PROJECT REPORT

Volume 3 of 7

PROJECT 409

BUNCH FAMILY SELECTION

Efficiency of bunch-planted and single-planted seedlings for selecting superior crosses in sugar cane

by

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Figure 1. Illustration of plots used in the original seedling and evaluation trials.

Seedling trial

Q = single plant of the standard commercial variety (Q82)
x = a single seedling from a buffer cross
rows are 1.45m apart

Single, 1 plot = 3 rows each with 12 seedlings spaced 0.6m apart = 36 seedlings
= 3 x 1.45m x 12 x 0.60m = 0.003132 ha

Row														
1	x	1	2	3	4	5	6	7	8	9	10	11	12	x
2	Q	1	2	3	4	5	6	7	8	9	10	11	12	Q
3	x	1	2	3	4	5	6	7	8	9	10	11	12	x

1	x	1	2	3	4	5	6	7	8	9	10	11	1	2	3	4	5	6	7	8	9	10	11	x
2	Q	1	2	3	4	5	6	7	8	9	10	11	1	2	3	4	5	6	7	8	9	10	11	Q
3	X	1	2	3	4	5	6	7	8	9	10	11	1	2	3	4	5	6	7	8	9	10	11	x

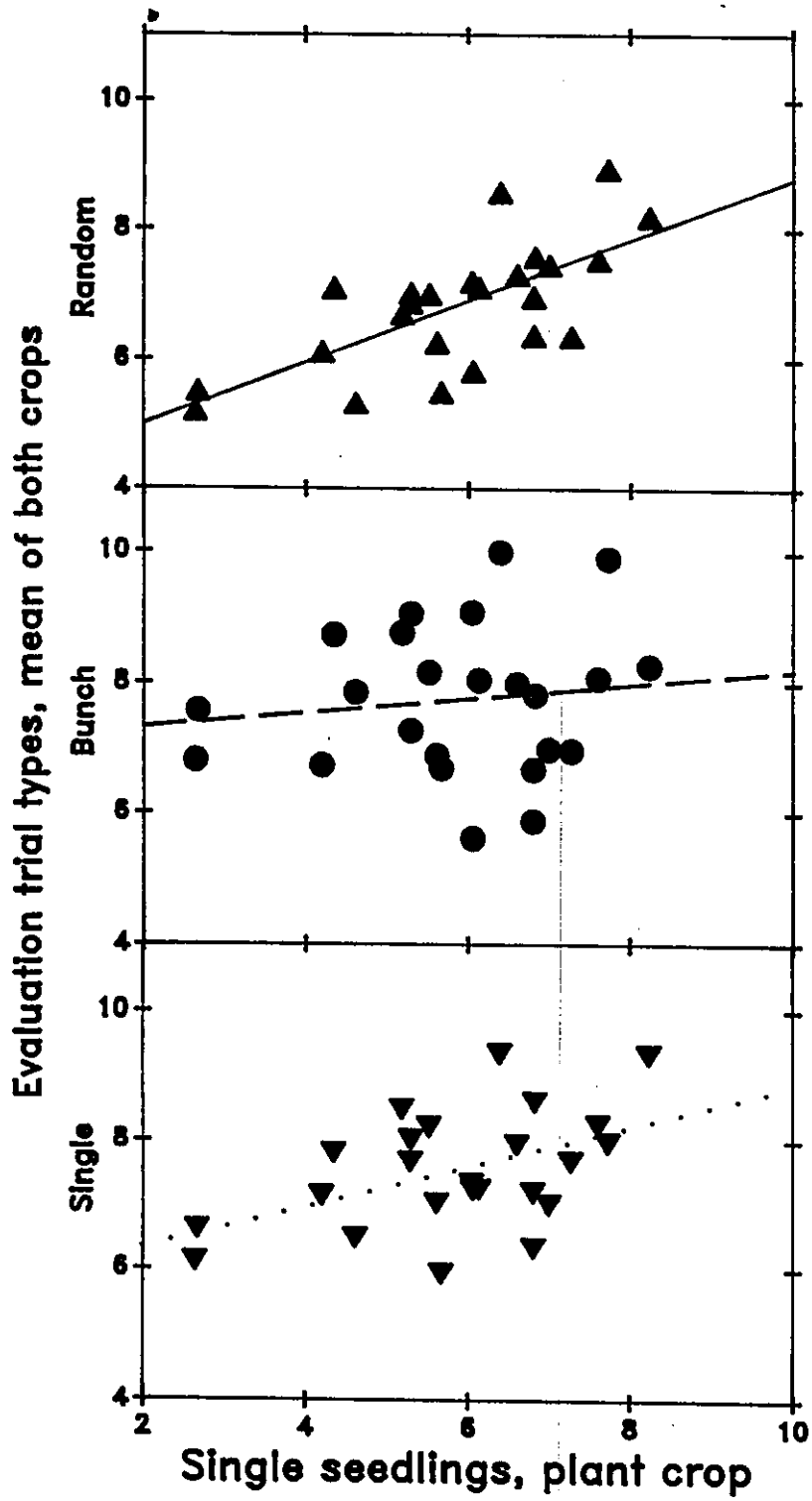
Bunch, 1 plot = 1 row x 11 bunches = 110 seedlings
= 1.45m x 3.6m = 0.000522 ha
6 bunch plots occupy the same area as one single plot

In the evaluation and mass selection trials, each clone occupies a single-row 4-sett plot. The rows are 1.45m apart.
Area of 4-sett plot = 1.45m x 2.3m = 0.0003335 ha

Evaluation trial

Each 3-row plot consists of nine 4-sett plots, each being a different clone (sib) from the same family. The area is 3 x 3 x 1.45 x 9 = 0.0030015 ha

Row												
1	1	1	1	1	2	2	2	2	3	3	3	3
2	4	4	4	4	5	5	5	5	6	6	6	6


Evaluation trial types, mean of both crops
Random
Bunch
Single
10
8
6
4
2
4
6
8
10
Single seedlings, plant crop

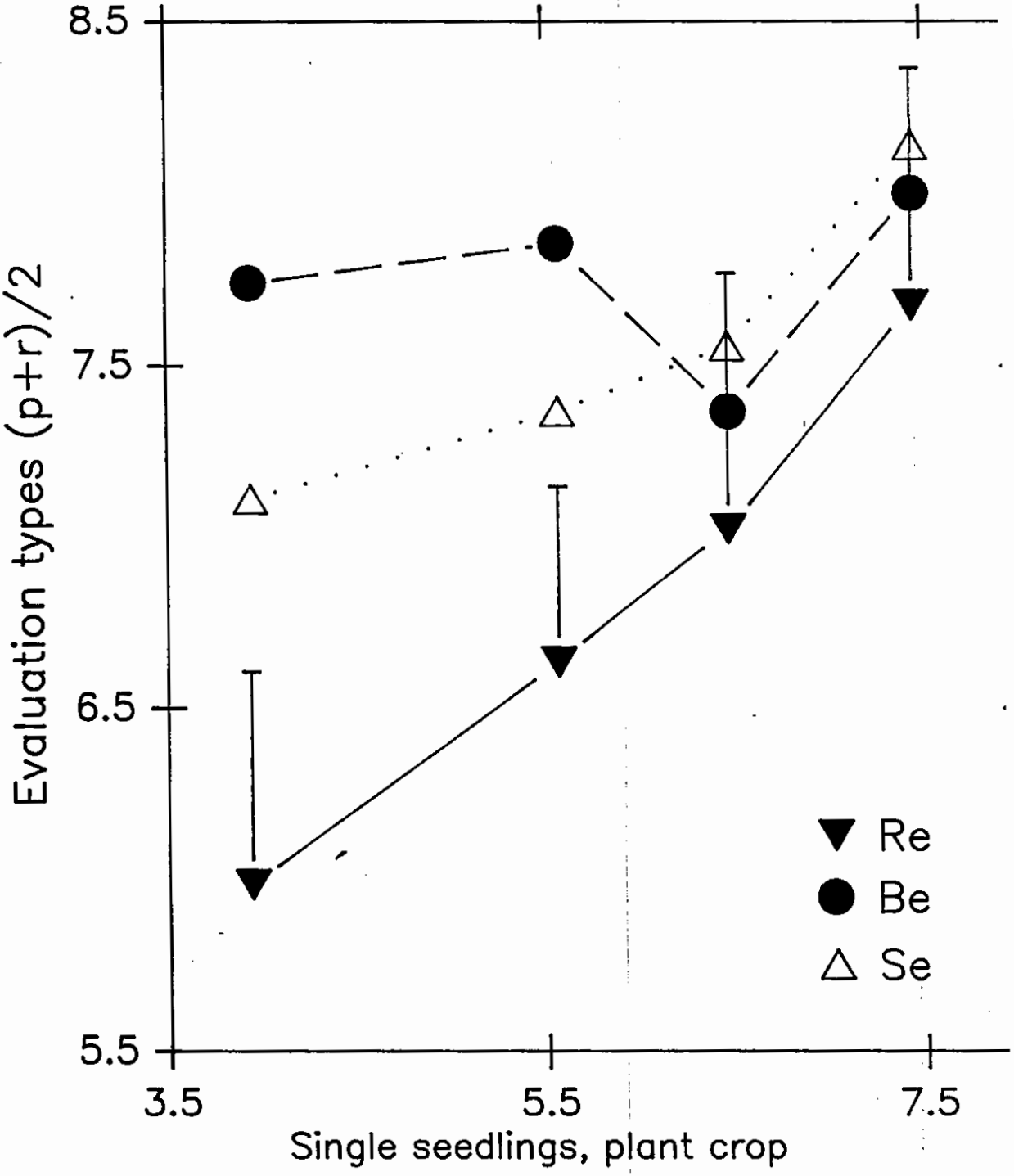


Figure 3. Mean for NMGYOT for each group of six families (best, 2nd, 3rd and worst group in seedling trial). 95% confidence intervals are shown for the Random type.

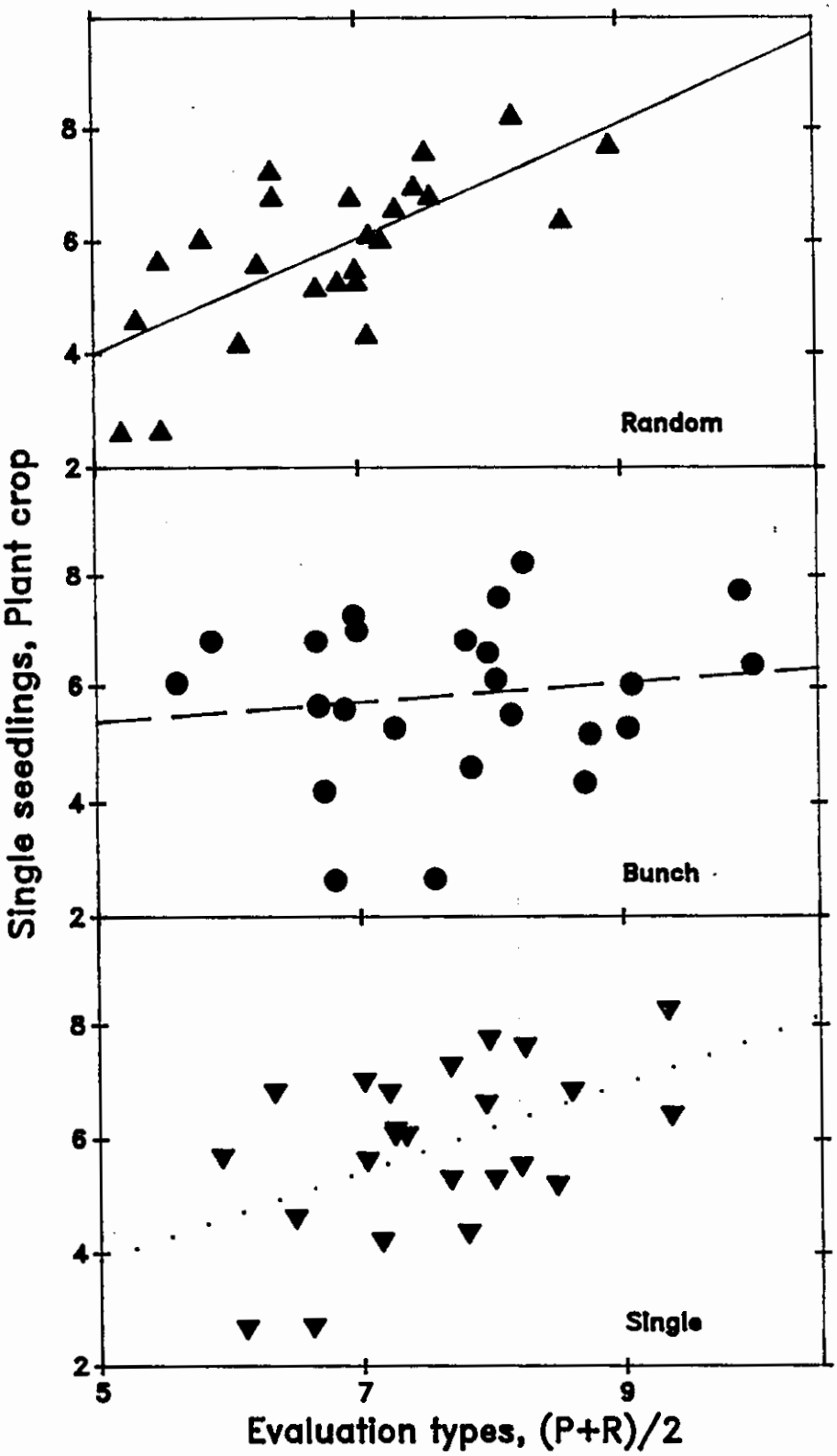


Figure 4. Regression of single seedlings on evaluation trial types.
Character = NMGYOT

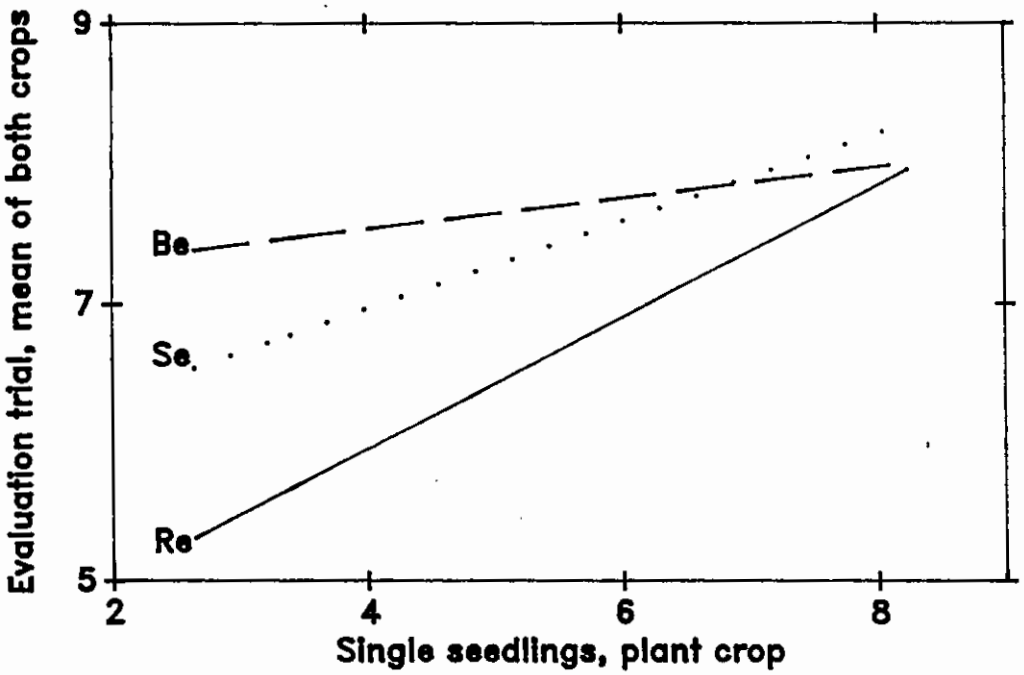


Fig. 5a

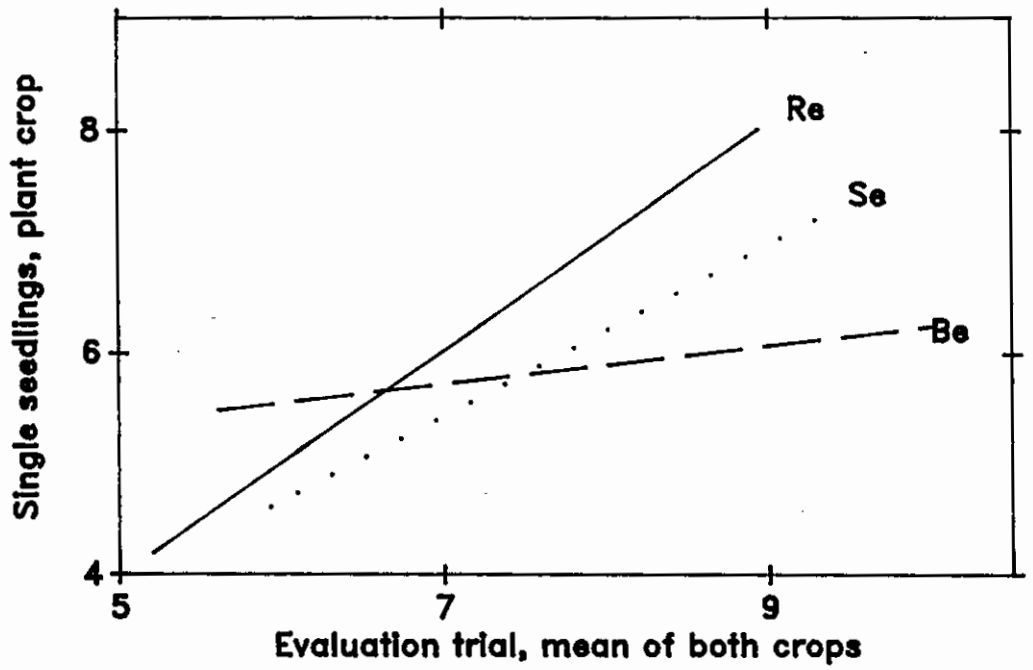


Fig. 5b

Figure 5. Regressions for NMGYOT. Evaluation types are Random (Re), Bunch (Be) and Single (Se).

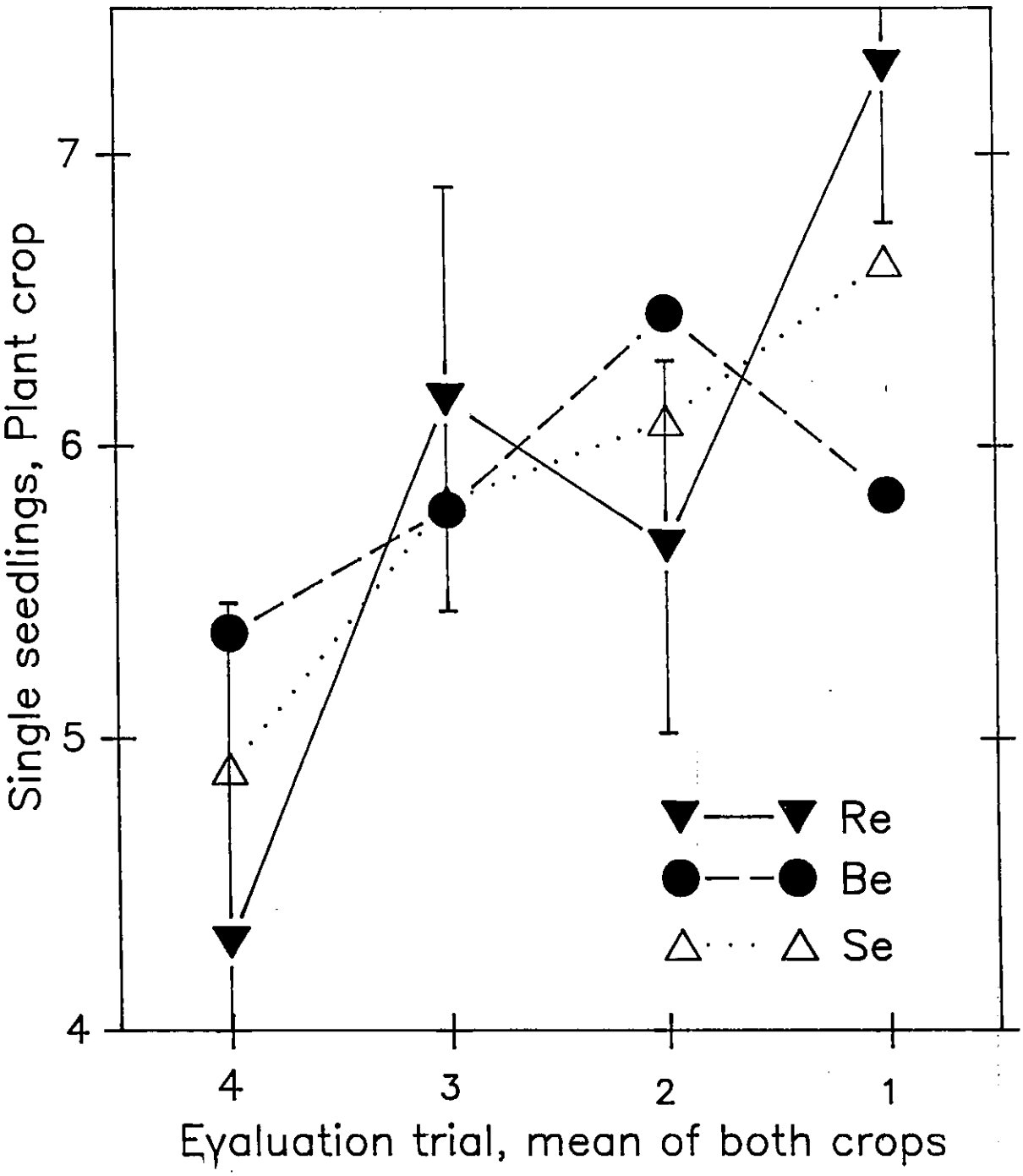


Figure 6. Mean for NMGYOT for each group of six families (worst = 4, best = 1, based on each evaluation type) 95% confidence intervals are shown for the Random type.

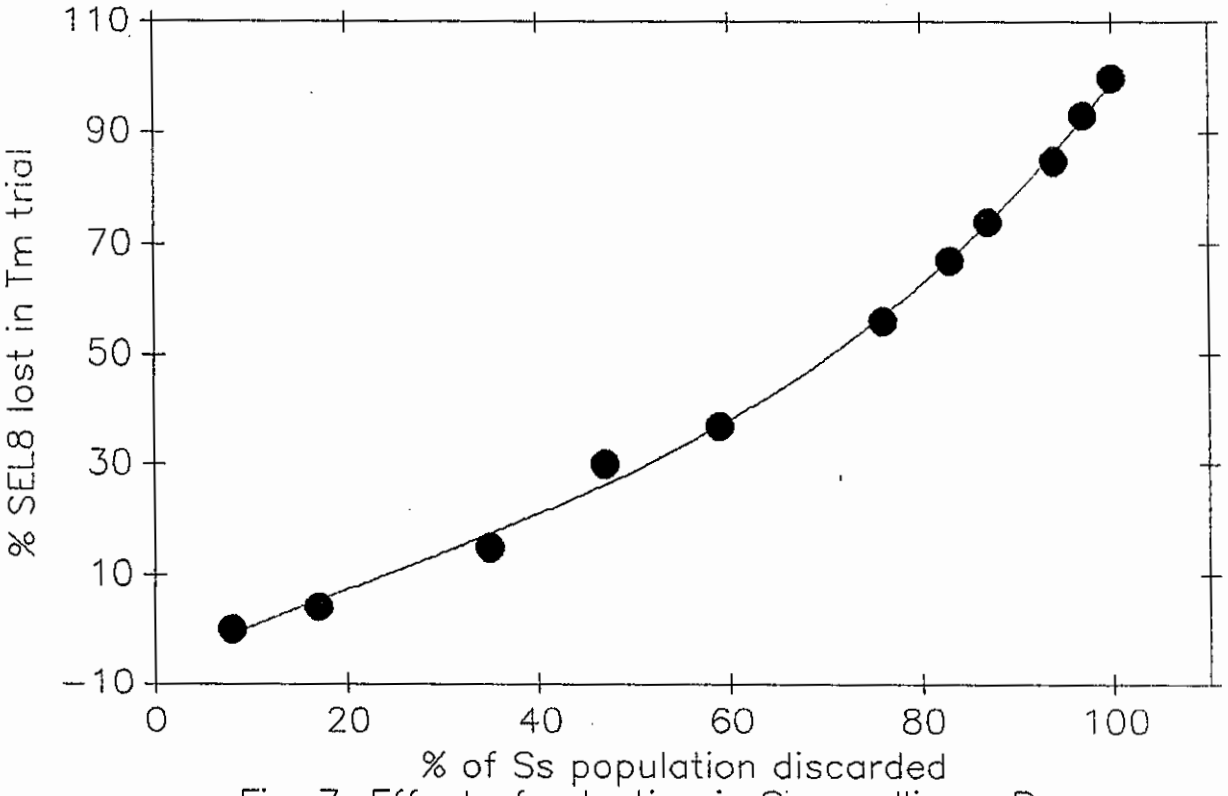


Fig. 7 Effect of selection in Ss seedlings, P crop

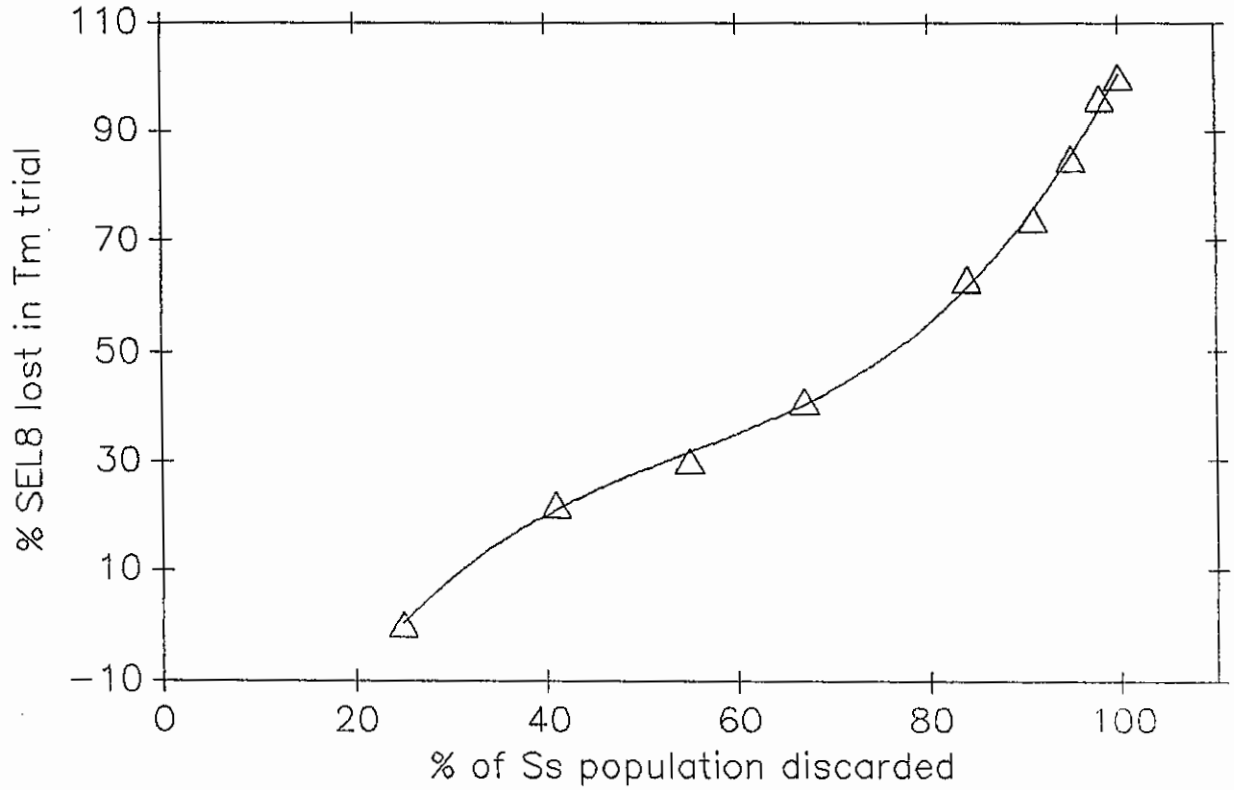


Fig. 8 Effect of selection on Ss seedlings, P crop

Table 1. Families used in the project, with number of 80N seedlings planted (Ss), and number of selections produced.

Key#	Family	Status` 1980	1976 rank~	Number of 80N planted (current) Ss	30-sett	YOT	Farms	Cross ratio 1989 80N	80N omitted ratio [rank]
1	62C366 x VESTA	n7		175	3	0	0	0.1	-
2	CO622 x MQ33-371	n6		108	0	0	0	0.0	-
3	CP53-19 x 62C476	n6		108	3	0	0	0.4	-
4	CP55-14 x VESTA	n6		108	2	0	0	0.4	-
5	H44-2818 x 67C444	n6		108	6	4	0	0.6	-
6	H49-104 x Q99	P6		759	62	7	3(1)	1.2	1.2 [5]
7	H66-5444 x CP43-47	n8		108	1	0	0	0.4	-
8	58N829 x 66N2008	P2		282	37	13	5(2)	5.4	4.7 [1]
9	58N978 x 62C476	n7		108	11	0	0	0.4	-
10	60N1853 x H49-3666	n0	39	108	7	1	0	0.6	0.0
11	60N1853 x 61N1232	P2		364	15	6	1	0.8	0.0
12	60N1853 x Q99	P4	14	777	48	7	6(1)	2.4	0.3
13	61N1232 x 54N7096	P4	27	503	6	3	2(2)	1.2	0.6
14	63N1589 x 61N1232	P1		108	6	2	2(2)	3.0	0.5
15	67N2254 x CO331	n0	6	108	4	6(1)	3(3+)	9.0	0.8
16	67N3184 x CO1007	n0	7	108	11	9(6)	3(2+)	3.0	-
17	67N3184 x H49-3666	P1		187	14	4	1	1.6	0.5
18	NCO310 x 54N7096	P2	10	263	19	7	3(1)	3.5	2.4 [3]
19	Q90 x 61N1232	P2	2	108	7	6	2(1)	5.7	0.9
20	Q100 x 61N1232	n0	8	108	3	1	1(1)	2.8	1.3 [4]
21	Q101 x H44-2818	P4	22	594	7	1	0	0.0	0.0
22	Q117 x 65A17	P2		350	35	3	2(1)	1.7	3.2 [2]
23	Q117 x B42231	P1		108	12	3	0	0.6	0.6
24	TROJAN x CO475	n0		108	0	0	0	0.0	0.0

Table 2. Dates of planting, selection and harvest for the three trials used in the project.

	Ts	Te	Tm
P crop			
Planted	21-22 October 1980	8-9 October 1981	28 September 198
Selected`	20-30 July 1981	5-7 October 1982	8 August 1983
Harvested	13 October 1981	13 October 1982	
R crop			
Selected`	29 July to 4 August 1982	2-4 August 1983	
Harvested	29-30 September 1982	31 October 1983	

` Selected refers to recording of selection data, not removal of selections for planting.

Table 3. Characters recorded or computed in the three trials.

Character	Ts Bs	Ts Ss	Te	Tm
Selection characters				
STALKS (number)	+	+	+	+
BRIX	-	+	+	+
HARDNESS on a Ø-9 scale, 9 very hard	+	+	+	+
Visual NMG	-	+	+	+
SQRNMG = plot mean computed after taking (visual NMG of each seedling + Ø.5)	-	+	-	-
NMGplot_BR (whole plot grade, omitting brix)	+	+	-	-
NMGplot+BR (whole plot grade, including brix)	+	+	-	-
Within-plot variances (VAR)				
ST_VAR (stalks)	-	+	+	-
BRIX_VAR	-	+	+	-
HARD_VAR (hardness)	-	+	+	-
NMG_VAR (Visual NMG)	-	+	+	-
SQRNMG_VAR	-	+		
LOGe (VAR + 1.Ø)				
LST_VAR, LBRIX_VAR, LHARD_VAR, LNMG_VAR	-	+	+	-
LSQRNMG_VAR	-	+		
Number of selections				
SEL7 (NMG 7 or higher)	-	+	+	-
SEL8 (NMG 8 or higher = Normal)	+	+	+	+
SEL1Ø (NMG 1Ø or higher)	-	+	+	+
√(number of selections + Ø.5)				
SQRSEL7, SQRSEL8, SQRSEL1Ø	-	+	+	-
Number of missing seedlings (MISSES)				
STALKS, BRIX, HARDNESS, Visual NMG	-	+	+	-
Harvest characters				
TCH (weight of cane, t/ha)	+	+	+	-
CCS	+`	+`	+	-
TSH (weight of sugar, t/ha)	+	+	+	-
NMGYOT~	+	+	+	-
FIBRE	-	-	+	-
KG/STALK (weight per stalk)	+	+	+	-

` In the original seedling trial CCS was estimated from brix, using a linear regression of CCS on brix obtained in experiments at Meringa by the late Mr. A.G. Barrie (1Ø May 1961)

~ Selection in the BSES system is based on net merit grade(NMG). Visual NMG and

Table 4. Expected values of the mean squares for a split-plot model in a randomized complete block design.

Source of variation	df	Model I Fixed effects	Model II Random effects
V1 Blocks, R	r-1	$\sigma^2_e + b\sigma^2_{RA} + ab\sigma^2_R$	$\sigma^2_e + b\sigma^2_{RA} + ab\sigma^2_R$
V2 A	a-1	$\sigma^2_e + b\sigma^2_{RA} + rb_{(A)}$	$\sigma^2_e + b\sigma^2_{RA} + r\sigma^2_{AB} + rb\sigma^2_A$
V3 Error(a)	(r-1)(a-1)	$\sigma^2_e + b\sigma^2_{RA}$	$\sigma^2_e + b\sigma^2_{RA}$
V4 B	b-1	$\sigma^2_e + ra_{(B)}$	$\sigma^2_e + r\sigma^2_{AB} + ra\sigma^2_B$
V5 AB	(a-1)(b-1)	$\sigma^2_e + r_{(AB)}$	$\sigma^2_e + r\sigma^2_{AB}$
V6 Error(b)	a(b-1)(r-1)	σ^2_e	σ^2_e

Let

$$Y_{ijk} = \mu + R_i + A_j + RA_{ij} + B_k + (AB)_{jk} + E_{ijk}$$

represent the observation in the *i*th block of a randomized complete block design, on the *j*th whole-unit treatment with the *k*th sub-unit treatment. Let $i = 1...r$ blocks, $j = 1...a$ whole-unit treatments, and $k = 1...b$ sub-unit treatments. Let RA_{ij} and E_{ijk} be normally and independently distributed about zero means with σ^2_e as the common variance of the *E*s, the sub-unit random components.

For the random model an error was synthesized for the main treatment (A), to give the following *quasi* F ratio:

$$F_{p,q} = (V2 + V6)/(V3 + V5) \qquad \text{(Steel \& Torrie, 1980, p357)}$$

where the effective degrees of freedom (p,q) are

$$p = (V2 + V6)^2/(V2^2/df2 + V6^2/df6) \qquad q = (V3 + V5)^2/(V3^2/df3 + V5^2/df5)$$

A normal F ratio (V4/V5) was used for treatment B in the random model.

If the **AB** interaction was not significant, an F ratio for B based on a combined error (V5 + V6) was presented for the fixed model.

Table 5. Expected values of the mean squares for a split-block model in a randomized complete block design.

Source of variation	df	Model I Fixed effects	Model II Random effects
V1 Blocks, R	r-1	$\sigma^2_e + b\sigma^2_{RA} + a\sigma^2_{RB} + ab\sigma^2_R$	$\sigma^2_e + b\sigma^2_{RA} + a\sigma^2_{RB} + ab\sigma^2_R$
V2 A	a-1	$\sigma^2_e + b\sigma^2_{RA} + rb_{(A)}$	$\sigma^2_e + b\sigma^2_{RA} + r\sigma^2_{AB} + rb\sigma^2_A$
V3 Error(a), RA	(r-1)(a-1)	$\sigma^2_e + b\sigma^2_{RA}$	$\sigma^2_e + b\sigma^2_{RA}$
V4 B	b-1	$\sigma^2_e + a\sigma^2_{RB} + ra_{(B)}$	$\sigma^2_e + a\sigma^2_{RB} + r\sigma^2_{AB} + ra\sigma^2_B$
V5 Error(b), RB	(r-1)(b-1)	$\sigma^2_e + r_{(AB)}$	$\sigma^2_e + a\sigma^2_{RB}$
V6 AB	(a-1)(b-1)	$\sigma^2_e + a\sigma^2_{RB}$	$\sigma^2_e + a\sigma^2_{RB}$
V7 Error(c), RAB	a(b-1)(r-1)	σ^2_e	σ^2_e

Let

$$Y_{ijk} = \mu + R_i + A_j + RA_{ij} + B_k + RB_{ik} + (AB)_{jk} + E_{ijk}$$

represent the observation in the *i*th block of a randomized complete block design, on the *j*th treatment in the *k*th crop (year). Let $i = 1...r$ blocks, $j = 1...a$ treatments, and $k = 1...b$ crops. Let RA_{ij}, RB_{ik} and E_{ijk} be normally and independently distributed about zero means with σ^2_e as the common variance of the *E*s, the **RAB** interaction component.

For the random model an error was synthesized for the main treatment (A), to give the following *quasi* F ratio:

$$F_{p,q} = (V2 + V7)/(V3 + V6) \qquad \text{(Steel \& Torrie, 1980, p357)}$$

where the effective degrees of freedom (p,q) are

$$p = (V2 + V7)^2/(V2^2/df2 + V7^2/df7) \qquad q = (V3 + V6)^2/(V3^2/df3 + V6^2/df6)$$

For treatment B the corresponding *quasi* F ratio for the random model was

$$F_{p,q} = (V4 + V7)/(V5 + V6)$$

If the **AB** interaction was not significant, an F ratio for B based on a combined error (V6 + V7) was presented for the fixed model.

Table 6. Method used to compute theoretical gains from selection, using a randomized complete blocks design with *r* blocks and *t* treatments.

Source of variation	df	Expected mean squares
Blocks	r - 1	
Treatments (T)	t - 1	$\sigma^2_e + r\sigma^2_G$
Error (E)	(r-1)(t-1)	σ^2_e
(T - E)/r		σ^2_G

Theoretical gains from selection, for crosses reproduced clonally, were computed as follows:-

$TG = Dh^2 \times 100/GM = i\sigma_f h^2 \times 100/GM$

TG = theoretical gain from selection

D = the selection differential in actual units of measurement = $i\sigma_f$

GM = General mean

σ_f = the standard deviation of observed family means

$= \sqrt{(T/r)}$ (Falconer, 1960, page 235)

$h^2 = \sigma^2_G/(\sigma^2_G + \sigma^2_e/r)$

where h^2 is broad sense type of heritability (Simmonds, 1979, page 92)

It was assumed that 25% of the population was selected so the selection differential in standard units of measurement (*i*) = 1.22 for selection of 6 from a population of 24 families (Falconer, 1960, page 193).

It is usually assumed that $(T - E)/r$ estimates $0.5\sigma^2_G$, and this was assumed by Skinner (1980, 1982). However, it is now considered that the above estimate (σ^2_G) is correct for families which are reproduced clonally after selection.

Table 7. Mean values, in order or key numbers, for each family of Bs and Ss seedlings, trial Ts, replicates KLM.

