

**SOUTH AFRICAN
WINTER RAINFALL WHEAT
Western Cape Province**

PRODUCTION REGION	(1) Namaqualand					(2) Swartland Western Region						
	Intake silos Bitterfontein Graafwater Landplaas Vanrhynsdorp Vredendal					Bergrivier Darling Koperfontein Vredenburg						
WHEAT												
	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	11.92	10.51	12.97	1.27		11.79	10.80	13.23	0.66			
Falling number, sec	413	370	436	37.00		427	380	490	34.65			
1000 Kernel mass (13% mb), g	37.8	35.4	41.0	2.87		33.2	28.3	37.1	2.14			
Hectolitre mass (dirty), kg/hl	79.0	78.9	79.0	0.06		76.3	74.2	78.3	1.32			
Screenings (<1.8mm), %	0.89	0.80	0.96	0.08		2.64	1.37	3.65	0.54			
Total Damaged Kernels, %	0.94	0.48	1.38	0.45		0.44	0.00	0.98	0.39			
Number of samples	3					18						
CULTIVARS												
		63.7					60.3					
cultivars	SST 88											
with highest %	SST 15	20.3					4.3					
occurrence	SST 57	10.0					9.9					
	SST 825						15.9					
	SST 65						4.2					
Number of samples	3					18						
MIXOGRAM (Quadromat)												
	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	3.0	2.8	3.3	0.29		2.9	2.3	3.5	0.28			
Tail height (6min), mm	53	52	55	1.73		50	46	59	3.67			
Number of samples	3					18						
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
BÜHLER EXTRACTION, %	72.1		75.1				77.0	72.8	72.1		72.8	
FLOUR												
Protein (12% mb), %	11.62		9.64				11.99	10.60	10.90		10.64	
Colour, KJ	-2.4		-1.6				-0.9	-1.9	-2.1		-2.3	
FARINOGRAM												
Water absorption (14% mb), %	63.6		61.3				61.4	62.0	60.2		61.1	
Development time, min	6.4		3.0				4.7	4.0	4.2		3.4	
Stability, min	12.1		7.2				6.0	11.3	8.6		8.8	
Mixing Tolerance Index, BU	31		31				56	13	37		29	
EXTENSOGRAM (45 min pull)												
Area, cm2	130		100				87	102	95		96	
Maximum height, BU	440		405				325	430	405		400	
Extensibility, mm	203		169				177	161	159		167	
ALVEOGRAM												
Strength, cm2	48.6		36.7				34.3	39.0	36.5		38.1	
Stability (P), mm	98		94				71	97	82		93	
Distensibility (L), mm	109		81				123	84	98		89	
Configuration ratio (P/L)	0.90		1.16				0.57	1.16	0.84		1.04	
MIXOGRAM												
Peak time, min	2.5		2.8				2.3	2.7	2.6		2.8	
100g BAKING TEST												
Loaf volume, cm3	875		815				900	790	865		815	
Evaluation	1		0				1	2	0		1	

SOUTH AFRICAN WINTER RAINFALL WHEAT Western Cape Province

PRODUCTION REGION	(3)					(4)						
	Swartland Central Region					Swartland Eastern Region						
Intake silos	Eendekuil Klipheuwel Koringberg Malmesbury Moorreesburg Moravia Piketberg Pools Ruststasie					Ceres Gouda Halfmanshof Leliedam Porterville Riebeeck-Wes						
WHEAT												
	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	11.88	9.68	14.07	0.84		11.15	9.22	12.79	1.00			
Falling number, sec	406	328	455	24.61		398	356	465	27.02			
1000 Kernel mass (13% mb), g	33.9	26.5	39.2	2.33		35.3	31.5	40.6	2.27			
Hectolitre mass (dirty), kg/hl	77.8	71.6	80.1	1.47		79.0	76.1	80.9	0.96			
Screenings (<1.8mm), %	1.48	0.23	4.57	1.22		1.10	0.13	3.51	1.09			
Total Damaged Kernels, %	2.01	0.00	22.80	3.73		0.68	0.20	3.30	0.53			
Number of samples	72					48						
CULTIVARS												
	SST 88	69.8					61.8					
cultivars	SST 57	12.8					16.6					
with highest %	SST 15	6.5					11.3					
occurrence	SST 65	5.5					5.9					
	PAN 3404	2.4					1.8					
Number of samples	72					48						
MIXOGRAM (Quadromat)												
	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	2.7	2.3	3.2	0.21		2.7	2.3	4.3	0.32			
Tail height (6min), mm	49	43	56	2.55		47	43	52	2.46			
Number of samples	72					48						
BÜHLER EXTRACTION, %												
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	75.3	76.3	76.6	74.7	75.4	75.5	76.4	76.7	77.1	76.1	76.3	
FLOUR												
Protein (12% mb), %	11.46	10.69	10.09	9.75	10.94	11.36	11.84	10.70	9.84	8.77	9.98	
Colour, KJ	-1.9	-1.7	-2.0	-2.0	-1.8	-1.7	-1.6	-1.7	-1.8	-2.1	-2.0	
FARINOGRAM												
Water absorption (14% mb), %	61.9	61.9	61.0	61.5	62.4	61.4	62.2	61.8	61.7	60.6	60.8	
Development time, min	4.7	4.0	3.5	2.8	4.2	5.0	5.3	4.5	3.5	2.8	3.5	
Stability, min	8.8	7.0	6.9	6.9	7.1	9.5	7.2	6.2	5.6	5.3	6.8	
Mixing Tolerance Index, BU	29	41	40	37	39	34	46	50	49	45	40	
EXTENSOGRAM (45 min pull)												
Area, cm2	85	105	84	83	87	106	95	78	72	73	90	
Maximum height, BU	285	330	360	360	340	400	335	295	300	345	375	
Extensibility, mm	214	214	156	157	172	187	187	170	159	140	161	
ALVEOGRAM												
Strength, cm2	39.1	31.3	33.5	35.3	36.1	39.8	36.5	31.8	30.1	24.6	32.7	
Stability (P), mm	81	78	79	97	84	81	77	71	79	75	80	
Distensibility (L), mm	109	85	93	78	94	107	106	106	83	71	88	
Configuration ratio (P/L)	0.74	0.92	0.85	1.23	0.89	0.75	0.72	0.68	0.96	1.05	0.91	
MIXOGRAM												
Peak time, min	2.4	2.3	2.8	2.5	2.3	2.2	2.5	2.2	2.1	2.4	2.6	
100g BAKING TEST												
Loaf volume, cm3	850	820	750	775	835	875	925	875	770	725	795	
Evaluation	1	1	2	0	1	0	0	0	1	0	0	

