



Table: 3.1 Trial site characteristics and management for all variety trials

SITE	ART Farm	Ivordale	Enterprise	Chakari	Selous	Darwendale	Sherwood	Kadoma
Altitude (m)	1,488	1,300	1,335	1,099	1,250	1,354	1,180	1,149
Planted	8-May	18-May	13-May	17-May	11-May	22-May	19-May	16-May
Harvested	23-Oct	15-Oct	21-Oct	27-Sep	7-Oct	21-Oct	14-Oct	5-Oct
Previous crop	Sugarbeans	Soyabeans	Soyabeans	Soyabeans	Soyabeans	Maize	Soyabeans	Maize
Land prep	Plough-disc-Roll	Disc	Plough-disc-roll	Disc	Disc	Disc	Disc	Rip-plough-disc-roll
Soil type	MG/SCL	MG/SCL	MG/SCL	MG/SL	MG/SCL	MG/SCL	MG/SCL	MG/SCL
Fertilizer kg/ha								
N at planting	48	92.1	28	40	40	40	35	28
Total N	186	161	201	161	163	212	161	201
P ₂ O ₅	96	89	56	92	92	92	81	56
K ₂ O	42	89	28	92	92	92	81	28
Irrigation mm								
April	NIL	NIL	Nil	NIL	Nil	Nil	Nil	Nil
May	88	50.8	80	55	93	78	68	72
June	44	20.3	60	46	118	18	95	48
July	88	41	60	30.6	31	87	205	48
August	132	76	60	34.5	32	149	150	48
September	88	41	90	NIL	20	116	135	24
October	NIL	NIL	NIL	NIL	NIL	Nil	Nil	NIL
TOTAL	440	229	350	166.1	294	448	653	240
Rain mm								
May-September	NIL	NIL	NIL	NL	NIL		4	NIL
October	NIL	NIL	NIL	NIL	NIL	NR	NIL	NIL
TOTAL	NIL	NIL	NIL	NIL	NIL		4	NIL
MG= medium grained		S =	NR = not recorded					

Table 3.2: ZCPA recent-release variety trials									
Yield t/ha @ 12.5% moisture									
Site	ART Farm	Enterprise	Ivordale	Chakari	Selous	Darwendale	Sherwood	Kadoma	
Altitude (m)	1480	1335	1300	1099	1250	1354	1180	1149	
Varieties									Mean
SC NDUNA	10.86	9.36	6.14	2.36	8.47	8.15	8.35	4.37	7.26
SC SERENA	10.84	9.11	5.61	1.99	8.23	6.97	6.66	5.80	6.90
SC SELECT	10.42	8.96	5.58	2.29	7.24	6.58	7.47	5.84	6.80
SC SHUNGU	10.30	9.44	5.75	2.73	10.10	6.27	5.85	3.73	6.77
WZ 3339/6/7	10.36	7.56	5.37	2.58	7.48	7.60	8.00	4.75	6.71
WZ 3473/6/1	8.28	8.83	6.13	2.46	8.59	6.20	7.97	6.74	6.90
WZ 3339/6/18	10.73	8.40	6.30	1.77	7.78	7.86	8.01	5.79	7.08
WZ 3581/6/39	10.99	8.43	5.07	1.77	9.18	7.58	8.11	5.32	7.06
W 3956/6/19	10.47	8.27	5.38	2.16	8.87	7.88	7.47	5.88	7.05
WZ 3670/6/3	10.01	9.39	5.18	2.34	9.58	6.35	7.29	4.26	6.80
W 2746/6/54	10.57	9.53	6.08	2.68	8.41	7.04	6.92	3.65	6.86
WZ 3687/6/9	10.20	9.29	6.24	2.88	9.54	7.14	8.84	6.32	7.55
NCEMA	8.68	8.83	5.89	1.81	7.83	7.24	6.55	5.58	6.55
RUNDE	9.27	9.15	5.75	2.70	7.52	7.23	7.91	4.58	6.76
AGUILAL/3/2/KUL	8.05	8.37	6.48	2.58	6.36	6.65	7.82	5.05	6.42
GONGLASE-4	9.27	7.54	5.30	1.67	5.29	7.47	6.74	4.89	6.02
15-25WBON-14	8.28	7.67	6.50	2.24	7.11	3.76	5.90	4.73	5.77
DANDE	6.65	9.22	6.17	2.16	7.79	5.44	7.35	2.54	5.91
S14002-OH-ON-OH-OG	6.68	7.87	6.17	2.28	6.81	5.79	6.46	4.60	5.83
132-M7HPYT-H18	7.97	8.46	5.38	1.82	7.12	6.37	6.01	5.19	6.04
159M7HPYT-H18	6.87	8.57	6.94	1.25	6.01	4.47	5.78	4.33	5.53
126M7HPYT-H18	8.74	8.79	5.25	1.75	8.29	3.68	6.19	5.68	6.05
15W75	8.02	8.94	4.86	2.13	7.64	5.59	6.10	4.69	6.00
15W119	10.54	9.06	6.22	2.91	7.88	7.65	8.10	5.92	7.28
15W50	10.10	9.29	6.59	1.99	7.53	5.38	7.17	5.19	6.66
15W477	9.27	8.87	6.14	2.32	7.20	7.14	6.68	4.22	6.48
PEREGRINE	9.41	8.92	6.90	2.42	9.90	7.34	6.87	3.89	6.96
MEAN	9.35	8.75	5.91	2.22	7.89	6.55	7.13	4.95	
STD ERR	0.18	0.67	0.56	0.12	0.16	0.17	0.19	0.93	
SIGNIFICANCE	***	NS	***	***	***	***	***	NS	
LSD (5%)	0.50	1.90	0.44	0.35	0.46	0.47	0.54	2.64	
CV (%)	3	13	5	10	4	4	5	33	

