

Wr Vr table

T ²	0.204	Prob	0.927
a (Intercept)	1.107	Correlation r	0.793
B (Slope)	0.708	Std.Error	0.223
T	3.183	Prob	0.019
H: b = 0	-3.183	Prob	0.019
H: b = 1	1.310	Prob	0.238
VoLo1	3.332	V1L1	7.644
WoLo1	6.522	(ML1 - ML0) ²	0.425
S ² (Varaince)	7.823	VoLo	18.618

Parameter	Estimation	Standard Error	T-Value
D (Additive Effect)	16.05068	2.96665	5.41038 *
F (Mean Fr over arrays)	7.29859	7.00992	1.04118
H1(Dominannce Effect)	16.04626	6.81989	2.35286 *
H2	12.11126	5.93330	2.04124 *
h ² (Heritability)	0.57747	3.97912	0.14512
E (Environ.Comp.)	2.56773	0.98888	2.59659 *

Mean Degree of Dominance	1.000
:: of Genes with +/- Effects in Parents	0.189
:: of Dominant & Recessive Genes in Parents	1.589
Va (Additive Gene Effects)	6.344 (5.909)
Vd (Dominance Deviations)	3.028 (1.483)
h2 / H2 (No.of Gene Groups)	0.048
h ² (Heritability in Narrow Sense)	0.531 (0.726)
Estimation of Most Dominant Parent	102.460
Estimation of Most Recessive Parent	125.830



Diallel Cross Anova (Summary)

	DF	Plant Height cm	Days to Maturity	Peduncle Volume	Earhead Nos.	Earhead Length cm	Spikes/ Main Earhead	Seeds/ Spikelte of M	Main Earhead Wt.	Total Biomass	Grain Yield/ Plant g
Replicates	2	13.240	14.010	0.200	0.709	2.954 ***	3.193 *	5.691 ***	6.373 ***	86.299	207.720 ***
Treatments	35	30.513 ***	32.058 ***	1.015 ***	15.268 **	4.592 ***	7.116 ***	0.249 ***	0.648 ***	152.164	38.050 *
Parents	7	26.988 *	55.855 ***	1.165 ***	10.345	7.638 ***	14.001 ***	0.265 *	0.751 ***	137.794	44.714 *
Hybrids	27	32.399 ***	26.692 ***	1.000 ***	16.262 **	3.943 ***	5.563 ***	0.205 **	0.566 ***	130.402	31.716
Parent Vs.Hybrids	1	4.245	10.367	0.374	22.906	0.774	0.833	1.346 ***	2.158 ***	840.346 **	162.447 **
Error	70	11.638	7.523	0.214	6.564	0.349	0.768	0.093	0.101	104.522	20.763
Total	107	17.842	15.670	0.476	9.302	1.786	2.890	0.249	0.397	119.765	29.912
GCA	7	21.936 ***	33.623 ***	0.988 ***	11.416 ***	5.622 ***	9.946 ***	0.163 ***	0.632 ***	78.948 *	18.968 *
SCA	28	7.230 *	4.952 *	0.176 **	3.508	0.508 ***	0.478 *	0.063 **	0.112 ***	43.665	11.112
Error	70	3.879	2.508	0.071	2.188	0.116	0.256	0.031	0.034	34.841	6.921

General Combining Ability (Summary)

	Plant Height cm	Days to Maturity	Peduncle Volume	Earhead Nos.	Earhead Length cm	Spikes/ Main Earhead	Seeds/ Spikelte of M	Main Earhead Wt.	Total Biomass	Grain Yield/ Plant g
COGG -2	-2.294 ***	-2.112 ***	0.218 **	-2.122 ***	0.095	-1.624 ***	0.269 ***	0.381 ***	-2.786	-0.153
ML -267	-0.030	-0.655	-0.244 **	0.675	0.405 ***	-0.394 *	0.010	0.133 *	1.802	0.584
PUSA -105	1.376 *	-2.432 ***	-0.623 ***	1.492 **	-1.499 ***	-0.504 **	0.057	-0.396 ***	-2.913	-0.769
RMG -275	1.127	-0.538	-0.099	-0.405	-0.173	-0.871 ***	-0.025	-0.158 **	-0.548	-0.641
PDM -89 - 221	-0.269	0.725	0.180 *	0.305	0.796 ***	1.139 ***	-0.129 *	0.252 ***	3.978 *	1.766 *
LGG -460	0.778	0.895	0.367 ***	0.475	-0.007	0.649 ***	0.009	0.040	3.658 *	2.114 **
LGG -410	-2.079 ***	3.208 ***	0.106	0.135	-0.431 ***	0.529 ***	-0.059	-0.109 *	-0.829	-1.218
COGG -22	1.390 *	0.908	0.095	-0.555	0.816 ***	1.076 ***	-0.132 *	-0.144 *	-2.362	-1.684 *
σ^2 g	1.806	3.112	0.092	0.923	0.551	0.969	0.013	0.060	4.411	1.205
σ^2 s	3.350	2.444	0.105	1.320	0.391	0.222	0.032	0.079	8.824	4.192
σ^2 reciprocal	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
σ^2 e	3.879	2.508	0.071	2.188	0.116	0.256	0.031	0.034	34.841	6.921
σ^2 a	3.611	6.223	0.183	1.846	1.101	1.938	0.026	0.120	8.821	2.409
σ^2 D	3.350	2.444	0.105	1.320	0.391	0.222	0.032	0.079	8.824	4.192
σ^2 p	10.841	11.175	0.359	5.353	1.609	2.416	0.090	0.232	52.486	13.522
h^2 Narrow Sense	0.333	0.557	0.510	0.345	0.684	0.802	0.294	0.516	0.168	0.178
h^2 Broad Sense	0.642	0.776	0.802	0.591	0.928	0.894	0.652	0.855	0.336	0.488
GCA/SCA Ratio	0.539	1.273	0.875	0.699	1.407	4.360	0.411	0.761	0.500	0.287