SOUTH AFRICAN WINTER RAINFALL WHEAT Western Cape Province

PRODUCTION REGION	(5)				(6)							
	Rüens Western Region				Rüens Eastern Region							
Intake silos	Bredasdorp Caledon Klipdale Kriège Napier Protem Rietpoel Villiersdorp				Albertinia Ashton Camfer Heidelberg Karringmelksrivier Kleinberg Protem Riversdal Swellendam							
WHEAT	ave	min	max	stdev	ave	min	max	stdev				
Protein (12% mb), %	10.97	9.23	12.48	1.03	11.40	9.71	12.85	0.92				
Falling number, sec	385	338	414	20.63	383	323	466	29.17				
1000 Kernel mass (13% mb), g	41.9	37.1	45.8	2.52	39.5	33.6	43.6	2.93				
Hectolitre mass (dirty), kg/hl	80.1	76.9	81.9	1.09	80.3	78.2	82.8	1.06				
Screenings (<1.8mm), %	1.97	1.29	3.14	0.45	1.46	0.45	2.36	0.55				
Total Damaged Kemels, %	0.53	0.24	1.06	0.22	0.96	0.30	1.66	0.44				
Number of samples	19				22							
CULTIVARS												
SST 88	65.5				34.5							
cultivars	SST 15	16.2				13.5						
with highest %	SST 57	11.9				30.9						
occurrence	SST 65	3.1				12.5						
	PAN 3404	1.8				1.1						
Number of samples	19				22							
MIXOGRAM (Quadromat)	ave	min	max	stdev	ave	min	max	stdev				
Peak time, min	2.5	2.2	3.2	0.26	2.6	2.1	3.7	0.40				
Tail height (6min), mm	48	43	52	2.80	49	42	55	2.79				
Number of samples	19				22							
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
BÜHLER EXTRACTION, %	77.1	76.8	76.0	75.7	76.2		75.2	75.4	75.0	76.3		
FLOUR												
Protein (12% mb), %	11.67	10.46	9.50	8.65	9.67		11.62	10.47	9.72	9.10		
Colour, KJ	-1.8	-1.6	-1.9	-2.2	-1.5		-2.2	-2.3	-2.5	-2.3		
FARINOGRAM												
Water absorption (14% mb), %	64.3	62.9	62.8	61.7	62.4		63.4	62.5	61.5	60.4		
Development time, min	4.4	4.5	3.2	2.2	3.3		5.2	3.5	4.0	3.0		
Stability, min	6.5	6.2	5.7	4.8	5.3		7.6	7.0	6.2	5.2		
Mixing Tolerance Index, BU	49	51	49	53	51		45	38	52	46		
EXTENSOGRAM (45 min pull)												
Area, cm ²	82	75	63	53	66		86	72	60	64		
Maximum height, BU	255	265	245	230	285		300	285	275	275		
Extensibility, mm	208	191	168	148	154		194	170	144	149		
ALVEOGRAM												
Strength, cm ²	35.9	30.4	28.4	25.7	29.4		36.2	31.8	26.5	26.6		
Stability (P), mm	85	78	87	85	87		79	79	78	77		
Distensibility (L), mm	96	91	71	62	77		104	89	70	78		
Configuration ratio (P/L)	0.89	0.86	1.23	1.37	1.14		0.76	0.88	1.11	0.99		
MIXOGRAM												
Peak time, min	2.2	2.3	2.0	2.5	2.2		2.3	2.5	2.3	2.5		
100g BAKING TEST												
Loaf volume, cm ³	850	835	750	710	765		905	825	780	720		
Evaluation	2	0	1	0	1		0	0	0	1		

**SOUTH AFRICAN
IRRIGATION WHEAT
Vaal and Orange river area**

PRODUCTION REGION	(10) Griqualand - West					(11) Vaalharts						
	Intake silos					Barkly-Wes Hartswater Jan Kemp Magogong Taung						
WHEAT												
	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	11.31	8.85	14.28	1.20		11.66	10.50	12.53	0.81			
Falling number, sec	412	370	487	24.37		382	357	403	14.54			
1000 Kernel mass (13% mb), g	37.6	28.5	45.4	3.29		39.5	36.1	41.1	1.52			
Hectolitre mass (dirty), kg/hl	79.7	74.4	82.5	2.06		78.5	74.3	80.8	1.90			
Screenings (<1.8mm), %	1.92	0.10	5.26	1.32		3.17	1.94	5.01	1.35			
Total Damaged Kernels, %	0.34	0.08	0.60	0.16		0.19	0.16	0.32	0.06			
Number of samples	28					9						
CULTIVARS												
	SST 806	53.1				57.4						
cultivars	SST 876	17.3				9.7						
with highest %	Olifants	7.8				4.1						
occurrence	CRN 826	6.7				13.7						
	SST 825	2.6				7.6						
Number of samples	28					9						
MIXOGRAM (Quadromat)												
	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	2.3	1.6	2.8	0.34		2.6	2.4	3.0	0.19			
Tail height (6min), mm	45	36	51	3.80		49	47	51	1.66			
Number of samples	28					9						
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
BÜHLER EXTRACTION, %	76.2	76.1	77.7	77.7	77.2		76.2	76.2	77.1		75.3	
FLOUR												
Protein (12% mb), %	11.69	10.60	9.70	9.03	10.17		12.32	10.28	9.79		10.73	
Colour, KJ	-2.1	-2.0	-1.9	-2.5	-2.0		-2.2	-2.1	-2.1		-2.4	
FARINOGRAM												
Water absorption (14% mb), %	64.5	64.3	61.8	62.2	60.9		63.5	61.6	61.0		61.1	
Development time, min	3.8	4.0	3.5	3.3	4.0		6.7	4.8	3.5		4.5	
Stability, min	6.0	7.4	5.6	6.3	5.9		10.4	6.5	5.7		7.8	
Mixing Tolerance Index, BU	45	37	46	42	52		35	49	49		40	
EXTENSOGRAM (45 min pull)												
Area, cm ²	85	83	76	71	90		130	108	92		109	
Maximum height, BU	270	295	285	265	305		380	365	330		425	
Extensibility, mm	209	187	177	177	200		234	194	194		176	
ALVEOGRAM												
Strength, cm ²	34.9	37.9	28.7	27.8	32.9		42.4	33.5	31.0		31.3	
Stability (P), mm	83	93	78	82	73		77	75	68		75	
Distensibility (L), mm	97	92	82	72	109		123	102	110		93	
Configuration ratio (P/L)	0.85	1.01	0.95	1.14	0.67		0.63	0.73	0.62		0.81	
MIXOGRAM												
Peak time, min	1.8	2.2	2.3	2.3	2.3		2.4	2.3	2.4		2.7	
100g BAKING TEST												
Loaf volume, cm ³	975	895	820	745	855		950	895	890		875	
Evaluation	0	0	0	0	0		0	0	0		0	