Table 3.3: ZCPA recent-release variety trials

Test Density kg/hl

Site Altitude (m)	ART Farm 1480	Ivordale 1300	Chakari 1099	Selous 1250	Enterprise 1335	Darwendale 1354	Sherwood 1180	Kadoma 1149	
Varieties									Mean
SC NDUNA	83	81	80	82	81	83	79	78	81
SC SERENA	81	77	79	78	77	80	76	79	78
SC SELECT	80	77	79	77	79	80	80	81	79
SC SHUNGU	82	80	79	81	80	80	79	77	80
WZ 3339/6/7	82	77	79	75	78	80	82	79	79
WZ 3473/6/1	84	80	81	81	81	83	81	80	81
WZ 3339/6/18	80	76	80	96	78	68	79	79	80
WZ 3581/6/39	82	78	80	77	78	81	76	81	79
W 3956/6/19	82	79	79	79	80	81	80	81	80
WZ 3670/6/3	82	78	81	81	81	82	81	79	81
W 2746/6/54	82	79	81	78	79	81	80	81	80
WZ 3687/6/9	82	79	81	80	80	80	80	82	80
NCEMA	79	81	80	79	82	82	81	80	81
RUNDE	82	81	81	80	84	82	80	80	81
AGUILAL/3/2/KUL	84	81	83	78	82	83	83	83	82
GONGLASE-4	83	79	79	80	81	81	81	82	81
15-25WBON-14	83	81	81	80	81	82	80	80	81
DANDE	82	81	81	80	82	83	80	83	82
S14002-0H-ON-OH-OG	83	81	82	81	82	83	79	81	81
132-M7HPYT-H18	84	81	78	80	81	84	82	81	81
159M7HPYT-H18	82	80	80	80	81	83	81	82	81
126M7HPYT-H18	83	81	82	80	81	83	81	82	82
15W75	74	77	79	77	78	80	78	79	78
15W119	82	79	81	80	80	82	80	77	80
15W50	79	78	79	76	78	80	77	79	78
15W477	82	80	80	80	81	81	80	80	81
PEREGRINE	84	79	81	80	81	82	81	79	81
MEAN	82	79	80	79	80	90	80	80	
STD ERR	2	1	1	1	1	42	1	1	
SIGNIFICANCE	***	***	***	***	**	***	***	NS	
LSD (5%)	3	2	4	2	3	131	3	4	
CV (%)	2	2	3	2	2	89	2	3	

Table 3.4: ZCPA recent-release variety trials Thousand seed mass (g)