KEY	BsSTpr	BsSTp	BsSTr	BsBRIXpr	BsBRIXp	BsBRIXr	BsHARDpr	BsHARDp	BsHARDr
1	48.330	56.670	40.000	22.033	21.800	22.267	4.833	5.167	4.500
2	35.830	43.000	28.670	21.167	21.067	21.267	5.000	5.000	5.000
3	43.170	51.330	35.000	22.067	21.667	22.467	5.417	5.667	5.167
4	47.000	55.330	38.670	21.233	20.867	21.600	5.167	5.333	5.000
5	46.000	51.670	40.330	21.900	22.067	21.733	5.500	6.333	4.667
6	42.830	49.670	36.000	22.333	22.333	22.333	5.500	6.000	5.000
7	44.670	48.670	40.670	20.633	20.067	21.200	5.833	6.000	5.667
8	50.500	55.000	46.000	22.100	22.133	22.067	5.250	5.167	5.333
9	47.000	50.670	43.330	22.433	22.400	22.467	5.667	5.833	5.500
10	44.170	51.000	37.330	22.317	21.767	22.867	5.417	5.500	5.333
11	56.170	61.330	51.000	21.467	20.667	22.267	5.250	5.500	5.000
12	48.170	56.000	40.330	22.633	22.000	23.267	5.417	5.500	5.333
13	45.500	50.330	40.670	21.633	21.600	21.667	4.917	5.500	4.333
14	58.830	64.000	53.670	21.467	21.133	21.800	5.417	5.500	5.333
15	51.500	55.670	47.330	21.033	20.667	21.400	5.000	5.167	4.833
16	51.000	55.330	46.670	23.100	22.933	23.267	5.250	5.500	5.000
17	47.330	56.330	38.330	22.833	22.800	22.867	5.250	5.667	4.833
18	50.830	55.330	46.330	22.900	22.533	23.267	5.417	5.333	5.500
19	47.170	47.330	47.000	21.733	21.400	22.067	5.500	5.667	5.333
20	51.670	56.000	47.330	22.033	21.133	22.933	5.083	5.167	5.000
21	38.000	46.670	29.330	21.833	21.267	22.400	5.000	5.333	4.667
22	46.830	52.330	41.330	21.933	21.600	22.267	4.833	5.000	4.667
23	46.830	53.000	40.670	22.800	22.533	23.067	5.000	5.833	4.167
24	27.330	29.670	25.000	20.767	20.600	20.933	4.750	5.167	4.333
GM	46.5275	52.1804	40.8746	21.9325	21.6264	22.2390	5.2362	5.4931	4.9791

KEY	BsG_Bpr	BsG_Bp	BsG_Br	BsGBpr	BsGBp	BsGBr	BsWSpr	BsWSp	BsWSr
1	6.667	6.500	6.833	5.780	5.670	5.900	0.641	0.552	0.731
2	6.000	6.333	5.667	5.000	5.670	4.330	0.601	0.450	0.753
3	7.000	6.667	7.333	6.330	6.170	6.500	0.754	0.551	0.957
4	7.583	7.333	7.833	6.330	6.330	6.330	0.754	0.623	0.884
5	7.500	6.833	8.167	6.580	6.170	7.000	0.684	0.591	0.777
6	7.083	6.333	7.833	6.420	6.170	6.670	0.846	0.593	1.099
7	6.583	5.333	7.833	4.920	4.000	5.830	0.677	0.562	0.793
8	9.000	8.833	9.167	8.080	8.330	7.830	0.998	0.911	1.085
9	7.500	7.333	7.667	6.870	7.000	6.730	0.817	0.731	0.902
10	7.333	7.333	7.333	7.080	7.170	7.000	0.856	0.635	1.078
11	7.667	7.333	8.000	6.580	6.000	7.170	0.668	0.647	0.689
12	7.083	6.500	7.667	6.620	6.000	7.230	0.772	0.537	1.006
13	6.417	5.167	7.667	5.330	4.170	6.500	0.630	0.385	0.875
14	8.250	6.500	10.000	6.950	5.670	8.230	0.673	0.508	0.839
15	7.167	6.000	8.333	5.670	4.670	6.670	0.721	0.556	0.887
16	6.833	5.833	7.833	6.670	5.830	7.500	0.647	0.479	0.816
17	7.333	6.500	8.167	6.970	6.500	7.430	1.023	0.651	1.395
18	7.250	7.500	7.000	7.080	7.670	6.500	0.794	0.686	0.902
19	8.250	7.667	8.833	7.280	6.830	7.730	0.693	0.539	0.847

Table 7 continued 2/7

KEY	BsTCHpr	BsTCHp	BsTCHr	BsCCSpr	BsCCSp	BsCCSr	BsTSHpr	BsTSHp	BsTSHr
1	58.080	59.710	56.450	14.727	14.465	14.989	8.520	8.550	8.490
2	38.670	37.230	40.100	13.752	13.640	13.865	5.320	5.100	5.540
3	59.040	54.150	63.920	14.764	14.315	15.214	8.710	7.770	9.640
4	65.610	65.960	65.260	13.827	13.415	14.240	9.080	8.840	9.330
5	59.200	58.170	60.220	14.577	14.764	14.389	8.610	8.620	8.590
6	65.740	56.190	75.290	15.064	15.064	15.064	9.910	8.460	11.360
7	57.380	52.300	62.450	13.152	12.515	13.790	7.570	6.430	8.720
8	95.910	95.270	96.550	14.802	14.839	14.764	14.150	14.000	14.300
9	72.450	70.880	74.010	15.177	15.139	15.214	10.950	10.690	11.220
10	70.080	62.390	77.780	15.046	14.427	15.664	10.630	9.030	12.230
11	71.460	75.160	67.750	14.090	13.190	14.989	10.030	9.860	10.200
12	67.530	57.020	78.030	15.402	14.689	16.114	10.430	8.320	12.540
13	52.330	36.910	67.750	14.277	14.240	14.315	7.450	5.250	9.660
14	74.200	61.880	86.530	14.090	13.715	14.465	10.480	8.430	12.520
15	70.660	59.770	81.550	13.602	13.190	14.015	9.750	7.990	11.510
16	61.650	50.510	72.800	15.927	15.739	16.114	9.840	7.940	11.730
17	85.540	69.480	101.600	15.627	15.589	15.664	13.420	10.820	16.030
18	76.150	72.030	80.270	15.702	15.289	16.114	12.020	11.080	12.960
19	62.040	48.850	75.220	14.390	14.015	14.764	8.970	6.860	11.080
20	75.350	62.960	87.740	14.727	13.715	15.739	11.220	8.650	13.780
21	56.670	48.080	65.260	14.502	13.865	15.139	8.290	6.660	9.920
22	77.970	73.120	82.820	14.615	14.240	14.989	11.480	10.430	12.530
23	72.290	64.300	80.270	15.589	15.289	15.889	11.260	9.730	12.790
24	34.550	31.420	37.680	13.302	13.115	13.490	4.600	4.120	5.090
GM	65.8563	59.3225	72.3875	14.6138	14.2693	14.9580	9.6954	8.4846	10.9067

KEY	BsGYOTpr	BsGYOTp	BsGYOTr	BsSELST
1	5.830	6.030	5.620	6.670
2	3.230	3.270	3.200	2.000
3	5.800	5.410	6.180	7.330
4	5.960	5.920	5.990	6.330
5	5.840	6.160	5.520	5.330
6	6.910	6.140	7.680	5.670
7	4.660	3.890	5.430	6.330
8	9.810	10.110	9.520	9.000
9	7.450	7.650	7.250	8.330
10	7.420	6.360	8.480	5.330
11	6.720	6.600	6.830	6.330
12	7.380	5.930	8.830	7.720
13	4.900	3.550	6.250	1.670
14	7.020	5.720	8.330	4.330
15	6.350	5.230	7.480	3.670
16	7.040	5.960	8.110	2.330
17	9.520	7.860	11.170	4.000
18	8.560	8.120	9.010	3.000
19	5.980	4.570	7.390	7.000

Table 7 continued 3/7

KEY	SsBRVp1r	SsBRVpr	SsBRVp	SsBRVr	SsLBRVpr	SsLBRVp	SsLBRVr
1	1.226	1.536	1.176	1.895	0.912	0.769	1.055
2	2.018	2.513	2.734	2.292	1.248	1.305	1.191
3	0.987	1.711	2.122	1.299	0.961	1.107	0.816
4	1.382	1.728	1.520	1.936	0.963	0.909	1.016
5	2.049	2.552	2.498	2.606	1.248	1.214	1.283
6	2.409	2.726	3.314	2.139	1.264	1.414	1.114
7	2.586	2.911	2.931	2.890	1.342	1.343	1.342
8	1.621	2.184	2.289	2.079	1.144	1.175	1.113
9	1.390	1.739	1.753	1.725	0.990	0.989	0.992
10	1.251	1.611	1.688	1.534	0.954	0.984	0.923
11	1.486	1.893	2.019	1.768	1.025	1.075	0.975
12	1.841	2.224	2.939	1.508	1.109	1.330	0.887
13	1.806	2.109	1.890	2.328	1.116	1.041	1.191
14	1.103	1.387	1.602	1.173	0.857	0.950	0.763
15	0.903	1.151	1.232	1.070	0.755	0.798	0.712
16	1.132	1.467	1.392	1.542	0.896	0.863	0.930
17	1.074	1.729	1.438	2.021	0.981	0.877	1.085
18	1.517	1.865	2.181	1.549	1.037	1.143	0.931
19	1.502	1.936	2.382	1.491	1.015	1.154	0.875
20	1.509	1.812	2.132	1.492	1.024	1.140	0.909
21	2.193	3.052	2.495	3.610	1.365	1.249	1.482
22	1.425	1.688	1.566	1.810	0.975	0.934	1.016
23	1.463	1.855	1.790	1.920	1.007	0.981	1.034
24	1.929	2.676	2.962	2.391	1.279	1.341	1.216
GM	1.5751	2.0023	2.0852	1.9195	1.0611	1.0869	1.0355

KEY	SsG_Bpr	SsG_Bp	SsG_Br	SsGBpr	SsGBp	SsGBr	SsWSpr	SsWSp	SsWSr
1	5.4170	5.0000	5.8330	4.7830	4.5000	5.0670	0.8584	0.9104	0.8064
2	5.0000	4.3330	5.6670	3.7500	3.1670	4.3330	0.8141	0.7808	0.8475
3	7.5000	8.3330	6.6670	6.8330	7.5000	6.1670	1.1193	1.1565	1.0820
4	6.7500	7.0000	6.5000	5.5000	5.8330	5.1670	0.9711	0.9570	0.9852
5	7.9170	8.0000	7.8330	6.5830	6.5000	6.6670	0.9841	1.0477	0.9204
6	8.5000	8.3330	8.6670	7.5500	7.5000	7.6000	0.9594	0.8805	1.0384
7	8.6670	8.5000	8.8330	5.9170	5.8330	6.0000	0.9964	1.0096	0.9833
8	9.1670	9.0000	9.3330	8.2500	8.0000	8.5000	0.9992	1.0121	0.9863
9	8.8330	9.3330	8.3330	8.2000	8.6670	7.7330	0.9665	0.9845	0.9484
10	8.2500	8.8330	7.6670	7.7500	8.0000	7.5000	0.9570	0.9890	0.9250
11	8.2500	8.3330	8.1670	7.0000	7.3330	6.6670	0.8157	0.8447	0.7867
12	7.4670	7.5000	7.4330	6.8000	6.6670	6.9330	0.8495	0.7975	0.9015
13	6.5000	4.8330	8.1670	5.3000	3.8330	6.7670	0.9177	0.8519	0.9834
14	8.3330	8.0000	8.6670	6.9000	7.0000	6.8000	0.8528	0.8904	0.8151
15	8.2500	7.8330	8.6670	6.5170	6.0000	7.0330	0.8775	0.8782	0.8768
16	9.0000	9.3330	8.6670	8.1670	8.5000	7.8330	0.9637	0.9761	0.9513
17	7.5830	8.0000	7.1670	7.3500	8.1670	6.5330	1.1340	1.1131	1.1549
18	8.5830	8.5000	8.6670	8.1830	8.3670	8.0000	0.8068	0.7291	0.8846

Table 7 continued 4/7

KEY	SsTCHpr	SsTCHp	SsTCHr	SsCCSpr	SsCCSp	SsCCSr	SsTSHpr	SsTSHp	SsTSHr
1	55.300	56.250	54.350	14.722	14.379	15.065	8.153	8.085	8.221
2	47.390	42.650	52.140	12.518	11.832	13.204	5.965	5.048	6.882
3	70.230	70.250	70.200	15.054	14.672	15.437	10.564	10.299	10.830
4	63.650	61.130	66.180	14.131	13.611	14.652	9.007	8.327	9.687
5	77.590	78.910	76.280	13.783	13.227	14.339	10.682	10.434	10.929
6	65.710	59.430	72.000	14.464	13.872	15.055	9.521	8.217	10.826
7	66.310	64.150	68.470	11.653	11.419	11.886	7.698	7.293	8.102
8	85.630	85.250	86.000	14.059	13.629	14.490	12.048	11.619	12.478
9	72.010	70.080	73.950	14.111	13.781	14.441	10.145	9.626	10.663
10	66.670	68.930	64.400	14.871	14.151	15.591	9.894	9.752	10.037
11	72.460	69.010	75.920	14.065	13.388	14.741	10.176	9.162	11.189
12	70.200	65.920	74.480	14.564	13.564	15.564	10.263	8.948	11.578
13	65.870	57.630	74.110	14.258	13.769	14.747	9.430	7.925	10.935
14	77.350	73.530	81.160	13.461	13.037	13.885	10.448	9.598	11.299
15	70.540	66.010	75.060	13.368	12.718	14.019	9.453	8.387	10.520
16	75.900	72.910	78.900	15.066	14.613	15.520	11.456	10.663	12.249
17	68.700	67.660	69.740	15.411	15.064	15.759	10.576	10.180	10.972
18	69.850	60.340	79.350	15.020	14.799	15.241	10.497	8.923	12.070
19	68.020	58.350	77.690	13.170	12.448	13.892	9.065	7.304	10.827
20	72.910	64.600	81.230	13.281	12.854	13.707	9.700	8.291	11.109
21	57.370	48.440	66.300	14.357	13.996	14.718	8.277	6.794	9.760
22	75.620	76.400	74.840	15.224	14.770	15.677	11.520	11.294	11.746
23	66.550	66.070	67.030	14.975	14.694	15.255	9.965	9.714	10.216
24	45.580	41.110	50.040	13.081	12.060	14.102	5.993	4.935	7.051
GM	67.8088	64.3754	71.2425	14.1111	13.5978	14.6245	9.6040	8.7841	10.4240

KEY	SsGYOTpr	SsGYOTp	SsGYOTr	SsSTpr	SsSTp	SsSTr	SsBRIXpr	SsBRIXp	SsBRIXr
1	5.517	5.662	5.371	6.055	5.630	6.480	22.029	21.724	22.334
2	3.295	2.642	3.948	5.923	5.303	6.543	20.070	19.460	20.679
3	6.838	6.999	6.676	5.575	5.287	5.864	22.324	21.984	22.664
4	5.779	5.608	5.951	6.099	5.802	6.396	21.504	21.041	21.966
5	6.867	6.804	6.929	7.138	6.641	7.635	21.194	20.700	21.689
6	6.408	5.515	7.300	6.187	5.986	6.389	21.799	21.273	22.325
7	4.267	4.197	4.338	6.170	5.729	6.610	19.300	19.093	19.508
8	8.017	7.732	8.302	7.526	7.324	7.728	21.440	21.057	21.822
9	6.628	6.605	6.650	7.026	6.543	7.509	21.486	21.192	21.779
10	6.855	6.808	6.902	6.220	6.130	6.309	22.161	21.521	22.801
11	6.760	6.055	7.464	8.091	7.288	8.894	21.445	20.843	22.046
12	7.011	6.046	7.977	7.328	7.252	7.403	21.888	20.999	22.777
13	6.223	5.286	7.160	6.611	6.116	7.106	21.617	21.182	22.051
14	6.708	6.130	7.285	8.251	7.458	9.045	20.908	20.531	21.285
15	6.031	5.290	6.772	7.204	6.623	7.785	20.825	20.248	21.403
16	7.674	7.610	7.738	7.130	6.686	7.573	22.335	21.932	22.738
17	7.319	7.274	7.364	5.459	5.404	5.514	22.642	22.333	22.951
18	7.182	6.398	7.966	7.715	7.260	8.171	22.294	22.098	22.490

Table 7 continued 5/7

KEY	SsSEL7pr	SsSEL7p	SsSEL7r	SsSEL8pr	SsSEL8p	SsSEL8r	SsS10pr	SsS10p	SsS10r
1	10.670	12.670	8.670	3.670	5.000	2.330	1.000	1.670	0.330
2	3.830	3.000	4.670	1.000	1.330	0.670	0.000	0.000	0.000
3	11.500	14.330	8.670	3.670	5.670	1.670	0.170	0.330	0.000
4	9.000	10.330	7.670	3.000	3.670	2.330	0.500	0.670	0.330
5	12.500	12.670	12.330	5.830	6.330	5.330	1.170	0.000	2.330
6	14.000	12.670	15.330	9.000	7.330	10.670	1.670	0.330	3.000
7	5.170	4.330	6.000	0.670	0.330	1.000	0.000	0.000	0.000
8	17.830	18.670	17.000	11.670	11.670	11.670	4.330	2.670	6.000
9	16.000	18.000	14.000	8.330	11.000	5.670	2.000	1.330	2.670
10	17.500	20.670	14.330	9.670	10.670	8.670	1.670	1.000	2.330
11	14.170	13.000	15.330	7.000	7.000	7.000	2.000	1.330	2.670
12	16.670	17.330	16.000	8.000	7.330	8.670	1.670	1.000	2.330
13	9.330	7.330	11.330	3.830	1.330	6.330	1.170	0.330	2.000
14	12.000	12.000	12.000	5.170	6.330	4.000	0.670	0.000	1.330
15	8.830	7.000	10.670	4.000	2.670	5.330	1.170	0.330	2.000
16	15.500	16.670	14.330	6.830	9.330	4.330	2.500	3.670	1.330
17	13.000	16.670	9.330	7.330	10.000	4.670	1.330	2.000	0.670
18	16.830	16.670	17.000	9.330	11.330	7.330	1.330	1.000	1.670
19	11.170	9.330	13.000	4.830	3.670	6.000	1.170	0.330	2.000
20	8.500	7.330	9.670	3.330	3.000	3.670	0.500	0.330	0.670
21	8.670	6.000	11.330	3.670	2.330	5.000	1.000	0.330	1.670
22	18.500	19.000	18.000	12.330	12.670	12.000	3.330	2.000	4.670
23	13.170	16.000	10.330	6.330	8.670	4.000	0.330	0.330	0.330
24	4.000	2.330	5.670	1.170	0.000	2.330	0.000	0.000	0.000
GM	12.0142	12.2500	11.7775	5.8192	6.1942	5.4446	1.2783	0.8742	1.6804

KEY	SsS7p1r	SsS8p1r	SsS10p1r
1	7.333	3.667	0.667
2	2.000	0.333	0.000
3	7.667	2.667	0.000
4	5.667	2.000	0.000
5	8.667	6.000	0.667
6	11.667	6.667	1.000
7	2.667	0.333	0.000
8	16.333	9.333	3.333
9	13.667	7.000	2.000
10	13.667	6.667	1.333
11	11.333	7.333	2.000
12	14.000	6.333	2.000
13	6.333	2.333	0.333
14	8.667	2.667	0.333
15	6.333	3.333	0.667
16	11.000	6.333	1.000
17	10.000	5.000	0.667
18	15.000	7.333	1.000

Table 7 continued 6/7

KEY	SsVISGpr	SsVISGp	SsVISGr	SsGVARpr	SsGVARp	SsGVARr	SsLGVpr	SsLGVp	SsLGVr
1	4.929	5.218	4.640	6.440	7.560	5.330	1.975	2.140	1.810
2	3.715	3.584	3.846	4.760	4.670	4.850	1.747	1.732	1.762
3	5.125	5.606	4.644	4.830	4.920	4.740	1.758	1.770	1.746
4	4.863	5.003	4.723	4.990	4.960	5.020	1.774	1.776	1.772
5	5.348	5.496	5.200	6.170	4.830	7.500	1.931	1.732	2.130
6	5.555	5.485	5.625	7.300	5.470	9.140	2.080	1.864	2.297
7	4.105	4.281	3.928	4.430	3.740	5.120	1.679	1.553	1.806
8	6.450	6.574	6.325	7.780	5.430	10.130	2.126	1.848	2.404
9	6.055	6.458	5.652	7.520	5.990	9.050	2.075	1.907	2.242
10	5.962	6.523	5.401	6.870	4.860	8.870	1.977	1.693	2.262
11	5.935	5.796	6.074	7.100	5.590	8.620	2.049	1.872	2.225
12	6.175	6.331	6.020	5.230	3.970	6.490	1.791	1.587	1.994
13	4.948	4.567	5.329	5.640	4.490	6.790	1.842	1.665	2.019
14	5.655	5.753	5.556	3.560	3.030	4.080	1.493	1.369	1.617
15	4.920	4.785	5.055	5.950	4.200	7.710	1.887	1.632	2.142
16	5.993	6.411	5.575	6.010	5.060	6.950	1.892	1.750	2.034
17	5.430	5.951	4.909	6.430	6.760	6.100	1.997	2.035	1.959
18	5.979	6.095	5.864	7.100	5.790	8.420	2.054	1.915	2.193
19	5.134	4.864	5.405	6.740	6.310	7.170	2.029	1.984	2.075
20	5.030	4.938	5.121	4.510	4.340	4.680	1.692	1.652	1.732
21	4.426	4.254	4.598	6.600	4.610	8.590	1.978	1.716	2.240
22	6.415	6.646	6.183	8.410	5.420	11.390	2.159	1.851	2.467
23	5.322	5.737	4.907	5.600	5.700	5.500	1.880	1.898	1.861
24	3.584	3.294	3.873	4.730	3.880	5.580	1.729	1.585	1.874
GM	5.2939	5.4021	5.1855	6.0292	5.0658	6.9925	1.8998	1.7719	2.0276

KEY	SsSTVpr	SsSTVp	SsSTVr	SsLSTVpr	SsLSTVp	SsLSTVr	SsSQRGpr	SsSQRGp	SsSQRGr
1	10.2900	7.5800	13.0000	2.3840	2.1300	2.6380	2.2552	2.3095	2.2008
2	12.9900	7.8100	18.1600	2.5460	2.1460	2.9460	1.9756	1.9409	2.0103
3	7.7100	5.4200	10.0000	2.1230	1.8490	2.3960	2.3157	2.4259	2.2055
4	10.6800	7.3100	14.0600	2.3230	2.0450	2.6020	2.2568	2.2890	2.2247
5	11.8700	5.9300	17.8100	2.4120	1.8960	2.9280	2.3538	2.3997	2.3079
6	8.5300	5.3400	11.7200	2.1720	1.8270	2.5170	2.3904	2.3929	2.3878
7	12.5600	6.8800	18.2500	2.4960	2.0380	2.9540	2.0813	2.1347	2.0278
8	12.0200	6.3700	17.6700	2.4500	1.9960	2.9050	2.5765	2.6193	2.5337
9	12.2300	6.4000	18.0700	2.4090	1.9730	2.8440	2.4943	2.5894	2.3993
10	7.8100	5.6800	9.9400	2.1260	1.8740	2.3770	2.4727	2.6067	2.3387
11	13.2700	8.0300	18.5100	2.5750	2.1860	2.9650	2.4771	2.4578	2.4964
12	10.7100	7.7000	13.7300	2.3600	2.0820	2.6380	2.5394	2.5788	2.4999
13	12.2500	6.6400	17.8500	2.4640	2.0290	2.8980	2.2713	2.1952	2.3474
14	13.4000	6.6000	20.2100	2.4720	1.9790	2.9650	2.4471	2.4704	2.4238
15	14.9700	5.9900	23.9400	2.5400	1.9300	3.1510	2.2639	2.2502	2.2776
16	12.0200	6.9300	17.1100	2.4680	2.0440	2.8920	2.4924	2.5891	2.3956
17	6.3900	4.9600	7.8300	1.9580	1.7830	2.1330	2.3698	2.4788	2.2607
18	14.1300	7.3700	20.8900	2.6040	2.1230	3.0840	2.4815	2.5155	2.4476

Table 7 continued 7/7

KEY	SsSQGVpr	SsSQGVp	SsSQGVr	SsLSQGpr	SsLSQGp	SsLSQGr	SsHARDpr	SsHARDp	SsHARDr
1	0.3460	0.3921	0.2999	0.2950	0.3307	0.2593	4.4860	4.4960	4.4760
2	0.3154	0.3159	0.3150	0.2740	0.2744	0.2736	4.2800	4.4920	4.0670
3	0.2535	0.2240	0.2830	0.2253	0.2016	0.2491	5.0070	5.2570	4.7570
4	0.2668	0.2542	0.2794	0.2348	0.2251	0.2445	4.5910	4.8160	4.3670
5	0.3077	0.2349	0.3804	0.2649	0.2079	0.3218	4.8280	4.8470	4.8080
6	0.3490	0.2634	0.4346	0.2964	0.2334	0.3593	4.5920	4.6890	4.4960
7	0.2761	0.2285	0.3237	0.2427	0.2056	0.2799	5.5840	5.8360	5.3330
8	0.3138	0.2123	0.4153	0.2690	0.1924	0.3456	4.4880	4.7180	4.2580
9	0.3292	0.2582	0.4002	0.2806	0.2279	0.3333	5.3620	5.5590	5.1650
10	0.3352	0.2340	0.4365	0.2824	0.2059	0.3588	4.9790	5.2670	4.6900
11	0.2990	0.2528	0.3452	0.2601	0.2247	0.2955	5.0980	5.2400	4.9550
12	0.2244	0.1756	0.2733	0.2009	0.1613	0.2405	4.7890	4.6930	4.8860
13	0.2870	0.2478	0.3262	0.2506	0.2205	0.2806	5.1170	5.0320	5.2020
14	0.1614	0.1376	0.1852	0.1489	0.1280	0.1697	5.0130	5.3530	4.6720
15	0.2967	0.2214	0.3720	0.2565	0.1992	0.3138	4.8220	4.8800	4.7640
16	0.2698	0.2020	0.3376	0.2359	0.1825	0.2892	4.8550	4.9700	4.7400
17	0.3051	0.3038	0.3065	0.2657	0.2643	0.2671	4.6790	4.7400	4.6180
18	0.3267	0.2706	0.3827	0.2810	0.2393	0.3227	4.6010	4.7950	4.4070
19	0.3334	0.3288	0.3379	0.2860	0.2841	0.2879	4.9400	5.0820	4.7990
20	0.2303	0.2133	0.2473	0.2068	0.1928	0.2209	4.7620	4.8120	4.7120
21	0.3507	0.2495	0.4518	0.2972	0.2227	0.3716	4.8800	4.9590	4.8000
22	0.3616	0.2230	0.5001	0.3014	0.2011	0.4016	4.5280	4.5490	4.5080
23	0.2957	0.2889	0.3025	0.2585	0.2536	0.2634	4.7420	4.8670	4.6180
24	0.3066	0.2768	0.3365	0.2665	0.2442	0.2888	4.4630	4.2240	4.7030
GM	0.2975	0.2504	0.3447	0.2575	0.2218	0.2933	4.8119	4.9239	4.7000

KEY
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p = plant crop, r = ratoon crop, pr = (p+r)/2 where p,r are plot values
SsBRVplr = (p+r)/2 of each seedling was used to compute within plot brix variance
V, VAR = within plot variance
SEL7 (8, 10) = Number of selections (seedlings) graded 7+ (8+, 10+)
ST = number of stalks, HARD = Hardness
G_B = Visual NMG of whole plot, omitting brix
GB = Visual NMG of whole plot, adjusted for brix
WS = Weight per stalk (kg)
G = net merit grade, VISG = Visual NMG
GYOT = NMGYOT vs standard variety Q82
SQRG, SQG = SQRT(Visual NMG of each seedling + 0.5)
BsSELST = Number of selectable stalks in each bunch-planted family

Table 8. Sorted mean values for each family of Bs and Ss seedlings, trial Ts, replicates KLM.

K(1)	BsSTpr	K(2)	BsSTp	K(3)	BsSTr	K(4)	BsBRIXpr	K(5)	BsBRIXp	K(6)	BsBRIXr
24	27.330	24	29.670	24	25.000	7	20.633	7	20.067	24	20.933
2	35.830	2	43.000	2	28.670	24	20.767	24	20.600	7	21.200
21	38.000	21	46.670	21	29.330	15	21.033	11	20.667	2	21.267
6	42.830	19	47.330	3	35.000	2	21.167	15	20.667	15	21.400
3	43.170	7	48.670	6	36.000	4	21.233	4	20.867	4	21.600
10	44.170	6	49.670	10	37.330	11	21.467	2	21.067	13	21.667
7	44.670	13	50.330	17	38.330	14	21.467	20	21.133	5	21.733
13	45.500	9	50.670	4	38.670	13	21.633	14	21.133	14	21.800
5	46.000	10	51.000	1	40.000	19	21.733	21	21.267	19	22.067
23	46.830	3	51.330	5	40.330	21	21.833	19	21.400	8	22.067
22	46.830	5	51.670	12	40.330	5	21.900	22	21.600	22	22.267
4	47.000	22	52.330	7	40.670	22	21.933	13	21.600	11	22.267
9	47.000	23	53.000	23	40.670	20	22.033	3	21.667	1	22.267
19	47.170	8	55.000	13	40.670	1	22.033	10	21.767	6	22.333
17	47.330	4	55.330	22	41.330	3	22.067	1	21.800	21	22.400
12	48.170	18	55.330	9	43.330	8	22.100	12	22.000	3	22.467
1	48.330	16	55.330	8	46.000	10	22.317	5	22.067	9	22.467
8	50.500	15	55.670	18	46.330	6	22.333	8	22.133	17	22.867
18	50.830	20	56.000	16	46.670	9	22.433	6	22.333	10	22.867
16	51.000	12	56.000	19	47.000	12	22.633	9	22.400	20	22.933
15	51.500	17	56.330	20	47.330	23	22.800	23	22.533	23	23.067
20	51.670	1	56.670	15	47.330	17	22.833	18	22.533	18	23.267
11	56.170	11	61.330	11	51.000	18	22.900	17	22.800	16	23.267
14	58.830	14	64.000	14	53.670	16	23.100	16	22.933	12	23.267
GM	46.5275		52.1804		40.8746		21.9325		21.6264		22.239

K(1)	BsHARDpr	K(2)	BsHARDp	K(3)	BsHARDr	K(4)	BsG_Bpr	K(5)	BsG_Bp	K(6)	BsG_Br
24	4.750	22	5.000	23	4.167	24	4.000	24	3.667	24	4.333
1	4.833	2	5.000	13	4.333	2	6.000	13	5.167	2	5.667
22	4.833	15	5.167	24	4.333	13	6.417	7	5.333	1	6.833
13	4.917	1	5.167	1	4.500	21	6.417	21	5.667	18	7.000
2	5.000	8	5.167	5	4.667	7	6.583	16	5.833	21	7.167
23	5.000	24	5.167	21	4.667	1	6.667	15	6.000	10	7.333
15	5.000	20	5.167	22	4.667	16	6.833	2	6.333	3	7.333
21	5.000	4	5.333	17	4.833	3	7.000	6	6.333	13	7.667
20	5.083	21	5.333	15	4.833	6	7.083	17	6.500	9	7.667
4	5.167	18	5.333	4	5.000	12	7.083	14	6.500	12	7.667
17	5.250	13	5.500	2	5.000	15	7.167	1	6.500	4	7.833
16	5.250	11	5.500	6	5.000	18	7.250	12	6.500	7	7.833
8	5.250	16	5.500	16	5.000	17	7.333	3	6.667	16	7.833
11	5.250	14	5.500	20	5.000	10	7.333	5	6.833	6	7.833
18	5.417	12	5.500	11	5.000	5	7.500	20	6.833	11	8.000
3	5.417	10	5.500	3	5.167	9	7.500	10	7.333	5	8.167
10	5.417	17	5.667	19	5.333	4	7.583	4	7.333	17	8.167
12	5.417	3	5.667	12	5.333	11	7.667	11	7.333	15	8.333
14	5.417	19	5.667	10	5.333	20	7.833	23	7.333	23	8.500

Table 8 (continued) 2/10

K(1)	BsGBpr	K(2)	BsGBp	K(3)	BsGBr	K(4)	BsWSpr	K(5)	BsWSp	K(6)	BsWSr
24	3.000	24	2.670	24	3.330	2	0.601	13	0.385	11	0.689
7	4.920	7	4.000	2	4.330	13	0.630	2	0.450	1	0.731
2	5.000	13	4.170	7	5.830	1	0.641	16	0.479	2	0.753
13	5.330	15	4.670	1	5.900	16	0.647	14	0.508	5	0.777
15	5.670	21	5.170	21	6.330	11	0.668	12	0.537	24	0.784
21	5.750	2	5.670	4	6.330	24	0.671	21	0.538	7	0.793
1	5.780	14	5.670	3	6.500	14	0.673	19	0.539	16	0.816
4	6.330	1	5.670	13	6.500	7	0.677	3	0.551	14	0.839
3	6.330	16	5.830	18	6.500	5	0.684	1	0.552	19	0.847
6	6.420	11	6.000	15	6.670	19	0.693	15	0.556	13	0.875
5	6.580	12	6.000	6	6.670	15	0.721	24	0.557	4	0.884
11	6.580	5	6.170	9	6.730	3	0.754	7	0.562	15	0.887
12	6.620	20	6.170	5	7.000	4	0.754	20	0.588	9	0.902
16	6.670	3	6.170	10	7.000	12	0.772	5	0.591	18	0.902
9	6.870	6	6.170	11	7.170	20	0.779	6	0.593	3	0.957
14	6.950	4	6.330	12	7.230	18	0.794	4	0.623	20	0.969
17	6.970	17	6.500	17	7.430	9	0.817	10	0.635	12	1.006
10	7.080	19	6.830	16	7.500	6	0.846	11	0.647	23	1.042
20	7.080	23	7.000	19	7.730	23	0.847	17	0.651	22	1.069
18	7.080	9	7.000	8	7.830	21	0.855	23	0.651	10	1.078
19	7.280	10	7.170	20	8.000	10	0.856	18	0.686	8	1.085
23	7.500	22	7.170	23	8.000	22	0.897	22	0.726	6	1.099
22	7.630	18	7.670	22	8.100	8	0.998	9	0.731	21	1.171
8	8.080	8	8.330	14	8.230	17	1.023	8	0.911	17	1.395
GM	6.3958		6.0083		6.7850		0.7624		0.5936		0.9313

K(1)	BsTCHpr	K(2)	BsTCHp	K(3)	BsTCHr	K(4)	BsCCSpr	K(5)	BsCCSp	K(6)	BsCCSr
24	34.550	24	31.420	24	37.680	7	13.152	7	12.515	24	13.490
2	38.670	13	36.910	2	40.100	24	13.302	24	13.115	7	13.790
13	52.330	2	37.230	1	56.450	15	13.602	11	13.190	2	13.865
21	56.670	21	48.080	5	60.220	2	13.752	15	13.190	15	14.015
7	57.380	19	48.850	7	62.450	4	13.827	4	13.415	4	14.240
1	58.080	16	50.510	3	63.920	11	14.090	2	13.640	13	14.315
3	59.040	7	52.300	4	65.260	14	14.090	20	13.715	5	14.389
5	59.200	3	54.150	21	65.260	13	14.277	14	13.715	14	14.465
16	61.650	6	56.190	11	67.750	19	14.390	21	13.865	19	14.764
19	62.040	12	57.020	13	67.750	21	14.502	19	14.015	8	14.764
4	65.610	5	58.170	16	72.800	5	14.577	22	14.240	22	14.989
6	65.740	1	59.710	9	74.010	22	14.615	13	14.240	11	14.989
12	67.530	15	59.770	19	75.220	20	14.727	3	14.315	1	14.989
10	70.080	14	61.880	6	75.290	1	14.727	10	14.427	6	15.064
15	70.660	10	62.390	10	77.780	3	14.764	1	14.465	21	15.139
11	71.460	20	62.960	12	78.030	8	14.802	12	14.689	3	15.214
23	72.290	23	64.300	23	80.270	10	15.046	5	14.764	9	15.214
9	72.450	4	65.960	18	80.270	6	15.064	8	14.839	17	15.664
14	74.200	17	69.480	15	81.550	9	15.177	6	15.064	10	15.664

Table 8 (continued) 3/10

K(1)	BsTSHpr	K(2)	BsTSHp	K(3)	BsTSHr	K(4)	BsGYOTpr	K(5)	BsGYOTp	K(6)	BsGYOTr
24	4.600	24	4.120	24	5.090	24	2.570	24	2.390	24	2.760
2	5.320	2	5.100	2	5.540	2	3.230	2	3.270	2	3.200
13	7.450	13	5.250	1	8.490	7	4.660	13	3.550	7	5.430
7	7.570	7	6.430	5	8.590	13	4.900	7	3.890	5	5.520
21	8.290	21	6.660	7	8.720	21	5.580	21	4.470	1	5.620
1	8.520	19	6.860	4	9.330	3	5.800	19	4.570	4	5.990
5	8.610	3	7.770	3	9.640	1	5.830	15	5.230	3	6.180
3	8.710	16	7.940	13	9.660	5	5.840	3	5.410	13	6.250
19	8.970	15	7.990	21	9.920	4	5.960	14	5.720	21	6.680
4	9.080	12	8.320	11	10.200	19	5.980	20	5.770	11	6.830
15	9.750	14	8.430	19	11.080	15	6.350	4	5.920	9	7.250
16	9.840	6	8.460	9	11.220	11	6.720	12	5.930	19	7.390
6	9.910	1	8.550	6	11.360	6	6.910	16	5.960	15	7.480
11	10.030	5	8.620	15	11.510	14	7.020	1	6.030	6	7.680
12	10.430	20	8.650	16	11.730	16	7.040	6	6.140	16	8.110
14	10.480	4	8.840	10	12.230	12	7.380	5	6.160	14	8.330
10	10.630	10	9.030	14	12.520	10	7.420	10	6.360	10	8.480
9	10.950	23	9.730	22	12.530	9	7.450	11	6.600	22	8.490
20	11.220	11	9.860	12	12.540	20	7.680	23	7.140	23	8.620
23	11.260	22	10.430	23	12.790	23	7.880	22	7.330	12	8.830
22	11.480	9	10.690	18	12.960	22	7.910	9	7.650	18	9.010
18	12.020	17	10.820	20	13.780	18	8.560	17	7.860	8	9.520
17	13.420	18	11.080	8	14.300	17	9.520	18	8.120	20	9.600
8	14.150	8	14.000	17	16.030	8	9.810	8	10.110	17	11.170
GM	9.6954		8.4846		10.9067		6.5833		5.8992		7.267

K(1)	BsSELST	K(2)	SsHARDpr	K(3)	SsHARDp	K(4)	SsHARDr	K(5)	SsBRVp1r
13	1.670	2	4.280	24	4.224	2	4.067	15	0.903
2	2.000	24	4.463	2	4.492	8	4.258	3	0.987
16	2.330	1	4.486	1	4.496	4	4.367	17	1.074
24	2.670	8	4.488	22	4.549	18	4.407	14	1.103
20	2.670	22	4.528	6	4.689	1	4.476	16	1.132
18	3.000	4	4.591	12	4.693	6	4.496	1	1.226
15	3.670	6	4.592	8	4.718	22	4.508	10	1.251
17	4.000	18	4.601	17	4.740	17	4.618	4	1.382
21	4.000	17	4.679	18	4.795	23	4.618	9	1.390
14	4.330	23	4.742	20	4.812	14	4.672	22	1.425
10	5.330	20	4.762	4	4.816	10	4.690	23	1.463
5	5.330	12	4.789	5	4.847	24	4.703	11	1.486
6	5.670	15	4.822	23	4.867	20	4.712	19	1.502
7	6.330	5	4.828	15	4.880	16	4.740	20	1.509
4	6.330	16	4.855	21	4.959	3	4.757	18	1.517
11	6.330	21	4.880	16	4.970	15	4.764	8	1.621
1	6.670	19	4.940	13	5.032	19	4.799	13	1.806
19	7.000	10	4.979	19	5.082	21	4.800	12	1.841
3	7.330	3	5.007	11	5.240	5	4.808	24	1.929

Table 8 (continued) 4/10

K(1)	SsBRVpr	K(2)	SsBRVp	K(3)	SsBRVr	K(4)	SsLBRVpr	K(5)	SsLBRVp	K(6)	SsLBRVr
15	1.151	1	1.176	15	1.070	15	0.755	1	0.769	15	0.712
14	1.387	15	1.232	14	1.173	14	0.857	15	0.798	14	0.763
16	1.467	16	1.392	3	1.299	16	0.896	16	0.863	3	0.816
1	1.536	17	1.438	19	1.491	1	0.912	17	0.877	19	0.875
10	1.611	4	1.520	20	1.492	10	0.954	4	0.909	12	0.887
22	1.688	22	1.566	12	1.508	3	0.961	22	0.934	20	0.909
3	1.711	14	1.602	10	1.534	4	0.963	14	0.950	10	0.923
4	1.728	10	1.688	16	1.542	22	0.975	23	0.981	16	0.930
17	1.729	9	1.753	18	1.549	17	0.981	10	0.984	18	0.931
9	1.739	23	1.790	9	1.725	9	0.990	9	0.989	11	0.975
20	1.812	13	1.890	11	1.768	23	1.007	13	1.041	9	0.992
23	1.855	11	2.019	22	1.810	19	1.015	11	1.075	4	1.016
18	1.865	3	2.122	1	1.895	20	1.024	3	1.107	22	1.016
11	1.893	20	2.132	23	1.920	11	1.025	20	1.140	23	1.034
19	1.936	18	2.181	4	1.936	18	1.037	18	1.143	1	1.055
13	2.109	8	2.289	17	2.021	12	1.109	19	1.154	17	1.085
8	2.184	19	2.382	8	2.079	13	1.116	8	1.175	8	1.113
12	2.224	21	2.495	6	2.139	8	1.144	5	1.214	6	1.114
2	2.513	5	2.498	2	2.292	2	1.248	21	1.249	13	1.191
5	2.552	2	2.734	13	2.328	5	1.248	2	1.305	2	1.191
24	2.676	7	2.931	24	2.391	6	1.264	12	1.330	24	1.216
6	2.726	12	2.939	5	2.606	24	1.279	24	1.341	5	1.283
7	2.911	24	2.962	7	2.890	7	1.342	7	1.343	7	1.342
21	3.052	6	3.314	21	3.610	21	1.365	6	1.414	21	1.482
GM	2.0023		2.0852		1.9195		1.0611		1.0869		1.035

K(1)	SsG_Bpr	K(2)	SsG_Bp	K(3)	SsG_Br	K(4)	SsGBpr	K(5)	SsGBp	K(6)	SsGBr
24	4.417	24	4.000	24	4.833	24	3.250	24	3.000	24	3.500
2	5.000	2	4.333	2	5.667	2	3.750	2	3.167	2	4.333
1	5.417	21	4.333	1	5.833	1	4.783	21	3.767	1	5.067
21	5.917	13	4.833	4	6.500	21	5.017	13	3.833	4	5.167
13	6.500	1	5.000	3	6.667	13	5.300	1	4.500	20	5.500
4	6.750	4	7.000	20	7.133	4	5.500	4	5.833	7	6.000
12	7.467	12	7.500	17	7.167	7	5.917	7	5.833	3	6.167
20	7.483	19	7.667	12	7.433	20	6.083	15	6.000	21	6.267
3	7.500	20	7.833	21	7.500	19	6.383	5	6.500	19	6.267
17	7.583	15	7.833	10	7.667	15	6.517	19	6.500	17	6.533
19	7.833	5	8.000	5	7.833	5	6.583	20	6.667	11	6.667
5	7.917	17	8.000	19	8.000	12	6.800	12	6.667	5	6.667
23	8.167	14	8.000	13	8.167	3	6.833	14	7.000	13	6.767
10	8.250	23	8.167	11	8.167	14	6.900	11	7.333	14	6.800
15	8.250	3	8.333	23	8.167	11	7.000	3	7.500	12	6.933
11	8.250	6	8.333	9	8.333	17	7.350	6	7.500	15	7.033
14	8.333	11	8.333	22	8.500	6	7.550	10	8.000	10	7.500
6	8.500	7	8.500	6	8.667	10	7.750	23	8.000	23	7.500
18	8.583	18	8.500	16	8.667	23	7.750	8	8.000	6	7.600
7	8.667	10	8.833	14	8.667	16	8.167	17	8.167	9	7.733

Table 8 (continued) 5/10

K(1)	SsWSpr	K(2)	SsWSp	K(3)	SsWSr	K(4)	SsTCHpr	K(5)	SsTCHp	K(6)	SsTCHr
18	0.807	18	0.729	11	0.787	24	45.580	24	41.110	24	50.040
2	0.814	2	0.781	1	0.806	2	47.390	2	42.650	2	52.140
11	0.816	12	0.798	14	0.815	1	55.300	21	48.440	1	54.350
12	0.850	24	0.798	2	0.848	21	57.370	1	56.250	10	64.400
14	0.853	11	0.845	15	0.877	4	63.650	13	57.630	4	66.180
1	0.858	13	0.852	18	0.885	6	65.710	19	58.350	21	66.300
24	0.876	21	0.871	12	0.902	13	65.870	6	59.430	23	67.030
15	0.878	15	0.878	5	0.920	7	66.310	18	60.340	7	68.470
13	0.918	6	0.881	10	0.925	23	66.550	4	61.130	17	69.740
19	0.935	14	0.890	9	0.948	10	66.670	7	64.150	3	70.200
10	0.957	19	0.904	16	0.951	19	68.020	20	64.600	6	72.000
6	0.959	1	0.910	24	0.953	17	68.700	12	65.920	9	73.950
16	0.964	20	0.943	22	0.960	18	69.850	15	66.010	13	74.110
20	0.965	4	0.957	19	0.965	12	70.200	23	66.070	12	74.480
9	0.967	16	0.976	7	0.983	3	70.230	17	67.660	22	74.840
4	0.971	9	0.985	13	0.983	15	70.540	10	68.930	15	75.060
21	0.976	10	0.989	4	0.985	9	72.010	11	69.010	11	75.920
5	0.984	7	1.010	8	0.986	11	72.460	9	70.080	5	76.280
7	0.996	8	1.012	20	0.987	20	72.910	3	70.250	19	77.690
8	0.999	5	1.048	23	1.004	22	75.620	16	72.910	16	78.900
22	1.029	22	1.098	6	1.038	16	75.900	14	73.530	18	79.350
23	1.057	23	1.110	21	1.081	14	77.350	22	76.400	14	81.160
3	1.119	17	1.113	3	1.082	5	77.590	5	78.910	20	81.230
17	1.134	3	1.156	17	1.155	8	85.630	8	85.250	8	86.000
GM	0.9450		0.9388		0.9511		67.8088		64.3754		71.2425

K(1)	SsCCSpr	K(2)	SsCCSp	K(3)	SsCCSr	K(4)	SsTSHpr	K(5)	SsTSHp	K(6)	SsTSHr
7	11.653	7	11.419	7	11.886	2	5.965	24	4.935	2	6.882
2	12.518	2	11.832	2	13.204	24	5.993	2	5.048	24	7.051
24	13.081	24	12.060	20	13.707	7	7.698	21	6.794	7	8.102
19	13.170	19	12.448	14	13.885	1	8.153	7	7.293	1	8.221
20	13.281	15	12.718	19	13.892	21	8.277	19	7.304	4	9.687
15	13.368	20	12.854	15	14.019	4	9.007	13	7.925	21	9.760
14	13.461	14	13.037	24	14.102	19	9.065	1	8.085	10	10.037
5	13.783	5	13.227	5	14.339	13	9.430	6	8.217	23	10.216
8	14.059	11	13.388	9	14.441	15	9.453	20	8.291	15	10.520
11	14.065	12	13.564	8	14.490	6	9.521	4	8.327	9	10.663
9	14.111	4	13.611	4	14.652	20	9.700	15	8.387	6	10.826
4	14.131	8	13.629	21	14.718	10	9.894	18	8.923	19	10.827
13	14.258	13	13.769	11	14.741	23	9.965	12	8.948	3	10.830
21	14.357	9	13.781	13	14.747	9	10.145	11	9.162	5	10.929
6	14.464	6	13.872	6	15.055	11	10.176	14	9.598	13	10.935
12	14.564	21	13.996	1	15.065	12	10.263	9	9.626	17	10.972
1	14.722	10	14.151	18	15.241	14	10.448	23	9.714	20	11.109
10	14.871	1	14.379	23	15.255	18	10.497	10	9.752	11	11.189
23	14.975	16	14.613	3	15.437	3	10.564	17	10.180	14	11.299
18	15.020	3	14.672	16	15.520	17	10.576	3	10.299	12	11.578
3	15.054	23	14.694	12	15.564	5	10.682	5	10.434	22	11.746