**SOUTH AFRICAN
MAINLY IRRIGATION
North-West Province**

PRODUCTION REGION	(12) North-West Western Region					(14) North-West Southern Region						
	Intake silos											
	Bloubank Buhmannsdrif Kameel Kraaipan Madibogo Mafikeng Mareetsane Piet Plessis Springbokpan Vergeleë Vryburg Vryhof					Amalia Barberspan Delareyville Excelsior Geysdorp Hallat's Hope Migdol Nooitgedacht Schweizer-Reneke Taaibospan						
WHEAT												
	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	12.50	11.12	14.32	1.35		13.71	12.28	14.82	1.10			
Falling number, sec	375	348	406	24.24		342	268	376	44.26			
1000 Kernel mass (13% mb), g	38.3	36.8	40.1	1.55		34.6	31.8	38.2	2.87			
Hectolitre mass (dirty), kg/hl	79.0	77.8	80.6	1.23		75.7	71.9	80.1	3.25			
Screenings (<1.8mm), %	1.95	0.69	2.75	0.90		3.16	1.93	6.24	1.79			
Total Damaged Kernels, %	0.66	0.08	2.08	0.95		0.19	0.08	0.32	0.09			
Number of samples	4					5						
CULTIVARS												
	SST 806	64.0				53.6						
cultivars	SST 876	12.8				21.4						
with highest %	SST 822	10.3				18.0						
occurrence	Olifants	6.8				1.2						
	CRN 826					5.8						
Number of samples	4					5						
MIXOGRAM (Quadromat)												
	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	2.7	2.5	3.0	0.24		2.5	2.3	3.0	0.29			
Tail height (6min), mm	51	47	53	2.71		49	46	52	2.70			
Number of samples	4					5						
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
BÜHLER EXTRACTION, %	75.9						76.1		75.9		74.5	
FLOUR												
Protein (12% mb), %	11.71						11.36		13.43		12.99	
Colour, KJ	-2.5						-2.7		-1.1		-1.8	
FARINOGRAM												
Water absorption (14% mb), %	61.7						62.8		61.9		62.9	
Development time, min	5.5						4.8		5.3		7.5	
Stability, min	10.3						7.9		9.1		11.9	
Mixing Tolerance Index, BU	35						40		37		31	
EXTENSOGRAM (45 min pull)												
Area, cm2	134						110		156		127	
Maximum height, BU	405						345		395		360	
Extensibility, mm	227						217		255		236	
ALVEOGRAM												
Strength, cm2	41.3						39.3		43.3		47.4	
Stability (P), mm	75						75		61		69	
Distensibility (L), mm	126						126		179		159	
Configuration ratio (P/L)	0.60						0.60		0.34		0.43	
MIXOGRAM												
Peak time, min	2.5						2.3		2.3		2.3	
100g BAKING TEST												
Loaf volume, cm3	930						960		1010		955	
Evaluation	0						0		0		1	

**SOUTH AFRICAN
MAINLY IRRIGATION
North-West Province**

PRODUCTION REGION	(15)					(16)						
	North-West South-Eastern Region					North-West Central Eastern Region						
Intake silos	Bloemhof Christiana Hertzogville Hoopstad Kingswood					Bamboesspruit Klerksdorp Leeudoringstad Makwassie Regina Strydpoort Wolmaransstad						
WHEAT												
	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	14.09	13.60	14.58	0.69		13.36	12.23	14.44	1.11			
Falling number, sec	312	301	322	14.85		314	294	329	17.90			
1000 Kernel mass (13% mb), g	31.5	30.7	32.2	1.06		33.5	32.6	34.0	0.81			
Hectolitre mass (dirty), kg/hl	79.1	79.0	79.1	0.07		78.3	77.7	78.9	0.60			
Screenings (<1.8mm), %	2.15	1.49	2.80	0.93		2.20	2.00	2.40	0.20			
Total Damaged Kernels, %	0.60	0.56	0.64	0.06		0.63	0.56	0.70	0.07			
Number of samples	2					3						
CULTIVARS												
		PAN 3349	63.0				SST 806	52.7				
cultivars		PAN 3364	10.5				SST 876	27.7				
with highest %		Elands	10.5				CRN 826	13.7				
occurrence		Betta DN	7.0				PAN 3349	3.3				
		PAN 3191	6.0				Olifants	2.7				
Number of samples	2					3						
MIXOGRAM (Quadromat)												
	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	2.8	2.8	2.8	0.00		2.6	2.4	2.8	0.21			
Tail height (6min), mm	53	51	54	2.12		49	46	52	3.00			
Number of samples	2					3						
BÜHLER EXTRACTION, %												
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	73.7						73.4					
FLOUR												
Protein (12% mb), %	12.95						12.19					
Colour, KJ	-2.0						-2.2					
FARINOGRAM												
Water absorption (14% mb), %	63.7						61.6					
Development time, min	9.3						5.0					
Stability, min	17.7						11.0					
Mixing Tolerance Index, BU	15						29					
EXTENSOGRAM (45 min pull)												
Area, cm ²	115						100					
Maximum height, BU	385						375					
Extensibility, mm	206						192					
ALVEOGRAM												
Strength, cm ²	60.1						41.0					
Stability (P), mm	99						77					
Distensibility (L), mm	122						114					
Configuration ratio (P/L)	0.81						0.68					
MIXOGRAM												
Peak time, min	2.7						2.4					
100g BAKING TEST												
Loaf volume, cm ³	910						965					
Evaluation	2						0					