Site Altitude (m)	ART Farm 1480	Ivordale 1300	Chakari 1099	Selous 1250	Enterprise 1335	Darwendale 1354	Sherwood 1180	Kadoma 1149	Mean
Varieties									
SC NDUNA	45	43	42	43	46	46	45	43	44
SC SERENA	42	40	46	38	45	48	51	45	44
SC SELECT	45	36	40	35	43	46	44	51	42
SC SHUNGU	48	43	43	43	47	47	46	42	45
WZ 3339/6/7	47	37	42	34	38	45	49	47	42
WZ 3473/6/1	40	37	40	39	42	47	43	48	42
WZ 3339/6/18	43	38	42	35	43	45	43	43	41
WZ 3581/6/39	47	38	43	34	41	47	47	51	44
W 3956/6/19	41	36	37	36	40	39	40	57	41
WZ 3670/6/3	41	40	46	42	43	42	44	46	43
W 2746/6/54	40	38	44	35	37	41	40	44	40
WZ 3687/6/9	44	39	41	40	46	46	44	50	44
NCEMA	40	43	44	39	45	44	46	42	43
RUNDE	42	41	45	41	45	47	44	50	44
AGUILAL/3/2/KUL	51	48	52	47	52	55	52	51	51
GONGLASE-4	49	42	43	42	47	46	48	54	46
15-25WBON-14	50	45	47	46	52	50	48	55	49
DANDE	48	44	48	44	49	51	49	48	48
S14002-0H-ON-OH-OG	49	52	52	49	49	54	51	55	51
132-M7HPYT-H18	52	47	49	52	53	53	43	55	50
159M7HPYT-H18	46	48	48	48	45	54	48	58	49
126M7HPYT-H18	54	49	55	47	57	53	53	47	52
15W75	46	51	49	39	47	45	47	61	48
15W119	45	45	45	41	46	50	46	43	45
15W50	49	46	46	42	46	54	45	53	48
15W477	53	47	41	45	51	50	48	49	48
PEREGRINE	54	44	49	45	50	50	50	49	49
MEAN	46	42	45	42	46	48	46	50	
STD ERR	2	2	2	2	2	2	2	4	
SIGNIFICANCE	**	***	***	***	***	***	***	*	
LSD (5%)	4	6	5	6	6	5	5	12	
CV (%)	6	9	6	9	8	6	7	15	

Table 3.7: Days to flowering and physiological maturity recorded at ART Farm						
Site	ART FARM		ENTERPRISE		KADOMA	
	Flowering	Maturity	Flowering	Maturity	Flowering	Maturity
Varieties						
SC NDUNA	97	153	88	139	78	116
SC SERENA	98	146	90	139	82	125
SC SELECT	97	146	89	139	78	127
SC SHUNGU	91	140	83	134	75	115
WZ 3339/6/7	98	150	95	139	82	127
WZ 3473/6/1	95	144	91	140	83	122
WZ 3339/6/18	98	144	93	138	80	119
WZ 3581/6/39	99	141	94	137	82	125
W 3956/6/19	92	140	87	137	77	121
WZ 3670/6/3	93	141	86	136	76	119
W 2746/6/54	97	149	91	140	81	122
WZ 3687/6/9	95	141	91	139	82	125
NCEMA	98	150	90	144	78	120
RUNDE	93	141	87	140	76	123
AGUILAL/3/2/KUL	93	142	86	136	77	125
GONGLASE-4	83	140	79	129	68	120
15-25WBON-14	93	145	87	136	77	119
DANDE	94	145	86	140	77	126
S14002-OH-ON-OH-OG	95	145	89	140	78	122
132-M7HPYT-H18	92	141	82	133	75	120
159M7HPYT-H18	104	151	95	140	82	126
126M7HPYT-H18	93	149	87	138	76	124
15W75	99	149	88	140	78	124
15W119	94	143	87	139	77	120
15W50	92	145	83	134	69	125
15W477	90	139	84	135	70	119
PEREGRINE	87	136	87	136	69	118
MEAN	95	144	88	138	77	122
STD ERR	1	3	1	1	1	2
SIGNIFICANCE	***	**	***	***	***	*
LSD (5%)	4	8	2	4	2	7
CV (%)	2	3	2	2	2	3

Table 3.8: Ear height (cm)