Table 8 (continued) 6/10

K(1)	SsGYOTpr	K(2)	SsGYOTp	K(3)	SsGYOTr	K(4)	SsSTpr	K(5)	SsSTp	K(6)	SsSTr
2	3.295	2	2.642	2	3.948	24	5.271	24	4.799	17	5.514
24	3.363	24	2.671	24	4.055	17	5.459	21	5.069	24	5.744
7	4.267	7	4.197	7	4.338	21	5.490	3	5.287	3	5.864
21	5.473	19	4.342	1	5.371	3	5.575	2	5.303	21	5.911
1	5.517	21	4.606	4	5.951	23	5.770	23	5.383	23	6.157
19	5.647	20	5.180	21	6.339	2	5.923	17	5.404	10	6.309
4	5.779	13	5.286	23	6.470	1	6.055	1	5.630	6	6.389
15	6.031	15	5.290	9	6.650	4	6.099	7	5.729	4	6.396
20	6.134	6	5.515	3	6.676	7	6.170	4	5.802	1	6.480
13	6.223	4	5.608	15	6.772	6	6.187	6	5.986	2	6.543
6	6.408	1	5.662	10	6.902	10	6.220	19	5.997	7	6.610
9	6.628	12	6.046	5	6.929	13	6.611	13	6.116	13	7.106
23	6.650	11	6.055	19	6.952	22	6.774	10	6.130	22	7.194
14	6.708	14	6.130	20	7.088	19	6.849	20	6.147	12	7.403
11	6.760	18	6.398	13	7.160	20	6.873	22	6.354	9	7.509
3	6.838	9	6.605	14	7.285	9	7.026	9	6.543	16	7.573
10	6.855	5	6.804	6	7.300	16	7.130	15	6.623	20	7.599
5	6.867	10	6.808	17	7.364	5	7.138	5	6.641	5	7.635
12	7.011	23	6.829	11	7.464	15	7.204	16	6.686	19	7.701
18	7.182	3	6.999	16	7.738	12	7.328	12	7.252	8	7.728
17	7.319	17	7.274	18	7.966	8	7.526	18	7.260	15	7.785
16	7.674	16	7.610	12	7.977	18	7.715	11	7.288	18	8.171
8	8.017	8	7.732	22	8.139	11	8.091	8	7.324	11	8.894
22	8.188	22	8.236	8	8.302	14	8.251	14	7.458	14	9.045
GM	6.2847		5.8552		6.7140		6.6140		6.1755		7.0525

K(1)	SsBRIXpr	K(2)	SsBRIXp	K(3)	SsBRIXr	K(4)	SsSEL7pr	K(5)	SsSEL7p	K(6)	SsSEL7r
7	19.300	7	19.093	7	19.508	2	3.830	24	2.330	2	4.670
2	20.070	2	19.460	2	20.679	24	4.000	2	3.000	24	5.670
24	20.570	24	19.663	20	21.127	7	5.170	7	4.330	7	6.000
19	20.649	19	20.007	14	21.285	20	8.500	21	6.000	4	7.670
20	20.748	15	20.248	19	21.291	21	8.670	15	7.000	3	8.670
15	20.825	20	20.369	15	21.403	15	8.830	13	7.330	1	8.670
14	20.908	14	20.531	24	21.478	4	9.000	20	7.330	17	9.330
5	21.194	5	20.700	5	21.689	13	9.330	19	9.330	20	9.670
8	21.440	11	20.843	9	21.779	1	10.670	4	10.330	23	10.330
11	21.445	12	20.999	8	21.822	19	11.170	14	12.000	15	10.670
9	21.486	4	21.041	4	21.966	3	11.500	5	12.670	13	11.330
4	21.504	8	21.057	21	22.025	14	12.000	6	12.670	21	11.330
13	21.617	13	21.182	11	22.046	5	12.500	1	12.670	14	12.000
21	21.704	9	21.192	13	22.051	17	13.000	11	13.000	5	12.330
6	21.799	6	21.273	6	22.325	23	13.170	3	14.330	19	13.000
12	21.888	21	21.384	1	22.334	6	14.000	23	16.000	9	14.000
1	22.029	10	21.521	18	22.490	11	14.170	16	16.670	10	14.330
10	22.161	1	21.724	23	22.503	16	15.500	18	16.670	16	14.330
23	22.253	16	21.932	3	22.664	9	16.000	17	16.670	6	15.330
18	22.294	3	21.984	16	22.738	12	16.670	12	17.330	11	15.330

Table 8 (continued) 7/10

K(1)	SsSEL8pr	K(2)	SsSEL8p	K(3)	SsSEL8r	K(4)	SsS10pr	K(5)	SsS10p	K(6)	SsS10r
7	0.670	24	0.000	2	0.670	7	0.000	7	0.000	7	0.000
2	1.000	7	0.330	7	1.000	2	0.000	2	0.000	2	0.000
24	1.170	2	1.330	3	1.670	24	0.000	24	0.000	3	0.000
4	3.000	13	1.330	4	2.330	3	0.170	5	0.000	24	0.000
20	3.330	21	2.330	24	2.330	23	0.330	14	0.000	4	0.330
3	3.670	15	2.670	1	2.330	4	0.500	13	0.330	23	0.330
1	3.670	20	3.000	20	3.670	20	0.500	3	0.330	1	0.330
21	3.670	4	3.670	23	4.000	14	0.670	19	0.330	20	0.670
13	3.830	19	3.670	14	4.000	1	1.000	21	0.330	17	0.670
15	4.000	1	5.000	16	4.330	21	1.000	23	0.330	16	1.330
19	4.830	3	5.670	17	4.670	13	1.170	6	0.330	14	1.330
14	5.170	5	6.330	21	5.000	15	1.170	20	0.330	21	1.670
5	5.830	14	6.330	15	5.330	19	1.170	15	0.330	18	1.670
23	6.330	11	7.000	5	5.330	5	1.170	4	0.670	13	2.000
16	6.830	6	7.330	9	5.670	18	1.330	10	1.000	15	2.000
11	7.000	12	7.330	19	6.000	17	1.330	18	1.000	19	2.000
17	7.330	23	8.670	13	6.330	10	1.670	12	1.000	5	2.330
12	8.000	16	9.330	11	7.000	6	1.670	11	1.330	12	2.330
9	8.330	17	10.000	18	7.330	12	1.670	9	1.330	10	2.330
6	9.000	10	10.670	10	8.670	11	2.000	1	1.670	11	2.670
18	9.330	9	11.000	12	8.670	9	2.000	22	2.000	9	2.670
10	9.670	18	11.330	6	10.670	16	2.500	17	2.000	6	3.000
8	11.670	8	11.670	8	11.670	22	3.330	8	2.670	22	4.670
22	12.330	22	12.670	22	12.000	8	4.330	16	3.670	8	6.000
GM	5.8192		6.1942		5.4446		1.2783		0.8742		1.680

Key	SsS7p1r	Key	SsS8p1r	Key	SsS10p1r
2	2.000	24	0.000	7	0.000
7	2.667	7	0.333	2	0.000
24	3.000	2	0.333	3	0.000
20	5.667	4	2.000	4	0.000
4	5.667	20	2.000	23	0.000
15	6.333	21	2.333	24	0.000
13	6.333	13	2.333	20	0.000
21	6.333	14	2.667	13	0.333
1	7.333	3	2.667	14	0.333
3	7.667	23	3.000	1	0.667
19	8.333	15	3.333	19	0.667
5	8.667	1	3.667	21	0.667
14	8.667	19	4.333	15	0.667
17	10.000	17	5.000	5	0.667
16	11.000	5	6.000	17	0.667
11	11.333	12	6.333	6	1.000
23	11.333	16	6.333	16	1.000
6	11.667	6	6.667	18	1.000
9	13.667	10	6.667	10	1.333
10	13.667	9	7.000	11	2.000

Table 8 (continued) 8/10

K(1)	SsVISGpr	K(2)	SsVISGp	K(3)	SsVISGr	K(4)	SsGVARpr	K(5)	SsGVARp	K(6)	SsGVARr
24	3.584	24	3.294	2	3.846	14	3.560	14	3.030	14	4.080
2	3.715	2	3.584	24	3.873	7	4.430	7	3.740	20	4.680
7	4.105	21	4.254	7	3.928	20	4.510	24	3.880	3	4.740
21	4.426	7	4.281	21	4.598	24	4.730	12	3.970	2	4.850
4	4.863	13	4.567	1	4.640	2	4.760	15	4.200	4	5.020
15	4.920	15	4.785	3	4.644	3	4.830	20	4.340	7	5.120
1	4.929	19	4.864	4	4.723	4	4.990	13	4.490	1	5.330
13	4.948	20	4.938	23	4.907	12	5.230	21	4.610	23	5.500
20	5.030	4	5.003	17	4.909	23	5.600	2	4.670	24	5.580
3	5.125	1	5.218	15	5.055	13	5.640	5	4.830	17	6.100
19	5.134	6	5.485	20	5.121	15	5.950	10	4.860	12	6.490
23	5.322	5	5.496	5	5.200	16	6.010	3	4.920	13	6.790
5	5.348	3	5.606	13	5.329	5	6.170	4	4.960	16	6.950
17	5.430	23	5.737	10	5.401	17	6.430	16	5.060	19	7.170
6	5.555	14	5.753	19	5.405	1	6.440	22	5.420	5	7.500
14	5.655	11	5.796	14	5.556	21	6.600	8	5.430	15	7.710
11	5.935	17	5.951	16	5.575	19	6.740	6	5.470	18	8.420
10	5.962	18	6.095	6	5.625	10	6.870	11	5.590	21	8.590
18	5.979	12	6.331	9	5.652	18	7.100	23	5.700	11	8.620
16	5.993	16	6.411	18	5.864	11	7.100	18	5.790	10	8.870
9	6.055	9	6.458	12	6.020	6	7.300	9	5.990	9	9.050
12	6.175	10	6.523	11	6.074	9	7.520	19	6.310	6	9.140
22	6.415	8	6.574	22	6.183	8	7.780	17	6.760	8	10.130
8	6.450	22	6.646	8	6.325	22	8.410	1	7.560	22	11.390
GM	5.2939		5.4021		5.1855		6.0292		5.0658		6.992

K(1)	SsLGVpr	K(2)	SsLGVp	K(3)	SsLGVr	K(4)	SsSTVpr	K(5)	SsSTVp	K(6)	SsSTVr
14	1.493	14	1.369	14	1.617	17	6.390	20	4.760	17	7.830
7	1.679	7	1.553	20	1.732	3	7.710	17	4.960	10	9.940
20	1.692	24	1.585	3	1.746	10	7.810	6	5.340	3	10.000
24	1.729	12	1.587	2	1.762	6	8.530	3	5.420	6	11.720
2	1.747	15	1.632	4	1.772	23	9.350	21	5.560	1	13.000
3	1.758	20	1.652	7	1.806	20	9.590	23	5.660	24	13.000
4	1.774	13	1.665	1	1.810	24	9.730	10	5.680	23	13.030
12	1.791	10	1.693	23	1.861	1	10.290	22	5.900	12	13.730
13	1.842	21	1.716	24	1.874	21	10.480	5	5.930	4	14.060
23	1.880	5	1.732	17	1.959	4	10.680	15	5.990	20	14.420
15	1.887	2	1.732	12	1.994	12	10.710	19	6.070	21	15.400
16	1.892	16	1.750	13	2.019	22	11.290	8	6.370	22	16.680
5	1.931	3	1.770	16	2.034	5	11.870	9	6.400	16	17.110
1	1.975	4	1.776	19	2.075	16	12.020	24	6.450	8	17.670
10	1.977	8	1.848	5	2.130	8	12.020	14	6.600	5	17.810
21	1.978	22	1.851	15	2.142	9	12.230	13	6.640	13	17.850
17	1.997	6	1.864	18	2.193	13	12.250	7	6.880	9	18.070
19	2.029	11	1.872	11	2.225	7	12.560	16	6.930	2	18.160
11	2.049	23	1.898	21	2.240	2	12.990	4	7.310	7	18.250
18	2.054	9	1.907	9	2.242	19	13.040	18	7.370	11	18.510

Table 8 (continued) 9/10

K(1)	SsLSTVpr	K(2)	SsLSTVp	K(3)	SsLSTVr	K(4)	SsSQRGpr	K(5)	SsSQRGp	K(6)	SsSQRGr
17	1.958	20	1.747	17	2.133	24	1.940	24	1.877	24	2.003
3	2.123	17	1.783	10	2.377	2	1.976	2	1.941	2	2.010
10	2.126	6	1.827	3	2.396	7	2.081	21	2.124	7	2.028
6	2.172	21	1.834	6	2.517	21	2.141	7	2.135	21	2.158
20	2.217	3	1.849	4	2.602	1	2.255	13	2.195	1	2.201
23	2.260	10	1.874	24	2.632	4	2.257	19	2.246	3	2.205
21	2.313	23	1.888	23	2.633	15	2.264	15	2.250	4	2.225
24	2.318	5	1.896	1	2.638	13	2.271	20	2.285	17	2.261
4	2.323	22	1.923	12	2.638	20	2.302	4	2.289	23	2.261
12	2.360	15	1.930	20	2.688	19	2.303	1	2.309	15	2.278
1	2.384	19	1.953	21	2.791	3	2.316	6	2.393	5	2.308
22	2.392	9	1.973	9	2.844	23	2.349	5	2.400	20	2.318
9	2.409	14	1.979	22	2.862	5	2.354	3	2.426	10	2.339
5	2.412	8	1.996	16	2.892	17	2.370	23	2.438	13	2.347
8	2.450	24	2.003	13	2.898	6	2.390	11	2.458	19	2.360
13	2.464	13	2.029	8	2.905	14	2.447	14	2.470	6	2.388
16	2.468	7	2.038	5	2.928	10	2.473	17	2.479	16	2.396
14	2.472	16	2.044	2	2.946	11	2.477	18	2.516	9	2.399
19	2.485	4	2.045	7	2.954	18	2.481	12	2.579	14	2.424
7	2.496	12	2.082	14	2.965	16	2.492	16	2.589	18	2.448
15	2.540	18	2.123	11	2.965	9	2.494	9	2.589	22	2.488
2	2.546	1	2.130	19	3.017	12	2.539	10	2.607	11	2.496
11	2.575	2	2.146	18	3.084	22	2.560	8	2.619	12	2.500
18	2.604	11	2.186	15	3.151	8	2.576	22	2.631	8	2.534
GM	2.3695		1.9699		2.7690		2.3379		2.3685		2.307

K(1)	SsSQGVpr	K(2)	SsSQGVp	K(3)	SsSQGVr	K(4)	SsLSQGpr	K(5)	SsLSQGp	K(6)	SsLSQGr
14	0.161	14	0.138	14	0.185	14	0.149	14	0.128	14	0.170
12	0.224	12	0.176	20	0.247	12	0.201	12	0.161	20	0.221
20	0.230	16	0.202	12	0.273	20	0.207	16	0.183	12	0.241
3	0.254	8	0.212	4	0.279	3	0.225	8	0.192	4	0.245
4	0.267	20	0.213	3	0.283	4	0.235	20	0.193	3	0.249
16	0.270	15	0.221	1	0.300	16	0.236	15	0.199	1	0.259
7	0.276	22	0.223	23	0.303	7	0.243	22	0.201	23	0.263
13	0.287	3	0.224	17	0.307	13	0.251	3	0.202	17	0.267
23	0.296	7	0.229	2	0.315	15	0.257	7	0.206	2	0.274
15	0.297	10	0.234	7	0.324	23	0.259	10	0.206	7	0.280
11	0.299	5	0.235	13	0.326	11	0.260	5	0.208	13	0.281
17	0.305	13	0.248	24	0.337	5	0.265	13	0.221	19	0.288
24	0.307	21	0.250	16	0.338	17	0.266	21	0.223	24	0.289
5	0.308	11	0.253	19	0.338	24	0.267	11	0.225	16	0.289
8	0.314	4	0.254	11	0.345	8	0.269	4	0.225	11	0.296
2	0.315	9	0.258	15	0.372	2	0.274	9	0.228	15	0.314
18	0.327	6	0.263	5	0.380	9	0.281	6	0.233	5	0.322
9	0.329	18	0.271	18	0.383	18	0.281	18	0.239	18	0.323
19	0.333	24	0.277	9	0.400	10	0.282	24	0.244	9	0.333
10	0.335	23	0.289	8	0.415	19	0.286	23	0.254	8	0.346
1	0.346	17	0.304	6	0.435	1	0.295	17	0.264	10	0.359

Table 8 (continued) 10/10

KEY
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p = plant crop, r = ratoon crop, pr = (p+r)/2 where p,r are plot values
SsBRVp1r = (p+r)/2 of each seedling was used to compute within plot brix variance
V, VAR = within plot variance
SEL7 (8, 10) = Number of selections (seedlings) graded 7+ (8+, 10+)
ST = number of stalks, HARD = Hardness
G_B = Visual NMG of whole plot, omitting brix
GB = Visual NMG of whole plot, adjusted for brix
WS = Weight per stalk (kg)
G = net merit grade, VISG = Visual NMG
GYOT = NMGYOT vs standard variety Q82
SQRG, SQG = SQRT(Visual NMG of each seedling + 0.5)
BsSELST = Number of selectable stalks in each bunch-planted family

Table 9. Mean values for each family of Bs and Ss seedlings, trial Ts, replicates KL only.

Key	B2STp	B2STr	B2STpr	B2G_Bp	B2G_Br	B2G_Bpr	B2GBp	B2GBr	B2GBpr
1	58.000	38.000	48.000	6.500	7.250	6.875	5.750	6.250	6.000
2	45.000	35.000	40.000	7.000	7.500	7.250	6.500	5.750	6.130
3	52.000	35.500	43.750	6.500	7.500	7.000	6.000	7.000	6.500
4	53.000	38.000	45.500	7.500	8.000	7.750	6.500	6.750	6.630
5	50.500	41.000	45.750	7.750	7.750	7.750	7.000	6.500	6.750
6	48.000	34.500	41.250	6.250	7.250	6.750	6.000	6.250	6.130
7	47.000	40.500	43.750	4.500	7.500	6.000	3.500	6.000	4.750
8	58.000	48.000	53.000	8.750	9.500	9.125	8.000	8.500	8.250
9	51.000	39.500	45.250	6.500	7.250	6.875	6.500	6.350	6.430
10	51.000	40.000	45.500	7.500	9.000	8.250	7.500	8.750	8.130
11	58.500	48.500	53.500	7.000	8.500	7.750	5.750	7.500	6.630
12	55.000	39.000	47.000	6.500	7.500	7.000	6.250	7.350	6.800
13	51.000	43.000	47.000	4.750	8.000	6.375	3.500	6.500	5.000
14	65.500	56.000	60.750	7.000	9.500	8.250	6.500	7.850	7.180
15	54.500	43.500	49.000	6.250	9.000	7.625	4.750	7.000	5.880
16	59.500	47.000	53.250	6.750	8.500	7.625	6.750	8.000	7.380
17	52.000	36.000	44.000	6.750	7.750	7.250	6.500	6.650	6.580
18	58.500	48.500	53.500	7.750	8.000	7.875	8.250	7.500	7.880
19	48.500	44.000	46.250	8.000	9.000	8.500	7.500	8.150	7.830
20	56.000	47.000	51.500	7.250	9.000	8.125	6.500	7.750	7.130
21	47.000	31.500	39.250	6.500	6.250	6.375	6.000	5.500	5.750
22	48.500	40.000	44.250	7.500	9.250	8.375	7.250	9.000	8.130
23	56.000	41.500	48.750	6.500	8.250	7.375	6.500	7.500	7.000
24	28.000	26.000	27.000	3.000	5.000	4.000	2.000	3.750	2.880
GM	52.1667	40.8958	46.5313	6.6771	8.0000	7.3385	6.1354	7.0042	6.572

Key	B2WSp	B2WSr	B2WSpr	B2TCHp	B2TCHr	B2TCHpr	B2CCSp	B2CCSr	B2CCSpr
1	0.456	0.739	0.598	51.150	54.600	52.870	14.689	15.027	14.858
2	0.465	0.701	0.583	40.230	47.030	43.630	14.015	13.790	13.902
3	0.530	0.829	0.679	52.870	56.420	54.650	14.689	15.702	15.196
4	0.647	0.958	0.803	65.900	69.640	67.770	13.002	14.689	13.846
5	0.661	0.863	0.762	63.890	67.720	65.800	14.914	14.127	14.521
6	0.615	1.170	0.893	56.420	77.200	66.810	15.027	15.139	15.083
7	0.490	0.764	0.627	43.300	60.250	51.770	13.340	14.577	13.958
8	0.865	1.160	1.013	95.880	107.180	101.530	14.577	15.027	14.802
9	0.691	0.891	0.791	67.430	65.900	66.670	15.702	15.477	15.589
10	0.571	1.187	0.879	56.420	90.330	73.370	14.408	16.039	15.224
11	0.670	0.630	0.650	74.230	58.330	66.280	13.790	14.802	14.296
12	0.516	1.002	0.759	53.260	75.290	64.270	15.589	16.714	16.152
13	0.432	0.821	0.627	41.760	67.720	54.740	14.127	13.677	13.902
14	0.462	0.817	0.640	57.760	88.410	73.080	14.352	14.689	14.521
15	0.508	0.812	0.660	53.450	67.720	60.580	13.002	13.790	13.396
16	0.446	0.797	0.621	51.250	71.550	61.400	16.039	15.927	15.983
17	0.700	1.452	1.076	69.730	99.710	84.720	15.477	15.027	15.252
18	0.676	0.931	0.803	74.900	86.490	80.700	15.589	16.264	15.927
19	0.548	0.899	0.724	50.860	75.190	63.030	15.139	15.027	15.083

Table 9 continued 2/5

Key	B2TSHp	B2TSHr	B2TSHpr	B2GYOTp	B2GYOTr	B2GYOTpr
1	7.450	8.250	7.850	5.290	5.460	5.380
2	5.640	6.480	6.060	3.770	3.840	3.800
3	7.800	8.850	8.330	5.550	5.790	5.670
4	8.560	10.220	9.390	5.590	6.760	6.180
5	9.540	9.520	9.530	6.890	6.100	6.490
6	8.470	11.710	10.090	6.140	7.950	7.040
7	5.820	9.000	7.410	3.700	5.860	4.780
8	13.770	16.090	14.930	9.860	10.790	10.330
9	10.580	10.210	10.390	7.680	6.640	7.160
10	8.160	14.420	11.290	5.730	10.140	7.940
11	10.170	8.640	9.410	7.000	5.670	6.340
12	8.320	12.580	10.450	6.190	9.040	7.620
13	5.900	9.210	7.560	4.000	5.740	4.870
14	8.290	12.990	10.640	5.800	8.720	7.260
15	7.070	9.370	8.220	4.510	5.890	5.200
16	8.200	11.390	9.800	6.240	7.960	7.100
17	10.780	15.120	12.950	7.710	10.330	9.020
18	11.760	14.080	12.920	8.700	9.970	9.340
19	7.650	11.260	9.460	5.430	7.600	6.520
20	8.450	13.660	11.060	5.490	9.340	7.410
21	6.120	10.540	8.330	4.060	7.090	5.570
22	10.100	14.040	12.070	7.190	9.710	8.450
23	9.370	12.140	10.750	7.060	8.190	7.620
24	4.230	5.290	4.760	2.510	2.860	2.690
GM	8.4250	11.0442	9.7354	5.9204	7.3933	6.6575

Key	S2STp	S2STr	S2STpr	S2G_Bp	S2G_Br	S2G_Bpr	S2GBp	S2GBr	S2GBpr
1	5.583	6.749	6.166	4.250	5.500	4.875	3.750	4.850	4.300
2	5.484	6.948	6.216	5.000	6.500	5.750	3.750	5.000	4.375
3	5.333	5.795	5.564	8.500	7.500	8.000	7.500	6.750	7.125
4	5.900	6.239	6.070	8.000	7.250	7.625	6.750	6.000	6.375
5	6.906	7.497	7.202	8.250	7.750	8.000	7.000	7.000	7.000
6	5.861	6.190	6.025	8.500	8.750	8.625	7.750	7.650	7.700
7	5.664	6.597	6.130	8.500	9.000	8.750	6.000	6.250	6.125
8	7.306	7.635	7.470	9.250	9.500	9.375	7.750	8.750	8.250
9	6.343	7.505	6.924	9.000	8.250	8.625	8.500	7.500	8.000
10	6.057	6.172	6.114	9.250	8.250	8.750	8.250	8.250	8.250
11	7.196	8.665	7.930	8.500	8.000	8.250	8.000	7.000	7.500
12	7.278	7.193	7.236	8.000	7.400	7.700	7.250	7.150	7.200
13	6.074	7.081	6.577	5.250	8.750	7.000	4.250	7.000	5.625
14	7.349	8.861	8.105	8.250	9.000	8.625	7.250	7.200	7.225
15	7.004	8.316	7.660	8.500	9.000	8.750	6.500	7.550	7.025
16	6.472	7.646	7.059	10.000	9.000	9.500	9.000	8.250	8.625
17	5.321	5.551	5.436	8.500	7.750	8.125	8.750	7.050	7.900
18	7.098	7.985	7.541	8.750	9.250	9.000	8.800	8.500	8.650
19	6.010	7.458	6.734	8.000	8.000	8.000	6.500	6.400	6.450
20	6.235	7.443	6.839	8.000	7.700	7.850	7.250	6.250	6.750

Table 9 continued 3/5

Key	S2WSp	S2WSr	S2WSpr	S2TCHp	S2TCHr	S2TCHpr	S2CCSp	S2CCSr	S2CCSpr
1	0.899	0.793	0.846	53.660	53.850	53.750	14.611	15.388	15.000
2	0.761	0.804	0.783	42.640	52.570	47.610	11.908	13.035	12.472
3	1.177	1.042	1.109	72.090	66.320	69.200	14.548	15.493	15.020
4	1.003	0.995	0.999	66.170	67.230	66.700	13.764	14.625	14.195
5	1.011	0.922	0.966	78.990	76.170	77.580	13.691	14.553	14.122
6	0.849	1.014	0.932	57.220	69.140	63.180	14.308	15.320	14.814
7	0.998	0.922	0.960	61.410	64.050	62.730	11.803	12.332	12.068
8	0.990	0.977	0.983	83.140	84.550	83.840	13.440	14.658	14.049
9	0.939	0.887	0.913	64.560	68.520	66.540	14.144	14.634	14.389
10	1.025	0.965	0.995	70.290	64.590	67.440	14.678	15.741	15.210
11	0.842	0.814	0.828	69.060	76.720	72.890	13.737	14.886	14.312
12	0.790	0.893	0.842	66.220	72.690	69.450	14.290	15.869	15.079
13	0.871	0.971	0.921	58.270	74.270	66.270	13.372	14.558	13.965
14	0.846	0.829	0.838	69.480	81.560	75.520	13.058	13.798	13.428
15	0.859	0.849	0.854	68.120	76.550	72.330	12.520	13.864	13.192
16	0.991	0.979	0.985	71.790	81.160	76.480	14.572	15.478	15.025
17	1.166	1.160	1.163	70.130	70.830	70.480	14.824	15.413	15.119
18	0.730	0.912	0.821	58.860	79.450	69.160	14.710	15.163	14.936
19	0.880	0.939	0.910	57.660	73.950	65.800	12.530	13.719	13.124
20	0.934	0.972	0.953	63.840	78.210	71.020	13.387	14.113	13.750
21	0.816	1.085	0.950	45.560	65.740	55.650	14.115	14.573	14.344
22	1.143	0.986	1.064	78.420	77.940	78.180	15.101	15.934	15.517
23	1.074	1.033	1.053	65.490	69.410	67.450	14.346	15.012	14.679
24	0.830	0.977	0.904	41.440	47.720	44.580	12.760	14.271	13.515
GM	0.9343	0.9467	0.9405	63.9379	70.5496	67.2429	13.7590	14.6846	14.221

Key	S2TSHp	S2TSHr	S2TSHpr	S2GYOTp	S2GYOTr	S2GYOTpr	S2SEL7p	S2SEL7r	S2SEL7pr
1	7.853	8.340	8.097	5.563	5.638	5.600	12.000	7.500	9.750
2	5.080	6.850	5.965	2.731	3.875	3.303	3.000	4.000	3.500
3	10.482	10.270	10.376	7.272	6.334	6.803	12.500	9.000	10.750
4	9.094	9.819	9.456	6.212	5.981	6.097	10.500	7.000	8.750
5	10.809	11.072	10.941	7.260	7.151	7.205	13.000	12.500	12.750
6	8.175	10.594	9.384	5.706	7.215	6.461	13.000	15.000	14.000
7	7.230	7.904	7.567	4.266	4.291	4.279	4.500	5.000	4.750
8	11.162	12.424	11.793	7.423	8.314	7.869	16.500	16.500	16.500
9	9.144	10.035	9.589	6.363	6.282	6.322	18.500	12.500	15.500
10	10.292	10.162	10.227	7.359	7.035	7.197	21.500	16.000	18.750
11	9.371	11.416	10.393	6.406	7.668	7.037	15.000	14.500	14.750
12	9.465	11.531	10.498	6.641	8.030	7.335	18.500	17.500	18.000
13	7.784	10.823	9.304	5.026	7.149	6.087	6.000	11.000	8.500
14	9.093	11.298	10.195	5.830	7.258	6.544	11.500	13.000	12.250
15	8.529	10.615	9.572	5.288	6.794	6.041	8.000	12.500	10.250
16	10.472	12.572	11.522	7.459	8.000	7.730	16.000	16.000	16.000
17	10.396	10.901	10.649	7.300	7.283	7.292	18.000	9.000	13.500
18	8.642	12.012	10.327	6.167	7.765	6.966	16.000	16.500	16.250
19	7.288	10.175	8.731	4.381	6.438	5.409	10.000	12.500	11.250
20	8.538	11.037	9.788	5.550	7.155	6.352	10.000	11.000	10.500

Table 9 continued 4/5

Key	S2SEL8p	S2SEL8r	S2SEL8pr	S2S10p	S2S10r	S2S10pr	S2NMGp	S2NMGr	S2NMGpr
1	3.500	1.500	2.500	0.500	0.000	0.250	5.008	4.668	4.838
2	1.500	0.500	1.000	0.000	0.000	0.000	3.768	3.879	3.824
3	6.000	2.500	4.250	0.500	0.000	0.250	5.424	4.708	5.066
4	3.500	1.500	2.500	1.000	0.500	0.750	5.179	4.803	4.991
5	6.000	5.500	5.750	0.000	3.000	1.500	5.688	5.386	5.537
6	8.000	10.000	9.000	0.500	2.500	1.500	5.639	5.528	5.583
7	0.000	0.500	0.250	0.000	0.000	0.000	4.366	3.964	4.165
8	9.000	12.000	10.500	2.000	6.000	4.000	6.278	6.370	6.324
9	11.500	4.500	8.000	1.500	2.500	2.000	6.592	5.691	6.141
10	12.000	10.500	11.250	1.500	3.000	2.250	6.527	5.484	6.005
11	8.500	6.000	7.250	2.000	1.500	1.750	5.951	5.787	5.869
12	8.500	9.500	9.000	1.500	2.500	2.000	6.646	6.215	6.431
13	2.000	5.500	3.750	0.500	1.000	0.750	4.529	5.244	4.887
14	6.000	4.000	5.000	0.000	1.500	0.750	5.894	5.673	5.783
15	3.500	6.500	5.000	0.500	2.500	1.500	5.010	5.250	5.130
16	11.000	6.500	8.750	5.500	2.000	3.750	6.487	5.920	6.204
17	10.000	4.000	7.000	2.500	1.000	1.750	6.084	4.937	5.510
18	11.000	7.000	9.000	1.000	1.000	1.000	6.065	5.731	5.898
19	3.500	6.500	5.000	0.000	2.000	1.000	4.943	5.233	5.088
20	4.000	4.000	4.000	0.500	1.000	0.750	5.254	5.382	5.318
21	2.000	5.500	3.750	0.500	2.500	1.500	4.288	4.675	4.481
22	13.500	15.500	14.500	3.000	6.500	4.750	6.866	6.510	6.688
23	6.000	4.000	5.000	0.000	0.500	0.250	5.348	4.854	5.101
24	0.000	2.000	1.000	0.000	0.000	0.000	3.140	3.373	3.256
GM	6.2708	5.6458	5.9583	1.0417	1.7917	1.4167	5.4573	5.2194	5.338

Key	S2GVARp	S2GVARr	S2GVARpr	S2LGVp	S2LGVr	S2LGVpr	S2STVp	S2STVr	S2STVpr
1	6.850	4.150	5.500	2.060	1.635	1.847	8.700	12.500	10.600
2	4.650	4.770	4.710	1.725	1.746	1.736	8.320	19.450	13.880
3	5.200	4.900	5.050	1.816	1.775	1.796	5.070	10.170	7.620
4	4.420	4.200	4.310	1.688	1.640	1.664	6.270	10.980	8.620
5	3.880	7.710	5.790	1.574	2.149	1.862	5.010	16.610	10.810
6	5.250	8.720	6.980	1.830	2.247	2.039	4.950	10.310	7.630
7	3.680	4.680	4.180	1.539	1.737	1.638	5.570	17.310	11.440
8	5.300	9.290	7.300	1.822	2.331	2.076	6.150	15.080	10.620
9	6.060	8.890	7.470	1.898	2.194	2.046	6.930	18.420	12.670
10	6.280	10.300	8.290	1.984	2.418	2.201	6.480	11.210	8.850
11	6.200	6.670	6.440	1.969	2.035	2.002	8.560	17.130	12.840
12	3.960	5.630	4.800	1.577	1.881	1.729	5.080	11.790	8.440
13	4.500	5.410	4.960	1.649	1.851	1.750	6.640	16.230	11.430
14	2.450	4.280	3.360	1.229	1.654	1.441	4.940	13.700	9.320
15	4.720	8.400	6.560	1.736	2.217	1.976	6.810	28.610	17.710
16	6.180	8.210	7.190	1.953	2.204	2.078	8.070	16.370	12.220
17	6.560	5.990	6.270	2.003	1.944	1.973	4.720	6.410	5.560
18	5.690	6.230	5.960	1.898	1.978	1.938	7.110	19.940	13.530
19	5.760	7.930	6.850	1.911	2.164	2.037	6.280	22.190	14.230
20	5.020	4.790	4.910	1.786	1.748	1.767	4.780	12.650	8.720

Table 9 continued 5/5

KEY

B2 = bunch-planted seedlings, S2 = single-planted seedlings
p = plant crop, r = ratoon crop, pr = (p+r)/2 where p,r are plot values
NB There are no p1r values (results based on mean of each seedling)
V, VAR = within plot variance
SEL7 (8, 1Ø) = Number of selections (seedlings) graded 7+ (8+, 1Ø+)
ST = number of stalks, HARD = Hardness
G_B = Visual NMG of whole plot, omitting brix
GB = Visual NMG of whole plot, adjusted for brix
WS = Weight per stalk (kg)
G = net merit grade, NMG = Visual NMG
GYOT = NMGYOT vs standard variety Q82
SQRG, SQG = SQRT(Visual NMG of each seedling + Ø.5)
BuSELST = Number of selectable stalks in each bunch-planted family
LGV = LOGe(GVAR + 1.Ø) where GVAR = within-plot variance for NMG
LSTV = LOGe(STV + 1.Ø) where STV = within-plot variance for STALKS

Table 10. Te trial, Re type, P, R, PR crops. Mean values for harvest & selection characters.

Key	ReFIBREp	ReFIBREr	ReFIBRpr	ReTCHp	ReTCHr	ReTCHpr	ReCCSp	ReCCSr	ReCCSpr
1	12.413	13.967	13.190	54.090	61.080	57.580	14.750	13.587	14.168
2	12.883	13.443	13.163	51.260	60.200	55.730	14.180	13.677	13.928
3	14.387	15.327	14.857	74.130	74.410	74.270	14.950	14.357	14.653
4	13.787	14.040	13.913	62.830	68.370	65.600	14.593	13.633	14.113
5	14.647	15.130	14.888	76.470	83.820	80.150	14.153	13.003	13.578
6	13.523	14.000	13.762	66.440	73.360	69.900	14.973	14.017	14.495
7	13.970	15.250	14.610	71.280	72.960	72.120	13.133	13.200	13.167
8	12.977	13.473	13.225	84.830	79.300	82.070	15.970	14.163	15.067
9	14.563	15.263	14.913	67.070	83.130	75.100	14.780	14.070	14.425
10	12.807	14.140	13.473	65.840	70.950	68.390	14.723	13.543	14.133
11	14.687	14.917	14.802	59.620	76.560	68.090	14.037	13.340	13.688
12	11.653	12.663	12.158	64.950	71.690	68.320	15.087	14.250	14.668
13	13.293	14.470	13.882	68.860	74.700	71.780	14.653	13.857	14.255
14	13.270	15.550	14.410	70.330	90.970	80.650	13.773	13.427	13.600
15	13.867	15.137	14.502	68.280	85.470	76.870	14.417	13.550	13.983
16	14.487	14.963	14.725	70.600	88.900	79.750	14.593	13.957	14.275
17	13.040	13.767	13.403	61.150	74.700	67.920	14.827	14.057	14.442
18	12.960	13.923	13.442	66.820	90.030	78.430	15.840	14.787	15.313
19	13.723	14.347	14.035	69.070	73.230	71.150	15.023	14.397	14.710
20	14.027	14.080	14.053	61.250	74.710	67.980	14.927	13.823	14.375
21	13.767	14.130	13.948	57.090	54.100	55.590	14.317	13.640	13.978
22	12.947	13.503	13.225	70.560	71.820	71.190	16.007	14.907	15.457
23	12.837	13.230	13.033	69.280	79.470	74.380	15.187	14.377	14.782
24	11.597	11.440	11.518	52.470	48.880	50.670	15.193	14.553	14.873
GM	13.4213	14.1730	13.7971	66.0237	74.2837	70.1533	14.7536	13.9238	14.3386

key	ReTSHp	ReTSHr	ReTSHpr	ReNMGYp	ReNMGYr	ReNMGYpr	ReSEL7p	ReSEL7r	ReSEL7p1r
1	7.970	8.215	8.092	6.202	4.802	5.502	2.670	1.670	1.330
2	7.230	8.230	7.730	5.385	5.026	5.205	2.000	1.670	1.000
3	11.084	10.692	10.888	8.487	6.415	7.451	2.670	2.670	2.000
4	9.163	9.330	9.246	6.957	5.553	6.255	4.000	3.670	3.670
5	10.828	10.871	10.849	8.074	5.851	6.963	5.330	4.000	5.000
6	9.965	10.256	10.111	7.695	6.296	6.995	5.330	2.330	4.000
7	9.341	9.590	9.466	6.584	5.640	6.112	4.330	1.670	2.670
8	13.517	11.173	12.345	10.935	6.947	8.941	7.000	5.000	5.330
9	9.907	11.698	10.803	7.477	7.131	7.304	3.330	4.670	3.670
10	9.701	9.597	9.649	7.488	5.255	6.372	4.000	6.330	4.330
11	8.304	10.176	9.240	6.003	5.653	5.828	4.330	3.330	3.330
12	9.810	10.187	9.999	7.906	6.477	7.191	4.670	3.000	3.330
13	10.079	10.321	10.200	7.758	5.966	6.862	3.670	3.000	2.670
14	9.695	12.244	10.969	7.209	6.993	7.101	3.670	5.000	3.670
15	9.895	11.548	10.722	7.379	6.634	7.006	4.670	4.330	3.670
16	10.312	12.389	11.351	7.696	7.370	7.533	3.670	6.330	4.330
17	9.107	10.577	9.842	7.066	5.653	6.360	2.000	4.330	2.670
18	10.574	13.306	11.940	8.530	8.620	8.575	5.000	6.330	4.670
19	10.389	10.545	10.467	8.019	6.143	7.081	3.670	3.670	3.000
20	9.110	10.345	9.727	6.974	6.412	6.693	3.670	3.670	3.670

Table 10 continued 2/4

key	ReSEL8p	ReSEL8r	ReS8p1r	ReSEL10p	ReSEL10r	ReS10p1r	ReSTp	ReSTr	ReSTp1r
1	1.670	1.000	1.333	1.000	1.000	0.667	17.330	21.110	19.220
2	1.330	0.333	0.667	0.667	0.000	0.000	16.580	22.930	19.770
3	2.000	2.667	1.667	0.333	0.667	0.333	16.330	21.220	18.780
4	3.000	1.667	1.333	0.000	0.667	0.000	19.890	22.440	21.170
5	3.670	2.667	3.000	1.333	1.000	0.667	20.110	25.150	22.630
6	4.330	1.333	2.000	1.000	0.333	0.333	17.850	21.780	19.810
7	2.670	0.667	1.667	1.000	0.667	0.333	18.370	24.040	21.200
8	6.000	3.667	4.333	2.000	2.000	1.333	19.040	22.930	20.980
9	1.670	3.333	1.333	0.000	1.000	0.667	17.670	23.930	20.800
10	2.330	3.667	2.000	1.000	0.667	0.333	16.040	19.520	17.780
11	2.330	3.000	2.000	0.000	1.000	0.000	17.960	29.480	23.720
12	3.000	1.333	1.333	0.333	1.333	0.333	17.590	21.780	19.690
13	2.670	1.667	1.667	0.333	1.333	0.667	15.440	24.110	19.780
14	2.670	2.667	2.333	1.000	1.667	1.000	21.670	31.520	26.590
15	3.670	2.333	1.667	0.667	0.667	0.667	19.260	27.630	23.440
16	1.670	5.000	3.000	0.333	2.667	1.333	17.300	26.850	22.070
17	0.670	3.000	0.667	0.000	1.000	0.333	12.740	19.070	15.910
18	3.000	3.667	2.667	1.000	1.000	1.000	20.520	28.520	24.520
19	2.000	2.667	1.667	0.667	1.333	0.667	17.850	24.740	21.300
20	2.670	2.333	1.333	0.000	1.000	0.000	16.330	26.070	21.200
21	3.000	0.333	0.667	0.667	0.000	0.000	14.330	18.340	16.690
22	2.330	2.333	1.667	0.333	1.333	0.000	18.560	23.480	21.020
23	2.000	3.333	3.000	0.667	1.333	0.667	17.780	23.190	20.480
24	0.670	0.667	0.000	0.000	0.000	0.000	16.440	19.520	17.980
GM	2.5425	2.3056	1.7917	0.5972	0.9861	0.4722	17.6242	23.7229	20.6887

key	ReBRIXp	ReBRIXr	ReBRIXp1r	ReHARDp	ReHARDr	ReHARDp1r	ReVISGp	ReVISGr	ReVISGp1
1	23.230	19.704	21.467	4.407	4.463	4.435	5.870	4.426	5.148
2	22.193	18.900	20.546	4.019	4.444	4.231	4.537	4.426	4.481
3	23.763	20.622	22.193	5.296	5.815	5.556	6.222	5.926	6.074
4	22.859	20.293	21.602	5.222	5.139	5.204	5.889	5.963	5.926
5	23.689	20.637	22.163	5.389	5.296	5.343	7.222	6.611	6.917
6	23.556	20.178	21.867	5.259	4.870	5.065	6.796	5.278	6.037
7	22.385	18.519	20.452	5.667	6.000	5.833	6.463	4.907	5.685
8	24.770	20.059	22.415	5.111	4.333	4.722	8.352	7.019	7.685
9	23.593	20.141	21.867	5.833	5.481	5.657	6.074	6.556	6.315
10	23.644	20.637	22.141	5.222	5.222	5.222	6.500	6.778	6.639
11	23.815	19.704	21.759	5.222	5.370	5.296	6.370	6.019	6.194
12	23.837	20.311	22.074	4.759	4.778	4.769	6.019	5.611	5.815
13	23.830	19.452	21.641	5.000	4.981	4.991	5.907	6.019	5.963
14	23.444	19.230	21.337	5.204	5.185	5.194	6.500	6.674	6.587
15	23.504	19.963	21.733	5.000	5.185	5.093	6.648	6.537	6.593
16	22.852	21.348	22.100	4.815	5.000	4.907	6.056	8.000	7.028
17	22.526	20.674	21.600	4.704	4.926	4.815	4.778	6.278	5.528
18	24.840	20.815	22.815	4.889	5.259	5.074	6.852	7.111	6.981
19	24.237	19.837	22.037	5.231	5.333	5.299	6.463	5.704	6.083

Table 10 continued 3/4

key	ReSTVp	ReSTVr	ReSTVp1r	ReBRVp	ReBRVr	ReBRVp1r	ReHVp	ReHVr	ReHVp1r
1	31.100	57.500	37.100	1.930	2.311	1.561	0.630	0.671	0.432
2	47.600	64.800	44.000	4.410	0.865	1.384	1.106	0.713	0.582
3	16.700	48.400	26.600	1.950	2.323	1.513	1.525	1.231	0.968
4	36.700	64.400	38.900	3.410	2.880	2.937	1.407	1.976	1.358
5	39.000	68.900	47.200	1.750	1.985	1.530	0.907	1.148	0.596
6	41.100	51.300	37.000	3.200	1.777	1.937	0.657	1.935	1.015
7	48.600	109.600	70.300	2.780	2.397	2.299	1.324	1.241	0.813
8	38.400	61.100	41.400	1.280	2.401	1.312	0.630	0.417	0.282
9	39.600	80.800	51.900	1.590	2.330	1.150	2.324	0.741	1.060
10	27.100	67.800	29.500	2.290	2.238	1.042	1.241	0.907	0.685
11	24.600	86.800	41.000	1.470	1.945	1.087	0.657	1.083	0.639
12	39.900	79.800	54.100	1.510	2.932	1.520	0.833	0.519	0.478
13	23.400	66.300	36.100	1.910	3.486	2.065	0.574	1.505	0.766
14	63.900	83.900	55.900	2.180	1.114	1.235	1.278	1.111	0.956
15	33.100	105.300	47.600	1.450	1.406	1.129	0.519	0.833	0.387
16	42.100	62.500	41.200	2.910	1.260	1.444	0.981	0.852	0.641
17	30.700	37.500	26.400	3.960	2.199	1.845	1.120	1.185	0.833
18	23.400	49.200	30.000	1.560	2.416	1.104	0.574	0.759	0.442
19	38.600	103.200	57.500	0.840	2.148	0.740	0.358	0.630	0.311
20	24.000	97.800	47.700	1.220	2.238	1.451	0.352	0.667	0.292
21	21.400	34.100	19.300	2.650	2.352	1.639	0.722	0.947	0.570
22	17.600	56.000	23.300	0.680	1.239	0.592	0.944	0.528	0.403
23	54.200	72.900	57.900	1.740	1.751	1.382	0.361	0.921	0.314
24	55.900	71.800	53.900	1.110	2.062	0.976	0.431	1.111	0.479
GM	35.7792	70.0708	42.3250	2.0742	2.0856	1.4531	0.8940	0.9846	0.6376

key	ReGVp	ReGVr	ReGVp1r	ReWSp	ReWSr	ReWSpr	ReWSr_p
1	5.330	7.900	5.820	1.043	0.965	1.004	-0.039
2	7.070	3.690	4.070	1.059	0.867	0.963	-0.096
3	3.920	4.470	3.200	1.515	1.164	1.339	-0.175
4	4.300	5.630	3.990	1.055	1.017	1.036	-0.019
5	2.790	9.020	4.320	1.280	1.117	1.199	-0.082
6	7.680	6.070	6.380	1.266	1.125	1.196	-0.070
7	4.660	6.070	4.500	1.291	1.017	1.154	-0.137
8	4.920	12.230	6.900	1.491	1.154	1.323	-0.169
9	2.670	9.020	4.350	1.268	1.160	1.214	-0.054
10	5.240	5.020	3.280	1.372	1.220	1.296	-0.076
11	2.540	6.110	2.600	1.097	0.867	0.982	-0.115
12	6.170	7.920	5.910	1.247	1.090	1.169	-0.078
13	5.650	8.480	5.880	1.486	1.038	1.262	-0.224
14	5.390	7.490	5.580	1.134	0.970	1.052	-0.082
15	5.050	5.830	4.210	1.174	1.032	1.103	-0.071
16	3.800	10.800	5.670	1.364	1.111	1.238	-0.126
17	3.470	8.670	4.490	1.614	1.300	1.457	-0.157
18	3.590	5.910	4.140	1.087	1.052	1.070	-0.018
19	4.900	11.090	6.380	1.291	0.984	1.138	-0.154
20	3.500	6.290	3.310	1.261	0.970	1.115	-0.145

Table 10 continued 4/4

p = plant crop
r = ratoon crop
pr = (p+r)/2 crop, where p, r are whole plot values
p1r = (p+r)/2 crop, where p, r are individual seedling values
r_p = (r-p)/2 crop
NMGY = NMGYOT
VISG = visual net merit grade
SEL7 = number of selections graded 7+
SEL8 = number of selections graded 8+
SEL10 = number of selections graded 10+
ST = number of stalks
WS = weight per stalk
STV = within plot variance for number of stalks
BRV = within plot variance for BRIX
HV = within plot variance for HARDNESS
GV = within plot variance for visual net merit grade

Table 11. Te trial, Be type, P, R, PR crops. Mean values for harvest & selection characters.