**SOUTH AFRICAN
MAINLY IRRIGATION
North-West Province**

PRODUCTION REGION	(17) North-West Central Northern Region (Ottosdal)					(18) North-West Central Region (Ventersdorp)						
	Intake silos											
	Bospoort Hartbeesfontein Kleinwarts Melliadora Ottosdal Rostrataville Vermaas Werda					Bodenstein Buckingham Coligny Enselspruit Makokskraal Potchefstroom Ventersdorp						
WHEAT												
	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	12.49	10.11	14.91	1.94		12.59	12.07	13.03	0.40			
Falling number, sec	387	352	414	22.92		385	319	420	45.20			
1000 Kernel mass (13% mb), g	36.6	32.1	39.7	3.02		34.8	33.0	36.1	1.42			
Hectolitre mass (dirty), kg/hl	78.6	75.1	80.8	2.05		78.1	75.8	79.7	1.79			
Screenings (<1.8mm), %	1.16	0.61	1.61	0.37		2.68	1.04	4.54	1.53			
Total Damaged Kernels, %	0.37	0.24	0.64	0.14		0.96	0.22	2.74	1.19			
Number of samples	6					4						
CULTIVARS												
	SST 806	51.8				62.3						
cultivars	SST 826	24.2				15.8						
with highest %	SST 876	16.7				13.5						
occurrence	Olifants	2.8				3.5						
	SST 825	1.0				3.5						
Number of samples	6					4						
MIXOGRAM (Quadromat)												
	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	2.8	2.5	3.0	0.16		2.9	2.5	3.1	0.27			
Tail height (6min), mm	49	44	55	3.56		52	47	54	3.20			
Number of samples	6					4						
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
BÜHLER EXTRACTION, %	75.2		75.8				76.5				75.1	
FLOUR												
Protein (12% mb), %	12.10		10.89				11.53				11.87	
Colour, KJ	-2.2		-2.4				-1.6				-2.4	
FARINOGRAM												
Water absorption (14% mb), %	61.5		61.2				61.8				60.5	
Development time, min	5.2		4.7				5.0				4.9	
Stability, min	12.2		10.5				7.8				17.0	
Mixing Tolerance Index, BU	22		26				42				14	
EXTENSOGRAM (45 min pull)												
Area, cm2	138		112				123				143	
Maximum height, BU	400		390				370				455	
Extensibility, mm	227		196				226				211	
ALVEOGRAM												
Strength, cm2	40.1		39.6				37.9				48.0	
Stability (P), mm	74		76				72				75	
Distensibility (L), mm	128		121				134				144	
Configuration ratio (P/L)	0.57		0.63				0.54				0.52	
MIXOGRAM												
Peak time, min	2.3		2.3				2.3				2.7	
100g BAKING TEST												
Loaf volume, cm3	975		925				950				960	
Evaluation	0		0				0				0	

SOUTH AFRICAN MAINLY IRRIGATION North-West Province

PRODUCTION REGION	(19)					(20)						
	North-West Central Region (Lichtenburg)					North-West Eastern Region						
Intake silos	Grootpan Halfpad Hibernia Lichtenburg Lottiehalte Lusthof					Battery Boons Brits Derby Koster Rustenburg Swartruggens Syferbult						
WHEAT												
	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	12.29	10.34	13.71	1.15		11.25	8.29	13.84	1.52			
Falling number, sec	358	224	391	49.61		376	278	429	38.64			
1000 Kernel mass (13% mb), g	37.5	28.1	41.6	4.39		37.7	30.6	42.9	3.36			
Hectolitre mass (dirty), kg/hl	77.1	63.5	80.1	4.58		79.2	74.4	81.4	1.62			
Screenings (<1.8mm), %	2.91	0.81	11.82	3.21		1.95	0.75	4.16	1.04			
Total Damaged Kernels, %	3.42	0.16	13.73	4.66		0.69	0.08	2.86	0.74			
Number of samples	11					24						
CULTIVARS												
		43.5					41.2					
cultivars	SST 806											
with highest %	Olifants	16.3					14.1					
occurrence	CRN 826	12.5					15.6					
	SST 322	8.6										
	SST 876	6.1					9.3					
Number of samples	11					24						
MIXOGRAM (Quadromat)												
	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	2.8	2.3	3.5	0.34		2.9	2.0	4.2	0.41			
Tail height (6min), mm	50	46	54	2.06		48	39	55	4.04			
Number of samples	11					24						
BÜHLER EXTRACTION, %												
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	77.2	76.7	76.6			75.7	74.8	76.5	76.5	75.3	74.9	
FLOUR												
Protein (12% mb), %	11.73	10.68	9.30			11.89	11.73	10.41	9.22	8.35	10.86	
Colour, KJ	-2.2	-2.0	-2.8			-1.3	-2.1	-2.8	-2.8	-3.1	-1.7	
FARINOGRAM												
Water absorption (14% mb), %	63.4	62.9	59.9			61.9	62.3	61.2	59.2	58.8	60.9	
Development time, min	4.7	3.5	3.5			5.2	5.3	4.2	2.2	3.0	4.8	
Stability, min	7.3	6.6	6.4			8.6	12.4	7.3	6.4	4.6	8.6	
Mixing Tolerance Index, BU	39	41	49			40	23	41	40	59	36	
EXTENSOGRAM (45 min pull)												
Area, cm2	96	85	84			117	145	104	89	64	108	
Maximum height, BU	335	325	340			390	470	350	350	310	405	
Extensibility, mm	198	177	171			209	208	198	170	142	183	
ALVEOGRAM												
Strength, cm2	36.5	35.2	27.2			37.6	47.6	33.8	31.5	21.3	37.5	
Stability (P), mm	78	87	67			72	90	74	69	66	77	
Distensibility (L), mm	107	80	92			117	115	102	106	71	105	
Configuration ratio (P/L)	0.73	1.08	0.73			0.62	0.78	0.72	0.65	0.93	0.73	
MIXOGRAM												
Peak time, min	2.3	2.4	2.6			2.5	2.7	2.5	2.8	2.3	2.7	
100g BAKING TEST												
Loaf volume, cm3	900	875	845			925	950	890	905	740	915	
Evaluation	0	0	0			0	0	0	0	0	0	