Site Altitude (m)	ART Farm 1480	Ivordale 1300	Chakari 1099	Selous 1250	Enterprise 1335	Darwendale 1354	Sherwood 1180	Kadoma 1149	Mean
Varieties									
SC NDUNA	83	69	59	90	85	83	92	78	80
SC SERENA	88	70	57	93	85	88	88	78	81
SC SELECT	79	66	53	89	87	79	93	78	78
SC SHUNGU	94	72	64	90	87	94	87	82	84
WZ 3339/6/7	88	65	71	93	85	88	95	82	83
WZ 3473/6/1	85	71	57	97	90	85	93	82	82
WZ 3339/6/18	89	70	56	97	90	89	92	80	83
WZ 3581/6/39	86	67	54	93	87	86	87	77	80
W 3956/6/19	79	63	55	91	78	79	90	77	76
WZ 3670/6/3	82	72	62	90	82	82	84	80	79
W 2746/6/54	77	79	63	86	80	77	85	73	78
WZ 3687/6/9	80	66	51	85	85	80	88	75	76
NCEMA	87	77	57	91	88	87	90	78	82
RUNDE	82	70	55	86	85	82	93	77	79
AGUILAL/3/2/KUL	95	78	65	98	95	95	100	90	90
GONGLASE-4	88	80	57	93	90	88	97	85	85
15-25WBON-14	105	81	70	103	100	105	101	92	94
DANDE	100	80	67	110	100	100	108	90	94
S14002-0H-ON-OH-OG	98	87	80	101	98	98	106	93	95
132-M7HPYT-H18	97	82	64	105	97	97	102	92	92
159M7HPYT-H18	102	87	62	109	105	102	106	90	95
126M7HPYT-H18	90	88	75	108	102	90	97	93	93
15W75	83	68	63	95	87	87	90	82	82
15W119	90	82	62	101	95	90	102	83	88
15W50	89	81	66	103	92	89	98	87	88
15W477	92	79	61	95	97	92	91	83	86
PEREGRINE	90	79	67	97	95	90	103	82	88
MEAN	98	75	62	96	91	89	95	83	
STD ERR	6	3	4	3	2	4	4	2	
SIGNIFICANCE	NS	***	***	***	***	**	***	***	
LSD (5%)	17	9	11	8	6	12	10	6	
CV (%)	11	7	10	5	4	8	6	5	

Table 3.9: Percent Protein

Laboratory	1.00	1.00	1.00	2.00	
Site	ART Farm	Selous	Enterprise	RARS	
Altitude (m)	1480	1250	1335	1335	
Varieties					Mean
SC NDUNA	11.9	11.6	11.2	11.2	11.5
SC SERENA	11.8	12.2	11.1	11.6	11.7
SC SELECT	13.0	12.7	12.0	11.9	12.4
SC SHUNGU	11.9	11.2	11.1	10.9	11.3
WZ 3339/6/7	11.3	13.0	11.7	11.6	11.9
WZ 3473/6/1	11.8	11.3	11.0	10.3	11.1
WZ 3339/6/18	11.6	11.8	10.5	10.3	11.1
WZ 3581/6/39	10.9	12.2	10.7	11.3	11.3
W 3956/6/19	13.3	13.2	11.9	11.9	12.8
WZ 3670/6/3	11.7	11.6	11.1	10.8	11.3
W 2746/6/54	12.1	12.0	11.4	11.6	11.8
WZ 3687/6/9	10.8	10.6	10.6	10.2	10.6
NCEMA	12.0	12.7	11.9	11.7	12.1
RUNDE	12.1	11.6	11.3	10.8	11.6
AGUILAL/3/2/KUL	11.4	11.9	11.0	10.7	11.4
GONGLASE-4	13.1	12.7	12.2	12.5	12.6
15-25WBON-14	11.9	12.4	11.9	11.8	12.0
DANDE	12.6	12.3	11.4	11.0	11.8
S14002-0H-ON-OH-OG	11.8	12.8	11.2	10.9	11.7
132-M7HPYT-H18	13.1	12.6	12.5	12.4	12.6
159M7HPYT-H18	11.6	12.0	11.5	11.5	11.7
126M7HPYT-H18	12.2	13.1	12.2	12.2	12.4
15W75	11.7	11.7	11.1	11.0	11.4
15W119	11.4	11.2	11.2	10.8	11.1
15W50	11.9	11.2	10.9	11.0	11.2
15W477	12.2	11.8	11.2	11.4	11.7
PEREGRINE	12.3	11.6	11.9	11.3	11.8
MEAN	12.0	12.0	11.4	11.3	
STD ERR	0.2	0.6	0.3	0.4	
SIGNIFICANCE	***	NS	**	**	
LSD (5%)	0.5	-	0.9	1.0	
CV (%)	2.0	7.0	4.0	6.0	

1.00 = Protein analysis done at Blue Ribbon Foods

2.00 = Protein analysis done at Rattray Arnold Research Station laboratory