Key	BeFIBREp	BeFIBREr	BeFIBRpr	BeTCHp	BeTCHr	BeTCHpr	BeCCSp	BeCCSr	BeCCSpr
1	12.510	12.647	12.578	57.280	72.670	64.980	15.220	14.210	14.715
2	13.103	13.340	13.222	61.430	82.340	71.880	14.310	13.327	13.818
3	13.890	14.763	14.327	69.620	75.240	72.430	13.923	14.253	14.088
4	14.163	14.587	14.375	69.660	73.140	71.400	14.490	14.137	14.313
5	14.297	15.063	14.680	67.890	74.510	71.200	13.533	13.097	13.315
6	14.020	14.983	14.502	75.700	76.780	76.240	15.607	14.393	15.000
7	14.820	15.713	15.267	77.330	86.410	81.870	13.653	12.483	13.068
8	12.917	13.433	13.175	98.270	99.050	98.660	15.347	14.100	14.723
9	14.570	15.113	14.842	78.620	92.150	85.390	14.487	13.817	14.152
10	12.603	13.567	13.085	66.670	74.520	70.590	14.760	14.193	14.477
11	14.757	16.497	15.627	65.510	81.940	73.720	13.637	12.173	12.905
12	12.447	13.670	13.058	80.100	87.500	83.800	15.287	14.563	14.925
13	13.093	13.737	13.415	67.470	87.320	77.400	14.760	13.820	14.290
14	12.810	14.400	13.605	79.760	96.620	88.190	13.700	13.763	13.732
15	14.110	14.300	14.205	81.210	113.070	97.140	14.097	13.277	13.687
16	14.857	15.270	15.063	78.340	100.820	89.580	14.577	13.210	13.893
17	12.897	13.293	13.095	62.150	74.880	68.520	15.717	14.200	14.958
18	12.257	13.323	12.790	88.800	91.400	90.100	15.427	15.297	15.362
19	14.100	14.920	14.510	78.330	88.920	83.620	15.297	14.397	14.847
20	13.393	13.803	13.598	84.020	90.520	87.270	14.977	14.017	14.497
21	13.570	14.257	13.913	84.410	66.580	75.490	15.087	14.000	14.543
22	13.280	13.303	13.292	66.170	84.940	75.550	15.730	14.780	15.255
23	12.233	13.447	12.840	70.530	76.250	73.390	15.413	14.493	14.953
24	11.050	11.887	11.468	62.430	68.190	65.310	15.823	14.810	15.317
GM	13.4061	14.1382	13.7722	73.8208	83.9900	78.9050	14.7858	13.9504	14.3680

Key	BeTSHp	BeTSHr	BeTSHpr	BeNMGYp	BeNMGYr	BeNMGYpr	BeSEL7p	BeSEL7r	BeS7p1r
1	8.717	10.328	9.523	6.953	6.425	6.689	2.330	2.670	2.000
2	8.750	11.024	9.887	6.600	7.015	6.807	2.670	1.000	2.000
3	9.720	10.726	10.223	7.180	6.790	6.985	4.330	4.000	3.330
4	10.064	10.338	10.201	7.554	6.216	6.885	4.670	3.330	3.330
5	9.243	9.743	9.493	6.625	5.134	5.879	4.330	2.670	1.670
6	11.815	11.059	11.437	9.284	7.041	8.163	7.000	2.670	5.000
7	10.565	10.660	10.612	7.656	5.807	6.731	5.330	3.670	4.000
8	15.079	13.853	14.466	12.021	7.800	9.911	8.330	5.670	7.000
9	11.417	12.674	12.046	8.574	7.404	7.989	5.670	5.670	5.330
10	9.830	10.573	10.201	7.669	5.682	6.675	4.330	5.670	5.000
11	8.929	9.930	9.429	6.374	4.851	5.612	3.670	3.670	2.330
12	12.254	12.728	12.491	9.821	8.332	9.077	7.000	4.330	5.330
13	9.936	12.073	11.004	7.750	6.787	7.268	3.330	5.330	4.000
14	10.964	13.306	12.135	8.294	7.798	8.046	4.670	6.330	5.330
15	11.492	14.849	13.170	8.701	9.393	9.047	7.000	3.670	3.670
16	11.440	13.268	12.354	8.682	7.474	8.078	4.000	6.330	5.000
17	9.776	10.559	10.168	7.904	6.022	6.963	3.330	6.330	4.670
18	13.809	13.961	13.885	11.030	8.975	10.002	5.670	6.000	5.330
19	11.978	12.716	12.347	9.337	8.103	8.720	6.000	5.000	5.330
20	12.577	12.729	12.653	9.837	7.683	8.760	6.000	5.000	5.330
21	12.710	9.344	11.027	9.936	5.768	7.852	7.330	3.330	4.330

Table 11 continued 2/4

Key	BeSEL8p	BeSEL8r	BeS8p1r	BeSEL10p	BeSEL10r	BeS10p1r	BeSTp	BeSTr	BeSTp1r
1	1.330	1.333	0.667	0.333	0.000	0.000	16.040	20.670	18.350
2	1.670	0.667	0.000	0.000	0.000	0.000	18.850	26.300	22.570
3	2.670	1.667	1.333	0.667	0.000	0.000	15.040	20.700	17.870
4	1.670	2.667	1.333	0.333	0.667	0.333	19.040	22.700	20.870
5	1.330	1.000	0.667	0.333	0.000	0.000	16.480	20.590	18.540
6	5.330	2.333	2.333	1.000	0.667	0.333	15.810	19.630	17.720
7	3.670	2.333	2.667	1.333	0.667	0.333	19.700	23.810	21.760
8	7.000	4.333	5.333	4.333	3.000	2.667	19.930	23.440	21.690
9	2.670	4.333	3.000	1.667	2.000	1.333	17.520	22.810	20.170
10	2.670	3.667	2.000	0.000	1.000	0.333	15.630	20.630	18.130
11	2.000	2.000	1.667	0.667	1.000	0.333	19.260	29.480	24.370
12	5.330	3.667	3.000	0.667	1.000	0.333	18.590	24.070	21.330
13	2.330	3.667	2.000	0.333	0.667	0.000	14.060	23.930	19.370
14	2.330	4.333	3.667	0.000	2.000	0.000	18.870	28.710	23.790
15	4.670	2.333	2.667	0.667	1.333	1.000	19.070	30.560	24.810
16	1.000	4.667	2.667	0.000	2.333	0.667	16.370	25.740	21.060
17	2.670	4.667	2.000	1.000	1.667	1.000	12.110	17.590	14.850
18	4.330	4.333	3.333	2.000	0.667	1.000	19.480	25.560	22.520
19	3.330	3.333	2.333	0.667	0.667	0.000	17.780	25.040	21.410
20	3.330	4.000	3.667	1.333	1.667	1.000	18.370	26.370	22.370
21	5.670	2.667	3.333	2.667	0.667	2.000	17.630	19.300	18.460
22	4.330	3.667	3.333	1.333	1.000	0.667	16.630	24.410	20.520
23	2.000	4.667	2.667	0.333	1.667	0.333	14.590	22.670	18.630
24	1.330	1.000	1.000	0.000	0.667	0.000	15.850	20.070	17.960
GM	3.1108	3.0556	2.3611	0.9028	1.0418	0.5694	17.1958	23.5325	20.380

Key	BeBRIXp	BeBRIXr	BeBRp1r	BeHARDp	BeHARDr	BeHp1r	BeVISGp	BeVISGr	BeGp1r
1	23.830	19.663	21.746	4.444	4.481	4.463	5.407	4.963	5.185
2	22.933	18.637	20.785	4.444	4.648	4.546	5.852	4.796	5.324
3	23.300	19.926	21.613	5.389	5.852	5.620	6.537	6.074	6.306
4	23.496	19.830	21.663	5.185	5.185	5.185	6.722	6.241	6.481
5	21.867	19.348	20.607	5.037	4.815	4.926	6.241	5.352	5.796
6	24.200	19.778	21.989	5.759	5.185	5.472	7.556	5.815	6.685
7	22.356	18.504	20.430	6.463	6.111	6.287	7.630	6.315	6.972
8	24.044	20.007	22.026	5.000	4.352	4.676	9.296	7.870	8.583
9	23.289	20.385	21.837	6.111	6.037	6.074	6.944	7.426	7.185
10	23.126	21.222	22.174	5.000	5.148	5.074	6.074	7.000	6.537
11	23.548	19.215	21.381	5.593	5.519	5.556	6.259	6.259	6.259
12	24.037	19.104	21.570	5.333	5.148	5.241	7.574	6.704	7.139
13	23.717	19.304	21.526	5.269	4.704	5.002	6.155	6.648	6.522
14	23.422	19.425	21.424	4.884	4.889	4.887	6.475	7.968	7.221
15	22.830	18.696	20.763	5.111	5.037	5.074	7.444	6.759	7.102
16	23.356	20.896	22.126	5.407	5.611	5.509	6.130	7.926	7.028
17	24.096	21.574	22.835	5.074	5.111	5.093	5.963	7.185	6.574
18	23.578	19.711	21.644	5.259	5.074	5.167	7.907	7.333	7.620
19	24.637	20.659	22.648	5.537	5.519	5.528	7.296	6.759	7.028
20	23.956	19.030	21.493	4.759	4.704	4.731	7.185	7.074	7.130
21	24.470	18.422	21.446	5.926	4.741	5.333	8.481	5.630	7.056

Table 11 continued 3/4

Key	BeSTVp	BeSTVr	BeSTVp1r	BeBRVp	BeBRVr	BeBRVp1r	BeHVp	BeHVr	BeHVp1r
1	27.900	70.700	42.500	1.490	1.044	0.884	1.046	0.787	0.699
2	23.700	42.400	20.800	2.220	3.321	2.269	0.935	1.208	0.744
3	10.500	21.300	12.700	2.770	1.930	2.065	1.755	1.810	1.494
4	33.500	66.100	44.300	1.020	1.790	1.096	0.704	0.731	0.530
5	23.500	41.100	21.100	3.090	2.166	1.617	0.713	0.963	0.639
6	16.200	55.200	29.900	0.820	1.704	0.915	1.894	1.815	1.560
7	40.300	50.000	34.900	1.980	1.504	1.294	1.236	0.907	0.725
8	34.100	135.300	61.000	1.550	1.591	1.226	1.130	1.375	0.965
9	44.100	59.900	46.300	1.300	1.123	0.743	1.574	1.231	0.847
10	53.400	60.800	48.700	2.860	1.913	1.563	0.722	0.963	0.523
11	60.200	108.300	71.600	1.490	1.780	1.191	1.056	0.861	0.664
12	25.900	41.400	24.100	1.390	1.709	0.924	1.306	0.750	0.620
13	23.700	54.500	27.600	1.140	1.763	1.006	1.263	0.889	0.756
14	37.300	93.800	52.000	1.920	1.452	1.318	0.737	1.054	0.708
15	26.300	95.100	47.000	0.580	0.663	0.386	0.685	1.009	0.648
16	27.400	65.400	33.100	1.340	1.657	1.014	0.972	0.903	0.544
17	34.900	59.900	42.800	1.180	1.199	0.748	1.037	1.157	0.757
18	31.200	34.400	26.700	4.080	0.780	1.281	1.185	1.259	0.741
19	28.000	76.700	41.700	0.590	1.314	0.712	1.130	0.741	0.671
20	49.300	103.400	64.400	1.340	2.625	1.368	0.917	0.556	0.350
21	42.200	77.700	48.700	1.740	3.724	2.152	0.796	0.806	0.491
22	27.600	67.700	41.000	0.930	3.044	1.457	1.435	0.542	0.578
23	28.200	43.000	28.800	2.230	2.159	1.467	1.134	0.843	0.692
24	26.600	56.900	37.000	0.530	1.647	0.694	0.972	1.111	0.748
GM	32.3333	65.8750	39.5292	1.6492	1.8167	1.2246	1.0972	1.0113	0.737

Key	BeGVp	BeGVr	BeGVp1r	BeWSp	BeWSr	BeWSpr	BeWSr_p
1	3.850	4.030	3.130	1.191	1.172	1.182	-0.010
2	2.750	3.410	2.090	1.082	1.034	1.058	-0.024
3	4.120	3.530	2.170	1.551	1.218	1.384	-0.167
4	2.290	5.300	2.520	1.235	1.074	1.154	-0.081
5	2.900	3.810	1.850	1.379	1.200	1.289	-0.089
6	1.660	6.160	3.110	1.595	1.305	1.450	-0.145
7	1.400	4.130	2.010	1.309	1.208	1.259	-0.051
8	4.600	13.470	6.490	1.665	1.418	1.542	-0.123
9	4.820	5.530	4.160	1.506	1.349	1.427	-0.079
10	3.660	6.340	3.740	1.449	1.221	1.335	-0.114
11	5.140	3.800	3.200	1.172	0.935	1.054	-0.118
12	2.250	5.160	2.870	1.436	1.213	1.325	-0.112
13	3.220	4.940	2.520	1.596	1.218	1.407	-0.189
14	2.470	5.680	1.640	1.417	1.125	1.271	-0.146
15	2.760	6.250	3.640	1.404	1.230	1.317	-0.087
16	1.820	6.690	2.820	1.596	1.306	1.451	-0.145
17	8.660	8.100	6.670	1.714	1.418	1.566	-0.148
18	5.530	3.770	2.910	1.529	1.193	1.361	-0.168
19	2.090	3.690	1.680	1.473	1.176	1.324	-0.149
20	5.650	8.010	5.100	1.533	1.149	1.341	-0.192

Table 11 continued 4/4

p = plant crop
r = ratoon crop
pr = (p+r)/2 crop, where p, r are whole plot values
p1r = (p+r)/2 crop, where p, r are individual seedling values
r_p = (r-p)/2 crop
NMGY = NMGYOT
VISG = visual net merit grade
SEL7 = number of selections graded 7+
SEL8 = number of selections graded 8+
SEL1Ø = number of selections graded 1Ø+
ST = number of stalks
WS = weight per stalk
STV = within plot variance for number of stalks
BRV = within plot variance for BRIX
HV = within plot variance for HARDNESS
GV = within plot variance for visual net merit grade

Table 12. Te trial, Se type, P, R, PR crops. Mean values for harvest & selection characters.

Key	SeFIBREp	SeFIBREr	SeFIBRpr	SeTCHp	SeTCHr	SeTCHpr	SeCCSp	SeCCSr	SeCCSpr
1	13.150	13.463	13.307	49.600	61.340	55.470	15.127	14.823	14.975
2	12.503	13.253	12.878	58.600	69.980	64.290	14.233	13.403	13.818
3	13.610	15.590	14.600	63.100	69.980	66.540	15.510	14.740	15.125
4	13.733	14.680	14.207	69.340	71.040	70.190	15.147	14.137	14.642
5	13.700	15.843	14.772	72.210	78.120	75.160	14.593	14.177	14.385
6	14.050	13.823	13.937	74.880	74.020	74.450	15.593	14.973	15.283
7	14.480	14.713	14.597	77.590	79.200	78.400	14.017	13.703	13.860
8	13.293	13.687	13.490	70.550	89.500	80.030	14.800	14.713	14.757
9	15.670	15.990	15.830	69.530	82.290	75.910	15.367	14.863	15.115
10	13.470	14.423	13.947	61.730	60.160	60.940	15.420	14.473	14.947
11	14.750	15.880	15.315	71.100	88.770	79.940	14.543	13.290	13.917
12	12.627	13.960	13.293	65.230	65.830	65.530	15.793	15.113	15.453
13	13.223	13.300	13.262	70.410	86.380	78.390	14.893	14.023	14.458
14	13.370	14.997	14.183	66.350	94.630	80.490	14.550	13.557	14.053
15	13.367	15.190	14.278	78.530	91.730	85.130	14.563	13.773	14.168
16	14.667	15.497	15.082	78.660	86.320	82.490	15.000	14.557	14.778
17	14.000	13.917	13.958	68.130	83.210	75.670	15.530	14.583	15.057
18	13.070	12.877	12.973	75.830	88.870	82.350	16.090	15.337	15.713
19	13.243	14.263	13.753	72.420	86.390	79.400	14.533	14.030	14.282
20	13.587	13.977	13.782	70.840	92.140	81.490	15.350	14.680	15.015
21	13.453	14.513	13.983	72.830	62.490	67.660	14.960	13.390	14.175
22	13.353	13.517	13.435	74.040	83.910	78.980	15.923	15.787	15.855
23	12.417	13.763	13.090	74.200	83.470	78.830	15.760	14.857	15.308
24	12.130	12.513	12.322	58.950	59.300	59.120	15.710	14.693	15.202
GM	13.5382	14.3179	13.9281	69.3604	78.7113	74.0354	15.1252	14.4031	14.7642

Key	SeTSHp	SeTSHr	SeTSHpr	SeNMGYp	SeNMGYr	SeNMGYpr	SeSEL7p	SeSEL7r	SeS7p1r
1	7.541	9.102	8.321	5.952	5.916	5.934	1.670	2.000	1.330
2	8.351	9.328	8.839	6.325	5.904	6.114	3.000	0.670	0.670
3	9.789	10.336	10.063	7.732	6.299	7.015	4.000	3.330	2.670
4	10.485	10.103	10.294	8.154	5.912	7.033	5.000	3.670	4.330
5	10.531	11.102	10.816	8.068	6.345	7.206	4.000	4.000	3.670
6	11.695	11.062	11.378	9.206	7.220	8.213	7.330	5.000	5.670
7	10.761	10.730	10.746	7.933	6.358	7.145	5.000	3.000	3.000
8	10.443	13.168	11.806	8.080	7.872	7.976	5.670	5.330	5.330
9	10.684	12.244	11.464	8.128	7.766	7.947	6.670	5.000	5.330
10	9.516	8.704	9.110	7.548	5.125	6.336	5.670	3.670	4.000
11	10.327	11.755	11.041	7.752	6.741	7.247	4.330	5.670	4.330
12	10.279	9.959	10.119	8.334	6.331	7.332	5.670	4.670	5.000
13	10.513	12.117	11.315	8.213	7.138	7.675	5.330	6.000	5.000
14	9.646	12.810	11.228	7.348	7.151	7.250	4.000	6.670	5.670
15	11.400	12.629	12.014	8.735	7.298	8.017	5.000	4.670	4.000
16	11.800	12.551	12.176	9.094	7.402	8.248	5.000	5.670	5.670
17	10.617	12.125	11.371	8.383	6.977	7.680	4.670	5.330	5.000
18	12.178	13.584	12.881	9.903	8.809	9.356	5.670	5.330	5.670
19	10.520	12.103	11.312	8.079	7.534	7.806	7.000	4.670	5.670
20	10.858	13.520	12.189	8.562	8.412	8.487	5.000	5.000	5.000

Table 12 continued 2/4

Key	SeSEL8p	SeSEL8r	SeS8p1r	SeSEL10p	SeSEL10r	SeS10p1r	SeSTp	SeSTr	SeSTp1r
1	1.000	1.000	0.333	0.667	0.000	0.000	16.590	21.000	18.800
2	1.670	0.333	0.000	0.000	0.000	0.000	18.150	24.150	21.150
3	2.330	2.000	2.000	0.333	0.000	0.000	14.850	21.110	17.980
4	3.330	1.667	2.000	1.000	0.000	0.000	20.850	22.930	21.890
5	2.670	2.667	2.333	0.667	1.333	1.000	16.300	22.040	19.170
6	5.000	3.000	3.667	2.000	0.333	0.667	16.740	21.850	19.300
7	3.670	1.333	1.333	1.667	0.333	0.667	20.440	24.560	22.500
8	4.670	4.333	3.333	2.333	1.333	1.000	16.520	22.110	19.310
9	4.670	3.333	3.667	0.667	1.000	0.667	18.960	24.440	21.700
10	3.670	2.000	2.000	0.667	0.333	0.000	15.150	19.070	17.110
11	3.000	3.667	1.333	0.333	0.333	0.333	20.560	31.110	25.830
12	3.330	3.000	2.000	0.000	1.333	0.667	17.850	25.740	21.800
13	3.330	3.333	2.667	1.000	1.000	1.000	16.300	25.560	20.930
14	3.000	4.667	2.333	0.000	1.333	0.333	17.440	31.850	24.650
15	2.330	4.000	3.333	0.667	2.000	0.333	18.930	29.740	24.330
16	3.330	4.333	2.667	0.667	2.000	1.000	19.220	26.630	22.930
17	3.000	4.333	3.333	0.333	1.667	0.667	15.110	20.410	17.760
18	4.000	4.000	3.333	0.667	2.667	1.000	19.220	27.890	23.560
19	4.000	3.667	4.000	1.333	1.333	0.333	17.410	26.590	22.000
20	3.000	3.333	2.000	0.667	1.667	0.667	16.520	25.040	20.780
21	1.330	1.333	1.000	0.333	0.667	0.000	16.810	22.220	19.520
22	4.330	2.333	2.333	1.333	0.333	0.667	18.520	26.070	22.300
23	3.670	3.667	3.667	1.000	0.333	0.667	18.630	24.810	21.720
24	2.330	0.667	1.000	0.333	0.333	0.333	16.740	18.330	17.540
GM	3.1942	2.8333	2.3194	0.7778	0.9027	0.5000	17.6587	24.3854	21.023

Key	SeBRIXp	SeBRIXr	SeBRp1r	SeHARDp	SeHARDr	SeHp1r	SeVISGp	SeVISGr	SeGp1r
1	23.644	20.478	22.061	4.963	4.667	4.815	4.944	4.722	4.833
2	23.467	18.519	20.993	4.630	4.556	4.593	5.870	3.926	4.898
3	24.315	21.069	22.692	5.609	5.833	5.721	6.528	6.093	6.310
4	23.859	20.541	22.200	5.111	5.222	5.167	6.630	5.889	6.259
5	23.733	20.452	22.093	5.611	5.389	5.500	6.167	6.704	6.435
6	24.474	20.704	22.589	5.315	5.296	5.306	7.889	6.630	7.259
7	22.852	18.867	20.859	5.630	5.611	5.620	7.019	5.463	6.241
8	23.504	20.104	21.804	4.630	4.778	4.704	7.685	7.056	7.370
9	25.748	21.207	23.478	6.630	6.167	6.398	7.444	6.833	7.139
10	24.807	21.630	23.219	5.093	5.370	5.231	7.093	6.000	6.546
11	24.096	20.141	22.119	5.296	5.611	5.454	6.778	7.019	6.898
12	24.741	20.822	22.781	5.074	5.593	5.333	6.889	6.759	6.824
13	23.600	20.119	21.859	4.981	5.037	5.009	6.796	7.111	6.954
14	23.926	20.326	22.126	5.222	5.296	5.259	6.444	7.796	7.120
15	23.407	19.341	21.374	4.926	4.926	4.926	6.611	6.981	6.796
16	23.696	20.689	22.193	5.185	5.759	5.472	6.963	7.889	7.426
17	23.807	21.630	22.719	5.519	5.333	5.426	6.167	7.704	6.935
18	24.785	20.844	22.815	5.333	4.667	5.000	7.167	7.259	7.213
19	23.985	19.081	21.533	5.630	5.333	5.481	7.722	6.963	7.343
20	24.511	20.000	22.256	4.926	4.815	4.870	6.856	7.204	7.030
21	24.022	19.719	21.870	5.370	4.852	5.111	5.741	4.944	5.343

Table 12 continued 3/4

Key	SeSTVp	SeSTVr	SeSTVp1r	SeBRVp	SeBRVr	SeBRVp1r	SeHVp	SeHVr	SeHVp1r
1	48.800	92.300	61.700	2.040	1.900	1.231	1.204	1.213	0.965
2	33.100	69.600	38.400	1.000	2.287	1.122	0.704	0.824	0.461
3	14.400	38.800	18.400	0.820	1.464	0.413	1.392	1.512	1.071
4	41.900	54.600	38.500	3.260	1.352	1.802	1.750	1.278	1.014
5	39.000	77.800	46.700	4.080	2.415	2.112	1.449	1.227	0.972
6	32.700	27.200	21.000	1.260	1.174	0.779	0.648	0.704	0.494
7	34.500	49.100	37.700	1.680	1.576	1.429	0.630	0.708	0.501
8	42.900	72.300	46.700	2.800	1.004	1.144	1.102	0.352	0.493
9	32.300	85.600	45.200	0.920	1.200	0.811	1.134	1.042	0.532
10	44.900	59.300	45.600	0.620	0.983	0.431	1.639	0.593	0.858
11	44.600	114.000	68.300	0.790	1.863	0.810	0.815	0.657	0.521
12	36.600	62.600	39.600	1.010	0.619	0.482	0.787	0.648	0.546
13	45.200	74.300	46.200	0.860	1.789	0.706	0.495	1.120	0.532
14	35.800	168.000	66.200	0.660	0.744	0.468	0.963	0.898	0.630
15	31.200	88.800	42.200	3.240	1.070	1.287	0.981	0.806	0.708
16	38.700	92.000	55.800	0.860	1.233	0.823	1.056	0.944	0.723
17	44.500	74.800	51.400	2.950	1.587	1.693	1.269	1.157	0.897
18	38.500	60.100	42.400	0.890	1.906	0.843	0.852	0.583	0.512
19	33.900	104.700	52.700	1.650	1.631	1.256	0.731	0.602	0.477
20	38.600	74.800	51.000	1.280	0.927	0.442	0.556	1.231	0.458
21	30.400	70.000	37.700	2.140	1.702	1.314	0.824	1.500	0.896
22	58.500	96.100	69.000	0.660	1.271	0.650	0.574	0.704	0.363
23	65.200	121.900	83.100	3.120	1.387	1.625	0.611	0.519	0.352
24	20.700	40.000	25.000	1.180	3.507	1.565	0.519	0.662	0.470
GM	38.6208	77.8625	47.1042	1.6571	1.5246	1.0516	0.9452	0.8952	0.643

Key	SeGVp	SeGVr	SeGVp1r	SeWSp	SeWSr	SeWSpr	SeWSr_p
1	5.730	5.570	4.180	0.993	0.982	0.988	-0.006
2	3.030	2.500	1.500	1.077	0.963	1.020	-0.057
3	2.830	3.380	2.060	1.425	1.109	1.267	-0.158
4	4.600	3.360	2.860	1.110	1.028	1.069	-0.041
5	6.000	9.230	6.130	1.495	1.180	1.337	-0.157
6	4.090	3.780	2.540	1.490	1.129	1.309	-0.180
7	4.840	4.500	3.780	1.264	1.076	1.170	-0.094
8	7.670	6.750	5.720	1.427	1.349	1.388	-0.039
9	3.370	5.560	3.750	1.229	1.125	1.177	-0.052
10	4.120	3.240	2.410	1.370	1.052	1.211	-0.159
11	1.640	2.170	1.090	1.153	0.956	1.054	-0.098
12	3.550	3.250	2.600	1.222	0.851	1.036	-0.185
13	6.590	8.300	5.750	1.441	1.129	1.285	-0.156
14	3.250	3.280	1.550	1.273	0.987	1.130	-0.143
15	3.620	8.520	3.990	1.386	1.031	1.208	-0.178
16	4.890	6.300	4.240	1.365	1.083	1.224	-0.141
17	5.750	5.890	3.610	1.503	1.359	1.431	-0.072
18	3.710	7.510	4.570	1.335	1.060	1.197	-0.137
19	4.820	6.680	4.240	1.386	1.083	1.235	-0.152
20	3.720	4.410	3.140	1.427	1.226	1.327	-0.100
21	3.500	6.960	3.640	1.442	0.935	1.189	-0.254

Table 12 continued 4/4

p = plant crop
r = ratoon crop
pr = (p+r)/2 crop, where p, r are whole plot values
p1r = (p+r)/2 crop, where p, r are individual seedling values
r_p = (r-p)/2 crop
NMGY = NMGYOT
VISG = visual net merit grade
SEL7 = number of selections graded 7+
SEL8 = number of selections graded 8+
SEL1Ø = number of selections graded 1Ø+
ST = number of stalks
WS = weight per stalk
STV = within plot variance for number of stalks
BRV = within plot variance for BRIX
HV = within plot variance for HARDNESS
GV = within plot variance for visual net merit grade

Table 13. Variance ratios (F) and means for RCB analysis, trial Ts, type Bs. 24 crosses x 3 replicates, P, R, PR and (R-P)/2 crops.

Character	P crop Mean	F	R crop Mean	F	PR crop Mean	F	(R - P)/2 Mean	F
Selectable stalks	5.43	2.4**						
TCH	59.3	5.1**	72.4	3.3**	65.9	4.8**	6.53	1.9*
CCS	14.27	2.4**	14.96	1.9*	14.614	2.7**	0.344	1.0
TSH	8.48	6.3**	10.91	3.4**	9.70	6.0**	1.21	1.4
NMGYOT vs Q82	5.90	6.5**	7.27	3.4**	6.58	6.3**	0.68	1.4
Appearance grade	9.972	.9	9.924	5.2**	9.9479	3.3**	-0.0243	2.9**
KG/STALK	0.594	2.6**	0.931	3.0**	0.762	3.1**	0.169	2.5**
STALKS	52.18	5.0**	40.88	4.8**	46.53	6.6**	-5.65	1.5
BRIX	21.626	2.4**	22.24	1.9*	21.933	2.7**	0.306	1.0
HARDNESS	5.493	.8	4.979	1.7**	5.236	1.1	-0.257	1.2
VisNMGplot_BRIX	6.62	2.1*	7.78	2.1*	7.20	2.9**	0.583	1.1
VisNMGplot+BRIX	6.01	3.1**	6.79	2.0*	6.40	3.7**	0.39	1.0

Degrees of freedom = 23,46
VisNMGplot_BRIX = Visual NMG of whole plot, omitting brix (+BRIX = adjusted for brix)

Table 14. Variance ratios (F) and means for RCB analysis, trial Ts, type Ss. 24 crosses x 3 replicates, P, R, PR and (R-P)/2 crops. For number of selections see table T9.

Character	P crop Mean	F	R crop Mean	F	PR crop Mean	F	(R - P)/2 Mean	F
TCH	64.38	7.0**	71.24	5.2**	67.81	6.8**	3.4331	3.63**
CCS	13.598	5.5**	14.624	10.6**	14.111	8.3**	0.513	1.8*
TSH	8.782	9.1**	10.42	6.3**	9.605	9.1**	0.820	3.3**
NMGYOT vs Q82	5.855	9.7**	6.714	7.0**	6.285	10.2**	0.429	3.5**
KG/STALK	0.939	4.9**	0.9511	4.5**	.945	5.4**	0.0061	3.4**
STALKS	6.175	19.2**	7.052	9.5**	6.688	12.5**	0.369	3.2**
STALKS MISSES	1.17	2.0*	2.47	3.0**				
BRIX	21.030	5.5**	21.942	10.6**	21.513	8.2**	0.435	1.7
BRIX MISSES	1.43	3.3**	2.54	2.9**				
HARDNESS	4.924	5.5**	4.700	3.7**	4.827	8.6**	-0.124	1.4
HARDNESS MISSES	1.39	3.5**	2.54	2.9**				
Visual NMG	5.402	11.0**	5.186	9.0**	5.294	13.4**	-0.137	3.6**
Visual NMG (1)					5.325	11.8**		
Visual NMG MISSES	1.11	1.4	1.72	2.6**				
SQRNMGseedling	2.368	12.1**	2.307	8.8**	2.3596	11.7**		
SQRNMGmean	2.420	12.0**	2.379	9.2**	2.4005	13.9**		
SQRNMGmean (1)					2.4075	12.0**		
VisNMGplot_BRIX	7.514	9.9**	7.71	3.9**	7.6125	7.3**	0.0986	4.8**
SQRVisNMGplot_BRIX			2.854	3.9**				
VisNMGplot+BRIX	6.603	10.3**	6.60	6.2**	6.6035	10.1**	0.0007	4.1**
ST_VAR	6.39	.6	15.89	1.8*	8.70	1.3	2.246	2.8**
LST_VAR	1.97	.6	2.769	2.3**	2.233	1.5	1.144	2.8**
BRIX_VAR	2.09	1.5	1.919	2.0*	1.575	1.8*	0.368	2.3**
LBRIX_VAR	1.087	1.5	1.035	1.9*	0.917	1.8*	0.308	2.2*
HARD_VAR	0.860	1.2	0.903	1.1	0.595	1.4	0.280	0.9
LHARD_VAR	0.605	1.3	0.627	1.2	0.458	1.4	0.2445	.9
NMG_VAR	5.07	1.7	6.99	2.1*	4.84	1.8*	1.118	2.2*
LNMG_VAR	1.772	1.6	2.028	2.4**	1.732	1.8*	0.732	2.3**
SQRNMG_VAR	0.2504	2.2*	0.345	1.7	0.2338	1.4		
LSQRNMG_VAR	0.2218	2.1*	0.2933	1.8*	0.2088	1.4		

Degrees of freedom = 23,46
ST_VAR = within-plot variance for stalks (brix, hardness, visual NMG), PR for each seedling.
Log(V) = LOGe(V+1.0), e.g. LST_VAR
VisNMGplot_BRIX = Visual NMG of whole plot, omitting brix (+BRIX = adjusted for brix)
Visual NMG (1) (P+R)/2 is computed for each seedling
Visual NMG (P+R)/2, (R-P)/2 are based on seedling mean for P crop & R crop

Table 15. Variance ratios (F) and means for RCB analysis of variance, trial Ts, type Ss. 24 crosses x 3 replicates, P, R, PR and (R-P)/2 crops. Number of selections with visual NMG 7.Ø+ (>6.99), 8.Ø+, 1Ø.Ø+.

Character	Plant crop		Ratoon crop		(P + R)/2		(R - P)/2	
	Mean	F	Mean	F	Mean	F	Mean	F
SEL7	12.25	7.3**	11.78	8.3**	12.Ø1	1Ø.8**	-Ø.24	2.9**
SEL7 (1)					9.33	7.5**		
SQRSEL7	3.443	7.4**	3.449	8.4**	3.468	11.6**		
SQRSEL7 (1)					3.Ø26	7.Ø**		
SEL8	6.19	5.4**	5.44	5.7**	5.82	7.5**	-Ø.38	2.5**
SEL8 (1)					4.57	5.8**		
SQRSEL8	2.4Ø7	7.4**	2.311	5.5**	2.4ØØ	8.4**		
SQRSEL8 (1)					2.Ø97	6.8**		
SEL1Ø	Ø.88	1.Ø	1.68	3.2**	1.28	2.4**	Ø.4Ø	1.5
SEL1Ø (1)					Ø.88	2.4**		
SQRSEL1Ø	1.Ø51	1.1	1.348	3.6**	1.245	2.7**		
SQRSEL1Ø (1)					1.Ø77	2.6**		

Degrees of freedom = 23,46
SEL7 (1) (P+R)/2 is computed for each seedling
SEL7 (P+R)/2, (R-P)/2 are based on seedling mean for P crop & R crop
SEL8 = Number of selections graded 8.Ø or higher (SEL1Ø = 1Ø.Ø+)
SQRX = SQRT(X+Ø.5), NB. sqrt ((P+R)/2 + Ø.5) NOT (sqrt(P+Ø.5)+sqrt(R+Ø.5)/2

Table 16. Coefficients of variation (s.e. per plot as % general mean) for Bs and seedlings in P and R crops.

Character	Plant crop			Ratoon crop			(P+R)/2		
	Ss	Bs	Bs/Ss	Ss	Bs	Bs/Ss	Ss	Bs	Bs/
TCH	10.7	17.9	1.7	9.7	19.9	2.1	9.0	16.0	1
CCS	5.4	6.7	1.2	3.3	6.4	1.9	4.0	5.5	1
TSH	11.2	17.6	1.6	9.9	22.0	2.2	9.1	16.0	1
NMGYOT	13.7	19.7	1.4	11.8	25.5	2.2	10.8	18.0	1
KG/STALK	9.6	19.2	2.0	7.7	17.6	2.3	7.1	14.7	2
STALKS	5.0	9.9	2.0	7.6	13.4	1.8	6.0	9.3	1
VisNMGplot_BRIX	12.4	18.6	1.5	12.9	17.4	1.3	11.0	13.7	1
VisNMGplot+BRIX	14.7	20.4	1.4	13.0	20.8	1.6	11.9	15.2	1
SEL8	46.7	50.8	1.1	42.6			35.1		

VisNMGplot_BRIX = Visual NMG of whole plot, omitting brix (+BRIX = adjusted for brix)
SEL8 = number of single seedlings graded 8.0 or higher
= number of selectable stalks per bunch planted plot

e 17. Variance ratios (F) for modified split plot and split plot analysis of variance, using fixed and om models. 24 crosses on main plots, with 2 years (P, R crops) as subplots, Bs seedlings.

acter	F ratios for fixed model							F ratios for random model			
	Modified split plot				Split plot		CombError	Modified split plot			Spli
	Cross	Year	Cross *Year	Rep *Year	Year	Year *Cross	Year	Cross	Year df	F	Year
	A	B	AB	RB	B	AB	B	A	B	B	B
	4.8**	29.9*	1.9*	2.1	60.1**	1.8*		2.9**	(1,4)	15.9*	33.0
	2.7**	7.1	1.0	4.4*	27.9**	.9	28.8**	2.2**	(1,3)	6.0	31.1
	6.0**	55.9*	1.4	1.2	66.6**	1.4	58.9**	3.5**	(1,6)	26.0**	47.4
OT	6.3**	26.8*	1.4	1.3	34.0**	1.4	30.5**	3.6**	(1,6)	13.3*	25.1
TALK	3.1**	165.4**	2.5**	1.7	268.5**	2.5**		1.5	(1.5)	65.9**	108.9
KS	6.6**	911.2**	1.5	.3	248.1**	1.5	212.1**	4.1**	(1,28)	138.7**	162.7
:	2.7**	7.1	1.0	4.5*	27.9**	.9	28.8**	2.2**	(1,3)	6.0	31.1
NESS	1.1	5432.5**	1.2	.0	34.2**	1.3	31.4**	1.0	(1,46)	27.5**	26.8
lot_BR	2.9**	41.8*	1.1	.8	35.0**	1.1	34.2**	2.1**	(1,9)	18.8**	32.6
lot+BR	3.7**	51.1*	1.0	.3	14.0**	1.0	14.1**	2.5**	(1,28)	11.9**	14.1
treat)	23	1	23	2	1	23	1	26-50			1
error)	46	2	46	46	48	48	71	52-69			23

F ratios for treatment A (cross) were the same for all fixed models
Quasi F ratios for treatment A (cross) were very similar for both random models.
Error = Combined error (interactions,AB + Error (c), RAB), used if interactions were not significant.
lot_BR = Visual NMG of whole plot (NOT mean of seedling NMG), omitting brix (+BRIX = adjusted for brix)

.e 18. Variance ratios (F) for modified split plot and split plot analysis of variance, using fixed and lom models. 24 crosses on main plots, with 2 years (P, R crops) as subplots, Ss seedlings.