SOUTH AFRICAN

SUMMER RAINFALL WHEAT (AND IRRIGATION)

Free State Province (Central)

PRODUCTION REGION	(21) Free State North-Western Region (Viljoenskroon)				(26) Free State South-Eastern Region							
	Intake silos	Attie Groenebloem Heuningspruit Koppies Rooiwal Vierfontein Viljoenskroon Vredefort Weiveld	Arlington Kaallaagte Libertas Marquard Meets Monte Video Senekal Steynsrus									
WHEAT												
	ave	min	max	stdev	ave	min	max	stdev				
Protein (12% mb), %	14.04	11.54	15.56	1.37	14.86	13.46	17.96	1.17				
Falling number, sec	350	313	427	40.77	328	218	426	59.42				
1000 Kernel mass (13% mb), g	31.8	29.1	37.1	3.29	34.0	27.5	39.6	3.09				
Hectolitre mass (dirty), kg/hl	78.3	77.6	80.0	0.82	76.7	71.9	80.3	2.13				
Screenings (<1.8mm), %	1.35	0.26	2.74	0.95	1.42	0.40	3.40	0.78				
Total Damaged Kemels, %	0.43	0.24	0.68	0.14	0.56	0.08	1.50	0.40				
Number of samples	8				18							
CULTIVARS												
Elands	31.9				32.0							
cultivars	SST 806	20.1										
with highest %	Gariep	15.1				22.6						
occurrence	SST 399	8.4				13.7						
	Betta DN	5.9				7.9						
Number of samples	8				18							
MIXOGRAM (Quadromat)												
	ave	min	max	stdev	ave	min	max	stdev				
Peak time, min	3.0	2.4	3.3	0.31	3.1	2.5	3.6	0.32				
Tail height (6min), mm	53	45	57	3.85	55	52	60	2.23				
Number of samples	8				18							
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
BÜHLER EXTRACTION, %	73.8	77.5					75.3	74.0	73.9		74.8	73.4
FLOUR												
Protein (12% mb), %	13.11	10.64					12.91	14.23	13.94		12.31	15.65
Colour, KJ	-0.8	-1.2					-1.7	-1.3	-1.1		2.8	0.9
FARINOGRAM												
Water absorption (14% mb), %	61.6	61.0					64.1	64.5	63.4		61.2	64.0
Development time, min	6.3	3.4					7.3	7.2	6.3		3.2	9.2
Stability, min	10.7	4.9					12.4	12.0	11.7		6.4	17.0
Mixing Tolerance Index, BU	34	55					31	27	27		41	16
EXTENSOGRAM (45 min pull)												
Area, cm2	145	85					113	128	133		133	165
Maximum height, BU	430	305					390	395	400		435	440
Extensibility, mm	228	193					200	225	228		214	248
ALVEOGRAM												
Strength, cm2	46.6	28.0					53.5	55.7	48.6		37.9	61.2
Stability (P), mm	79	61					97	88	74		70	78
Distensibility (L), mm	123	114					109	126	135		119	150
Configuration ratio (P/L)	0.64	0.53					0.89	0.70	0.55		0.59	0.52
MIXOGRAM												
Peak time, min	2.7	2.3					2.4	2.4	2.7		2.7	2.8
100g BAKING TEST												
Loaf volume, cm3	1030	910					960	1015	965		965	1050
Evaluation	0	0					1	2	2		0	3

SOUTH AFRICAN

SUMMER RAINFALL WHEAT (AND IRRIGATION) Free State Province (Central)

Free State Province (South-Western)