'acter	F ratios for fixed model							F ratios for random model`			
	Modified split plot				Split plot		CombError	Modified split plot			Spli
	Cross	Year	Cross *Year	Rep *Year	Year	Year *Cross	Year	Cross	Year df	F	Year
	A	B	AB	RB	B	AB	B	A	B	B	B
'	10.0**	2.7	2.9**	.4	1.2	3.0**		3.8**	(3,17)	.7	.4
EL7	10.9**	.0	3.0**	.9	.0	3.0**		3.8**	(47,8)	.3	.0
;	7.5**	34.7*	2.5**	.1	3.9	2.6**		3.1**	(1,44)	1.8	1.5
EL8	8.3**	22.3*	3.4**	.1	1.7	3.6**		3.0**	(2,47)	.8	.5
.0	2.4**	27.1*	1.5	.4	12.1**	1.5	10.5**	1.5	(1,18)	6.8*	8.1
EL10	2.5**	40.0*	1.6	.4	16.9**	1.6	14.0**	1.5	(1,19)	8.7**	10.3
	6.8**	71.6*	3.6**	1.1	78.8**	3.6**		3.5**	(1,7)	16.9**	6.4
	8.3**	57.1*	1.8*	4.4*	219.3**	1.6		6.0**	(1,3)	40.7**	139.4
	9.1**	216.4**	3.3**	.9	195.9**	3.3**		4.5**	(1,8)	46.5**	58.8
OT	10.2**	67.4*	3.5**	1.1	75.4**	3.5**		4.6**	(1,7)	16.7**	21.9
TALK	5.4**	36.1*	3.4**	.0	1.3	3.6**		2.2**	(3,48)	.6	.4
KS	15.8**	77.6*	2.6**	3.3*	224.1**	2.4**		7.7**	(1,3)	42.6**	93.6
'	8.3**	57.1*	1.8*	4.3*	219.3**	1.6		6.0**	(1,3)	40.7**	139.4
NESS	8.7**	6.8	1.4	3.3*	20.7**	1.3	19.2**	3.6**	(1,3)	5.1	16.5
al NMG	13.4**	101.0**	3.5**	.2	13.5**	3.6**		5.3**	(1,42)	3.9	3.8
MG	14.0**	165.6**	3.5**	.0	23.6**	3.7**		5.5**	(1,42)	6.5*	6.4
lot_BR	7.3**	53.2*	4.8**	.1	3.3	5.0**		3.0**	(1,48)	.9	.7
lot+BR	10.1**	.0	4.1**	.3	.0	4.3**		4.2**	(46,27)	.2	.0
AR	1.5	152.3**	2.1*	2.2	323.5**	2.0*		1.0	(1,4)	79.3**	164.4
_VAR	1.4	786.1**	2.0*	1.0	669.7**	2.0*		1.1	(1,9)	233.1**	330.6
_VAR	1.9*	481.8**	2.2*	.1	54.5**	2.3**		1.1	(1,44)	23.0**	23.7
_VAR	2.0*	313.1**	2.2*	.3	60.5**	2.3**		1.2	(1,36)	25.1**	26.8
MG_VAR	1.5	2354.7**	2.7**	.0	84.4**	2.8**		.9	(1,48)	29.9**	30.0
NMG_VAR	1.5	2065.5**	2.7**	.0	88.1**	2.8**		.9	(1,48)	30.9**	31.0
(treat)	23	1	23	2	1	23	1	24-39			1
(error)	46	2	46	46	48	48	71	46-69			23

F ratios for AB are the same for the random and fixed models.
F ratios for treatment A (cross) were the same for all fixed models
Quasi F ratios for treatment A (cross) were very similar for both random models.
Error = Combined error (interactions,AB + Error (c), RAB), used if AB interactions were not significant.
' = Number of selections graded 7.0 or higher (8+, 10+)
' = SQRT(X+0.5)
AR = within-plot variance for number of stalks (brix, hardness, visual NMG)

Table 19a Correlation matrix for means of harvest and selection characters, Bs and Ss seedlings, trial Ts. 24 families. The matrix is in two parts (a,b) with some correlations repeated.

							DF = 22	
BsSTpr	1	1.0000						
BsSTp	2	0.9452	1.0000					
BsSTr	3	0.9498	0.7955	1.0000				
BsBRIXpr	4	0.2937	0.3653	0.1947	1.0000			
BsBRIXp	5	0.1732	0.2362	0.0951	0.9370	1.0000		
BsBRIXr	6	0.3837	0.4544	0.2761	0.9225	0.7296	1.0000	
BsHARDpr	7	0.2872	0.2274	0.3147	0.1568	0.1324	0.1607	1.000
BsHARDp	8	0.0729	0.0598	0.0780	0.1974	0.2684	0.0899	0.707
BsHARDr	9	0.3404	0.2678	0.3747	0.0532	-0.0406	0.1491	0.804
BsG_Bpr	10	0.7692	0.7316	0.7261	0.3530	0.2858	0.3754	0.332
BsG_Bp	11	0.5521	0.5485	0.4986	0.4151	0.3582	0.4170	0.276
BsG_Br	12	0.8045	0.7440	0.7799	0.2224	0.1599	0.2588	0.314
BsGBpr	13	0.6783	0.6751	0.6115	0.6488	0.5586	0.6531	0.293
BsGBp	14	0.4564	0.4832	0.3836	0.6472	0.5983	0.6061	0.277
BsGBr	15	0.7846	0.7498	0.7372	0.5225	0.4051	0.5753	0.250
BsWSpr	16	0.0599	0.1500	-0.0328	0.4849	0.4611	0.4401	0.070
BsWSp	17	0.2174	0.1938	0.2176	0.2704	0.2709	0.2301	0.158
BsWSr	18	-0.0568	0.0828	-0.1850	0.4936	0.4606	0.4576	-0.005
BsTCHpr	19	0.7103	0.7060	0.6414	0.4932	0.4093	0.5134	0.244
BsTCHp	20	0.6370	0.6478	0.5611	0.3732	0.3099	0.3884	0.224
BsTCHr	21	0.6738	0.6562	0.6214	0.5312	0.4408	0.5531	0.226
BsCCSpr	22	0.2939	0.3655	0.1949	1.0000	0.9370	0.9226	0.156
BsCCSp	23	0.1733	0.2362	0.0952	0.9370	1.0000	0.7296	0.132
BsCCSr	24	0.3837	0.4544	0.2761	0.9225	0.7295	1.0000	0.160
BsTSHpr	25	0.6630	0.6740	0.5841	0.6501	0.5633	0.6504	0.237
BsTSHp	26	0.5900	0.6118	0.5084	0.5512	0.5153	0.5099	0.227
BsTSHr	27	0.6439	0.6447	0.5769	0.6547	0.5356	0.6901	0.216
BsGYOTpr	28	0.6475	0.6691	0.5601	0.7136	0.6250	0.7065	0.229
BsGYOTp	29	0.5663	0.5976	0.4782	0.6411	0.6177	0.5727	0.222
BsGYOTr	30	0.6379	0.6479	0.5626	0.6874	0.5533	0.7347	0.206
SsSTpr	31	0.7837	0.6320	0.8486	0.1039	0.0412	0.1576	0.308
SsSTp	32	0.7779	0.6711	0.8003	0.2368	0.1778	0.2671	0.358
SsSTr	33	0.7488	0.5681	0.8451	-0.0097	-0.0720	0.0604	0.251
SsBRIXpr	34	0.2000	0.3491	0.0363	0.7937	0.7487	0.7268	-0.176
SsBRIXp	35	0.2605	0.4093	0.0911	0.8014	0.7590	0.7304	-0.127
SsBRIXr	36	0.1232	0.2652	-0.0258	0.7452	0.6995	0.6862	-0.222
SsG_Bpr	37	0.6684	0.5661	0.6977	0.4105	0.3533	0.4133	0.593
SsG_Bp	38	0.6139	0.5348	0.6265	0.4480	0.3733	0.4646	0.600
SsG_Br	39	0.6288	0.5105	0.6776	0.2803	0.2594	0.2621	0.475
SsGBpr	40	0.5987	0.5583	0.5757	0.6680	0.6098	0.6340	0.433
SsGBp	41	0.5826	0.5466	0.5570	0.6502	0.5723	0.6405	0.453
SsGBr	42	0.5489	0.5071	0.5325	0.6123	0.5900	0.5469	0.351
SsWSpr	43	-0.0965	-0.0124	-0.1674	0.2890	0.3257	0.2061	0.137
SsWSp	44	0.1174	0.1818	0.0435	0.2490	0.2816	0.1766	0.153
SsWSr	45	-0.3445	-0.2584	-0.3918	0.2599	0.2918	0.1866	0.078
SsTCHpr	46	0.7679	0.6849	0.7683	0.3855	0.3433	0.3754	0.437
SsTCHp	47	0.6856	0.6518	0.6474	0.3703	0.3581	0.3292	0.396
SsTCHr	48	0.7519	0.6242	0.7968	0.3474	0.2766	0.3745	0.420
SsCCSpr	49	0.1999	0.3490	0.0362	0.7938	0.7487	0.7269	-0.176
SsCCSp	50	0.2606	0.4094	0.0911	0.8015	0.7591	0.7305	-0.127
SsCCSr	51	0.1232	0.2652	-0.0258	0.7452	0.6994	0.6861	-0.222
SsTSHpr	52	0.6940	0.6825	0.6335	0.6362	0.5880	0.5960	0.276

Table 19a continued (2/6)

BsHARDp	8	1.0000						
BsHARDr	9	0.1495	1.0000					
BsG_Bpr	10	0.1330	0.3537	1.0000				
BsG_Bp	11	0.0057	0.3811	0.8780	1.0000			
BsG_Br	12	0.2208	0.2546	0.9004	0.5822	1.0000		
BsGBpr	13	0.1258	0.3047	0.9294	0.8840	0.7750	1.0000	
BsGBp	14	0.0371	0.3572	0.7970	0.9448	0.4949	0.9127	1.000
BsGBr	15	0.1951	0.1862	0.8900	0.6460	0.9243	0.8982	0.640
BsWSpr	16	0.0061	0.0934	0.4445	0.4774	0.3212	0.5708	0.594
BsWSp	17	-0.0372	0.2533	0.5409	0.6873	0.2939	0.5679	0.676
BsWSr	18	0.0319	-0.0341	0.2639	0.2140	0.2538	0.4204	0.382
BsTCHpr	19	0.0158	0.3286	0.8383	0.7395	0.7516	0.8500	0.739
BsTCHp	20	-0.0262	0.3363	0.7843	0.8154	0.5909	0.7719	0.768
BsTCHr	21	0.0519	0.2736	0.7652	0.5616	0.7892	0.7973	0.605
BsCCSpr	22	0.1973	0.0533	0.3532	0.4152	0.2226	0.6490	0.647
BsCCSp	23	0.2682	-0.0407	0.2858	0.3582	0.1600	0.5586	0.598
BsCCSr	24	0.0900	0.1490	0.3753	0.4168	0.2587	0.6530	0.605
BsTSHpr	25	0.0430	0.2958	0.7919	0.7247	0.6863	0.8729	0.782
BsTSHp	26	0.0272	0.2954	0.7598	0.8145	0.5501	0.8157	0.833
BsTSHr	27	0.0511	0.2603	0.7229	0.5611	0.7179	0.8153	0.644
BsGYOTpr	28	0.0556	0.2739	0.7690	0.7135	0.6577	0.8784	0.793
BsGYOTp	29	0.0604	0.2605	0.7369	0.7993	0.5251	0.8281	0.851
BsGYOTr	30	0.0433	0.2523	0.7018	0.5502	0.6919	0.8132	0.645
SsSTpr	31	-0.0103	0.4395	0.5566	0.4301	0.5544	0.4612	0.327
SsSTp	32	0.0251	0.4802	0.5855	0.4827	0.5556	0.5330	0.419
SsSTr	33	-0.0386	0.3840	0.5049	0.3654	0.5253	0.3795	0.236
SsBRIXpr	34	-0.0134	-0.2364	0.2451	0.3251	0.1208	0.5089	0.511
SsBRIXp	35	0.0264	-0.2007	0.3060	0.3615	0.1912	0.5517	0.545
SsBRIXr	36	-0.0562	-0.2639	0.1656	0.2683	0.0374	0.4360	0.447
SsG_Bpr	37	0.3787	0.5123	0.7334	0.5694	0.7281	0.7289	0.578
SsG_Bp	38	0.3657	0.5328	0.7005	0.6031	0.6415	0.7303	0.625
SsG_Br	39	0.3296	0.3889	0.6498	0.4160	0.7254	0.5948	0.403
SsGBpr	40	0.2770	0.3731	0.7198	0.6510	0.6308	0.8317	0.740
SsGBp	41	0.2767	0.4012	0.6997	0.6563	0.5919	0.8165	0.742
SsGBr	42	0.2435	0.2864	0.6611	0.5637	0.6105	0.7524	0.646
SsWSpr	43	0.3669	-0.1155	0.2568	0.1556	0.2948	0.3200	0.242
SsWSp	44	0.3612	-0.0885	0.4122	0.3082	0.4199	0.4290	0.332
SsWSr	45	0.2720	-0.1178	-0.0145	-0.0839	0.0517	0.0908	0.059
SsTCHpr	46	0.2714	0.3836	0.8145	0.6036	0.8348	0.7748	0.572
SsTCHp	47	0.2946	0.3077	0.7691	0.6095	0.7523	0.7396	0.579
SsTCHr	48	0.2056	0.4157	0.7492	0.5095	0.8094	0.7034	0.482
SsCCSpr	49	-0.0132	-0.2365	0.2451	0.3250	0.1208	0.5089	0.511
SsCCSp	50	0.0266	-0.2006	0.3062	0.3617	0.1913	0.5519	0.545
SsCCSr	51	-0.0564	-0.2638	0.1656	0.2684	0.0374	0.4360	0.447
SsTSHpr	52	0.1990	0.2191	0.7572	0.6228	0.7200	0.8357	0.676
SsTSHp	53	0.2279	0.1683	0.7232	0.6233	0.6617	0.7951	0.670
SsTSHr	54	0.1436	0.2524	0.7113	0.5525	0.7059	0.7885	0.607
SsGYOTpr	55	0.1365	0.1450	0.7159	0.6160	0.6560	0.8349	0.696
SsGYOTp	56	0.1808	0.0957	0.6613	0.5949	0.5824	0.7829	0.680
SsGYOTr	57	0.0672	0.1863	0.6941	0.5665	0.6640	0.7956	0.631

	8	9	10	11	12	13	1

Table 19a continued (3/6)

BsGBr	15	1.0000						
BsWSpr	16	0.4321	1.0000					
BsWSp	17	0.3390	0.7399	1.0000				
BsWSr	18	0.3773	0.9002	0.3732	1.0000			
BsTCHpr	19	0.8012	0.7291	0.7329	0.5320	1.0000		
BsTCHp	20	0.6243	0.6433	0.8710	0.3241	0.9167	1.0000	
BsTCHr	21	0.8464	0.7012	0.4991	0.6450	0.9303	0.7062	1.000
BsCCSpr	22	0.5227	0.4850	0.2705	0.4936	0.4934	0.3734	0.531
BsCCSp	23	0.4052	0.4610	0.2708	0.4606	0.4094	0.3099	0.440
BsCCSr	24	0.5753	0.4400	0.2299	0.4576	0.5133	0.3882	0.553
BsTSHpr	25	0.7984	0.7602	0.7068	0.5917	0.9803	0.8770	0.931
BsTSHp	26	0.6368	0.7048	0.8647	0.4131	0.9209	0.9731	0.738
BsTSHr	27	0.8379	0.7161	0.4889	0.6718	0.9125	0.6901	0.983
BsGYOTpr	28	0.7965	0.7543	0.6767	0.6031	0.9595	0.8500	0.919
BsGYOTp	29	0.6406	0.7083	0.8313	0.4394	0.9006	0.9378	0.734
BsGYOTr	30	0.8335	0.7009	0.4584	0.6706	0.8922	0.6681	0.967
SsSTpr	31	0.5153	-0.1446	0.2026	-0.3298	0.4701	0.4753	0.396
SsSTp	32	0.5512	0.0179	0.3062	-0.1725	0.5752	0.5733	0.492
SsSTr	33	0.4600	-0.2697	0.1080	-0.4412	0.3608	0.3715	0.298
SsBRIXpr	34	0.4074	0.5055	0.2674	0.5242	0.4259	0.3690	0.416
SsBRIXp	35	0.4513	0.5271	0.3025	0.5315	0.4808	0.4257	0.461
SsBRIXr	36	0.3387	0.4563	0.2153	0.4899	0.3441	0.2880	0.345
SsG_Bpr	37	0.7467	0.3959	0.5080	0.2188	0.7452	0.6646	0.710
SsG_Bp	38	0.6985	0.4155	0.5556	0.2148	0.7277	0.6843	0.661
SsG_Br	39	0.6833	0.2949	0.3447	0.1851	0.6362	0.5148	0.654
SsGBpr	40	0.7663	0.5677	0.5935	0.4001	0.8026	0.7245	0.757
SsGBp	41	0.7348	0.5548	0.6097	0.3716	0.7865	0.7294	0.723
SsGBr	42	0.7187	0.5171	0.4972	0.3927	0.7280	0.6286	0.712
SsWSpr	43	0.3394	0.5944	0.2932	0.6300	0.3139	0.2078	0.365
SsWSp	44	0.4481	0.4603	0.3570	0.4047	0.3835	0.3534	0.355
SsWSr	45	0.1050	0.6013	0.1298	0.7441	0.1372	-0.0370	0.276
SsTCHpr	46	0.8405	0.3633	0.4774	0.1931	0.7902	0.7049	0.753
SsTCHp	47	0.7675	0.3931	0.5455	0.1906	0.7590	0.7393	0.666
SsTCHr	48	0.8034	0.2762	0.3296	0.1679	0.7120	0.5634	0.744
SsCCSpr	49	0.4075	0.5055	0.2674	0.5243	0.4259	0.3690	0.416
SsCCSp	50	0.4513	0.5271	0.3026	0.5315	0.4808	0.4257	0.461
SsCCSr	51	0.3387	0.4563	0.2153	0.4899	0.3442	0.2880	0.345
SsTSHpr	52	0.8433	0.4977	0.4956	0.3665	0.8082	0.7148	0.775
SsTSHp	53	0.7731	0.5131	0.5550	0.3498	0.7777	0.7432	0.695
SsTSHr	54	0.8289	0.4245	0.3723	0.3447	0.7525	0.6025	0.780
SsGYOTpr	55	0.8208	0.5499	0.4968	0.4378	0.8039	0.7101	0.772
SsGYOTp	56	0.7403	0.5493	0.5382	0.4105	0.7562	0.7192	0.679
SsGYOTr	57	0.8170	0.4841	0.3875	0.4173	0.7633	0.6135	0.789

	15	16	17	18	19	20	2

Table 19a continued (4/6)

BsCCSpr	22	1.0000						
BsCCSp	23	0.9370	1.0000					
BsCCSr	24	0.9225	0.7295	1.0000				
BsTSHpr	25	0.6502	0.5633	0.6504	1.0000			
BsTSHp	26	0.5513	0.5153	0.5097	0.9222	1.0000		
BsTSHr	27	0.6549	0.5357	0.6901	0.9452	0.7453	1.0000	
BsGYOTpr	28	0.7137	0.6251	0.7065	0.9956	0.9114	0.9466	1.000
BsGYOTp	29	0.6412	0.6176	0.5726	0.9240	0.9919	0.7553	0.923
BsGYOTr	30	0.6876	0.5533	0.7347	0.9347	0.7283	0.9963	0.942
SsSTpr	31	0.1040	0.0413	0.1576	0.4154	0.4249	0.3566	0.399
SsSTp	32	0.2370	0.1777	0.2671	0.5379	0.5466	0.4651	0.530
SsSTr	33	-0.0095	-0.0720	0.0604	0.2947	0.3043	0.2501	0.273
SsBRIXpr	34	0.7937	0.7487	0.7267	0.5422	0.5017	0.5109	0.595
SsBRIXp	35	0.8014	0.7591	0.7303	0.5907	0.5550	0.5494	0.638
SsBRIXr	36	0.7452	0.6995	0.6861	0.4616	0.4178	0.4428	0.517
SsG_Bpr	37	0.4106	0.3532	0.4133	0.7292	0.6719	0.6893	0.714
SsG_Bp	38	0.4481	0.3732	0.4646	0.7254	0.6959	0.6624	0.713
SsG_Br	39	0.2804	0.2594	0.2621	0.6027	0.5142	0.6047	0.587
SsGBpr	40	0.6680	0.6098	0.6339	0.8399	0.7896	0.7807	0.847
SsGBp	41	0.6503	0.5723	0.6405	0.8251	0.7859	0.7583	0.829
SsGBr	42	0.6124	0.5900	0.5468	0.7587	0.6985	0.7179	0.769
SsWSpr	43	0.2890	0.3257	0.2060	0.3412	0.2657	0.3640	0.335
SsWSp	44	0.2490	0.2815	0.1764	0.3840	0.3787	0.3419	0.370
SsWSr	45	0.2599	0.2918	0.1866	0.1912	0.0465	0.2910	0.196
SsTCHpr	46	0.3856	0.3433	0.3753	0.7578	0.7034	0.7117	0.740
SsTCHp	47	0.3703	0.3581	0.3291	0.7269	0.7377	0.6295	0.709
SsTCHr	48	0.3476	0.2767	0.3745	0.6839	0.5621	0.7035	0.668
SsCCSpr	49	0.7938	0.7487	0.7268	0.5422	0.5017	0.5109	0.595
SsCCSp	50	0.8015	0.7592	0.7304	0.5907	0.5551	0.5494	0.638
SsCCSr	51	0.7451	0.6995	0.6860	0.4616	0.4178	0.4428	0.517
SsTSHpr	52	0.6363	0.5880	0.5959	0.8308	0.7702	0.7811	0.838
SsTSHp	53	0.5916	0.5727	0.5252	0.7944	0.7926	0.6995	0.798
SsTSHr	54	0.6161	0.5397	0.6098	0.7793	0.6583	0.7868	0.790
SsGYOTpr	55	0.7012	0.6438	0.6612	0.8431	0.7794	0.7948	0.860
SsGYOTp	56	0.6782	0.6492	0.6102	0.7964	0.7892	0.7060	0.811
SsGYOTr	57	0.6437	0.5594	0.6419	0.7966	0.6734	0.8040	0.814

	22	23	24	25	26	27	2

Table 19a continued (5/6)

BsGYOTp	29	1.0000						
BsGYOTr	30	0.7427	1.0000					
SsSTpr	31	0.3999	0.3516	1.0000				
SsSTp	32	0.5330	0.4628	0.9658	1.0000			
SsSTr	33	0.2713	0.2433	0.9774	0.8891	1.0000		
SsBRIXpr	34	0.5738	0.5384	-0.0521	0.0945	-0.1688	1.0000	
SsBRIXp	35	0.6234	0.5705	-0.0515	0.0849	-0.1599	0.9780	1.000
SsBRIXr	36	0.4902	0.4760	-0.0504	0.1000	-0.1703	0.9736	0.904
SsG_Bpr	37	0.6678	0.6672	0.5806	0.6503	0.4944	0.2281	0.289
SsG_Bp	38	0.6907	0.6447	0.4842	0.5657	0.3932	0.2823	0.326
SsG_Br	39	0.5128	0.5801	0.6192	0.6586	0.5558	0.1061	0.181
SsGBpr	40	0.8138	0.7710	0.4723	0.5850	0.3566	0.5528	0.591
SsGBp	41	0.8020	0.7500	0.4082	0.5102	0.3044	0.5334	0.569
SsGBr	42	0.7315	0.7072	0.5082	0.6226	0.3893	0.5136	0.552
SsWSpr	43	0.2832	0.3373	-0.4835	-0.3933	-0.5326	0.3449	0.410
SsWSp	44	0.3834	0.3113	-0.2791	-0.2107	-0.3209	0.3266	0.399
SsWSr	45	0.0756	0.2769	-0.6115	-0.5184	-0.6564	0.2724	0.311
SsTCHpr	46	0.6952	0.6882	0.6880	0.7496	0.6030	0.2632	0.309
SsTCHp	47	0.7305	0.6035	0.5529	0.6455	0.4495	0.3240	0.365
SsTCHr	48	0.5539	0.6863	0.7444	0.7614	0.6930	0.1549	0.201
SsCCSpr	49	0.5737	0.5384	-0.0522	0.0944	-0.1689	1.0000	0.978
SsCCSp	50	0.6235	0.5705	-0.0515	0.0849	-0.1599	0.9781	1.000
SsCCSr	51	0.4902	0.4760	-0.0504	0.1001	-0.1703	0.9735	0.904
SsTSHpr	52	0.7940	0.7729	0.5436	0.6523	0.4276	0.6163	0.641
SsTSHp	53	0.8132	0.6856	0.4143	0.5392	0.2917	0.6200	0.657
SsTSHr	54	0.6832	0.7861	0.6302	0.7082	0.5348	0.5430	0.552
SsGYOTpr	55	0.8114	0.7956	0.4823	0.6084	0.3551	0.7306	0.743
SsGYOTp	56	0.8217	0.7010	0.3364	0.4752	0.2063	0.7464	0.781
SsGYOTr	57	0.7008	0.8117	0.5971	0.6931	0.4888	0.6234	0.609

		29	30	31	32	33	34	3
SsBRIXr	36	1.0000						
SsG_Bpr	37	0.1497	1.0000					
SsG_Bp	38	0.2196	0.9521	1.0000				
SsG_Br	39	0.0183	0.8902	0.7083	1.0000			
SsGBpr	40	0.4819	0.9223	0.9144	0.7670	1.0000		
SsGBp	41	0.4669	0.8829	0.9461	0.6288	0.9664	1.0000	
SsGBr	42	0.4450	0.8668	0.7561	0.8748	0.9267	0.7989	1.000
SsWSpr	43	0.2554	0.2832	0.3595	0.1180	0.3474	0.3986	0.230
SsWSp	44	0.2307	0.4003	0.5048	0.1719	0.4433	0.5135	0.286
SsWSr	45	0.2161	0.0540	0.0729	0.0160	0.1275	0.1400	0.093
SsTCHpr	46	0.1985	0.8716	0.8235	0.7852	0.8131	0.7692	0.777
SsTCHp	47	0.2621	0.8260	0.8347	0.6632	0.8025	0.7871	0.726
SsTCHr	48	0.0964	0.7982	0.6917	0.8125	0.7079	0.6374	0.724
SsCCSpr	49	0.9736	0.2282	0.2824	0.1062	0.5529	0.5335	0.513
SsCCSp	50	0.9046	0.2893	0.3265	0.1814	0.5920	0.5695	0.552
SsCCSr	51	1.0000	0.1497	0.2196	0.0183	0.4819	0.4669	0.445
SsTSHpr	52	0.5571	0.8016	0.7858	0.6800	0.8880	0.8447	0.842
SsTSHp	53	0.5477	0.7648	0.7932	0.5839	0.8631	0.8470	0.780
SsTSHr	54	0.5054	0.7539	0.6893	0.7136	0.8171	0.7476	0.818

Table 19a continued (6/6)

SsWSpr	43	1.0000						
SsWSp	44	0.9070	1.0000					
SsWSr	45	0.8409	0.5347	1.0000				
SsTCHpr	46	0.2878	0.4243	0.0321	1.0000			
SsTCHp	47	0.3925	0.6013	0.0149	0.9422	1.0000		
SsTCHr	48	0.1253	0.1587	0.0474	0.9222	0.7393	1.0000	
SsCCSpr	49	0.3450	0.3267	0.2724	0.2632	0.3239	0.1549	1.000
SsCCSp	50	0.4109	0.3993	0.3114	0.3100	0.3655	0.2011	0.978
SsCCSr	51	0.2554	0.2306	0.2160	0.1985	0.2621	0.0964	0.973
SsTSHpr	52	0.3693	0.4714	0.1352	0.9205	0.8962	0.8155	0.616
SsTSHp	53	0.4769	0.6432	0.1303	0.8658	0.9395	0.6556	0.620
SsTSHr	54	0.2054	0.2227	0.1258	0.8798	0.7464	0.9066	0.543
SsGYOTpr	55	0.3482	0.4361	0.1383	0.8432	0.8318	0.7345	0.730
SsGYOTp	56	0.4756	0.6152	0.1639	0.7827	0.8608	0.5794	0.746
SsGYOTr	57	0.1547	0.1706	0.0912	0.8131	0.6968	0.8298	0.623

	43	44	45	46	47	48	4

SsCCSp	50	1.0000						
SsCCSr	51	0.9046	1.0000					
SsTSHpr	52	0.6418	0.5570	1.0000				
SsTSHp	53	0.6574	0.5477	0.9544	1.0000			
SsTSHr	54	0.5523	0.5054	0.9402	0.7955	1.0000		
SsGYOTpr	55	0.7437	0.6794	0.9823	0.9394	0.9213	1.0000	
SsGYOTp	56	0.7811	0.6705	0.9368	0.9810	0.7816	0.9537	1.000
SsGYOTr	57	0.6091	0.6076	0.9174	0.7762	0.9758	0.9340	0.783

	50	51	52	53	54	55	5

Correlation is significantly different from zero if > 0.404 (5%), 0.515 (1%)
p = plant crop, r = ratoon crop, pr = (p+r)/2
Bs = bunch-planted seedlings, Ss = single-planted seedlings
ST = number of stalks, HARD = Hardness
G_B = Visual NMG of whole plot, omitting brix
GB = Visual NMG of whole plot, adjusted for brix
WS = Weight per stalk (kg)
GYOT = NMGYOT vs standard variety Q82

Table 19b Correlation matrix for means of selection and harvest characters, Bs and Ss seedlings, trial Ts. 24 families.

df = 22

BsWSpr	1	1.0000						
BsWSp	2	0.7399	1.0000					
BsWSr	3	0.9002	0.3732	1.0000				
BsTCHpr	4	0.7291	0.7329	0.5320	1.0000			
BsTCHp	5	0.6433	0.8710	0.3241	0.9167	1.0000		
BsTCHr	6	0.7012	0.4991	0.6450	0.9303	0.7062	1.0000	
BsCCSpr	7	0.4850	0.2705	0.4936	0.4934	0.3734	0.5314	1.000
BsCCSp	8	0.4610	0.2708	0.4606	0.4094	0.3099	0.4408	0.937
BsCCSr	9	0.4400	0.2299	0.4576	0.5133	0.3882	0.5531	0.922
BsTSHpr	10	0.7602	0.7068	0.5917	0.9803	0.8770	0.9319	0.650
BsTSHp	11	0.7048	0.8647	0.4131	0.9209	0.9731	0.7383	0.551
BsTSHr	12	0.7161	0.4889	0.6718	0.9125	0.6901	0.9831	0.654
BsGYOTpr	13	0.7543	0.6767	0.6031	0.9595	0.8500	0.9198	0.713
BsGYOTp	14	0.7083	0.8313	0.4394	0.9006	0.9378	0.7348	0.641
BsGYOTr	15	0.7009	0.4584	0.6706	0.8922	0.6681	0.9675	0.687
BsSELST	16	0.4292	0.6308	0.1838	0.4518	0.5807	0.2672	0.127
SsSTpr	17	-0.1446	0.2026	-0.3298	0.4701	0.4753	0.3967	0.104
SsSTp	18	0.0179	0.3062	-0.1725	0.5752	0.5733	0.4929	0.237
SsSTr	19	-0.2697	0.1080	-0.4412	0.3608	0.3715	0.2983	-0.009
SsWSpr	20	0.5944	0.2932	0.6300	0.3139	0.2078	0.3653	0.289
SsWSp	21	0.4603	0.3570	0.4047	0.3835	0.3534	0.3550	0.249
SsWSr	22	0.6013	0.1298	0.7441	0.1372	-0.0370	0.2768	0.259
SsTCHpr	23	0.3633	0.4774	0.1931	0.7902	0.7049	0.7530	0.385
SsTCHp	24	0.3931	0.5455	0.1906	0.7590	0.7393	0.6662	0.370
SsTCHr	25	0.2762	0.3296	0.1679	0.7120	0.5634	0.7442	0.347
SsCCSpr	26	0.5055	0.2674	0.5243	0.4259	0.3690	0.4160	0.793
SsCCSp	27	0.5271	0.3026	0.5315	0.4808	0.4257	0.4612	0.801
SsCCSr	28	0.4563	0.2153	0.4899	0.3442	0.2880	0.3455	0.745
SsTSHpr	29	0.4977	0.4956	0.3665	0.8082	0.7148	0.7757	0.636
SsTSHp	30	0.5131	0.5550	0.3498	0.7777	0.7432	0.6958	0.591
SsTSHr	31	0.4245	0.3723	0.3447	0.7525	0.6025	0.7801	0.616
SsGYOTpr	32	0.5499	0.4968	0.4378	0.8039	0.7101	0.7725	0.701
SsGYOTp	33	0.5493	0.5382	0.4105	0.7562	0.7192	0.6798	0.678
SsGYOTr	34	0.4841	0.3875	0.4173	0.7633	0.6135	0.7892	0.643
SsSEL7pr	35	0.5443	0.5847	0.3731	0.7217	0.6987	0.6373	0.737
SsSEL7p	36	0.5744	0.5891	0.4119	0.7058	0.6986	0.6093	0.774
SsSEL7r	37	0.4132	0.4842	0.2571	0.6277	0.5859	0.5743	0.564
SsSEL8pr	38	0.6606	0.6797	0.4722	0.7358	0.7128	0.6493	0.647
SsSEL8p	39	0.6359	0.6865	0.4338	0.7402	0.7467	0.6260	0.752
SsSEL8r	40	0.5607	0.5374	0.4262	0.5855	0.5307	0.5502	0.391
SsS10pr	41	0.5002	0.6233	0.2877	0.6376	0.6534	0.5301	0.411
SsS10p	42	0.3538	0.4180	0.2189	0.4897	0.5017	0.4073	0.563
SsS10r	43	0.4766	0.6085	0.2644	0.5819	0.5968	0.4832	0.218
SsVISGpr	44	0.4826	0.5591	0.3046	0.7867	0.7457	0.7094	0.673
SsVISGp	45	0.5243	0.5727	0.3536	0.7772	0.7490	0.6895	0.729
SsVISGr	46	0.3753	0.4812	0.2066	0.7156	0.6619	0.6603	0.526
SsGVARpr	47	0.5229	0.6117	0.3261	0.4530	0.5230	0.3226	0.419
SsGVARp	48	0.3080	0.3641	0.1895	0.2817	0.3600	0.1686	0.488
SsGVARr	49	0.4932	0.5755	0.3087	0.4198	0.4669	0.3152	0.269

Table 19b continued 2/8

SsSTVpr	50	-0.4931	-0.0887	-0.6219	-0.0475	0.0269	-0.1088	-0.356
SsSTVp	51	-0.5571	-0.1623	-0.6632	-0.2745	-0.0568	-0.4342	-0.220
SsSTVr	52	-0.4174	-0.0600	-0.5361	0.0128	0.0442	-0.0180	-0.344
SsSQRGpr	53	0.4627	0.5282	0.2971	0.7957	0.7419	0.7288	0.670
SsSQRGp	54	0.5146	0.5543	0.3520	0.7880	0.7494	0.7082	0.717
SsSQRGr	55	0.3454	0.4400	0.1919	0.7274	0.6581	0.6848	0.540
SsSQGVpr	56	0.2812	0.3166	0.1836	-0.0642	0.0584	-0.1673	0.103
SsSQGVp	57	-0.0856	-0.0416	-0.0913	-0.3002	-0.1864	-0.3609	0.004
SsSQGVr	58	0.4269	0.4406	0.3046	0.1352	0.2113	0.0456	0.130
SsBRVp1r	59	-0.1184	-0.1307	-0.0798	-0.4143	-0.3477	-0.4149	-0.306
SsBRVpr	60	-0.0247	-0.1029	0.0310	-0.4534	-0.3800	-0.4546	-0.287
SsBRVp	61	-0.0785	-0.0976	-0.0467	-0.3892	-0.3492	-0.3692	-0.223
SsBRVr	62	0.0390	-0.0781	0.1034	-0.3870	-0.3003	-0.4100	-0.270

		1	2	3	4	5	6	
BsCCSp	8	1.0000						
BsCCSr	9	0.7295	1.0000					
BsTSHpr	10	0.5633	0.6504	1.0000				
BsTSHp	11	0.5153	0.5097	0.9222	1.0000			
BsTSHr	12	0.5357	0.6901	0.9452	0.7453	1.0000		
BsGYOTpr	13	0.6251	0.7065	0.9956	0.9114	0.9466	1.0000	
BsGYOTp	14	0.6176	0.5726	0.9240	0.9919	0.7553	0.9238	1.000
BsGYOTr	15	0.5533	0.7347	0.9347	0.7283	0.9963	0.9425	0.742
BsSELST	16	0.1063	0.1321	0.4081	0.5407	0.2473	0.3855	0.513
SsSTpr	17	0.0413	0.1576	0.4154	0.4249	0.3566	0.3999	0.399
SsSTp	18	0.1777	0.2671	0.5379	0.5466	0.4651	0.5300	0.533
SsSTr	19	-0.0720	0.0604	0.2947	0.3043	0.2501	0.2737	0.271
SsWSpr	20	0.3257	0.2060	0.3412	0.2657	0.3640	0.3351	0.283
SsWSp	21	0.2815	0.1764	0.3840	0.3787	0.3419	0.3702	0.383
SsWSr	22	0.2918	0.1866	0.1912	0.0465	0.2910	0.1968	0.075
SsTCHpr	23	0.3433	0.3753	0.7578	0.7034	0.7117	0.7403	0.695
SsTCHp	24	0.3581	0.3291	0.7269	0.7377	0.6295	0.7097	0.730
SsTCHr	25	0.2767	0.3745	0.6839	0.5621	0.7035	0.6686	0.553
SsCCSpr	26	0.7487	0.7268	0.5422	0.5017	0.5109	0.5952	0.573
SsCCSp	27	0.7592	0.7304	0.5907	0.5551	0.5494	0.6384	0.623
SsCCSr	28	0.6995	0.6860	0.4616	0.4178	0.4428	0.5178	0.490
SsTSHpr	29	0.5880	0.5959	0.8308	0.7702	0.7811	0.8385	0.794
SsTSHp	30	0.5727	0.5252	0.7944	0.7926	0.6995	0.7983	0.813
SsTSHr	31	0.5397	0.6098	0.7793	0.6583	0.7868	0.7906	0.683
SsGYOTpr	32	0.6438	0.6612	0.8431	0.7794	0.7948	0.8603	0.811
SsGYOTp	33	0.6492	0.6102	0.7964	0.7892	0.7060	0.8116	0.821
SsGYOTr	34	0.5594	0.6419	0.7966	0.6734	0.8040	0.8141	0.700
SsSEL7pr	35	0.6779	0.6941	0.7822	0.7814	0.6882	0.8094	0.819
SsSEL7p	36	0.7268	0.7131	0.7787	0.7937	0.6720	0.8071	0.836
SsSEL7r	37	0.4983	0.5542	0.6606	0.6377	0.5999	0.6818	0.663
SsSEL8pr	38	0.6293	0.5712	0.7827	0.7916	0.6808	0.8012	0.821
SsSEL8p	39	0.7316	0.6643	0.8106	0.8460	0.6829	0.8335	0.884
SsSEL8r	40	0.3803	0.3450	0.5944	0.5689	0.5443	0.6040	0.582
SsS10pr	41	0.4385	0.3207	0.6390	0.6894	0.5195	0.6425	0.699
SsS10p	42	0.5544	0.4895	0.5481	0.5746	0.4597	0.5735	0.608

Table 19b continued 3/8

SsS10r	43	0.2619	0.1383	0.5468	0.6009	0.4353	0.5356	0.594
SsVISGpr	44	0.6011	0.6532	0.8210	0.8011	0.7385	0.8371	0.825
SsVISGp	45	0.6594	0.6998	0.8270	0.8184	0.7342	0.8466	0.849
SsVISGr	46	0.4596	0.5219	0.7256	0.6927	0.6656	0.7354	0.705
SsGVARpr	47	0.4562	0.3161	0.4845	0.5842	0.3424	0.4989	0.602
SsGVARp	48	0.5308	0.3705	0.3506	0.4491	0.2257	0.3779	0.482
SsGVARr	49	0.2944	0.2028	0.4233	0.4971	0.3104	0.4272	0.502
SsSTVpr	50	-0.3218	-0.3420	-0.1319	-0.0527	-0.1831	-0.1617	-0.089
SsSTVp	51	-0.2213	-0.1864	-0.3002	-0.1150	-0.4201	-0.2934	-0.126
SsSTVr	52	-0.3063	-0.3367	-0.0753	-0.0308	-0.1041	-0.1101	-0.069
SsSQRGpr	53	0.5910	0.6600	0.8270	0.7935	0.7552	0.8421	0.816
SsSQRGp	54	0.6402	0.6970	0.8324	0.8129	0.7480	0.8501	0.841
SsSQRGr	55	0.4646	0.5435	0.7376	0.6881	0.6901	0.7475	0.701
SsSQGVpr	56	0.2009	-0.0201	-0.0264	0.1158	-0.1424	-0.0085	0.135
SsSQGVp	57	0.0931	-0.0941	-0.2536	-0.1368	-0.3208	-0.2337	-0.117
SsSQGVr	58	0.1927	0.0425	0.1503	0.2497	0.0489	0.1589	0.261
SsBRVp1r	59	-0.2461	-0.3285	-0.4248	-0.3676	-0.4213	-0.4192	-0.368
SsBRVpr	60	-0.2185	-0.3219	-0.4502	-0.3842	-0.4511	-0.4432	-0.381
SsBRVp	61	-0.1990	-0.2183	-0.3795	-0.3511	-0.3577	-0.3728	-0.348
SsBRVr	62	-0.1746	-0.3357	-0.3915	-0.3058	-0.4159	-0.3864	-0.303

	8	9	10	11	12	13	14

Table 19b continued 4/8

BsGYOTr	15	1.0000						
BsSELST	16	0.2250	1.0000					
SsSTpr	17	0.3516	0.1043	1.0000				
SsSTp	18	0.4628	0.1825	0.9658	1.0000			
SsSTr	19	0.2433	0.0353	0.9774	0.8891	1.0000		
SsWSpr	20	0.3373	0.3495	-0.4835	-0.3933	-0.5326	1.0000	
SsWSp	21	0.3113	0.5026	-0.2791	-0.2107	-0.3209	0.9070	1.0000
SsWSr	22	0.2769	0.0555	-0.6115	-0.5184	-0.6564	0.8409	0.5347
SsTCHpr	23	0.6882	0.3947	0.6880	0.7496	0.6030	0.2878	0.4243
SsTCHp	24	0.6035	0.5201	0.5529	0.6455	0.4495	0.3925	0.6013
SsTCHr	25	0.6863	0.1929	0.7444	0.7614	0.6930	0.1253	0.1587
SsCCSpr	26	0.5384	0.2388	-0.0522	0.0944	-0.1689	0.3450	0.3267
SsCCSp	27	0.5705	0.2439	-0.0515	0.0849	-0.1599	0.4109	0.3993
SsCCSr	28	0.4760	0.2210	-0.0504	0.1001	-0.1703	0.2554	0.2306
SsTSHpr	29	0.7729	0.4147	0.5436	0.6523	0.4276	0.3693	0.4714
SsTSHp	30	0.6856	0.5134	0.4143	0.5392	0.2917	0.4769	0.6432
SsTSHr	31	0.7861	0.2557	0.6302	0.7082	0.5348	0.2054	0.2227
SsGYOTpr	32	0.7956	0.4228	0.4823	0.6084	0.3551	0.3482	0.4361
SsGYOTp	33	0.7010	0.4950	0.3364	0.4752	0.2063	0.4756	0.6152
SsGYOTr	34	0.8117	0.2859	0.5971	0.6931	0.4888	0.1547	0.1706
SsSEL7pr	35	0.6995	0.5310	0.4787	0.6237	0.3364	0.1589	0.2625
SsSEL7p	36	0.6803	0.5490	0.3154	0.4808	0.1647	0.2997	0.4279
SsSEL7r	37	0.6135	0.4188	0.6347	0.7272	0.5273	-0.0682	-0.0166
SsSEL8pr	38	0.6843	0.5227	0.4195	0.5648	0.2800	0.1636	0.2240
SsSEL8p	39	0.6854	0.5006	0.3511	0.4937	0.2173	0.2582	0.3693
SsSEL8r	40	0.5483	0.4466	0.4201	0.5400	0.3012	0.0164	0.0028
SsS10pr	41	0.5127	0.4730	0.4761	0.5849	0.3633	0.0887	0.1571
SsS10p	42	0.4705	0.2438	0.2278	0.3366	0.1274	0.1773	0.2489
SsS10r	43	0.4190	0.5069	0.5203	0.6035	0.4263	0.0122	0.0622
SsVISGpr	44	0.7433	0.5089	0.6189	0.7413	0.4879	0.1194	0.2500
SsVISGp	45	0.7389	0.5370	0.4812	0.6265	0.3385	0.2545	0.4043
SsVISGr	46	0.6703	0.4171	0.7370	0.8159	0.6356	-0.0741	0.0169
SsGVARpr	47	0.3460	0.4695	0.1597	0.2380	0.0878	0.1201	0.1262
SsGVARp	48	0.2377	0.3107	-0.1576	-0.1242	-0.1769	0.2073	0.2388
SsGVARr	49	0.3086	0.4251	0.2808	0.3613	0.2011	0.0415	0.0325
SsSTVpr	50	-0.2026	-0.1073	0.6805	0.5518	0.7510	-0.6429	-0.4994
SsSTVp	51	-0.4025	-0.0270	0.3642	0.3388	0.3664	-0.7207	-0.5671
SsSTVr	52	-0.1300	-0.1127	0.6729	0.5356	0.7507	-0.5459	-0.4222
SsSQRGpr	53	0.7597	0.4911	0.6361	0.7549	0.5072	0.1246	0.2577
SsSQRGp	54	0.7519	0.5281	0.5024	0.6453	0.3606	0.2603	0.4088
SsSQRGr	55	0.6950	0.3914	0.7568	0.8306	0.6584	-0.0744	0.0245
SsSQGVpr	56	-0.1339	0.2155	-0.3374	-0.3123	-0.3408	0.0837	0.0169
SsSQGVp	57	-0.3069	-0.0393	-0.4984	-0.5493	-0.4317	-0.0440	-0.0769
SsSQGVr	58	0.0497	0.3079	-0.0749	-0.0052	-0.1279	0.1405	0.0778
SsBRVp1r	59	-0.4107	-0.0717	-0.2100	-0.2146	-0.1957	-0.1259	-0.2958
SsBRVpr	60	-0.4420	-0.0973	-0.3646	-0.3624	-0.3479	-0.0053	-0.2265
SsBRVp	61	-0.3470	-0.0517	-0.1579	-0.1530	-0.1538	-0.1450	-0.3423
SsBRVr	62	-0.4112	-0.1166	-0.4733	-0.4748	-0.4484	0.1423	-0.0390

	15	16	17	18	19	20	21

Table 19b continued 5/8

SsWSr	22	1.0000						
SsTCHpr	23	0.0321	1.0000					
SsTCHp	24	0.0149	0.9422	1.0000				
SsTCHr	25	0.0474	0.9222	0.7393	1.0000			
SsCCSpr	26	0.2724	0.2632	0.3239	0.1549	1.0000		
SsCCSp	27	0.3114	0.3100	0.3655	0.2011	0.9781	1.0000	
SsCCSr	28	0.2160	0.1985	0.2621	0.0964	0.9735	0.9046	1.0000
SsTSHpr	29	0.1352	0.9205	0.8962	0.8155	0.6162	0.6418	0.5570
SsTSHp	30	0.1303	0.8658	0.9395	0.6556	0.6200	0.6574	0.5477
SsTSHr	31	0.1258	0.8798	0.7464	0.9066	0.5430	0.5523	0.5054
SsGYOTpr	32	0.1383	0.8432	0.8318	0.7345	0.7306	0.7437	0.6794
SsGYOTp	33	0.1639	0.7827	0.8608	0.5794	0.7463	0.7811	0.6705
SsGYOTr	34	0.0912	0.8131	0.6968	0.8298	0.6234	0.6091	0.6076
SsSEL7pr	35	-0.0183	0.6894	0.7066	0.5698	0.7117	0.6919	0.6974
SsSEL7p	36	0.0516	0.6219	0.7128	0.4270	0.7643	0.7563	0.7345
SsSEL7r	37	-0.1156	0.6742	0.5833	0.6815	0.5214	0.4880	0.5314
SsSEL8pr	38	0.0405	0.6299	0.6403	0.5269	0.6407	0.6169	0.6342
SsSEL8p	39	0.0436	0.6105	0.6757	0.4470	0.7094	0.7183	0.6637
SsSEL8r	40	0.0294	0.5296	0.4707	0.5209	0.4302	0.3713	0.4730
SsS10pr	41	-0.0238	0.6342	0.6283	0.5493	0.4271	0.4053	0.4294
SsS10p	42	0.0362	0.4202	0.4760	0.2950	0.5529	0.5554	0.5224
SsS10r	43	-0.0554	0.6196	0.5761	0.5802	0.2468	0.2152	0.2690
SsVISGpr	44	-0.0817	0.8005	0.7875	0.6999	0.6272	0.6160	0.6076
SsVISGp	45	-0.0088	0.7602	0.8103	0.5925	0.6813	0.6863	0.6413
SsVISGr	46	-0.1706	0.7692	0.6731	0.7689	0.4884	0.4568	0.4983
SsGVARpr	47	0.0790	0.2974	0.3053	0.2455	0.4961	0.4882	0.4796
SsGVARp	48	0.1093	-0.0087	0.0583	-0.0846	0.5062	0.5394	0.4442
SsGVARr	49	0.0416	0.3749	0.3497	0.3498	0.3572	0.3301	0.3687
SsSTVpr	50	-0.6481	0.1815	0.0371	0.3220	-0.4645	-0.4333	-0.4752
SsSTVp	51	-0.7170	-0.2079	-0.1931	-0.1947	-0.1988	-0.2311	-0.1532
SsSTVr	52	-0.5528	0.2522	0.0878	0.4055	-0.4706	-0.4281	-0.4934
SsSQRGpr	53	-0.0812	0.8227	0.8024	0.7273	0.6191	0.6118	0.5957
SsSQRGp	54	-0.0030	0.7889	0.8293	0.6282	0.6682	0.6767	0.6250
SsSQRGr	55	-0.1808	0.7875	0.6857	0.7913	0.4901	0.4618	0.4962
SsSQGVpr	56	0.1465	-0.2795	-0.2206	-0.3071	0.2143	0.2123	0.2056
SsSQGVp	57	0.0107	-0.5988	-0.5281	-0.5937	0.0400	0.0543	0.0222
SsSQGVr	58	0.1822	0.0732	0.0983	0.0336	0.2487	0.2356	0.2504
SsBRVp1r	59	0.1278	-0.3182	-0.3745	-0.2069	-0.4790	-0.4737	-0.4609
SsBRVpr	60	0.2806	-0.3920	-0.4301	-0.2913	-0.4058	-0.4101	-0.3808
SsBRVp	61	0.1491	-0.2730	-0.3562	-0.1374	-0.4443	-0.4939	-0.3677
SsBRVr	62	0.3357	-0.4012	-0.3809	-0.3664	-0.2461	-0.2019	-0.2824

	22	23	24	25	26	27	28

Table 19b continued 6/8

SsTSHpr	29	1.0000						
SsTSHp	30	0.9544	1.0000					
SsTSHr	31	0.9402	0.7955	1.0000				
SsGYOTpr	32	0.9823	0.9394	0.9213	1.0000			
SsGYOTp	33	0.9368	0.9810	0.7816	0.9537	1.0000		
SsGYOTr	34	0.9174	0.7762	0.9758	0.9340	0.7832	1.0000	
SsSEL7pr	35	0.8520	0.8231	0.7897	0.9014	0.8584	0.8433	1.0000
SsSEL7p	36	0.8157	0.8560	0.6784	0.8668	0.8977	0.7253	0.9540
SsSEL7r	37	0.7660	0.6428	0.8208	0.8049	0.6635	0.8753	0.9037
SsSEL8pr	38	0.7797	0.7476	0.7290	0.8385	0.7813	0.8050	0.9521
SsSEL8p	39	0.7903	0.8171	0.6713	0.8400	0.8600	0.7145	0.9387
SsSEL8r	40	0.6130	0.5152	0.6560	0.6713	0.5309	0.7569	0.7805
SsS10pr	41	0.7020	0.6633	0.6676	0.7285	0.6643	0.7166	0.7825
SsS10p	42	0.5782	0.6015	0.4870	0.6174	0.6518	0.5020	0.6239
SsS10r	43	0.6145	0.5459	0.6240	0.6268	0.5156	0.6830	0.6982
SsVISGpr	44	0.9079	0.8575	0.8637	0.9316	0.8663	0.8965	0.9722
SsVISGp	45	0.8944	0.9046	0.7826	0.9203	0.9223	0.8067	0.9617
SsVISGr	46	0.8293	0.7032	0.8803	0.8477	0.6992	0.9214	0.8831
SsGVARpr	47	0.4454	0.4244	0.4196	0.5263	0.4886	0.5073	0.6759
SsGVARp	48	0.1894	0.2412	0.1091	0.2717	0.3275	0.1725	0.3580
SsGVARr	49	0.4572	0.4038	0.4669	0.5157	0.4395	0.5437	0.6579
SsSTVpr	50	-0.0297	-0.1358	0.0946	-0.1021	-0.2000	0.0264	-0.0833
SsSTVp	51	-0.2415	-0.2417	-0.2145	-0.2329	-0.2298	-0.2082	-0.0600
SsSTVr	52	0.0246	-0.0935	0.1566	-0.0582	-0.1679	0.0791	-0.0781
SsSQRGpr	53	0.9211	0.8659	0.8811	0.9387	0.8697	0.9070	0.9578
SsSQRGp	54	0.9111	0.9142	0.8056	0.9310	0.9265	0.8238	0.9537
SsSQRGr	55	0.8434	0.7135	0.8972	0.8559	0.7053	0.9312	0.8682
SsSQGVpr	56	-0.1404	-0.0961	-0.1752	-0.0433	-0.0077	-0.0806	0.1529
SsSQGVp	57	-0.4788	-0.4058	-0.5085	-0.3998	-0.3244	-0.4411	-0.2671
SsSQGVr	58	0.1663	0.1706	0.1427	0.2346	0.2260	0.2163	0.3925
SsBRVp1r	59	-0.4526	-0.4844	-0.3658	-0.4655	-0.5018	-0.3660	-0.3414
SsBRVpr	60	-0.4811	-0.5007	-0.4049	-0.4901	-0.5116	-0.4052	-0.3878
SsBRVp	61	-0.3919	-0.4661	-0.2635	-0.4249	-0.5116	-0.2705	-0.2692
SsBRVr	62	-0.4328	-0.3898	-0.4336	-0.4141	-0.3613	-0.4268	-0.3986

	29	30	31	32	33	34	35

Table 19b continued 7/8

SsSEL7p	36	1.0000						
SsSEL7r	37	0.7339	1.0000					
SsSEL8pr	38	0.8771	0.9052	1.0000				
SsSEL8p	39	0.9537	0.7654	0.9281	1.0000			
SsSEL8r	40	0.6103	0.8973	0.8905	0.6571	1.0000		
SsS10pr	41	0.6660	0.8225	0.8475	0.7228	0.8326	1.0000	
SsS10p	42	0.6406	0.4992	0.5919	0.6609	0.3906	0.7648	1.0000
SsS10r	43	0.5249	0.8328	0.8099	0.5923	0.9159	0.9135	0.4365
SsVISGpr	44	0.9109	0.9025	0.9138	0.8930	0.7587	0.7933	0.6221
SsVISGp	45	0.9714	0.7921	0.8771	0.9344	0.6339	0.7130	0.6535
SsVISGr	46	0.7332	0.9542	0.8656	0.7428	0.8449	0.8161	0.5138
SsGVARpr	47	0.5718	0.7153	0.7703	0.6605	0.7526	0.7739	0.5334
SsGVARp	48	0.4271	0.2013	0.3459	0.4413	0.1616	0.2974	0.4638
SsGVARr	49	0.4920	0.7886	0.7822	0.5955	0.8559	0.8119	0.4254
SsSTVpr	50	-0.2528	0.1726	-0.0860	-0.1569	0.0173	0.1283	-0.0599
SsSTVp	51	-0.0910	-0.0060	-0.1407	-0.1134	-0.1469	0.0117	0.1293
SsSTVr	52	-0.2596	0.1942	-0.0623	-0.1475	0.0541	0.1405	-0.0969
SsSQRGpr	53	0.8999	0.8854	0.8860	0.8712	0.7294	0.7606	0.5980
SsSQRGp	54	0.9583	0.7928	0.8629	0.9152	0.6287	0.6991	0.6290
SsSQRGr	55	0.7302	0.9247	0.8298	0.7241	0.7954	0.7696	0.4959
SsSQGVpr	56	0.1057	0.1957	0.2946	0.2088	0.3413	0.3110	0.1840
SsSQGVp	57	-0.1835	-0.3433	-0.2268	-0.1576	-0.2662	-0.2342	-0.0298
SsSQGVr	58	0.2706	0.5033	0.5469	0.3854	0.6362	0.5735	0.2604
SsBRVp1r	59	-0.4503	-0.1310	-0.2179	-0.3897	0.0348	-0.1637	-0.4023
SsBRVpr	60	-0.4670	-0.2124	-0.2648	-0.4061	-0.0402	-0.2000	-0.3907
SsBRVp	61	-0.3732	-0.0772	-0.1682	-0.3311	0.0638	-0.1976	-0.4544
SsBRVr	62	-0.4279	-0.2911	-0.2878	-0.3650	-0.1370	-0.1436	-0.2093

		36	37	38	39	40	41	42
SsS10r	43	1.0000						
SsVISGpr	44	0.7142	1.0000					
SsVISGp	45	0.5823	0.9662	1.0000				
SsVISGr	46	0.8145	0.9388	0.8184	1.0000			
SsGVARpr	47	0.7446	0.5932	0.5351	0.6079	1.0000		
SsGVARp	48	0.1231	0.2800	0.3265	0.1884	0.6396	1.0000	
SsGVARr	49	0.8656	0.5951	0.4983	0.6613	0.9179	0.2822	1.0000
SsSTVpr	50	0.2171	0.0170	-0.1211	0.1999	0.0106	-0.2344	0.1351
SsSTVp	51	-0.0654	-0.0331	-0.0770	0.0293	-0.0953	-0.0200	-0.1079
SsSTVr	52	0.2576	0.0275	-0.1160	0.2163	0.0343	-0.2567	0.1766
SsSQRGpr	53	0.6837	0.9971	0.9641	0.9352	0.5434	0.2546	0.5461
SsSQRGp	54	0.5783	0.9678	0.9978	0.8249	0.5078	0.2912	0.4824
SsSQRGr	55	0.7607	0.9383	0.8220	0.9940	0.5385	0.1790	0.5794
SsSQGVpr	56	0.3192	-0.0031	-0.0126	0.0101	0.7808	0.6216	0.6539
SsSQGVp	57	-0.3072	-0.3751	-0.3318	-0.3928	0.2489	0.7516	-0.0767
SsSQGVr	58	0.6372	0.2689	0.2251	0.2988	0.8308	0.2586	0.9034
SsBRVp1r	59	0.0263	-0.3922	-0.4547	-0.2671	-0.0444	-0.2708	0.0850
SsBRVpr	60	-0.0315	-0.4677	-0.5079	-0.3643	-0.0550	-0.2374	0.0544
SsBRVp	61	0.0114	-0.3207	-0.3902	-0.1937	-0.1355	-0.3395	0.0069
SsBRVr	62	-0.0669	-0.4838	-0.4817	-0.4354	0.0457	-0.0608	0.0884

Table 19b continued 8/8

SsSTVpr	50	1.0000						
SsSTVp	51	0.5651	1.0000					
SsSTVr	52	0.9809	0.3937	1.0000				
SsSQRGpr	53	0.0188	-0.0419	0.0316	1.0000			
SsSQRGp	54	-0.1097	-0.0926	-0.0995	0.9698	1.0000		
SsSQRGr	55	0.1935	0.0319	0.2086	0.9422	0.8320	1.0000	
SsSQGVpr	56	-0.0863	-0.0969	-0.0740	-0.0643	-0.0524	-0.0744	1.0000
SsSQGVp	57	-0.1639	0.1079	-0.2089	-0.4037	-0.3722	-0.4070	0.6412
SsSQGVr	58	0.0070	-0.2040	0.0558	0.2103	0.2029	0.1996	0.8296
SsBRVp1r	59	0.0497	0.0931	0.0333	-0.4121	-0.4534	-0.3145	0.2289
SsBRVpr	60	-0.0899	-0.0016	-0.1000	-0.4916	-0.5116	-0.4153	0.2583
SsBRVp	61	-0.0453	0.0275	-0.0571	-0.3367	-0.3902	-0.2299	0.0591
SsBRVr	62	-0.1101	-0.0319	-0.1153	-0.5089	-0.4882	-0.4870	0.3908

		50	51	52	53	54	55	56
SsSQGVp	57	1.0000						
SsSQGVr	58	0.1034	1.0000					
SsBRVp1r	59	0.0533	0.2580	1.0000				
SsBRVpr	60	0.0985	0.2632	0.9451	1.0000			
SsBRVp	61	-0.0531	0.1154	0.8474	0.8631	1.0000		
SsBRVr	62	0.2281	0.3405	0.7692	0.8490	0.4659	1.0000	

	57	58	59	60	61	62

Correlation is significantly different from zero if > 0.404 (5%), 0.515 (1%)
Bs = bunch-planted seedlings, Ss = single-planted seedlings
p = plant crop, r = ratoon crop, pr = (p+r)/2 where p,r are plot values
SsBRVp1r = (p+r)/2 of each seedling was used to compute within plot brix varianc
V, VAR = within plot variance
SEL7 (8, 10) = Number of selections (seedlings) graded 7+ (8+, 10+)
ST = number of stalks, HARD = Hardness
G_B = Visual NMG of whole plot, omitting brix
GB = Visual NMG of whole plot, adjusted for brix
WS = Weight per stalk (kg)
G = net merit grade, VISG = Visual NMG, GYOT = NMGYOT vs standard variety Q8
SQRG, SQG = SQRT(Visual NMG of each seedling + 0.5)
BsSELST = Number of selectable stalks in each bunch-planted family

Table 20. Genotypic, phenotypic and environmental correlations (± standard error) between P and R crops of Bs and Ss seedlings, trial Ts.

Character & crop` X		Y	Type	Plots rP	Means (df = 22) rG	rP	rE
TCHp	vs	TCHr	Bs	.590	.811 ± .124	.706 ± .035	.406 ± .123
TCHp	vs	TCHr	Ss	.688	.779 ± .104	.739 ± .032	.550 ± .103
CCSp	vs	CCSr	Bs	.555	1.006 ± .181	.730 ± .033	.417 ± .122
CCSp	vs	CCSr	Ss	.842	.950 ± .037	.905 ± .013	.667 ± .082
TSHp	vs	TSHr	Bs	.576	.901 ± .105	.745 ± .031	.235 ± .139
TSHp	vs	TSHr	Ss	.732	.841 ± .079	.795 ± .026	.512 ± .109
NMGYOTp	vs	NMGYOTr	Bs	.563	.907 ± .107	.742 ± .031	.198 ± .142
NMGYOTp	vs	NMGYOTr	Ss	.715	.831 ± .082	.783 ± .027	.450 ± .118
STALKSp	vs	STALKSr	Bs	.656	.917 ± .082	.796 ± .026	.322 ± .132
STALKSp	vs	STALKSr	Ss	.825	.927 ± .040	.889 ± .015	.476 ± .114
KG/STALKp	vs	KG/STALKr	Bs	.315	.432 ± .272	.374 ± .060	.271 ± .137
KG/STALKp	vs	KG/STALKr	Ss	.483	.587 ± .178	.535 ± .050	.342 ± .130
NMGplot_BRp	vs	NMGplot_BRr	Bs	.382	.955 ± .263	.582 ± .046	.158 ± .144
NMGplot_BRp	vs	NMGplot_BRr	Ss	.662	.764 ± .115	.708 ± .035	.519 ± .108
NMGplot+BRp	vs	NMGplot+BRr	Bs	.406	1.051 ± .238	.640 ± .041	.080 ± .147
NMGplot+BRp	vs	NMGplot+BRr	Ss	.741	.850 ± .076	.799 ± .025	.475 ± .114
SEL8p	vs	SEL8r	Ss	.544	.752 ± .129	.657 ± .040	.222 ± .140

` The P or R crop is shown in the name of the character as p or r
For Plots, df = 70, correlations significantly>0 at .232 (P.05) or .302 (P.01)
For Means, df = 22, t = r/se is significant at 2.074 (P.05) or 2.819(P.01)
Genetic correlations could not be computed for characters with negative estimates of genetic variance, e.g. ST_VARp, HARDNESSp

Correlations were the same for BRIX and CCS. BRIX is omitted from the table

Table 21. Genotypic, phenotypic and environmental correlations (± standard error) for Bs and Ss seedlings.

Character & crop X		Y	Type	Plots rP	Means (df = 22) rG	rP	rE
TCHp	vs	CCSp	Bs	.097	.525 ± .266	.310 ± .063	-.176 ± .143
TCHp	vs	CCSp	Ss	.219	.466 ± .203	.365 ± .060	-.149 ± .144
TCHr	vs	CCSr	Bs	.390	.820 ± .241	.553 ± .048	.192 ± .142
TCHr	vs	CCSr	Ss	.050	.128 ± .232	.096 ± .069	-.097 ± .146
TCHp	vs	TSHp	Bs	.951	.988 ± .011	.973 ± .004	.912 ± .025
TCHp	vs	TSHp	Ss	.923	.948 ± .025	.940 ± .008	.888 ± .031
TCHr	vs	TSHr	Bs	.972	.996 ± .008	.983 ± .002	.953 ± .013
TCHr	vs	TSHr	Ss	.913	.901 ± .045	.907 ± .012	.938 ± .018
TCHp	vs	NMGYOTp	Bs	.890	.970 ± .025	.938 ± .008	.795 ± .054
TCHp	vs	NMGYOTp	Ss	.816	.884 ± .055	.861 ± .018	.704 ± .074
TCHr	vs	NMGYOTr	Bs	.944	.994 ± .016	.967 ± .004	.905 ± .027
TCHr	vs	NMGYOTr	Ss	.834	.826 ± .076	.830 ± .022	.858 ± .039
CCSp	vs	TSHp	Bs	.388	.653 ± .203	.516 ± .051	.220 ± .140
CCSp	vs	TSHp	Ss	.570	.720 ± .126	.657 ± .039	.307 ± .134
CCSr	vs	TSHr	Bs	.589	.864 ± .173	.690 ± .036	.473 ± .114
CCSr	vs	TSHr	Ss	.449	.544 ± .167	.505 ± .052	.247 ± .138
CCSp	vs	NMGYOTp	Bs	.533	.719 ± .168	.618 ± .043	.440 ± .119
CCSp	vs	NMGYOTp	Ss	.730	.822 ± .085	.781 ± .027	.564 ± .100
CCSr	vs	NMGYOTr	Bs	.663	.867 ± .150	.735 ± .032	.584 ± .097
CCSr	vs	NMGYOTr	Ss	.564	.637 ± .140	.608 ± .044	.398 ± .124
TSHp	vs	NMGYOTp	Bs	.986	.996 ± .003	.992 ± .001	.970 ± .009
TSHp	vs	NMGYOTp	Ss	.972	.986 ± .008	.981 ± .003	.940 ± .017
TSHr	vs	NMGYOTr	Bs	.994	.999 ± .002	.996 ± .001	.990 ± .003
TSHr	vs	NMGYOTr	Ss	.975	.977 ± .011	.976 ± .003	.973 ± .008
STALKSp	vs	KG/STALKp	Bs	-.008	.420 ± .283	.193 ± .067	-.364 ± .128
STALKSp	vs	KG/STALKp	Ss	-.184	-.234 ± .220	-.210 ± .066	-.075 ± .147
STALKSr	vs	KG/STALKr	Bs	-.165	-.208 ± .270	-.185 ± .067	-.130 ± .145
STALKSr	vs	KG/STALKr	Ss	-.513	-.778 ± .126	-.656 ± .040	-.051 ± .147
STALKSp	vs	NMGplot_BRp	Bs	.399	.756 ± .211	.549 ± .049	.181 ± .143
STALKSp	vs	NMGplot_BRp	Ss	.523	.586 ± .145	.566 ± .047	.349 ± .129

Table 21 continued 2/5

Character & crop X		Y	Type	Plots rP	Means (df = 22) rG		rP	rE
STALKSr	vs	NMGplot+BRr	Bs	.587	.962 ±	.153	.737 ± .032	.414 ± .122
STALKSr	vs	NMGplot+BRr	Ss	.290	.426 ±	.194	.389 ± .059	.156 ± .144
STALKSp	vs	TCHp	Bs	.493	.775 ±	.134	.648 ± .040	.135 ± .145
STALKSp	vs	TCHp	Ss	.593	.681 ±	.125	.646 ± .041	.367 ± .128
STALKSr	vs	TCHr	Bs	.600	.645 ±	.164	.622 ± .043	.568 ± .100
STALKSr	vs	TCHr	Ss	.634	.744 ±	.116	.693 ± .036	.426 ± .121
STALKSp	vs	CCSp	Bs	.169	.305 ±	.279	.236 ± .066	.094 ± .146
STALKSp	vs	CCSp	Ss	.087	.087 ±	.226	.085 ± .069	.085 ± .146
STALKSr	vs	CCSr	Bs	.182	.414 ±	.302	.276 ± .064	.059 ± .147
STALKSr	vs	CCSr	Ss	-.165	-.169 ±	.216	-.170 ± .067	-.178 ± .143
STALKSp	vs	TSHp	Bs	.484	.712 ±	.144	.612 ± .043	.160 ± .144
STALKSp	vs	TSHp	Ss	.518	.554 ±	.153	.539 ± .049	.403 ± .124
STALKSr	vs	TSHr	Bs	.554	.601 ±	.178	.577 ± .046	.518 ± .108
STALKSr	vs	TSHr	Ss	.506	.562 ±	.162	.535 ± .050	.364 ± .128
STALKSp	vs	NMGYOTp	Bs	.478	.688 ±	.148	.597 ± .045	.180 ± .143
STALKSp	vs	NMGYOTp	Ss	.460	.485 ±	.167	.475 ± .054	.381 ± .126
STALKSr	vs	NMGYOTr	Bs	.535	.590 ±	.183	.563 ± .047	.492 ± .112
STALKSr	vs	NMGYOTr	Ss	.464	.511 ±	.172	.489 ± .053	.337 ± .131
KG/STALKp	vs	TCHp	Bs	.862	.900 ±	.065	.871 ± .017	.865 ± .037
KG/STALKp	vs	TCHp	Ss	.662	.553 ±	.163	.601 ± .044	.847 ± .042
KG/STALKr	vs	TCHr	Bs	.678	.606 ±	.183	.645 ± .041	.729 ± .069
KG/STALKr	vs	TCHr	Ss	.259	-.151 ±	.265	.047 ± .069	.808 ± .051
KG/STALKp	vs	CCSp	Bs	.033	.583 ±	.326	.271 ± .064	-.198 ± .142
KG/STALKp	vs	CCSp	Ss	.199	.547 ±	.203	.399 ± .058	-.214 ± .141
KG/STALKr	vs	CCSr	Bs	.336	.665 ±	.279	.457 ± .055	.189 ± .142
KG/STALKr	vs	CCSr	Ss	.150	.258 ±	.227	.216 ± .066	-.004 ± .147
KG/STALKp	vs	TSHp	Bs	.818	.934 ±	.065	.864 ± .018	.780 ± .058
KG/STALKp	vs	TSHp	Ss	.646	.637 ±	.141	.643 ± .041	.717 ± .072
KG/STALKr	vs	TSHr	Bs	.689	.652 ±	.168	.671 ± .038	.716 ± .072
KG/STALKr	vs	TSHr	Ss	.287	-.024 ±	.254	.126 ± .068	.775 ± .059

Table 21 continued 3/5

Character & crop X	Y	Type	Plots rP	Means (df = 22) rG	rP	rE
NMGplot_BRp vs	NMGplot+BRp	Bs	.922	.985 ± .034	.945 ± .007	.910 ± .025
NMGplot_BRp vs	NMGplot+BRp	Ss	.924	.963 ± .021	.946 ± .007	.796 ± .054
NMGplot_BRr vs	NMGplot+BRr	Bs	.902	.977 ± .050	.924 ± .010	.870 ± .036
NMGplot_BRr vs	NMGplot+BRr	Ss	.880	.881 ± .059	.875 ± .016	.880 ± .033
NMGplot_BRp vs	KG/STALKp	Bs	.423	1.096 ± .219	.687 ± .037	.141 ± .145
NMGplot_BRp vs	KG/STALKp	Ss	.446	.542 ± .173	.505 ± .052	.323 ± .132
NMGplot_BRr vs	KG/STALKr	Bs	.178	.379 ± .322	.253 ± .065	.070 ± .147
NMGplot_BRr vs	KG/STALKr	Ss	.046	-.023 ± .267	.016 ± .069	.139 ± .145
NMGplot_BRp vs	TCHp	Bs	.571	1.136 ± .153	.815 ± .023	.240 ± .139
NMGplot_BRp vs	TCHp	Ss	.756	.876 ± .063	.835 ± .021	.546 ± .103
NMGplot_BRr vs	TCHr	Bs	.587	1.088 ± .150	.789 ± .026	.335 ± .131
NMGplot_BRr vs	TCHr	Ss	.608	.955 ± .079	.813 ± .024	.324 ± .132
NMGplot_BRp vs	CCSp	Bs	.119	.787 ± .345	.358 ± .061	-.186 ± .142
NMGplot_BRp vs	CCSp	Ss	.234	.408 ± .205	.327 ± .062	-.172 ± .143
NMGplot_BRr vs	CCSr	Bs	.185	.400 ± .383	.259 ± .065	.112 ± .146
NMGplot_BRr vs	CCSr	Ss	.004	.045 ± .245	.018 ± .069	-.123 ± .145
NMGplot_BRp vs	TSHp	Bs	.562	1.150 ± .160	.815 ± .023	.168 ± .143
NMGplot_BRp vs	TSHp	Ss	.727	.832 ± .077	.793 ± .026	.462 ± .116
NMGplot_BRr vs	TSHr	Bs	.547	.970 ± .160	.718 ± .034	.331 ± .131
NMGplot_BRr vs	TSHr	Ss	.551	.830 ± .113	.714 ± .034	.281 ± .136
NMGplot_BRp vs	NMGYOTp	Bs	.535	1.149 ± .167	.799 ± .025	.105 ± .146
NMGplot_BRp vs	NMGYOTp	Ss	.677	.782 ± .095	.741 ± .031	.381 ± .126
NMGplot_BRr vs	NMGYOTr	Bs	.533	.928 ± .168	.692 ± .036	.332 ± .131
NMGplot_BRr vs	NMGYOTr	Ss	.505	.773 ± .132	.658 ± .039	.212 ± .141
NMGplot+BRp vs	KG/STALKp	Bs	.406	1.017 ± .179	.677 ± .038	.059 ± .147
NMGplot+BRp vs	KG/STALKp	Ss	.443	.557 ± .170	.513 ± .051	.295 ± .135
NMGplot+BRr vs	KG/STALKr	Bs	.282	.541 ± .302	.377 ± .060	.161 ± .144
NMGplot+BRr vs	KG/STALKr	Ss	.109	.068 ± .249	.093 ± .069	.206 ± .141
NMGplot+BRp vs	TCHp	Bs	.547	.983 ± .108	.769 ± .028	.175 ± .143
NMGplot+BRp vs	TCHp	Ss	.705	.829 ± .081	.787 ± .026	.491 ± .112

Table 21 continued 4/5

Character & crop X		Y	Type	Plots rP	Means (df = 22) rG		rP	rE
NMGplot+BRp	vs	CCSp	Bs	.410	.892 ±	.204	.598 ± .045	.100 ± .146
NMGplot+BRp	vs	CCSp	Ss	.477	.647 ±	.150	.569 ± .047	.102 ± .146
NMGplot+BRr	vs	CCSr	Bs	.541	.622 ±	.281	.575 ± .047	.530 ± .106
NMGplot+BRr	vs	CCSr	Ss	.360	.509 ±	.180	.445 ± .056	.009 ± .147
NMGplot+BRp	vs	TSHp	Bs	.632	1.038 ±	.088	.833 ± .021	.224 ± .140
NMGplot+BRp	vs	TSHp	Ss	.786	.881 ±	.058	.847 ± .020	.554 ± .102
NMGplot+BRr	vs	TSHr	Bs	.687	1.079 ±	.128	.838 ± .021	.519 ± .108
NMGplot+BRr	vs	TSHr	Ss	.642	.914 ±	.069	.819 ± .023	.317 ± .133
NMGplot+BRp	vs	NMGYOTp	Bs	.650	1.060 ±	.085	.851 ± .019	.221 ± .140
NMGplot+BRp	vs	NMGYOTp	Ss	.787	.877 ±	.059	.843 ± .020	.539 ± .105
NMGplot+BRr	vs	NMGYOTr	Bs	.705	1.041 ±	.118	.834 ± .021	.566 ± .100
NMGplot+BRr	vs	NMGYOTr	Ss	.645	.915 ±	.069	.817 ± .023	.275 ± .136
STALKSp	vs	SELSTp	Bs	.098	.329 ±	.283	.202 ± .067	-.084 ± .146
STALKSp	vs	SEL8p	Ss	.423	.548 ±	.167	.494 ± .053	.122 ± .145
KG/STALKp	vs	SELSTp	Bs	.509	.775 ±	.190	.632 ± .042	.416 ± .122
KG/STALKp	vs	SEL8p	Ss	.337	.390 ±	.215	.369 ± .060	.283 ± .136
NMGplot_BRp	vs	SELSTp	Bs	.477	.732 ±	.226	.592 ± .045	.416 ± .122
NMGplot_BRp	vs	SEL8p	Ss	.625	.786 ±	.105	.720 ± .033	.342 ± .130
NMGplot+BRp	vs	SELSTp	Bs	.354	.652 ±	.228	.513 ± .051	.276 ± .136
NMGplot+BRp	vs	SEL8p	Ss	.790	.929 ±	.048	.874 ± .016	.574 ± .099
TCHp	vs	SELSTp	Bs	.484	.680 ±	.186	.581 ± .046	.396 ± .124
TCHp	vs	SEL8p	Ss	.589	.742 ±	.123	.676 ± .038	.342 ± .130
CCSp	vs	SELSTp	Bs	-.144	.394 ±	.365	.106 ± .069	-.308 ± .133
CCSp	vs	SEL8p	Ss	.611	.802 ±	.109	.718 ± .034	.345 ± .130
TSHp	vs	SELSTp	Bs	.394	.672 ±	.193	.541 ± .049	.264 ± .137
TSHp	vs	SEL8p	Ss	.748	.872 ±	.071	.817 ± .023	.523 ± .107
NMGYOTp	vs	SELSTp	Bs	.338	.665 ±	.201	.514 ± .051	.175 ± .143
NMGYOTp	vs	SEL8p	Ss	.794	.912 ±	.054	.860 ± .018	.582 ± .098

Table 21 continued 5/5

Character & crop X		Y	Type	Plots rP	Means (df = 22) rG		rP	rE
STALKSr	vs	HARDNESSr	Bs	.113	.810 ±	.359	.375 ± .060	-.232 ± .140
NMGplot_BRr	vs	HARDNESSr	Bs	.190	.387 ±	.427	.255 ± .065	.143 ± .144
NMGplot+BRr	vs	HARDNESSr	Bs	.058	.490 ±	.478	.187 ± .067	-.058 ± .147
KG/STALKr	vs	HARDNESSr	Bs	.047	-.176 ±	.412	-.034 ± .069	.128 ± .145
TCHr	vs	HARDNESSr	Bs	.121	.563 ±	.376	.274 ± .064	-.057 ± .147
CCSr	vs	HARDNESSr	Bs	.026	.480 ±	.499	.149 ± .068	-.113 ± .146
TSHr	vs	HARDNESSr	Bs	.115	.539 ±	.376	.261 ± .065	-.062 ± .147
NMGYOTr	vs	HARDNESSr	Bs	.111	.527 ±	.378	.253 ± .065	-.065 ± .147

For Plots, df = 70, correlations significantly>0 at .232 (P.05) or .302 (P.01)
For Means, df = 22, t = r/se is significant at 2.074 (P.05) or 2.819(P.01)

The P or R crop is shown in the name of the character as p or r
Genetic correlations could not be computed for characters with negative estimates of genetic variance, e.g. ST_VARp, HARDNESSp

Correlations were the same for BRIX and CCS. BRIX is omitted from the table

Table 22. Genotypic, phenotypic and environmental correlations (± standard error) for Ss seedlings. Similar correlations for are given in Table 21 comparing Bs vs Ss seedlings, and in Table 20 for P vs R crops.

Character & crop X		Y	Type	Plots rP	Means (df = 22) rG	rP	rE
Visual NMGr	vs	NMG_VARr	Ss	.548	.827 ± .159	.661 ± .039	.407 ± .123
STALKSr	vs	ST_VARr	Ss	.633	.989 ± .163	.751 ± .030	.491 ± .112
CCSp	vs	BRIX_VARp	Ss	-.511	-.552 ± .296	-.494 ± .053	-.592 ± .096
CCSr	vs	BRIX_VARr	Ss	-.289	-.308 ± .274	-.282 ± .064	-.345 ± .130
STALKSp	vs	SEL7p	Ss	.452	.503 ± .168	.481 ± .053	.311 ± .133
STALKSr	vs	SEL7r	Ss	.478	.563 ± .160	.527 ± .050	.245 ± .139
KG/STALKp	vs	SEL7p	Ss	.323	.501 ± .193	.428 ± .057	.077 ± .147
KG/STALKr	vs	SEL7r	Ss	.019	-.235 ± .240	-.115 ± .069	.481 ± .113
NMGplot_BRp	vs	SEL7p	Ss	.609	.772 ± .105	.711 ± .034	.265 ± .137
NMGplot_BRr	vs	SEL7r	Ss	.546	.787 ± .123	.681 ± .037	.256 ± .138
NMGplot+BRp	vs	SEL7p	Ss	.760	.900 ± .056	.850 ± .019	.483 ± .113
NMGplot+BRr	vs	SEL7r	Ss	.704	.934 ± .056	.851 .019	.351 ± .129
TCHp	vs	SEL7p	Ss	.606	.786 ± .106	.713 ± .034	.264 ± .137
TCHr	vs	SEL7r	Ss	.639	.714 ± .123	.682 ± .037	.523 ± .107
CCSp	vs	SEL7p	Ss	.683	.812 ± .095	.756 ± .030	.471 ± .115
CCSr	vs	SEL7r	Ss	.460	.582 ± .156	.532 ± .050	.114 ± .146
TSHp	vs	SEL7p	Ss	.782	.908 ± .054	.856 ± .019	.492 ± .112
TSHr	vs	SEL7r	Ss	.762	.865 ± .070	.821 ± .023	.554 ± .102
NMGYOTp	vs	SEL7p	Ss	.832	.944 ± .038	.898 ± .014	.568 ± .100
NMGYOTr	vs	SEL7r	Ss	.803	.928 ± .047	.875 ± .016	.529 ± .106
SEL8p	vs	SEL7p	Ss	.891	1.003 ± .020	.954 ± .006	.704 ± .074
SEL8r	vs	SEL7r	Ss	.829	.951 ± .039	.897 ± .014	.604 ± .094
STALKSp	vs	SEL8p	Ss	.423	.548 ± .167	.494 ± .053	.122 ± .145
STALKSr	vs	SEL8r	Ss	.304	.302 ± .213	.302 ± .063	.307 ± .134
KG/STALKp	vs	SEL8p	Ss	.337	.390 ± .215	.369 ± .060	.283 ± .136
KG/STALKr	vs	SEL8r	Ss	.074	-.024 ± .253	.029 ± .069	.246 ± .139
NMGplot_BRp	vs	SEL8p	Ss	.625	.786 ± .105	.720 ± .033	.342 ± .130
NMGplot_BRr	vs	SEL8r	Ss	.458	.692 ± .160	.581 ± .046	.181 ± .143
NMGplot+BRp	vs	SEL8p	Ss	.790	.929 ± .048	.874 ± .016	.574 ± .099
NMGplot+BRr	vs	SEL8r	Ss	.619	.838 ± .096	.748 ± .031	.304 ± .134

Table 22 continued 2/4

Character & crop X		Y	Type	Plots rP	Means (df = 22) rG	rP	rE
TSHp	vs	SEL8p	Ss	.748	.872 ± .071	.817 ± .023	.523 ± .107
TSHr	vs	SEL8r	Ss	.560	.732 ± .129	.656 ± .040	.277 ± .136
NMGYOTp	vs	SEL8p	Ss	.794	.912 ± .054	.860 ± .018	.582 ± .098
NMGYOTr	vs	SEL8r	Ss	.644	.845 ± .092	.757 ± .030	.293 ± .135
STALKSp	vs	SEL10p	Ss	.183	3.749 ± 74.488	.337 ± .062	-.013 ± .147
STALKSr	vs	SEL10r	Ss	.390	.477 ± .205	.426 ± .057	.282 ± .136
KG/STALKp	vs	SEL10p	Ss	.255	1.114 ± 21.590	.249 ± .065	.347 ± .130
KG/STALKr	vs	SEL10r	Ss	.010	-.156 ± .278	-.056 ± .069	.222 ± .140
NMGplot_BRp	vs	SEL10p	Ss	.334	3.708 ± 73.335	.422 ± .057	.300 ± .134
NMGplOT_BRr	vs	SEL10r	Ss	.428	.817 ± .162	.620 ± .043	.119 ± .145
NMGplot+BRp	vs	SEL10p	Ss	.461	4.148 ± 81.870	.529 ± .050	.522 ± .107
NMGplOT+BRr	vs	SEL10r	Ss	.522	.886 ± .118	.717 ± .034	.187 ± .142
TCHp	vs	SEL10p	Ss	.355	4.089 ± 80.813	.476 ± .054	.329 ± .132
TCHr	vs	SEL10r	Ss	.462	.697 ± .169	.580 ± .046	.242 ± .139
CCSp	vs	SEL10p	Ss	.358	5.926 ± 117.647	.556 ± .048	.135 ± .145
CCSr	vs	SEL10r	Ss	.214	.332 ± .233	.269 ± .064	.039 ± .147
TSHp	vs	SEL10p	Ss	.460	5.288 ± 104.680	.602 ± .044	.417 ± .122
TSHr	vs	SEL10r	Ss	.510	.740 ± .151	.624 ± .042	.267 ± .137
NMGYOTp	vs	SEL10p	Ss	.494	5.879 ± 116.491	.652 ± .040	.419 ± .122
NMGYOTr	vs	SEL10r	Ss	.552	.814 ± .128	.683 ± .037	.266 ± .137
STALKSp	vs	Visual NMGp	Ss	.589	.649 ± .128	.626 ± .042	.354 ± .129
STALKSr	vs	Visual NMGr	Ss	.617	.642 ± .133	.636 ± .041	.583 ± .097
KG/STALKp	vs	Visual NMGp	Ss	.323	.463 ± .193	.404 ± .058	.083 ± .146
KG/STALKr	vs	Visual NMGr	Ss	-.097	-.236 ± .233	-.171 ± .067	.160 ± .144
NMGplot_BRp	vs	Visual NMGp	Ss	.744	.838 ± .074	.802 ± .025	.457 ± .117
NMGplot_BRr	vs	Visual NMGr	Ss	.571	.754 ± .127	.670 ± .038	.335 ± .131
NMGplot+BRp	vs	Visual NMGp	Ss	.855	.923 ± .039	.898 ± .013	.657 ± .084
NMGplot+BRr	vs	Visual NMGr	Ss	.697	.882 ± .071	.811 ± .024	.374 ± .127
TCHp	vs	Visual NMGp	Ss	.701	.883 ± .069	.810 ± .024	.277 ± .136
TCHr	vs	Visual NMGr	Ss	.671	.838 ± .088	.769 ± .028	.402 ± .124
CCSp	vs	Visual NMGp	Ss	.616	.739 ± .116	.686 ± .037	.382 ± .126

Table 22 continued 3/4

Character & crop X		Y	Type	Plots rP	Means (df = 22) rG	rP	rE
STALKSp	vs	NMG_VARp	Ss	-.076	-.195 ± .316	-.124 ± .068	-.009 ± .147
STALKSr	vs	NMG_VARr	Ss	.231	.194 ± .282	.201 ± .067	.304 ± .134
KG/STALKp	vs	NMG_VARp	Ss	.219	.268 ± .337	.238 ± .066	.243 ± .139
KG/STALKr	vs	NMG_VARr	Ss	.038	.033 ± .319	.041 ± .069	.062 ± .147
NMGplot_BRp	vs	NMG_VARp	Ss	.104	.149 ± .327	.118 ± .069	.114 ± .146
NMGplot_BRr	vs	NMG_VARr	Ss	.295	.825 ± .234	.527 ± .050	.023 ± .147
NMGplot+BRp	vs	NMG_VARp	Ss	.245	.388 ± .300	.293 ± .064	.232 ± .139
NMGplot+BRr	vs	NMG_VARr	Ss	.405	1.002 ± .180	.683 ± .037	.048 ± .147
TCHp	vs	NMG_VARp	Ss	.074	.037 ± .342	.058 ± .069	.124 ± .145
TCHr	vs	NMG_VARr	Ss	.254	.492 ± .268	.350 ± .061	.091 ± .146
CCSp	vs	NMG_VARp	Ss	.383	.833 ± .263	.539 ± .049	.165 ± .143
CCSr	vs	NMG_VARr	Ss	.215	.561 ± .249	.368 ± .060	-.100 ± .146
TSHp	vs	NMG_VARp	Ss	.218	.308 ± .313	.241 ± .065	.212 ± .141
TSHr	vs	NMG_VARr	Ss	.320	.672 ± .232	.467 ± .054	.062 ± .147
NMGYOTp	vs	NMG_VARp	Ss	.286	.434 ± .294	.327 ± .062	.254 ± .138
NMGYOTr	vs	NMG_VARr	Ss	.367	.784 ± .208	.544 ± .049	.055 ± .147
STALKSp	vs	BRIX_VARp	Ss	-.131	-.229 ± .353	-.153 ± .068	-.134 ± .145
STALKSr	vs	BRIX_VARr	Ss	-.221	-.719 ± .244	-.448 ± .056	.150 ± .144
KG/STALKp	vs	BRIX_VARp	Ss	-.178	-.663 ± .387	-.342 ± .061	-.006 ± .147
KG/STALKr	vs	BRIX_VARr	Ss	.170	.578 ± .291	.336 ± .062	-.078 ± .147
NMGplot_BRp	vs	BRIX_VARp	Ss	-.151	-.377 ± .360	-.224 ± .066	-.071 ± .147
NMGplot_BRr	vs	BRIX_VARr	Ss	-.252	-.071 ± .335	-.153 ± .068	-.308 ± .133
NMGplot+BRp	vs	BRIX_VARp	Ss	-.239	-.483 ± .343	-.312 ± .063	-.189 ± .142
NMGplot+BRr	vs	BRIX_VARr	Ss	-.350	-.223 ± .295	-.265 ± .065	-.423 ± .121
TCHp	vs	BRIX_VARp	Ss	-.250	-.588 ± .351	-.356 ± .061	-.139 ± .145
TCHr	vs	BRIX_VARr	Ss	-.203	-.563 ± .274	-.367 ± .060	-.024 ± .147
TSHp	vs	BRIX_VARp	Ss	-.406	-.659 ± .306	-.466 ± .054	-.399 ± .124
TSHr	vs	BRIX_VARr	Ss	-.297	-.607 ± .248	-.434 ± .056	-.137 ± .145
NMGYOTp	vs	BRIX_VARp	Ss	-.481	-.673 ± .285	-.512 ± .051	-.551 ± .103
NMGYOTr	vs	BRIX_VARr	Ss	-.320	-.570 ± .247	-.427 ± .057	-.196 ± .142
SEL8p	vs	BRIX_VARp	Ss	-.275	-.489 ± .356	-.331 ± .062	-.218 ± .140

Table 22 continued 4/4

Character & crop X		Y	Type	Plots rP	Means (df = 22) rG	rP	rE
KG/STALKr	vs	ST_VARr	Ss	-.392	-.821 ± .240	-.553 ± .048	-.179 ± .143
NMGplot_BRr	vs	ST_VARr	Ss	.164	.851 ± .296	.466 ± .054	-.085 ± .146
NMGplot+BRr	vs	ST_VARr	Ss	.023	.331 ± .318	.188 ± .067	-.060 ± .147
TCHr	vs	ST_VARr	Ss	.251	.681 ± .286	.405 ± .058	-.029 ± .147
CCSr	vs	ST_VARr	Ss	-.341	-.719 ± .240	-.493 ± .053	-.132 ± .145
TSHr	vs	ST_VARr	Ss	.094	.284 ± .321	.157 ± .068	-.068 ± .147
NMGYOTr	vs	ST_VARr	Ss	.041	.160 ± .324	.079 ± .069	-.076 ± .147

For Plots, df = 70, correlations significantly>0 at .232 (P.05) or .302 (P.01)
For Means, df = 22, t = r/se is significant at 2.074 (P.05) or 2.819(P.01)

The P or R crop is shown in the name of the character as p or r
Genetic correlations could not be computed for characters with negative estimates of genetic variance, e.g. ST_VARp, HARDNESSp

Correlations were the same for BRIX and CCS. BRIX is omitted from the table

Table 23. Competition analysis (F and CV values from RCB) of number of stalks per row in Ss seedlings, trial Ts.