PRODUCTION REGION	(27) Free State Northern Region					(24) Free State Central Region						
Intake silos	Gottenburg Heilbron Hoogte Mooigeleë Petrus Steyn Wolwehoek					Bloemfontein Brandfort De Brug Geneva Hennenman Koffiefontein Kroonstad Petrusburg Theunissen Van Tonder Welgeleë Winburg						
WHEAT	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	14.86	12.96	15.67	0.84		14.70	9.93	18.01	1.52			
Falling number, sec	267	64	383	114.87		340	134	417	61.17			
1000 Kernel mass (13% mb), g	34.1	31.9	35.7	1.17		32.1	28.2	45.4	4.20			
Hectolitre mass (dirty), kg/hl	77.0	71.6	79.3	2.65		78.3	75.3	81.6	1.35			
Screenings (<1.8mm), %	1.44	0.86	2.97	0.74		1.80	0.51	3.73	0.91			
Total Damaged Kernels, %	1.49	0.16	5.22	1.79		0.62	0.08	1.56	0.43			
Number of samples	8					27						
CULTIVARS												
Elands	40.3					6.1						
Tugela DN	15.5					1.9						
SST 399	12.1					4.3						
Gariép	2.5					37.1						
PAN 3377	3.9					19.4						
Number of samples	8					27						
MIXOGRAM (Quadromat)	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	3.5	3.0	4.0	0.35		2.9	2.5	3.5	0.26			
Tail height (6min), mm	56	45	65	6.32		53	43	58	3.06			
Number of samples	8					27						
BÜHLER EXTRACTION, %	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	75.4			75.8		73.9	73.9	74.2	74.2		74.6	
FLOUR												
Protein (12% mb), %	13.77			13.86		13.67	13.98	12.33	14.10		11.61	
Colour, KJ	-0.4			-1.0		0.8	-1.6	-1.7	-0.5		-1.6	
FARINOGRAM												
Water absorption (14% mb), %	65.7			63.4		60.7	63.9	63.4	62.9		62.6	
Development time, min	8.0			6.9		3.7	8.2	5.2	6.0		4.5	
Stability, min	17.0			9.6		7.8	13.6	10.4	10.1		8.5	
Mixing Tolerance Index, BU	18			41		39	32	27	31		33	
EXTENSOGRAM (45 min pull)												
Area, cm2	149			121		160	138	143	125		104	
Maximum height, BU	400			385		470	400	430	400		345	
Extensibility, mm	254			214		226	236	221	220		204	
ALVEOGRAM												
Strength, cm2	64.7			57.2		48.0	51.5	48.3	49.7		38.1	
Stability (P), mm	102			82		61	90	85	78		77	
Distensibility (L), mm	119			155		157	118	122	143		113	
Configuration ratio (P/L)	0.86			0.53		0.39	0.76	0.70	0.54		0.68	
MIXOGRAM												
Peak time, min	3.0			2.3		2.5	2.6	2.3	2.4		2.0	
100g BAKING TEST												
Loaf volume, cm3	970			995		1030	1135	1060	1035		920	
Evaluation	2			2		0.0	0	0	1		0	

SOUTH AFRICAN
SUMMER RAINFALL WHEAT (AND IRRIGATION)
Free State Province (North-Western)

PRODUCTION REGION	(22)				(23)							
	Free-State North-Western Region (Bothaville)				Free-State North-Western Region (Bultfontein)							
Intake silos	Allanridge Bothaville Mirage Odendaalsrus Schoonspruit Schuttendraai				Bultfontein Losdoorns Protespan Tierfontein Wesselsbron Willemsrust							
WHEAT												
	ave	min	max	stdev	ave	min	max	stdev				
Protein (12% mb), %	15.44	13.29	16.97	1.32	14.40	13.31	16.50	1.01				
Falling number, sec	334	315	352	16.93	332	274	395	35.01				
1000 Kernel mass (13% mb), g	31.9	27.9	35.7	3.07	31.7	29.0	35.4	2.12				
Hectolitre mass (dirty), kg/hl	76.8	73.9	79.2	1.61	77.7	74.6	80.1	1.68				
Screenings (<1.8mm), %	1.95	0.98	2.92	0.74	1.69	0.76	3.99	0.87				
Total Damaged Kernels, %	0.28	0.00	0.78	0.26	0.43	0.00	1.44	0.40				
Number of samples	7				13							
CULTIVARS												
	Elands				6.5							
cultivars	Gariep				12.8							
with highest %	PAN 3349				12.2							
occurrence	SST 806				14.8							
	PAN 3377				12.3							
Number of samples	7				13							
MIXOGRAM (Quadromat)												
	ave	min	max	stdev	ave	min	max	stdev				
Peak time, min	3.3	2.7	3.7	0.37	3.0	2.3	3.3	0.28				
Tail height (6min), mm	59	52	64	4.83	55	52	58	2.07				
Number of samples	7				13							
BÜHLER EXTRACTION, %												
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	73.8	72.9		75.0			73.4	72.7	72.3			
FLOUR												
Protein (12% mb), %	13.68	14.82		15.98			13.19	13.90	13.04			
Colour, KJ	-1.7	-1.7		-0.7			-2.1	-1.8	-2.0			
FARINOGRAM												
Water absorption (14% mb), %	63.9	64.8		65.9			63.6	63.7	63.4			
Development time, min	9.5	7.7		9.2			8.2	7.0	8.2			
Stability, min	15.9	17.4		15.9			18.1	18.2	18.0			
Mixing Tolerance Index, BU	27	6		19			16	20	21			
EXTENSOGRAM (45 min pull)												
Area, cm2	135	154		200			113	136	123			
Maximum height, BU	400	430		450			385	430	395			
Extensibility, mm	228	242		275			205	220	216			
ALVEOGRAM												
Strength, cm2	54.1	71.4		74.3			51.4	57.3	50.2			
Stability (P), mm	91	98		92			92	92	92			
Distensibility (L), mm	119	139		148			116	130	108			
Configuration ratio (P/L)	0.76	0.70		0.62			0.79	0.71	0.86			
MIXOGRAM												
Peak time, min	2.7	3.1		3.0			2.5	2.7	2.1			
100g BAKING TEST												
Loaf volume, cm3	1075	1175		1090			1110	1125	1010			
Evaluation	0	0		2			0	0	0			

SOUTH AFRICAN SUMMER RAINFALL WHEAT (AND IRRIGATION) Free State Province (Eastern)