Crop	Row A`		Row B		Row C		A+B+C		A+C		A+C-2
	F	CV	F	CV	F	CV	F	CV	F	CV	F
P	4.7**	12	6.4**	10	5.0**	12	20.6**	5	10.4**	8	0.7
R	5.1**	12	8.9**	10	6.2**	12	23.6**	6	12.1**	8	1.3
PR	6.0**	11	9.4**	9	6.4**	11	29.1**	5	13.3**	7	1.0

There were 24 families x 3 replications. DF for families = 23, error = 46.

` Row A is the northern row of the 3-row plot (A+B+C).

Table 24. Genotypic, phenotypic and environmental correlations for number of stalks in rows A, B (middle) and C in P and R crops of Ss seedlings.

Character & crop X		Y	Plots rP	Means (df = 22) rG	rP	rE
Ap	vs	Bp	.582	1.100 ± .083	.864 ± .018	-.176 ± .14
Ap	vs	Cp	.513	1.056 ± .098	.804 ± .025	-.162 ± .14
Bp	vs	Cp	.571	1.049 ± .080	.836 ± .021	-.153 ± .14
Ar	vs	Br	.618	1.003 ± .070	.834 ± .021	-.094 ± .14
Ar	vs	Cr	.590	1.057 ± .079	.842 ± .020	-.147 ± .14
Br	vs	Cr	.580	.944 ± .078	.791 ± .026	-.174 ± .14

For Plots, df = 70, correlations significantly>0 at .232 (P.05) or .302 (P.01)
For Means, df = 22, t = r/se is significant at 2.074 (P.05) or 2.819(P.01)

The character consists of the row (A, B or C) followed by the crop (p, r)

Table 25. Trial Te, 72 treatments * 3 randomized complete blocks. Re, Be, and Se types of a cross are regarded as different treatments for this analysis.

Character	Crop	Mean	F
TCH	P	69.73	3.13**
CCS	P	14.888	3.85**
TSH	P	10.386	3.22**
NMGYOT	P	8.050	3.29**
FIBRE	P	13.455	2.98**
TCH	R	78.99	3.04**
CCS	R	14.092	2.37**
TSH	R	11.11	3.48**
NMGYOT	R	6.695	3.00**
FIBRE	R	14.209	3.69**

df = 71,142

e 26. Variance ratios (F) for modified split plot and split plot analysis of variance, using fixed and lom models. 24 crosses on main plots, with 2 years (P, R crops) as subplots, type Re.

acter	F ratios for fixed model							F ratios for random model			
	Modified split plot				Split plot		CombError	Modified split plot			Spli
	Cross	Year	Cross *Year	Rep *Year	Year	Year *Cross	Year	Cross	Year df	F	Year
	A	B	AB	RB	B	AB	B	A	B	B	B
'	2.8**	9.0	3.2**	.2	1.9	3.3**		1.3	(2,35)	.8	.6
:	2.1*	1.7	2.3**	.7	1.2	2.3**		1.0	(3,10)	.7	.5
.0	1.4	7.6	.9	.8	6.2*	.9	6.4*	1.3	(1, 9)	4.2	6.8
	2.9**	627.4**	1.8*	.1	50.6**	1.9*		2.0*	(1,47)	26.1**	26.7
	2.2*	24.2*	.7	3.8*	82.9**	.6	94.1**	2.0*	(1,3)	20.7*	131.2
	3.4**	15.4	1.6	.6	9.4**	1.6	7.8**	2.2**	(1,12)	4.6	5.8
'OT	3.3**	5.4	1.4	13.0**	46.9**	.9	48.4**	2.2**	(1,2)	5.0	51.8
E	4.7**	16.6	.9	2.4	38.2**	.8	40.6**	3.6**	(1,4)	12.6*	46.7
'TALK	3.0**	74.1*	1.1	1.0	93.4**	1.1	90.2**	2.2**	(1,6)	39.8**	84.2
KS	2.9**	197.7**	3.4**	2.5	462.0**	3.2**		1.8*	(1,4)	84.0**	145.6
:	1.8*	4569.2**	3.6**	.3	1447.2**	3.7**		1.0	(1,25)	362.5**	393.5
NESS	4.2**	.2	1.2	3.8*	0.8	1.0	.8	2.9**	(4,3)	.4	.8
al NMG	3.9**	80.2*	2.4**	.1	5.3*	2.5**		1.8*	(1,47)	2.5	2.1
'AR	.7	87.1*	1.1	.9	80.5**	1.1	77.5**	.8	(1,8)	39.9**	71.8
_VAR	.5	.0	1.4	.8	.0	1.4	.0	.6	(46,9)	.5	.0
_VAR	2.3**	1.1	2.0*	1.2	1.2	1.9*		1.2	(3,6)	.7	.6
VAR	.7	34.5*	2.3**	1.0	34.0**	2.3**		.6	(1,7)	10.8*	15.1
treat)	23	1	23	2	1	23	1	26-60			1
error)	46	2	46	46	48	48	71	48-69			23

F ratios for treatment A (cross) were the same for all fixed models
Quasi F ratios for treatment A (cross) were very similar for both random models.
Error = Combined error (interactions,AB + Error (c), RAB), used if AB interactions were not significant.
' = Number of selections graded 7.0 or higher (8+, 10+)
'AR = within-plot variance for number of stalks (brix, hardness, visual NMG)

e 27. Variance ratios (F) for modified split plot and split plot analysis of variance, using fixed and lom models. 24 crosses on main plots, with 2 years (P, R crops) as subplots, type Be.

acter	F ratios for fixed model							F ratios for random model			
	Modified split plot				Split plot		CombError	Modified split plot			Spli
	Cross	Year	Cross *Year	Rep *Year	Year	Year *Cross	Year	Cross	Year df	F	Year
	A	B	AB	RB	B	AB	B	A	B	B	B
	3.0**	2.6	2.3**	2.0	4.8*	2.2*		1.3	(1,4)	1.4	2.2
	2.6**	.1	2.1*	.4	.1	2.1*		1.3	(45,18)	.4	.0
.0	3.3**	1.5	1.4	.4	.7	1.4	.6	1.8*	(6,17)	.9	.5
	3.0**	40.9*	1.9*	1.2	48.2**	1.9*		1.9*	(1, 6)	16.2**	26.1
	4.8**	5.3	.8	11.7**	42.9**	.6	50.2**	3.6**	(1,2)	5.0	78.1
	3.6**	2.5	1.7	5.0*	10.7**	1.5	9.2**	2.2*	(1, 2)	2.0	7.2
OT	4.0**	2.9	1.9*	24.6**	35.6**	.9		2.3**	(1,2)	2.7	38.0
E	5.3**	18.1	.6	2.2	37.3**	.6	43.6**	4.6**	(1,4)	14.6*	67.1
TALK	2.4**	15406.4*	1.3	.0	148.0**	1.4	132.6**	1.9*	(1,46)	109.0**	109.0
KS	5.3**	238.0**	6.2**	3.8*	817.8**	5.6**		2.3**	(1,3)	91.0**	147.0
	3.2**	1972.1**	3.7**	.8	1557.3**	3.7**		1.3	(1, 9)	348.4**	422.8
NESS	5.1**	.8	1.9*	12.4**	6.7*	1.3		3.2**	(1,2)	.8	5.1
al NMG	4.7**	3.6	2.7**	1.4	4.8*	2.7**		1.6	(1, 6)	1.4	1.8
AR	1.4	88.0*	1.4	.8	74.6**	1.4	66.1**	1.1	(1,9)	33.7**	53.3
_VAR	1.1	.2	1.2	3.6*	.6	1.1	.6	1.0	(6,3)	.4	.6
_VAR	1.8*	.6	.8	2.4	1.3	.7	1.4	1.6	(3,4)	.8	1.8
VAR	1.7	18.3	2.0*	2.0	34.6**	1.9*		1.2	(1,4)	9.5*	18.5
treat)	23	1	23	2	1	23	1	25-55			1
error)	46	2	46	46	48	48	71	41-69			23

F ratios for treatment A (cross) were the same for all fixed models
Quasi F ratios for treatment A (cross) were very similar for both random models.
Error = Combined error (interactions,AB + Error (c), RAB), used if AB interactions were not significant.
= Number of selections graded 7.0 or higher (8+, 10+)
AR = within-plot variance for number of stalks (brix, hardness, visual NMG)

e 28. Variance ratios (F) for modified split plot and split plot analysis of variance, using fixed and om models. 24 crosses on main plots, with 2 years (P, R crops) as subplots, type Se.

acter	F ratios for fixed model							F ratios for random model			
	Modified split plot				Split plot		CombError	Modified split plot			Spli
	Cross	Year	Cross *Year	Rep *Year	Year	Year *Cross	Year	Cross	Year df	F	Year
	A	B	AB	RB	B	AB	B	A	B	B	B
	3.5**	1.6	1.Ø	3.9*	5.5*	.9	5.7*	2.3**	(1, 3)	1.5	6.1
	2.4**	.6	.9	3.9*	1.9	.8	2.Ø	1.8*	(2, 3)	.7	2.3
Ø	1.6	.1	2.5**	15.1**	.6	1.6		.8	(4, 2)	.1	.4
	3.3**	74.6*	2.3**	.9	65.5**	2.3**		1.9*	(1, 8)	2Ø.7**	28.1
	4.5**	6.4	1.1	17.9**	66.9**	.7	75.5**	3.5**	(1,2)	6.1	1Ø3.2
	3.7**	5.9	2.4**	4.2*	21.8**	2.1*		2.1*	(1, 3)	3.9	1Ø.2
OT	3.3**	4.Ø	1.7	2Ø.1**	44.5**	.9	45.3**	2.1*	(1,2)	3.7	47.2
E	4.1**	8.7	1.5	5.5**	39.9**	1.3	36.5**	2.7**	(1,2)	6.9	31.Ø
TALK	3.2**	1566.Ø**	2.4**	.Ø	242.8**	2.5**		1.9*	(1,4Ø)	9Ø.9**	96.1
KS	6.4**	453.6**	5.6**	1.6	712.Ø**	5.5**		2.Ø*	(1,5)	1Ø1.4**	13Ø.4
	3.5**	396.1**	2.5**	4.6*	16ØØ.2**	2.2*		1.9*	(1, 3)	257.4**	734.2
NESS	4.6**	.1	1.7	8.7**	Ø.3	1.3	.3	3.Ø**	(1Ø,2)	.1	.3
al NMG	6.3**	.8	2.Ø*	7.1**	4.7*	1.6		2.3**	(1, 2)	.8	2.9
AR	.8	61.5*	.6	.5	32.9**	.7	37.1**	1.Ø	(1,14)	28.5**	5Ø.2
_VAR	1.2	.1	.8	1.9	.2	.7	.3	1.2	(19,4)	.5	.3
_VAR	2.1*	.6	1.4	.9	.5	1.4	.5	1.4	(7,8)	.7	.4
VAR	.7	34.5*	2.3**	1.Ø	34.Ø**	2.3**		.6	(1,7)	1Ø.8*	15.1
treat)	23	1	23	2	1	23	1	26-63			1
error)	46	2	46	46	48	48	71	42-69			23

F ratios for treatment A (cross) were the same for all fixed models
Quasi F ratios for treatment A (cross) were very similar for both random models.
Error = Combined error (interactions,AB + Error (c), RAB), used if AB interactions were not significant.
= Number of selections graded 7.Ø or higher (8+, 1Ø+)
AR = within-plot variance for number of stalks (brix, hardness, visual NMG)

Table 29. Variance ratios for combined analysis of variance. 24 crosses * 3 types (Re,Be,Se) as factoria on main plots, with 2 years (crops) as subplots.

Character	F values for main plots			F values for subplots & interactions				Mean values		
Character	Cross	Type	Cross *Type	Year	Year *Cross	Year *Type	Year*Cross *type	Random	Bunch	Singl
TCH	7.3**	18.5**	.9	159.7**	4.0**	.6	1.0	70.153	78.905	74.03
CCS	9.5**	13.1**	.7	176.0**	.5	.4	.7	14.339	14.368	14.76
TSH	8.6**	20.6**	1.1	38.9**	3.2**	.4	.9	10.041	11.301	10.90
NMGYOT	8.3**	18.8**	1.2	123.6**	1.5	.1	.6	6.831	7.741	7.54
FIBRE	12.3**	1.0	.6	115.4**	1.2	.1	.7	13.797	13.772	13.92
SEL7	7.6**	11.8**	.9	12.1**	3.9**	.8	.8	3.750	4.639	4.53
SEL8	5.6**	7.4**	.9	2.4	3.4**	.4	.8	2.424	3.083	3.01
SEL10	4.5**	1.5	1.1	5.3*	2.3**	.8	.8	0.792	0.972	0.84
STALKS	11.5**	1.9	.8	1901.0**	11.7**	1.6	.9	186.06	183.28	189.20
BRIX	5.7**	12.8**	1.3	4602.2**	7.2**	1.3	1.2	21.849	21.685	22.20
HARDNESS	11.5**	3.3*	1.0	1.8	1.9*	3.2*	.8	5.067	5.163	5.20
Visual NMG	11.9**	20.6**	1.3	14.6**	5.2**	.0	.7	6.101	6.714	6.60
KG/STALK	7.4**	31.3**	.6	425.9**	2.8**	.5	.8	1.1597	1.3217	1.20
ST_VAR	1.5	1.7	.6	150.0**	1.3	.4	.7	52.9	49.1	58.2
BRIX_VAR	1.0	3.9*	.8	.0	1.0	.4	1.0	2.080	1.733	1.59
HARD_VAR	3.3**	3.0	1.5*	.1	1.5	1.5	1.3	0.939	1.054	0.92
NMG_VAR	1.8*	4.9**	.9	62.1**	1.7*	5.3**	1.7*	5.84	4.73	4.83
df (treat)	23	2	46	1	23	2	46			
df (error)	142	142	142	144	144	144	144			

ST_VAR = within-plot variance for number of stalks (brix, hardness, visual NMG)
SEL7 = Number of selections graded 7.0 or higher (SEL8 = 8.0+, SEL10 = 10.0+)

ble 30. Means and F values for trial Te, P crop, harvest and selection characters. Factorial AOV of 24 milies x 3 types (Re, Be, Se).

aracter	Mean of			Variance ratios for Factorial analysis					Variance ratios for RCB		
				Family	Fixed model		Random model				
	Re	Be	Se	x type	Family	Type	Family	Type	Re	Be	Se
H	66.024	73.821	69.360	1.4	5.7**	14.9**	5.2**	13.7**	2.4**	3.8**	2.2
S	14.754	14.786	15.125	1.0	9.1**	8.7**	9.1**	8.7**	3.0**	4.2**	4.2
H	9.749	10.927	10.483	1.4	5.9**	13.4**	5.3**	12.2**	2.9**	3.4**	2.3
GYOT	7.497	8.462	8.191	1.4	6.1**	12.9**	5.5**	11.6**	3.1**	3.5**	2.5
BRE	13.421	13.406	13.538	.6	8.0**	.5	8.9**	.6	3.4**	3.3**	2.9
L7	3.87	4.94	4.86	.9	4.9**	9.5**	5.0**	9.7**	2.0*	2.7**	1.9
RSEL7	2.046	2.278	2.277	.9	4.8**	8.5**	5.0**	8.8**	2.0*	2.4**	2.0
L8	2.54	3.11	3.19	1.0	3.8**	3.6*	3.8**	3.6*	1.9*	2.4**	1.3
RSEL8	1.680	1.806	1.861	1.0	3.5**	3.0	3.5**	3.0	1.9*	2.2*	1.3
L10	0.597	0.903	0.778	1.1	3.4**	1.9	3.3**	1.9	1.1	2.4**	1.6
RSEL10	0.984	1.087	1.061	1.2	3.0**	1.6	2.9**	1.5	1.2	2.4**	1.5
/100	1.982	2.216	2.082	1.3	5.7**	14.9**	5.2**	13.7**			
/STALK	1.270	1.446	1.319	0.6	6.8**	21.4**	7.6**	23.8**	2.2*	2.7**	3.3
ALKS	17.62	17.20	17.66	0.9	4.9**	1.0	4.9**	1.0	1.5	3.4**	2.4
IX	23.680	23.621	24.120	1.1	3.9**	7.7**	3.8**	7.4**	2.0*	2.0*	2.1
RDNESS	5.040	5.242	5.223	1.0	8.4**	5.3**	8.4**	5.3**	3.4**	3.6**	3.6
sual NMG	6.242	6.866	6.761	1.3	6.3**	12.1**	5.8**	11.2**	2.7**	3.1**	3.0
_VAR	35.8	32.3	38.6	.8	.8	1.4	.9	1.5	.8	.8	.8
T_VAR	3.410	3.322	3.559	.8	1.0	2.8	1.1	2.9	.9	.7	1.0
IX_VAR	2.07	1.65	1.66	1.0	1.1	1.6	1.1	1.6	1.0	1.0	1.0
RIX_VAR	1.013	0.866	0.837	1.0	1.4	3.3*	1.4	3.3*	1.1	1.1	1.2
RD_VAR	0.894	1.097	0.945	1.5	2.5**	3.2*	2.2**	2.9	2.1*	1.1	2.3
ARD_VAR	0.591	0.709	0.636	1.5	2.4**	4.6*	2.2**	4.1*	2.1*	1.0	2.3
G_VAR	4.60	3.71	4.44	1.3	0.9	2.5	0.8	2.3	.9	2.1*	.8
MG_VAR	1.621	1.414	1.574	1.3	.9	3.9*	.8	3.6*	.9	2.0*	.8
df				46,142	23,142	2,142				23,46	

_VAR = within-plot variance for number of stalks (brix, hardness, visual NMG)
g(V) = LOGe(V+1.0), e.g. LST_VAR
L7 = Number of selections graded 7.0 or higher (SEL8, SEL10 8.0+, 10.0+)

ble 31. Means and F values for trial Te, R crop, harvest and selection characters. Factorial AOV of 24 milies x 3 types (Re, Be, Se).

aracter	Mean of			Variance ratios for factorial analysis					Variance ratios for RCB		
				Family	Fixed model		Random model				
	Re	Be	Se	x type	Family	Type	Family	Type	Re	Be	Se
H	74.283	83.988	78.711	.7	6.8**	12.8**	7.3**	13.7**	2.8**	2.2*	3.5
S	13.924	13.950	14.403	.6	5.3**	9.5**	5.9**	10.5**	1.1	2.6**	3.2
H	10.334	11.676	11.323	.8	7.9**	15.0**	8.3**	15.8**	2.8**	2.6**	4.1
GYOT	6.165	7.021	6.898	.8	6.6**	11.9**	6.8**	12.4**	2.1*	3.0**	3.0
ND	19.081	18.400	18.390	.9	7.6**	1.5	7.7**	1.5	3.2**	.	.
BRE	14.173	14.138	14.318	.8	9.7**	.8	10.2**	.9	3.3**	4.4**	3.6
L7	3.62	4.33	4.21	.8	7.5**	4.4*	8.0**	4.6*	3.9**	2.7**	2.8
RSEL7	1.966	2.142	2.100	.7	7.9**	3.9*	8.5**	4.1*	3.6**	2.9**	3.1
L8	2.306	3.056	2.833	.7	5.6**	5.2**	6.1**	5.6*	2.5**	2.3**	2.1
RSEL8	1.591	1.818	1.747	.8	6.2**	5.5**	6.5**	5.8*	2.6**	2.6**	2.3
L10	0.986	1.042	0.903	.9	3.7**	0.4	3.8**	0.4	1.2	2.2*	2.3
RSEL10	1.150	1.167	1.105	.9	3.7**	0.5	3.8**	0.6	1.2	2.2*	2.7
/STALK	1.049	1.197	1.083	0.7	4.7**	22.8**	5.1**	24.5**	2.6**	1.4	2.7
ALKS	23.72	23.53	24.39	0.8	17.9**	2.7	18.9**	2.8	4.3**	7.1**	9.8
IX	20.017	19.749	20.293	1.4	9.8**	12.3**	8.9**	11.2**	2.6**	6.1**	5.0
RDNESS	5.094	5.083	5.191	1.0	9.1**	1.6	9.1**	1.6	2.8**	5.0**	3.9
sual NMG	5.961	6.563	6.440	.8	11.4**	10.2**	12.1**	10.9**	4.0**	4.7**	4.9
_VAR	70.1	65.9	77.9	.6	1.5	1.2	1.7*	1.4	.9	1.6	.7
T_VAR	4.127	4.034	4.186	.8	1.8*	1.3	1.9*	1.4	1.0	1.5	1.0
IX_VAR	2.086	1.817	1.525	.9	.8	3.6*	.8	3.7*	.5	1.3	.8
RIX_VAR	1.050	0.963	0.848	.9	.7	4.9**	.7	5.0**	.6	1.4	.7
RD_VAR	0.985	1.011	0.895	1.4	2.6**	1.3	2.4**	1.2	2.2*	1.8	1.4
ARD_VAR	0.456	0.547	0.643	1.4	2.6**	1.6	2.3**	1.4	2.3**	1.7	1.5
G_VAR	7.07	5.75	5.21	1.2	2.4**	7.0**	2.3**	6.7**	1.4	1.7	1.9
MG_VAR	1.969	1.796	1.720	1.1	2.1**	5.5**	2.1**	5.4**	1.4	1.2	1.7
df				46,142	23,142	2,142				23,46	

_VAR = within-plot variance for number of stalks (brix, hardness, visual NMG)
g(V) = LOGe(V+1.0), e.g. LST_VAR
L7 = Number of selections graded 7.0 or higher (SEL8, SEL10 8.0+, 10.0+)

Table 32. Means and F values for trial Te, PR crop, harvest and selection characters. Factorial AOV of 2
families x 3 types (Re, Be, Se).

Character	Mean of			Variance ratios for factorial analysis					Variance ratios for RC		
				Family	Fixed model		Random model				
	Re	Be	Se	x type	Family	Type	Family	Type	Re	Be	Se
TCH	70.15	78.91	74.04	.9	7.3**	18.5**	7.4**	18.8**	2.9**	3.0**	3.
CCS	14.339	14.368	14.764	.7	9.5**	13.1**	10.3**	14.1**	2.2*	4.8**	4.
TSH	10.041	11.301	10.903	1.1	8.6**	20.6**	8.4**	20.2**	3.4**	3.6**	3.
NMGYOT	6.831	7.741	7.544	1.2	8.3**	18.8**	8.0**	18.0**	3.3**	4.0**	3.
Fibre	13.797	13.772	13.928	.6	12.3**	1.0	13.5**	1.0	4.7**	5.3**	4.
SEL7	3.33	4.22	4.18	.7	5.5**	7.5**	5.9**	8.0**	1.6	2.5**	2.
SQRSEL7	1.900	2.126	2.107	.8	6.6**	7.8**	7.0**	8.2**	1.8*	3.0**	3.
SEL8	1.792	2.361	2.319	1.2	4.6**	4.8**	4.3**	4.6*	1.8*	2.6**	2.
SQRSEL8	1.440	1.618	1.610	1.2	4.8**	4.6*	4.6**	4.3*	1.7	2.7**	2.
SEL10	0.472	0.569	0.500	1.1	2.4**	0.4	2.3**	0.3	1.0	2.4**	1.
SQRSEL10	0.933	0.965	0.952	1.1	2.3**	0.2	2.2**	0.2	1.0	2.4**	1.
KG/STALK	1.160	1.322	1.201	0.6	7.4**	31.3**	12.6**	53.7**	3.0**	2.4**	3.
STALKS	20.689	20.38	21.02	0.8	11.7**	1.9	12.2**	2.0	2.9**	5.3**	6.
BRIX	21.855	21.686	22.205	1.3	5.7**	12.7**	5.4**	11.9**	1.9**	3.2**	3.
HARDNESS	5.068	5.164	5.206	1.0	11.5**	3.2*	11.5**	3.2*	4.2**	5.1**	4.
Visual NMG	6.110	6.719	6.602	1.3	11.9**	20.7**	11.3**	19.5**	4.0**	4.6**	6.
ST_VAR	42.325	39.5	47.1	.8	1.3	1.7	1.8	2.3	.9	1.3	.
LST_VAR	3.611	3.536	3.717	1.0	1.5	1.8	1.5	1.8	1.0	1.5	1.
BRIX_VAR	1.453	1.225	1.052	0.9	1.1	3.8*	1.1	4.0*	.6	1.2	1.
LBRIX_VAR	0.831	0.749	0.660	1.0	1.1	5.0**	1.1	5.0**	.7	1.3	1.
HARD_VAR	0.638	0.737	0.644	1.4	3.1**	2.1	2.8**	2.0	1.9*	2.3**	1.
LHARD_VAR	0.466	0.527	0.477	1.4	2.8**	2.3	2.6**	2.1	2.1*	1.8*	1.
NMG_VAR	4.579	3.35	3.47	1.1	1.6*	7.6**	1.6	7.3**	.9	1.7	1.
LNMG_VAR	1.643	1.356	1.399	1.2	1.7*	10.0**	1.6	9.5**	.9	1.5	1.
df				46,142	23,142	2,142				23,46	

ST_VAR = within-plot variance for number of stalks (brix, hardness, visual NMG)
Log(V) = LOGe(V+1.0), e.g. LST_VAR
SEL7 = Number of selections graded 7.0 or higher (SEL8 = 8.0+, SEL10 = 10.0+)

)le 33. Means and F values for trial Te harvest and selection characters, -P)/2. Factorial AOV of 24 families x 3 types (Re, Be, Se).

ıracter	Mean of			Variance ratios for factorial analysis					Variance ratios for RCB		
				Family	Fixed model		Random model				
	Re	Be	Se	x type	Family	Type	Family	Type	Re	Be	Se
I	4.13	5.Ø8	4.68	1.Ø	4.Ø**	Ø.6	4.Ø**	Ø.6	1.8*	1.9*	2.3*
;	-Ø.415	-Ø.418	-Ø.361	.9	Ø.7	Ø.5	Ø.7	Ø.5	.7	.8	1.1
I	Ø.292	Ø.374	Ø.42Ø	1.Ø	3.5**	Ø.5	3.5**	Ø.5	1.6	1.7	2.4*
;YOT	-Ø.666	-Ø.72Ø	-Ø.646	1.1	2.6**	Ø.2	2.5**	Ø.2	1.4	1.9*	1.7
)re	Ø.376	Ø.366	Ø.39Ø	.8	1.3	Ø.Ø	1.4	Ø.Ø	.9	.6	1.5
'STALK	-Ø.111	-Ø.125	-Ø.118	.8	2.8**	Ø.5	4.4**	Ø.8	1.1	1.3	2.4*
	df			46,142	23,142	2,142				23,46	

Table 34. Realized gains from modified mass selection in Bs and Ss seedlings, as measured by performance of Re, Be and Se types in the P crop of trial Te. Variance ratios for this crop are presented in Table 30.

Character	Mean values			Gain from modified mass selection		
	Re	Be	Se	Se-Re (% of Re)	Be-Re (% of Re)	Se-Be (% of Re)
TCH	66.024	73.821	69.360	3.336 (5.1)*	7.797 (11.8)**	-4.461 (-6.8)**
CCS	14.754	14.786	15.125	0.371 (2.5)**	0.032 (0.2)	0.339 (2.3)**
TSH	9.749	10.927	10.483	0.734 (7.5)**	1.178 (12.1)**	-0.444 (-4.6)
NMGYOT	7.497	8.462	8.191	0.694 (9.3)**	0.965 (12.9)**	-0.271 (-3.6)
FIBRE	13.421	13.406	13.538	0.117 (0.9)	-0.015 (-0.1)	0.132 (1.0)
SEL7	3.870	4.940	4.860	0.990 (25.6)**	1.070 (27.6)**	-0.080 (-2.1)
SQRSEL7	2.046	2.278	2.277	0.231 (11.3)**	0.232 (11.3)**	-0.001 (-0.0)
SEL8	2.540	3.110	3.190	0.650 (25.6)*	0.570 (22.4)*	0.080 (3.1)
SQRSEL8	1.680	1.806	1.861	0.181 (10.8)	0.126 (7.5)	0.055 (3.3)
SEL10	0.597	0.903	0.778	0.181 (30.3)	0.306 (51.3)	-0.125 (-20.9)
SQRSEL10	0.984	1.087	1.061	0.077 (7.8)	0.103 (10.5)	-0.026 (-2.6)
KG/100	1.982	2.216	2.082	0.100 (5.0)*	0.234 (11.8)**	-0.134 (-6.8)**
KG/STALK	1.270	1.446	1.319	0.049 (3.9)	0.176 (13.9)**	-0.127 (-10.0)**
STALKS	17.620	17.200	17.660	0.040 (0.2)	-0.420 (-2.4)	0.460 (2.6)
BRIX	23.680	23.621	24.120	0.440 (1.9)**	-0.059 (-0.2)	0.499 (2.1)**
HARDNESS	5.040	5.242	5.223	0.183 (3.6)**	0.202 (4.0)**	-0.019 (-0.4)
Visual NMG	6.242	6.866	6.761	0.519 (8.3)**	0.624 (10.0)**	-0.105 (-1.7)
ST_VAR	35.800	32.300	38.600	2.800 (7.8)	-3.500 (-9.8)	6.300 (17.6)
LST_VAR	3.410	3.322	3.559	0.149 (4.4)	-0.088 (-2.6)	0.237 (7.0)
BRIX_VAR	2.070	1.650	1.660	-0.410 (-19.8)	-0.420 (-20.3)	0.010 (0.5)
LBRIX_VAR	1.013	0.866	0.837	-0.176 (-17.4)*	-0.147 (-14.5)*	-0.029 (-2.9)
HARD_VAR	0.894	1.097	0.945	0.051 (5.7)	0.203 (22.7)*	-0.152 (-17.0)
LHARD_VAR	0.591	0.709	0.636	0.045 (7.6)	0.118 (20.0)**	-0.073 (-12.4)
NMG_VAR	4.600	3.710	4.440	-0.160 (-3.5)	-0.890 (-19.3)	0.730 (15.9)
LNMG_VAR	1.621	1.414	1.574	-0.047 (-2.9)	-0.207 (-12.8)**	0.160 (9.9)*

* difference significant ($P \leq .05$)
** difference highly significant ($P \leq .01$)
ST_VAR = within-plot variance for number of stalks (brix, hardness, visual NMG)
Log(V) = LOGe(V+1.0), e.g. LST_VAR
SEL7 = Number of selections graded 7.0 or higher (SEL8, SEL10 8.0+, 10.0+)

Table 35. Realized gains from modified mass selection in Bs and Ss seedlings, as measured by performance of Re, Be and Se types in the R crop of trial Te. Variance ratios for this crop are presented in Table 31.

Character	Mean values			Gain from modified mass selection		
	Re	Be	Se	Se-Re (% of Re)	Be-Re (% of Re)	Se-Be (% of Re)
TCH	74.283	83.988	78.711	4.428 (6.0)*	9.705 (13.1)**	-5.277 (-7.1)**
CCS	13.924	13.950	14.403	0.479 (3.4)**	0.026 (0.2)	0.453 (3.3)**
TSH	10.334	11.676	11.323	0.989 (9.6)**	1.342 (13.0)**	-0.353 (-3.4)
NMGYOT	6.165	7.021	6.898	0.733 (11.9)**	0.856 (13.9)**	-0.123 (-2.0)
COND	19.081	18.400	18.390	-0.691 (-3.6)	-0.681 (-3.6)	-0.010 (-0.1)
FIBRE	14.173	14.138	14.318	0.145 (1.0)	-0.035 (-0.2)	0.180 (1.3)
SEL7	3.620	4.330	4.210	0.590 (16.3)*	0.710 (19.6)**	-0.120 (-3.3)
SQRSEL7	1.966	2.142	2.100	0.134 (6.8)*	0.176 (9.0)**	-0.042 (-2.1)
SEL8	2.306	3.056	2.833	0.527 (22.9)*	0.750 (32.5)**	-0.223 (-9.7)
SQRSEL8	1.591	1.818	1.747	0.156 (9.8)*	0.227 (14.3)**	-0.071 (-4.5)
SEL10	0.986	1.042	0.903	-0.083 (-8.4)	0.056 (5.7)	-0.139 (-14.1)
SQRSEL10	1.150	1.167	1.105	-0.045 (-3.9)	0.017 (1.5)	-0.062 (-5.4)
KG/STALK	1.049	1.197	1.083	0.034 (3.2)	0.148 (14.1)**	-0.114 (-10.9)**
STALKS	23.720	23.530	24.390	0.670 (2.8)	-0.190 (-0.8)	0.860 (3.6)
BRIX	20.017	19.749	20.293	0.276 (1.4)*	-0.268 (-1.3)*	0.544 (2.7)**
HARDNESS	5.094	5.083	5.191	0.097 (1.9)	-0.011 (-0.2)	0.108 (2.1)
Visual NMG	5.961	6.563	6.440	0.479 (8.0)**	0.602 (10.1)**	-0.123 (-2.1)
ST_VAR	70.100	65.900	77.900	7.800 (11.1)	-4.200 (-6.0)	12.000 (17.1)
LST_VAR	4.127	4.034	4.186	0.059 (1.4)	-0.093 (-2.3)	0.152 (3.7)
BRIX_VAR	2.086	1.817	1.525	-0.561 (-26.9)**	-0.269 (-12.9)	-0.292 (-14.0)
LBRIX_VAR	1.050	0.963	0.848	-0.202 (-19.2)**	-0.087 (-8.3)	-0.115 (-11.0)
HARD_VAR	0.985	1.011	0.895	-0.090 (-9.1)	0.026 (2.6)	-0.116 (-11.8)
LHARD_VAR	0.456	0.547	0.643	0.187 (41.0)	0.091 (20.0)	0.096 (21.1)
NMG_VAR	7.070	5.750	5.210	-1.860 (-26.3)**	-1.320 (-18.7)*	-0.540 (-7.6)
LNMG_VAR	1.969	1.796	1.720	-0.249 (-12.6)**	-0.173 (-8.8)*	-0.076 (-3.9)

* difference significant ($P \leq .05$)
** difference highly significant ($P \leq .01$)
ST_VAR = within-plot variance for number of stalks (brix, hardness, visual NMG)
Log(V) = LOGe(V+1.0), e.g. LST_VAR
SEL7 = Number of selections graded 7.0 or higher (SEL8, SEL10 8.0+, 10.0+)

Table 36. Realized gains from modified mass selection in Bs and Ss seedlings, as measured by performance of Re, Be and Se types in the PR crop of trial Te. Variance ratios for this analysis are presented in Table 32.

Character	Mean values			Gain from modified mass selection		
	Re	Be	Se	Se-Re (% of Re)	Be-Re (% of Re)	Se-Be (% of Re)
TCH	70.150	78.910	74.040	3.890 (5.5)**	8.760 (12.5)**	-4.870 (-6.9)**
CCS	14.339	14.368	14.764	0.425 (3.0)**	0.029 (0.2)	0.396 (2.8)**
TSH	10.041	11.301	10.903	0.862 (8.6)**	1.260 (12.5)**	-0.398 (-4.0)*
NMGYOT	6.831	7.741	7.544	0.713 (10.4)**	0.910 (13.3)**	-0.197 (-2.9)
FIBRE	13.797	13.772	13.928	0.131 (0.9)	-0.025 (-0.2)	0.156 (1.1)
SEL7	3.330	4.220	4.180	0.850 (25.5)**	0.890 (26.7)**	-0.040 (-1.2)
SQRSEL7	1.900	2.126	2.107	0.207 (10.9)**	0.226 (11.9)**	-0.019 (-1.0)
SEL8	1.792	2.361	2.319	0.527 (29.4)*	0.569 (31.8)**	-0.042 (-2.3)
SQRSEL8	1.440	1.618	1.610	0.170 (11.8)*	0.178 (12.4)**	-0.008 (-0.6)
SEL10	0.472	0.569	0.500	0.028 (5.9)	0.097 (20.6)	-0.069 (-14.6)
SQRSEL10	0.933	0.965	0.952	0.019 (2.0)	0.032 (3.4)	-0.013 (-1.4)
KG/STALK	1.160	1.322	1.201	0.041 (3.5)	0.162 (14.0)**	-0.121 (-10.4)**
STALKS	20.690	20.380	21.020	0.330 (1.6)	-0.310 (-1.5)	0.640 (3.1)
BRIX	21.855	21.686	22.205	0.350 (1.6)**	-0.169 (-0.8)	0.519 (2.4)**
HARDNESS	5.068	5.164	5.206	0.138 (2.7)*	0.096 (1.9)	0.042 (0.8)
Visual NMG	6.110	6.719	6.602	0.492 (8.1)**	0.609 (10.0)**	-0.117 (-1.9)
ST_VAR	42.300	39.500	47.100	4.800 (11.3)	-2.800 (-6.6)	7.600 (18.0)
LST_VAR	3.611	3.536	3.717	0.106 (2.9)	-0.075 (-2.1)	0.181 (5.0)
BRIX_VAR	1.453	1.225	1.052	-0.401 (-27.6)**	-0.228 (-15.7)	-0.173 (-11.9)
LBRIX_VAR	0.831	0.749	0.660	-0.171 (-20.6)**	-0.082 (-9.9)	-0.089 (-10.7)
HARD_VAR	0.638	0.737	0.644	0.006 (0.9)	0.099 (15.5)	-0.093 (-14.6)
LHARD_VAR	0.466	0.527	0.477	0.011 (2.4)	0.061 (13.1)	-0.050 (-10.7)
NMG_VAR	4.580	3.350	3.470	-1.110 (-24.2)**	-1.230 (-26.9)**	0.120 (2.6)
LNMG_VAR	1.643	1.356	1.399	-0.244 (-14.9)**	-0.287 (-17.5)**	0.043 (2.6)

* difference significant ($P \leq .05$)
** difference highly significant ($P \leq .01$)
ST_VAR = within-plot variance for number of stalks (brix, hardness, visual NMG)
Log(V) = LOGe(V+1.0), e.g. LST_VAR
SEL7 = Number of selections graded 7.0 or higher (SEL8, SEL10 8.0+, 10.0+)
SQRSEL = SQRT(X+0.5)

Table 37. Realized gains from modified mass selection in Bs and Ss seedlings, estimated in P and R crops of trial Te. Gains are estimated by the difference (Se type - Be type), expressed as per cent of the Re type.