PRODUCTION REGION	(25) Free State South-Western Region				(28) Free State Eastern Region							
	ave	min	max	stdev	ave	min	max	stdev				
Intake silos	Bethlehem Clocolan De Wetsdorp Ficksburg Fouriesburg Marseilles Modderpoort Slabberts Tweespruit Westminster Zastron				Afrikaskop Ascent Cornelia Daniëlsrus Eeram Frankfort Harrismith Jim Fouché Kransfontein Memel Reitz Tweeling Villiers Vrede Warden Windfield							
WHEAT												
Protein (12% mb), %	12.84	9.37	14.85	1.34	12.86	11.06	14.48	0.76				
Falling number, sec	332	237	435	39.89	336	211	414	46.08				
1000 Kernel mass (13% mb), g	36.0	31.0	41.8	2.87	37.4	30.7	46.1	3.90				
Hectolitre mass (dirty), kg/hl	77.6	73.8	80.5	1.66	77.4	68.3	80.6	2.31				
Screenings (<1.8mm), %	1.70	0.85	2.83	0.55	1.00	0.10	2.61	0.70				
Total Damaged Kemels, %	0.43	0.08	0.86	0.20	0.37	0.08	0.60	0.16				
Number of samples	25				31							
CULTIVARS												
Elands	29.6				38.4							
cultivars	11.3				3.3							
with highest %	11.2				2.0							
occurrence	10.2				11.0							
PAN 3377	4.6				8.8							
Number of samples	25				31							
MIXOGRAM (Quadromat)												
Peak time, min	ave	min	max	stdev	ave	min	max	stdev				
Tail height (6min), mm	3.1	2.0	4.7	0.60	3.1	2.3	4.1	0.46				
Number of samples	25				31							
BÜHLER EXTRACTION, %												
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
	74.5	74.8	73.8	74.3			76.0	75.9		73.6	76.3	
FLOUR												
Protein (12% mb), %	12.28	12.06	11.19	8.46			12.09	11.18		13.52	11.43	
Colour, KJ	-2.2	-1.8	-1.0	-2.5			-1.4	-1.3		0.0	-2.0	
FARINOGRAM												
Water absorption (14% mb), %	63.2	63.3	62.7	62.5			63.0	61.8		62.4	61.9	
Development time, min	5.9	5.9	3.3	1.7			5.3	6.0		6.0	6.2	
Stability, min	11.5	13.1	12.8	5.6			9.2	9.8		12.0	11.6	
Mixing Tolerance Index, BU	32	20	7	40			32	34		34	30	
EXTENSOGRAM (45 min pull)												
Area, cm2	132	131	108	95			120	118		143	117	
Maximum height, BU	420	440	445	470			365	410		415	430	
Extensibility, mm	212	200	169	136			223	190		232	189	
ALVEOGRAM												
Strength, cm2	48.6	55.4	47.9	30.6			45.6	40.2		59.5	50.0	
Stability (P), mm	92	97	110	132			80	81		81	92	
Distensibility (L), mm	107	115	81	37			119	101		152	108	
Configuration ratio (P/L)	0.86	0.84	1.36	3.60			0.68	0.80		0.53	0.85	
MIXOGRAM												
Peak time, min	2.4	3.1	3.3	3.1			2.5	2.8		2.9	3.0	
100g BAKING TEST												
Loaf volume, cm3	920	920	815	645			915	890		1035	840	
Evaluation	1	0	2	3			1	0		0	2	

SOUTH AFRICAN SUMMER RAINFALL WHEAT AND IRRIGATION Mpumalanga

PRODUCTION REGION	(30) Mpumalanga Eastern Region					(32) Mpumalanga Western Region						
	Intake silos											
	Amersfoort Badplaas Carolina Davel Ermelo Estancia Lothair Maizefield Mkondo Morgenzon Overvaal Panbult					Argent Dryden Endicott Elof Hawerklip Kendal Ogies						
WHEAT												
	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	12.63	11.38	16.22	2.05		12.95	11.62	13.72	0.64			
Falling number, sec	401	334	443	44.49		362	309	390	29.45			
1000 Kernel mass (13% mb), g	38.7	32.7	44.3	4.14		39.2	34.6	44.0	2.72			
Hectolitre mass (dirty), kg/hl	76.9	76.3	77.7	0.62		77.9	75.8	79.8	1.68			
Screenings (<1.8mm), %	2.06	1.09	3.20	0.94		0.87	0.46	1.38	0.32			
Total Damaged Kernels, %	0.34	0.08	0.64	0.25		0.57	0.38	0.92	0.18			
Number of samples	5					9						
CULTIVARS												
	SST 806					50.2						
cultivars	CRN 826					21.8						
with highest %	Elands					13.2						
occurrence	SST 876					4.8						
	SST 825					8.0						
Number of samples	5					9						
MIXOGRAM (Quadromat)												
	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	2.8	2.3	3.7	0.55		2.6	2.4	3.0	0.22			
Tail height (6min), mm	51	48	56	3.11		50	47	53	1.76			
Number of samples	5					9						
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
BÜHLER EXTRACTION, %	77.4	78.5					78.4	77.3				
FLOUR												
Protein (12% mb), %	12.23	10.29					12.02	11.46				
Colour, KJ	-1.2	-2.9					-2.0	-2.1				
FARINOGRAM												
Water absorption (14% mb), %	62.8	62.4					62.7	62.3				
Development time, min	4.5	4.2					6.3	6.5				
Stability, min	7.1	6.5					10.5	9.7				
Mixing Tolerance Index, BU	43	48					32	39				
EXTENSOGRAM (45 min pull)												
Area, cm2	125	101					115	131				
Maximum height, BU	370	325					355	375				
Extensibility, mm	224	208					220	219				
ALVEOGRAM												
Strength, cm2	43.6	34.9					42.0	40.1				
Stability (P), mm	81	74					69	70				
Distensibility (L), mm	136	112					149	136				
Configuration ratio (P/L)	0.60	0.66					0.46	0.51				
MIXOGRAM												
Peak time, min	2.2	2.3					2.2	2.3				
100g BAKING TEST												
Loaf volume, cm3	950	865					925	870				
Evaluation	0	0					0	1				

SOUTH AFRICAN SUMMER RAINFALL WHEAT AND IRRIGATION Mpumalanga and Gauteng Provinces

PRODUCTION REGION	(33)					(34)						
	Mpumalanga Northern Region					Gauteng						
Intake silos	Driefontein Lydenburg Marble Hall Middelburg Stoffelberg Pan Arnot Wonderfontein					Bloekomspruit Bronkhorstspruit Glenroy Goeie Hoek Kaalfontein Middelvlei Nigel Oberholzer Raathsvlei						
WHEAT												
	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	12.02	10.43	13.58	1.26		12.57	11.23	15.17	1.04			
Falling number, sec	417	382	473	31.68		415	374	445	29.63			
1000 Kernel mass (13% mb), g	37.7	33.3	42.4	3.28		37.5	29.7	41.7	3.55			
Hectolitre mass (dirty), kg/hl	79.1	77.7	80.8	1.32		78.6	74.7	81.5	2.00			
Screenings (<1.8mm), %	1.97	1.28	2.99	0.54		1.40	0.49	2.30	0.53			
Total Damaged Kernels, %	0.75	0.00	2.82	0.95		0.57	0.12	1.22	0.34			
Number of samples	8					11						
CULTIVARS												
SST 806		44.4					36.9					
cultivars CRN 826		29.6					48.7					
with highest % occurrence SST 876		6.8					4.0					
SST 822		6.0										
SST 825		3.5					6.0					
Number of samples	8					11						
MIXOGRAM (Quadromat)												
	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	3.0	2.3	3.7	0.47		2.9	2.0	3.8	0.62			
Tail height (6min), mm	49	43	54	3.38		50	44	54	3.10			
Number of samples	8					11						
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
BÜHLER EXTRACTION, %	75.1	78.3	75.8				76.1	77.9				
FLOUR												
Protein (12% mb), %	11.99	10.25	9.79				12.07	10.65				
Colour, KJ	-1.9	-2.2	-2.6				-2.1	-2.5				
FARINOGRAM												
Water absorption (14% mb), %	63.9	62.9	61.1				63.6	62.3				
Development time, min	6.5	3.8	4.2				6.3	6.4				
Stability, min	11.2	4.4	8.6				11.4	11.9				
Mixing Tolerance Index, BU	30	65	37				24	28				
EXTENSOGRAM (45 min pull)												
Area, cm2	113	70	87				128	128				
Maximum height, BU	395	260	375				405	450				
Extensibility, mm	186	186	160				209	194				
ALVEOGRAM												
Strength, cm2	45.0	31.2	34.6				42.4	44.0				
Stability (P), mm	94	78	88				87	94				
Distensibility (L), mm	103	95	80				104	92				
Configuration ratio (P/L)	0.91	0.82	1.10				0.83	1.03				
MIXOGRAM												
Peak time, min	2.5	2.0	3.0				2.3	2.7				
100g BAKING TEST												
Loaf volume, cm3	930	860	825				935	900				
Evaluation	0	0	0				0	0				

**SOUTH AFRICAN
SUMMER RAINFALL WHEAT (AND IRRIGATION)
Limpopo and Kwazulu-Natal Provinces**

PRODUCTION REGION	(35) Limpopo					(36) KwaZulu-Natal						
	Intake silos											
	Alma					Bergville						
	Crecy					Bloedrivier						
	Immerpan					Dannhauser						
	Lehau					Dundee						
	Naboomspruit					Mizpah						
	Northam					New Amalfi						
	Nutfield					Paulpietersburg						
	Nylstroom					Vryheid						
	Piensaarsrivier					Winterton						
	Pietersburg											
	Potgietersrus											
	Roedtan											
	Settlers											
	Tzaneen											
	Vaalwater											
	Warmbad											
WHEAT												
	ave	min	max	stdev		ave	min	max	stdev			
Protein (12% mb), %	12.40	9.99	14.96	1.49		12.92	10.93	14.34	0.86			
Falling number, sec	444	379	648	58.21		294	92	432	76.03			
1000 Kernel mass (13% mb), g	34.6	28.4	39.4	3.31		37.2	32.9	42.1	2.93			
Hectolitre mass (dirty), kg/hl	78.6	73.9	82.1	2.29		77.4	74.1	80.7	1.70			
Screenings (<1.8mm), %	2.47	0.59	5.67	1.26		1.54	0.93	2.60	0.44			
Total Damaged Kernels, %	0.78	0.00	9.30	2.20		1.44	0.16	5.08	1.33			
Number of samples	17					15						
CULTIVARS												
	CRN 826		35.3					14.7				
cultivars	SST 806		31.8					56.3				
with highest %	Olifants		13.2					2.0				
occurrence	SST 876		8.6					3.3				
	SST 825		4.9					13.9				
Number of samples	17					15						
MIXOGRAM (Quadromat)												
	ave	min	max	stdev		ave	min	max	stdev			
Peak time, min	2.6	1.8	3.5	0.46		2.8	2.3	3.5	0.42			
Tail height (6min), mm	48	36	56	5.59		50	43	55	3.79			
Number of samples	17					15						
	B1	B2	B3	B4	UT	COW	B1	B2	B3	B4	UT	COW
BÜHLER EXTRACTION, %	74.4	76.1	74.8	77.5	72.3		75.9	76.4	76.6		77.1	
FLOUR												
Protein (12% mb), %	12.07	10.17	10.54	9.81	13.67		11.78	11.05	10.86		12.43	
Colour, KJ	-1.8	-2.7	-2.8	-1.6	-0.7		-1.6	-1.4	-1.7		-0.5	
FARINOGRAM												
Water absorption (14% mb), %	64.2	60.8	61.3	59.5	64.3		63.2	62.3	61.7		63.4	
Development time, min	5.7	3.8	5.2	4.0	7.0		5.5	4.7	2.8		5.2	
Stability, min	12.1	7.3	9.2	6.2	11.2		8.8	6.8	7.8		11.1	
Mixing Tolerance Index, BU	27	37	33	52	33		39	51	30		26	
EXTENSOGRAM (45 min pull)												
Area, cm ²	130	86	104	86	131		101	94	105		133	
Maximum height, BU	445	350	345	385	345		310	290	335		375	
Extensibility, mm	192	190	206	153	260		245	229	218		248	
ALVEOGRAM												
Strength, cm ²	52.3	33.8	36.7	31.2	44.8		43.3	33.8	39.8		49.7	
Stability (P), mm	100	78	85	74	83		79	70	77		80	
Distensibility (L), mm	109	94	96	100	119		125	117	111		134	
Configuration ratio (P/L)	0.92	0.82	0.88	0.74	0.70		0.63	0.60	0.69		0.60	
MIXOGRAM												
Peak time, min	2.7	2.3	2.5	2.5	2.3		2.5	2.3	2.7		3.0	
100g BAKING TEST												
Loaf volume, cm ³	920	850	900	845	1030		985	915	935		1000	
Evaluation	0	0	0	0	0		0	0	0		0	