Character	P crop	R crop	PR` crop
TCH	-6.8**	-7.1**	-6.9**
CCS	2.3**	3.3**	2.8**
TSH	-4.6	-3.4	-4.0*
NMGYOT	-3.6	-2.0	-2.9
SEL8	3.1	-3.3	-2.3
STALKS	2.6	3.6	3.1
KG/STALK	-10.0**	-10.9**	-10.4**

* difference significant ($P \leq 0.05$)
** difference highly significant ($P \leq 0.01$)
SEL8 = Number of selections graded 8.0 or higher

` For harvest characters, including KG/STALK, P and R are plot values for the plant and ratoon crops. For all other (selection) characters, the mean (P+R)/2 was obtained for each clone, which occupied a 4-sett subplot.

Table 38. Realized gains from modified mass selection in Bs and Ss seedlings, as measured by performance of Re, Be and Se types in trial Te. Variance ratios for this crop are presented in Table 29.

Character	Mean values`			Gain from modified mass selection		
	Re	Be	Se	Se-Re (% of Re)	Be-Re (% of Re)	Se-Be (% of Re)
TCH	70.153	78.905	74.035	3.882 (5.5)**	8.752 (12.5)**	-4.870 (-6.9)**
CCS	14.339	14.368	14.764	0.425 (3.0)**	0.029 (0.2)	0.396 (2.8)**
TSH	10.041	11.301	10.903	0.862 (8.6)**	1.260 (12.5)**	-0.398 (-4.0)*
NMGYOT	6.831	7.741	7.544	0.713 (10.4)**	0.910 (13.3)**	-0.197 (-2.9)
FIBRE	13.797	13.772	13.928	0.131 (0.9)	-0.025 (-0.2)	0.156 (1.1)
SEL7	3.750	4.639	4.535	0.785 (20.9)**	0.889 (23.7)**	-0.104 (-2.8)
SEL8	2.424	3.083	3.014	0.590 (24.3)**	0.659 (27.2)**	-0.069 (-2.8)
SEL10	0.792	0.972	0.840	0.048 (6.1)	0.180 (22.7)	-0.132 (-16.7)
STALKS	186.060	183.280	189.200	3.140 (1.7)	-2.780 (-1.5)	5.920 (3.2)
BRIX	21.849	21.685	22.207	0.358 (1.6)**	-0.164 (-0.8)	0.522 (2.4)**
HARDNESS	5.067	5.163	5.207	0.140 (2.8)*	0.096 (1.9)	0.044 (0.9)
Visual NMG	6.101	6.714	6.600	0.499 (8.2)**	0.613 (10.0)**	-0.114 (-1.9)
KG/STALK	1.160	1.322	1.201	0.041 (3.6)	0.162 (14.0)**	-0.121 (-10.4)**
ST_VAR	52.900	49.100	58.200	5.300 (10.0)	-3.800 (-7.2)	9.100 (17.2)
BRIX_VAR	2.080	1.733	1.591	-0.489 (-23.5)**	-0.347 (-16.7)	-0.142 (-6.8)
HARD_VAR	0.939	1.054	0.920	-0.019 (-2.0)	0.115 (12.2)	-0.134 (-14.3)
NMG_VAR	5.840	4.730	4.830	-1.010 (-17.3)*	-1.110 (-19.0)**	0.100 (1.7)

* difference significant ($P \leq .05$)
* difference highly significant ($P \leq .01$)
ST_VAR = within-plot variance for number of stalks (brix, hardness, visual NMG)
Log(V) = LOGe(V+1.0), e.g. LST_VAR
SEL7 = Number of selections graded 7.0 or higher (SEL8, SEL10 8.0+, 10.0+)

` Mean values are (P+R)/2 where P and R are plot values for the plant and ratoon crops.

Table 39. Realized gains from modified mass selection in Bs and Ss seedlings, as measured by weight (TCH) of Re, Be and Se types in trial Te.

Crop	Rows`	Mean values			Gain from modified mass selection					
		Re	Be	Se	Ss		Bs		Ss - Bs	
					Se-Re	(% of Re)	Be-Re	(% of Re)	Se-Be	(% of Re)
P	ABC	66.Ø24	73.821	69.36Ø	3.336	(5.1)*	7.797	(11.8)**	-4.461	(-6.8)**
	B	67.73	74.68	68.22	Ø.49	(Ø.7)	6.95	(1Ø.3)**	-6.46	(-9.5)**
R	ABC	74.283	83.988	78.711	4.428	(6.Ø)*	9.7Ø5	(13.1)**	-5.277	(-7.1)**
	B	77.46	85.56	78.96	1.5Ø	(1.9)	8.1	(1Ø.5)**	-6.6	(-8.5)*
PR	ABC	7Ø.15Ø	78.91Ø	74.Ø4Ø	3.89Ø	(5.5)**	8.76Ø	(12.5)**	-4.87Ø	(-6.9)**
	B	72.6Ø	8Ø.12	73.59	Ø.99	(1.4)	7.52	(1Ø.4)**	-6.53	(-9.Ø)**

` The three rows of a plot are designated A, B (middle row), and C

Data for 3-row plots is reproduced from Tables 34, 35 and 36 for the P, R, and PR crops respectively. Data for the middle row is from the competition analysis, F values for which are presented in Table 64.

e 40. Variance ratios and means for split plot analysis of variance, trial Te, P crop. 24 crosses on main s, with 3 selection levels as subplots. Analyses for two types (Be, Se). Variance ratios are also given AOV of each level within each type.

acter	Type	Variance ratios for Split Plot				Mean values			Variance ratios for R		
		Cross	Level	Cross* Level	Level (Ecomb)	Level1	Level2	Level3	Level1	Level2	Level
	Be	2.7**	.1	1.1	.1	1.625	1.639	1.681	1.9*	1.6	1.7
EL7	Be	2.6**	.1	1.2	.1	1.418	1.398	1.418	1.9*	1.5	1.8
	Be	2.4**	.6	.9	.6	1.069	.958	1.083	2.2*	1.0	1.8
EL8	Be	2.4**	.4	.9	.4	1.195	1.149	1.189	2.1*	1.0	1.8
0	Be	2.4**	1.8	1.4	1.5	0.389	0.264	0.250	4.3**	1.2	1.0
EL10	Be	2.4**	1.8	1.4	1.6	0.892	0.829	0.828	3.9**	1.2	1.0
	Be	3.8**	2.1	1.1	2.0	76.19	74.04	71.24	1.8*	2.1*	2.1
TALK	Be	2.6**	5.1**	1.5	4.4*	1.527	1.418	1.429	2.1*	1.7	2.3
KS	Be	3.4**	1.4	1.0	1.4	16.90	17.73	16.96	1.5	2.2*	1.9
	Be	2.0*	1.2	.8	1.3	23.505	23.712	23.646	1.4	1.5	1.8
NESS	Be	3.6**	1.7	.6	2.0	5.190	5.381	5.157	1.0	1.7	2.2
al NMG	Be	3.1**	.6	1.0	.6	6.963	6.900	6.734	2.1*	1.6	2.0
_VAR	Be	1.1	.9	1.1	.9	1.74	1.23	1.68	1.0	1.2	1.3
X_VAR	Be	1.1	.6	1.3	.5	.701	.658	.750	1.2	1.3	1.3
_VAR	Be	1.5	.1	1.0	.1	.951	.911	.905			
D_VAR	Be	1.3	.1	1.0	.1	.575	.556	.539			
VAR	Be	.	.	.	.	4.20	2.70	2.95	1.2	.8	1.4
_VAR	Be	.	.	.	.	1.308	1.069	1.107	1.8*	.9	1.6
	Se	1.9*	4.0*	1.0	4.0*	1.736	1.736	1.389	1.1	1.1	1.8
EL7	Se	2.1*	4.8*	1.0	4.8**	1.456	1.464	1.315	1.2	1.0	1.9
	Se	1.3	2.3	0.9	2.4	1.236	1.014	.944	.9	1.0	1.3
EL8	Se	1.4	2.1	.9	2.2	1.262	1.176	1.145	.9	.9	1.6
0	Se	1.6	1.3	1.0	1.3	0.333	0.250	0.194	1.5	.7	1.1
EL10	Se	1.5	1.1	1.0	1.1	0.868	0.828	0.808	1.5	.7	1.1
	Se	2.2*	1.4	1.0	1.4	70.69	70.39	67.00	.9	1.5	1.8
TALK	Se	3.2**	.6	.8	.6	1.360	1.340	1.313	2.3**	1.7	.9
KS	Se	2.4**	1.1	1.3	1.0	17.65	18.11	17.22	2.0*	1.2	1.8
	Se	2.1*	5.3**	1.1	5.2**	24.289	24.198	23.874	1.2	2.2*	1.6
NESS	Se	3.6**	.7	1.5	0.6	5.282	5.208	5.178	2.9**	2.1*	2.2
al NMG	Se	3.0**	5.4**	1.1	5.2**	7.130	6.731	6.417	1.4	1.2	2.6
_VAR	Se	.9	1.4	.9	1.5	1.15	1.47	1.91	.8	1.2	.8
X_VAR	Se	1.0	.9	1.1	.9	.619	.654	.737	.8	1.3	1.0
_VAR	Se	2.0*	2.0	.7	2.2	1.088	0.729	0.904			
D_VAR	Se	1.6	1.9	.8	2.1	0.618	0.476	0.536			
VAR	Se	.	.	.	.	4.09	4.67	3.35	.8	1.1	.9
_VAR	Se	.	.	.	.	1.281	1.439	1.228	.8	.7	.9
treat)		23	2	46	2						

le 41. Variance ratios and means for split plot analysis of variance, trial Te, R crop. 24 crosses on mair
:s, with 3 selection levels as subplots. Analyses for 2 types (Be, Se). Variance ratios are also given for
of each level within each type.

:acter	Type	Variance ratios (F) for Split Plot				Mean values			Variance ratios for F		
		Cross	Level	Cross* Level	Level (Ecomb)	Level1	Level2	Level3	Level1	Level2	Level
/	Be	?	ns	ns	ns	1.46	1.54	1.333	1.5	1.3	2.3
SEL7	Be	?	ns	ns	ns	1.350	1.381	1.296	1.7	1.2	2.2
3	Be	?	ns	ns	ns	1.04	1.111	0.903	1.3	1.8*	1.5
SEL8	Be	?	ns	ns	ns	1.184	1.217	1.129	1.5	1.8*	1.5
10	Be	?	ns	ns	ns	0.403	0.333	0.306	0.9	1.9*	0.7
SEL10	Be	?	ns	ns	ns	0.902	0.873	0.859	0.9	1.9*	0.7
	Be	2.2*	.1	.8	.1	84.7	83.4	83.9	1.1	1.4	1.8
STALK	Be	1.4	5.3**	.8	5.6**	1.262	1.143	1.217	.7	1.3	1.3
LKS	Be	7.2**	3.4*	.6	3.8*	22.64	24.69	23.32	2.3**	2.3**	1.9
[	Be	6.1**	1.4	1.0	1.4	19.618	19.753	19.875	2.5**	2.7**	4.1
NESS	Be	5.0**	2.1	.9	2.2	4.986	5.204	5.063	2.4**	2.2*	2.2
ial NMG	Be	4.7**	1.0	.8	1.0	6.660	6.660	6.370	1.7*	1.6	2.6
MG	Be	5.0**	1.0	.8	1.0	2.658	2.660	2.603	1.9*	1.5	2.7
/	Se	?	ns	ns	ns	1.514	1.40	1.29	1.5	1.5	1.6
SEL7	Se	?	ns	ns	ns	1.382	1.317	1.276	1.6	1.6	1.6
3	Se	?	ns	ns	ns	1.08	0.92	0.833	1.3	1.2	1.0
SEL8	Se	?	ns	ns	ns	1.202	1.129	1.101	1.4	1.3	1.1
0	Se	?	ns	ns	ns	0.319	0.319	0.264	1.6	1.8*	0.9
SEL10	Se	?	ns	ns	ns	0.866	0.866	0.839	1.6	2.0*	0.9
	Se	3.5**	3.1	.6	3.5*	82.8	78.2	75.2	1.3	1.8*	1.4
STALK	Se	2.6**	3.8*	.9	4.0*	1.135	1.045	1.092	1.3	2.4**	1.1
LKS	Se	9.8**	3.0	.9	3.0	24.66	25.21	23.29	2.1*	2.9**	2.8
[	Se	5.1**	3.0	1.0	3.0	20.491	20.156	20.223	1.9*	3.9**	2.5
NESS	Se	3.8**	1.2	1.2	1.2	5.106	5.245	5.222	2.2**	1.5	3.6
ial NMG	Se	4.9**	3.2*	1.0	3.2*	6.773	6.315	6.225	1.7	3.1**	2.1
MG	Se	5.6**	3.8*	1.0	3.8*	2.682	2.586	2.568	1.8*	3.4**	2.3
AR	Se	.8	.2	.9	.2	76.5	78.0	86.4	ns	ns	ns
_VAR	Se	1.1	.3	.6	.3	3.858	3.707	3.723	ns	ns	ns
[_VAR	Se	.5	1.9	1.2	1.8	0.96	1.45	1.39	ns	ns	ns
X_VAR	Se	.6	4.2*	1.3	3.8*	0.524	0.708	0.728	ns	ns	ns
)_VAR	Se	1.8*	.3	1.0	.3	0.852	0.907	0.781	ns	ns	ns
D_VAR	Se	2.0*	.2	1.1	.2	0.533	0.520	0.493	2.0*	ns	ns
_VAR	Se	1.8*	.6	1.1	.6	5.41	4.89	4.55	ns	ns	ns
_VAR	Se	1.4	.8	1.0	.8	1.551	1.506	1.400	ns	ns	ns
(treat)		23	2	46	2				23		
(error)		46	96	96	142				46		

.e 42. Variance ratios and means for split plot analysis of variance, trial Te, PR and (R-P)/2. 24 crosses
ıain plots, with 3 selection levels as subplots. Analyses for 2 types (Be, Se). Variance ratios are also
ın for AOV of each level within each type.

:acter	Type	Variance ratios (F) for Split Plot				Mean values			Variance ratios for R		
		Cross	Level	Cross* Level	Level (Ecomb)	Level1	Level2	Level3	Level1	Level2	Level
(P+R)/2											
	Be	2.5**	1.1	1.1	1.Ø	1.431	1.5ØØ	1.292	1.2	1.9*	1.7
EL7	Be	2.8**	1.Ø	1.1	1.Ø	1.331	1.367	1.285	1.3	1.9*	ns
	Be	2.6**	.3	.6	.3	Ø.833	Ø.792	Ø.736	1.7	1.Ø	Ø.8
EL8	Be	2.4**	.3	.6	.4	1.Ø99	1.Ø84	1.Ø5Ø	1.7	1.Ø	ns
Ø	Be	2.4**	1.6	.7	1.8	Ø.25Ø	Ø.2Ø8	Ø.111	1.7	Ø.9	1.1
EL1Ø	Be	2.4**	1.6	.7	1.7	Ø.83Ø	Ø.8Ø5	Ø.765	1.7	Ø.9	ns
	Be	3.Ø**	.8	1.Ø	.8	8Ø.43	78.71	77.58	1.6	1.6	2.3
TALK	Be	2.3**	7.1**	1.1	6.8**	1.394	1.281	1.323	1.4	1.6	2.3
KS	Be	5.5**	3.Ø	.7	3.3*	19.77	21.25	2Ø.14	1.7	2.3**	1.8
	Be	3.1**	1.5	.9	1.5	21.561	21.737	21.76Ø	1.8*	1.7	2.7
NESS	Be	5.Ø**	2.5	.7	2.8	5.Ø88	5.299	5.11Ø	1.9*	2.Ø*	2.3
al NMG	Be	4.7**	1.1	.9	1.1	6.811	6.792	6.552	2.1*	1.5	2.2
MG	Be	4.7**	1.1	.9	1.1	2.693	2.69Ø	2.644	2.Ø*	1.5	2.3
_VAR	Be	3.Ø**	ns	ns	ns	Ø.66Ø	Ø.615	Ø.622	ns	ns	1.9
D_VAR	Be	2.4**	ns	ns	ns	Ø.443	Ø.429	Ø.4Ø6	ns	ns	1.8
X_VAR	Se	ns	4.Ø*	ns	ns	Ø.4Ø5	Ø.556	Ø.6Ø2	ns	ns	ns
	Se	2.8**	3.2*	1.Ø	3.2*	1.597	1.319	1.264	ns	1.9*	2.1
EL7	Se	3.3**	4.1*	1.Ø	4.Ø*	1.411	1.294	1.264	1.1	2.Ø*	2.2
	Se	2.4**	2.5	1.Ø	2.6	Ø.889	Ø.819	Ø.611	ns	1.5	1.Ø
EL8	Se	2.4**	2.5	1.Ø	2.5	1.117	1.Ø97	1.ØØ2	1.6	1.6	1.1
Ø	Se	1.Ø	.7	1.2	.6	Ø.2Ø8	Ø.153	Ø.139	1.2	1.5	Ø.6
EL1Ø	Se	.9	.6	1.2	.6	Ø.813	Ø.786	Ø.779	1.2	1.5	Ø.6
	Se	3.3**	2.6	.7	2.9	76.7	74.3	71.1	1.1	1.7	1.6
TALK	Se	3.1**	1.5	.8	1.6	1.247	1.192	1.2Ø2	1.7	2.Ø*	.9
KS	Se	6.4**	2.4	1.1	2.4	21.16	21.66	2Ø.26	2.Ø*	2.1*	2.4
	Se	3.5**	4.8*	1.Ø	4.7*	22.39Ø	22.177	22.Ø44	1.6	3.3**	2.2
NESS	Se	4.5**	.1	1.5*	na	5.194	5.227	5.198	3.3**	2.3**	3.2
al NMG	Se	6.3**	5.9**	1.1	5.7**	6.843	7.176	5.2Ø4	1.6	2.6**	3.1
MG	Se	6.9**	6.1**	1.1	6.Ø**	2.721	2.638	2.599	1.7	2.6**	3.3
(R-P)/2											
	Be	1.9*	1.1	.8	1.2	4.24	4.67	6.34	1.Ø	1.7	1.2
TALK	Be	1.2	1.3	1.3	1.2	-Ø.1328	-Ø.1376	-Ø.1Ø56	1.6	1.3	.8
	Se	2.3**	1.9	.9	1.9	6.Ø4	3.91	4.Ø8	1.5	1.6	1.2
TALK	Se	2.5**	2.3	1.Ø	2.3	-Ø.1126	-Ø.1474	-Ø.11Ø3	1.6	1.5	1.5
treat)		23	2	46	2				23		
error)		46	96	96	142				46		

Significant, P ≤ Ø.Ø5 ** Highly significant, P ≤ Ø.Ø1

Table 43. Realized gains from modified mass selection in Bs and Ss seedlings, as measured by differences between 3 selection levels (L1, L2, L3) in the P crop of trial Te. Variance ratios for this crop are presented in Table 40.

Character	B/S	Mean values Level1	Level2	Level3	Gain from modified mass selection L1 - L3 (% GM)	L1 - L2 (% GM)	L2 - L3 (% GM)
SEL7	Be	1.625	1.639	1.681	-0.056 (-3.4)	-0.014 (-0.8)	-0.042 (-2.5)
SQRSEL7	Be	1.418	1.398	1.418	0.000 (0.0)	0.020 (1.4)	-0.020 (-1.4)
SEL8	Be	1.069	0.958	1.083	-0.014 (-1.4)	0.111 (10.7)	-0.125 (-12.1)
SQRSEL8	Be	1.195	1.149	1.189	0.006 (0.5)	0.046 (3.9)	-0.040 (-3.4)
SEL10	Be	0.389	0.264	0.250	0.139 (46.2)	0.125 (41.5)	0.014 (4.7)
SQRSEL10	Be	0.892	0.829	0.828	0.064 (7.5)	0.063 (7.4)	0.001 (0.1)
TCH	Be	76.190	74.040	71.240	4.950 (6.7)	2.150 (2.9)	2.800 (3.8)
KG/STALK	Be	1.527	1.418	1.429	0.098 (6.7)*	0.109 (7.5)**	-0.011 (-0.8)
STALKS	Be	16.900	17.730	16.960	-0.060 (-0.3)	-0.830 (-4.8)	0.770 (4.5)
BRIX	Be	23.505	23.712	23.646	-0.141 (-0.6)	-0.207 (-0.9)	0.066 (0.3)
HARDNESS	Be	5.190	5.381	5.157	0.033 (0.6)	-0.191 (-3.6)	0.224 (4.3)
Visual NMG	Be	6.963	6.900	6.734	0.229 (3.3)	0.063 (0.9)	0.166 (2.4)
BRIX_VAR	Be	1.740	1.230	1.680	0.060 (3.9)	0.510 (32.9)	-0.450 (-29.0)
LBRIX_VAR	Be	0.701	0.658	0.750	-0.049 (-7.0)	0.043 (6.1)	-0.092 (-13.1)
HARD_VAR	Be	0.951	0.911	0.905	0.046 (5.0)	0.040 (4.3)	0.006 (0.7)
LHARD_VAR	Be	0.575	0.556	0.539	0.036 (6.5)	0.019 (3.4)	0.017 (3.1)
NMG_VAR	Be	4.200	2.700	2.950	1.250 (38.1)	1.500 (45.7)	-0.250 (-7.6)
LNMG_VAR	Be	1.308	1.069	1.107	0.201 (17.3)	0.239 (20.6)	-0.038 (-3.3)
SEL7	Se	1.736	1.736	1.389	0.347 (21.4)*	0.000 (0.0)	0.347 (21.4)*
SQRSEL7	Se	1.456	1.464	1.315	0.141 (10.0)*	-0.008 (-0.6)	0.149 (10.6)**
SEL8	Se	1.236	1.014	0.944	0.292 (27.4)	0.222 (20.9)	0.070 (6.6)
SQRSEL8	Se	1.262	1.176	1.145	0.117 (9.8)	0.086 (7.2)	0.031 (2.6)
SEL10	Se	0.333	0.250	0.194	0.139 (53.7)	0.083 (32.0)	0.056 (21.6)
SQRSEL10	Se	0.868	0.828	0.808	0.060 (7.2)	0.040 (4.8)	0.020 (2.4)
TCH	Se	70.690	70.390	67.000	3.690 (5.3)	0.300 (0.4)	3.390 (4.9)
KG/STALK	Se	1.360	1.340	1.313	0.047 (3.5)	0.020 (1.5)	0.027 (2.0)
STALKS	Se	17.650	18.110	17.220	0.430 (2.4)	-0.460 (-2.6)	0.890 (5.0)
BRIX	Se	24.289	24.198	23.874	0.415 (1.7)**	0.091 (0.4)	0.324 (1.3)*
HARDNESS	Se	5.282	5.208	5.178	0.104 (2.0)	0.074 (1.4)	0.030 (0.6)
Visual NMG	Se	7.130	6.731	6.417	0.713 (10.5)**	0.399 (5.9)	0.314 (4.6)
BRIX_VAR	Se	1.150	1.470	1.910	-0.760 (-50.3)	-0.320 (-21.2)	-0.440 (-29.1)
LBRIX_VAR	Se	0.619	0.654	0.737	-0.118 (-17.6)	-0.035 (-5.2)	-0.083 (-12.4)
HARD_VAR	Se	1.088	0.729	0.904	0.184 (20.3)	0.359 (39.6)	-0.175 (-19.3)
LHARD_VAR	Se	0.618	0.476	0.536	0.082 (15.1)	0.142 (26.1)	-0.060 (-11.0)
NMG_VAR	Se	4.090	4.670	3.350	0.740 (18.3)	-0.580 (-14.4)	1.320 (32.7)
LNMG_VAR	Se	1.281	1.439	1.228	0.053 (4.0)	-0.158 (-12.0)	0.211 (16.0)

Table 44. Realized gains from modified mass selection in Bs and Ss seedlings, as measured by differences between 3 selection levels (L1, L2, L3) in the R crop of trial Te. Variance ratios for this crop are presented in Table 41.

Character	B/S	Mean values			Gain from modified mass selection		
		Level1	Level2	Level3	L1 - L3 (% GM)	L1 - L2 (% GM)	L2 - L3 (% GM)
SEL7	Be	1.460	1.540	1.333	0.127 (8.8)	-0.080 (-5.5)	0.207 (14.3)
SQRSEL7	Be	1.350	1.381	1.296	0.054 (4.0)	-0.031 (-2.3)	0.085 (6.3)
SEL8	Be	1.040	1.111	0.903	0.137 (13.5)	-0.071 (-7.0)	0.208 (20.4)
SQRSEL8	Be	1.184	1.217	1.129	0.055 (4.7)	-0.033 (-2.8)	0.088 (7.5)
SEL10	Be	0.403	0.333	0.306	0.097 (27.9)	0.070 (20.2)	0.027 (7.8)
SQRSEL10	Be	0.902	0.873	0.859	0.043 (4.9)	0.029 (3.3)	0.014 (1.6)
TCH	Be	84.700	83.400	83.900	0.800 (1.0)	1.300 (1.5)	-0.500 (-0.6)
KG/STALK	Be	1.262	1.143	1.217	0.045 (3.7)	0.119 (9.9)**	-0.074 (-6.1)*
STALKS	Be	22.640	24.690	23.320	-0.680 (-2.9)	-2.050 (-8.7)*	1.370 (5.8)
BRIX	Be	19.618	19.753	19.875	-0.257 (-1.3)	-0.135 (-0.7)	-0.122 (-0.6)
HARDNESS	Be	4.986	5.204	5.063	-0.077 (-1.5)	-0.218 (-4.3)	0.141 (2.8)
Visual NMG	Be	6.660	6.660	6.370	0.290 (4.4)	0.000 (0.0)	0.290 (4.4)
SQRNMG	Be	2.658	2.660	2.603	0.055 (2.1)	-0.002 (-0.1)	0.057 (2.2)
SEL7	Se	1.514	1.400	1.290	0.224 (16.0)	0.114 (8.1)	0.110 (7.8)
SQRSEL7	Se	1.382	1.317	1.276	0.106 (8.0)	0.065 (4.9)	0.041 (3.1)
SEL8	Se	1.080	0.920	0.833	0.247 (26.2)	0.160 (16.9)	0.087 (9.2)
SQRSEL8	Se	1.202	1.129	1.101	0.101 (8.8)	0.073 (6.4)	0.028 (2.4)
SEL10	Se	0.319	0.319	0.264	0.055 (18.3)	0.000 (0.0)	0.055 (18.3)
SQRSEL10	Se	0.866	0.866	0.839	0.027 (3.2)	0.000 (0.0)	0.027 (3.2)
TCH	Se	82.800	78.200	75.200	7.600 (9.7)*	4.600 (5.8)	3.000 (3.8)
KG/STALK	Se	1.135	1.045	1.092	0.043 (3.9)	0.090 (8.3)**	-0.047 (-4.3)
STALKS	Se	24.660	25.210	23.290	1.370 (5.6)	-0.550 (-2.3)	1.920 (7.9)
BRIX	Se	20.491	20.156	20.223	0.268 (1.3)	0.335 (1.7)	-0.067 (-0.3)
HARDNESS	Se	5.106	5.245	5.222	-0.116 (-2.2)	-0.139 (-2.7)	0.023 (0.4)
Visual NMG	Se	6.773	6.315	6.225	0.548 (8.5)*	0.458 (7.1)	0.090 (1.4)
SQRNMG	Se	2.682	2.586	2.568	0.114 (4.4)*	0.096 (3.7)*	0.018 (0.7)
ST_VAR	Se	76.500	78.000	86.400	-9.900 (-12.3)	-1.500 (-1.9)	-8.400 (-10.5)
LST_VAR	Se	3.858	3.707	3.723	0.135 (3.6)	0.151 (4.0)	-0.016 (-0.4)
BRIX_VAR	Se	0.960	1.450	1.390	-0.430 (-33.9)	-0.490 (-38.7)	0.060 (4.7)
LBRIX_VAR	Se	0.524	0.708	0.728	-0.204 (-31.2)**	-0.184 (-28.2)*	-0.020 (-3.1)
HARD_VAR	Se	0.852	0.907	0.781	0.071 (8.4)	-0.055 (-6.5)	0.126 (14.9)
LHARD_VAR	Se	0.533	0.520	0.493	0.040 (7.8)	0.013 (2.5)	0.027 (5.2)
NMG_VAR	Se	5.410	4.890	4.550	0.860 (17.4)	0.520 (10.5)	0.340 (6.9)
LNMG_VAR	Se	1.551	1.506	1.400	0.151 (10.2)	0.045 (3.0)	0.106 (7.1)

* Significantly different from zero, $P \leq 0.05$, ** Highly significant, $P \leq 0.01$

Table 45. Realized gains from modified mass selection in Bs and Ss seedlings, as measured by differences between 3 selection levels (L1, L2, L3) in the PR crop of trial Te. Variance ratios for this crop are presented in Table 42.

Character	B/S	Mean values			Gain from modified mass selection		
		Level1	Level2	Level3	L1 - L3 (% GM)	L1 - L2 (% GM)	L2 - L3 (% GM)
SEL7	Be	1.431	1.500	1.292	0.139 (9.9)	-0.069 (-4.9)	0.208 (14.8)
SQRSEL7	Be	1.331	1.367	1.285	0.046 (3.5)	-0.036 (-2.7)	0.082 (6.2)
SEL8	Be	0.833	0.792	0.736	0.097 (12.3)	0.041 (5.2)	0.056 (7.1)
SQRSEL8	Be	1.099	1.084	1.050	0.049 (4.5)	0.015 (1.4)	0.034 (3.2)
SEL10	Be	0.250	0.208	0.111	0.139 (73.3)	0.042 (22.1)	0.097 (51.1)
SQRSEL10	Be	0.830	0.805	0.765	0.065 (8.1)	0.025 (3.1)	0.040 (5.0)
TCH	Be	80.430	78.710	77.580	2.850 (3.6)	1.720 (2.2)	1.130 (1.4)
KG/STALK	Be	1.394	1.281	1.323	0.071 (5.3)*	0.113 (8.5)**	-0.042 (-3.2)
STALKS	Be	19.770	21.250	20.140	-0.370 (-1.8)	-1.480 (-7.3)*	1.110 (5.4)
BRIX	Be	21.561	21.737	21.760	-0.199 (-0.9)	-0.176 (-0.8)	-0.023 (-0.1)
HARDNESS	Be	5.088	5.299	5.110	-0.022 (-0.4)	-0.211 (-4.1)	0.189 (3.7)
Visual NMG	Be	6.811	6.792	6.552	0.259 (3.9)	0.019 (0.3)	0.240 (3.6)
SQRNMG	Be	2.693	2.690	2.644	0.049 (1.8)	0.003 (0.1)	0.046 (1.7)
LBRIX_VAR	Se	0.405	0.556	0.602	-0.197 (-37.8)**	-0.151 (-29.0)*	-0.046 (-8.8)
SEL7	Se	1.597	1.319	1.264	0.333 (23.9)*	0.278 (20.0)*	0.055 (3.9)
SQRSEL7	Se	1.411	1.294	1.264	0.147 (11.1)**	0.117 (8.8)*	0.030 (2.3)
SEL8	Se	0.889	0.819	0.611	0.278 (36.0)	0.070 (9.1)	0.208 (26.9)
SQRSEL8	Se	1.117	1.097	1.002	0.115 (10.7)	0.020 (1.9)	0.095 (8.9)
SEL10	Se	0.208	0.153	0.139	0.069 (41.4)	0.055 (33.0)	0.014 (8.4)
SQRSEL10	Se	0.813	0.786	0.779	0.034 (4.3)	0.027 (3.4)	0.007 (0.9)
TCH	Se	76.700	74.300	71.100	5.600 (7.6)	2.400 (3.2)	3.200 (4.3)
KG/STALK	Se	1.247	1.192	1.202	0.045 (3.7)	0.055 (4.5)	-0.010 (-0.8)
STALKS	Se	21.160	21.660	20.260	0.900 (4.3)	-0.500 (-2.4)	1.400 (6.7)
BRIX	Se	22.390	22.177	22.044	0.346 (1.6)**	0.213 (1.0)	0.133 (0.6)
HARDNESS	Se	5.194	5.227	5.198	-0.004 (-0.1)	-0.033 (-0.6)	0.029 (0.6)
Visual NMG	Se	6.843	7.176	5.204	1.639 (25.6)**	-0.333 (-5.2)	1.972 (30.8)**
SQRNMG	Se	2.721	2.638	2.599	0.122 (4.6)**	0.083 (3.1)*	0.039 (1.5)

* Significantly different from zero, $P \leq 0.05$

** Highly significant, $P \leq 0.01$

LBRIX_VAR = LOGe(within-plot variance for brix + 1.0)

Table 46. Realized gains from modified mass selection in Bs and Ss seedlings, as measured by differences between 3 selection levels (L1, L2, L3) in the P and R crops of trial Te. Differences are expressed as per cent of the general mean for each Te type (Be,Se).

Character	Type	Crop	Gain from selection within each plot		
			L1 - L3	L1 - L2	L2 - L3
KG/STALK	Bs	P	6.7*	7.5**	-0.8
		R	3.7	9.9**	-6.1*
		PR	5.3*	8.5**	-3.2
STALKS	Bs	P	-0.3	-4.8	4.5
		R	-2.9	-8.7*	5.8
		PR	-1.8	-7.3*	1.1
SEL7	Ss	P	21.4*	0.0	21.4*
		R	16.0	8.1	7.8
		PR	23.9*	20.0*	3.9
SQRSEL7	Ss	P	10.0*	-0.6	10.6**
		R	8.0	4.9	3.1
		PR	11.1**	8.8*	2.3
BRIX	Ss	P	1.7**	0.4	1.3*
		R	1.3	1.7	-0.3
		PR	1.6**	1.0	0.6
TCH	Ss	P	5.3	0.4	4.9
		R	9.7*	5.8	3.8
		PR	7.6	3.2	4.3
KG/STALK	Ss	P	3.5	1.5	2.0
		R	3.9	8.3**	-4.3
		PR	3.7	4.5	-0.8
Visual NMG	Ss	P	10.5**	5.9	4.6*
		R	8.5*	7.1	1.4
		PR	25.6**	-5.2	30.8**
SQRNMG	Ss	R	4.4*	3.7*	0.7
		PR	4.6**	3.1*	1.5
LBRIX_VAR	Ss	P	-17.6	-5.2	-12.4
		R	-31.2**	-28.2*	-3.1
		PR	-37.8**	-29.0*	-8.8

Table 47. Variance ratios for split plot analysis of variance, trial Te, P crop. 24 crosses * 2 types (Be,Se) as factorial on main plots, with 3 selection levels as subplots.

Character	F values for main plots			F values for subplots & interactions				Mean values		
	Cross	Type	Cross *Type	Level	Cross* Level	Type* Level	Cross*type *Level	Level1	Level2	Leve
SEL7	3.6**	.1	1.1	1.4	1.2	2.4	.9	1.681	1.688	1.5
SQRSEL7	3.7**	.0	1.1	2.0	1.3	2.6	.8	1.437	1.431	1.3
SEL8	2.6**	.1	1.3	1.8	1.0	1.3	.9	1.153	0.986	1.0
SQRSEL8	2.7**	.2	1.3	1.7	.9	1.0	.9	1.228	1.163	1.1
SEL10	3.1**	.6	1.2	2.9	1.4	.1	1.0	0.361	0.257	0.2
SQRSEL10	3.0**	.4	1.2	2.7	1.3	.1	1.0	0.880	0.828	0.8
TCH	4.7**	10.0**	1.5	3.4*	.9	.2	1.1	73.44	72.22	69.1
KG/Stalk	5.1**	20.3**	.6	3.7*	1.2	1.2	1.0	1.443	1.379	1.3
STALKS	4.8**	2.1	1.2	2.3	1.2	.2	1.1	17.27	17.93	17.0
BRIX	2.8**	13.9**	1.3	2.2	.9	4.2*	.9	23.897	23.956	23.7
HARDNESS	5.9**	.1	1.1	1.3	1.0	1.6	.8	5.236	5.297	5.1
Visual NMG	4.6**	.6	1.7*	4.8**	1.3	1.3	.8	7.046	6.816	6.5
SQRNMG	4.7**	.5	1.6	4.7*	1.3	1.3	.8	2.733	2.692	2.6
ST_VAR	1.1	2.1	.6	1.0	1.0	.3	.6	31.6	37.9	33.8
LST_VAR	.8	3.4	.6	1.1	.8	1.5	.5	2.964	3.154	3.0
BRIX_VAR	1.0	.0	1.0	1.0	1.4	1.1	.6	1.44	1.38	1.8
LBRIX_VAR	1.0	.3	1.2	1.2	1.4	.2	1.0	0.660	0.660	0.7
HARD_VAR	1.5	.1	1.9*	1.3	.8	.9	.8	1.020	0.825	0.9
LHARD_VAR	1.2	.2	1.5	1.3	.9	.8	.9	0.596	0.518	0.5
NMG_VAR	1.3	3.4	1.1	1.9	1.0	2.2	.8	4.14	3.73	3.1
LNMG_VAR	1.5	4.7*	1.3	1.1	.8	2.6	1.0	1.294	1.258	1.1
df (treat)	23	1	23	2	46	2	46			
df (error)	94	94	94	192	192	192	192			

ST_VAR = within-plot variance for number of stalks (brix, hardness, visual NMG)
Log(V) = LOGe(V+1.0), e.g. LST_VAR
SEL7 = Number of selections graded 7.0 or higher (SEL8, SEL10 8.0+, 10.0+)
SQRSEL = SQRT(X+0.5)

Table 48. Variance ratios for split plot analysis of variance, trial Te, R crop. 24 crosses * 2 types (Be,Se) as factorial on main plots, with 3 selection levels as subplots.

Character	F values for main plots			F values for subplots & interactions				Mean values		
	Cross	Type	Cross *Type	Level	Cross* Level	Type* Level	Cross*type *Level	Level1	Level2	Leve
SEL7	4.9**	.2	.6	1.9	1.0	.5	.8	1.486	1.472	1.3
SQRSEL7	5.1**	.2	.7	2.3	1.0	.7	.8	1.366	1.349	1.2
SEL8	3.9**	.8	.6	2.3	1.0	.8	.7	1.063	1.014	.8
SQRSEL8	4.2**	.9	.7	2.1	1.0	.9	.7	1.193	1.173	1.1
SEL10	3.1**	.8	1.1	.7	.9	.1	.7	.361	.326	.2
SQRSEL10	3.1**	.7	1.1	.7	.9	.1	.8	.884	.869	.8
TCH	4.8**	7.2**	.7	2.0	.8	1.3	.6	83.72	80.79	79.5
KG/Stalk	3.0**	22.4**	.7	9.0**	.7	.2	1.0	1.198	1.094	1.1
STALKS	16.0**	6.0*	.9	4.6*	.7	1.7	.9	23.65	24.95	23.3
BRIX	8.8**	27.6**	1.9*	.6	1.0	3.7*	1.0	20.054	19.955	20.0
HARDNESS	7.8**	2.8	.7	3.1*	.7	.4	1.3	5.046	5.225	5.1
Visual NMG	8.6**	.9	.9	3.1*	1.1	.9	.7	6.716	6.487	6.2
SQRNMG	9.5**	1.2	.9	3.5*	1.1	1.2	.7	2.670	2.623	2.5
ST_VAR	1.3	2.1	.6	.1	.9	.2	1.0	71.5	74.6	76.1
LST_VAR	1.1	1.1	.9	.7	.8	.0	.5	3.817	3.647	3.6
BRIX_VAR	1.1	2.2	.9	1.2	1.5	.6	.6	1.221	1.486	1.5
LBRIX_VAR	1.0	3.7	.9	3.0	1.5	.8	.7	.620	.736	.7
HARD_VAR	1.5	1.3	1.9*	.2	.8	.3	1.1	.865	.938	.8
LHARD_VAR	1.6	2.1	1.8*	.1	.9	.3	1.1	.538	.552	.5
NMG_VAR	1.7*	1.8	1.3	1.4	1.0	.3	.8	5.73	5.54	4.6
LNMG_VAR	1.1	.1	1.3	2.0	.9	.1	.8	1.573	1.536	1.3
df (treat)	23	1	23	2	46	2	46			
df (error)	94	94	94	192	192	192	192			

ST_VAR = within-plot variance for number of stalks (brix, hardness, visual NMG)
Log(V) = LOGe(V+1.0), e.g. LST_VAR
SEL7 = Number of selections graded 7.0 or higher (SEL8, SEL10 8.0+, 10.0+)
SQRSEL = SQRT(X+0.5)

Table 49. Variance ratios for split plot analysis of variance, trial Te, PR and (R-P)/2. 24 crosses * 2 types (Be,Se) as factorial on main plots, with 3 selection levels as subplots.

Character	F values for main plots			F values for subplots & interactions				Mean values		
	Cross	Type	Cross *Type	Level	Cross* Level	Type* Level	Cross*type *Level	Level1	Level2	Leve
(a) (P+R)/2										
SEL7	4.7**	.0	.7	2.7	1.2	1.5	.9	1.514	1.410	1.2
SQRSEL7	5.4**	.0	.8	3.0	1.2	1.9	.9	1.371	1.330	1.2
SEL8	3.8**	.0	1.3	2.1	.9	.5	.6	.861	.806	.6
SQRSEL8	3.8**	.0	1.1	2.2	1.0	.4	.6	1.108	1.090	1.0
SEL10	2.2**	.3	1.4	2.1	.8	.4	1.0	.229	.181	.1
SQRSEL10	2.1**	.1	1.3	2.0	.9	.3	1.0	.821	.796	.7
TCH	5.4**	11.4**	1.0	3.2*	.9	.4	.8	78.58	76.50	74.3
KG/Stalk	4.7**	28.9**	.6	7.1**	.9	.8	1.0	1.3207	1.2364	1.2
STALKS	11.0**	4.9*	.9	4.3*	.9	1.1	.9	20.46	21.46	20.2
BRIX	5.1**	27.0**	1.5	.4	.9	5.5**	1.0	21.976	21.957	21.9
HARDNESS	8.4**	.5	.8	2.2	.9	1.2	1.1	5.141	5.263	5.1
Visual NMG	9.3**	1.5	1.5	5.3**	1.2	1.4	.8	6.881	6.657	6.4
SQRNMG	9.9**	1.6	1.5	5.5**	1.2	1.5	.8	2.707	2.664	2.6
ST_VAR	1.3	2.5	.7	.2	.8	.1	.7	41.8	45.7	43.3
LST_VAR	1.0	3.3	.7	.1	.7	.1	.6	3.281	3.255	3.2
BRIX_VAR	1.1	1.3	1.1	1.9	1.3	1.8	.7	.847	.994	1.1
LBRIX_VAR	1.1	2.5	1.1	3.1*	1.3	1.4	.9	.491	.558	.6
HARD_VAR	1.9*	.1	2.2**	.4	.8	.1	1.1	.664	.614	.5
LHARD_VAR	1.9*	.1	1.9*	.7	.8	.1	1.1	.448	.414	.4
NMG_VAR	1.7*	.1	.7	1.7	.9	.1	.8	3.48	3.36	2.7
LNMG_VAR	1.6	.2	.7	1.4	.8	.3	.8	1.217	1.194	1.0
(b) (R-P)/2										
TCH	3.2**	.2	1.0	.6	.8	2.3	.9	5.14	4.29	5.2
KG/Stalk	2.5**	.0	.9	2.9	1.2	.6	1.2	-0.1227	-0.1425	-0.1
df (treat)	23	1	23	2	46	2	46			
df (error)	94	94	94	192	192	192	192			

ST_VAR = within-plot variance for number of stalks (brix, hardness, visual NMG)
Log(V) = LOGe(V+1.0), e.g. LST_VAR
SEL7 = Number of selections graded 7.0 or higher (SEL8, SEL10 8.0+, 10.0+)
SQRSEL = SQRT(X+0.5)