

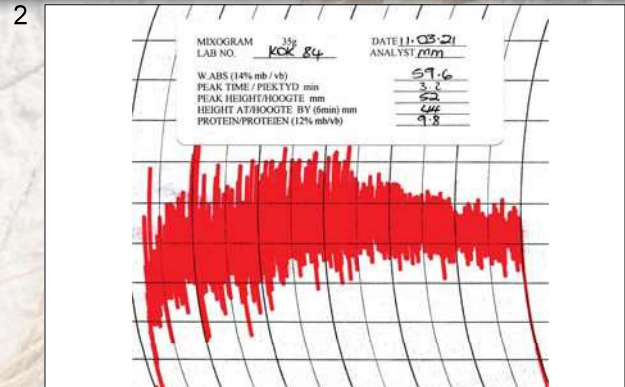
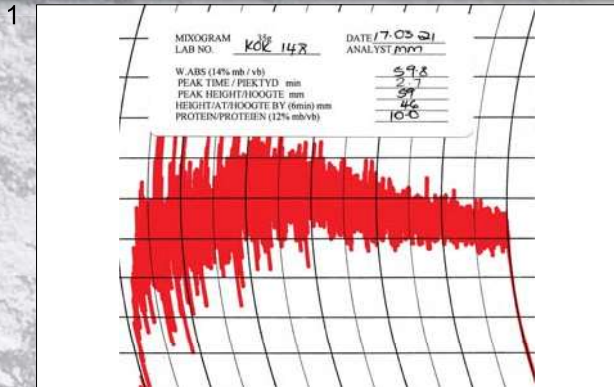
South African quality data per production region

WINTER RAINFALL WHEAT

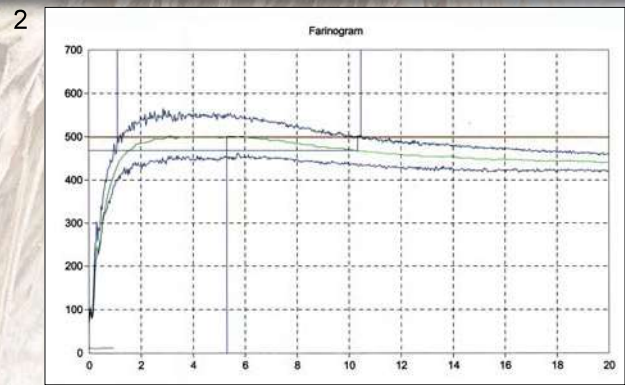
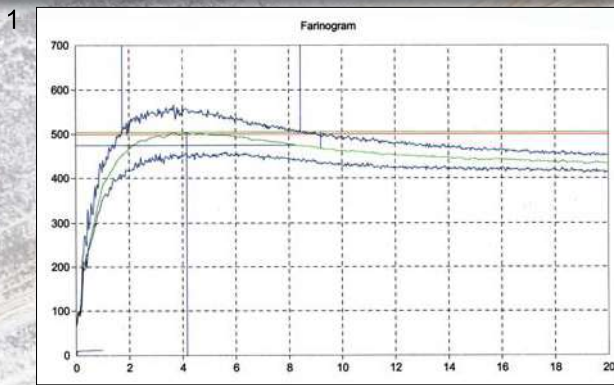
PRODUCTION REGION	(1)				(2)					
	Namakwaland Region				Swartland Western Region					
WHEAT	ave	min	max	stdev	ave	min	max	stdev		
Protein (12% mb), %	11.5	10.3	13.3	1.36	10.6	9.5	12.4	0.92		
Falling number, sec	404	380	424	21.23	387	352	428	26.53		
Moisture, %	10.6	10.3	10.7	0.19	10.9	10.5	11.2	0.26		
1000 Kernel mass (13% mb), g	39.5	36.7	41.8	2.13	36.6	34.4	39.9	1.86		
Hectolitre mass (dirty), kg/hl	79.0	77.7	79.5	0.87	77.7	74.3	80.3	1.89		
Screenings (<1.8 mm sieve), %	3.22	2.37	3.70	0.61	2.08	0.63	3.35	1.01		
Total damaged kernels, %	1.12	0.28	2.58	1.01	0.53	0.00	1.20	0.34		
Combined deviations, %	4.82	4.11	5.41	0.58	3.10	0.99	5.95	1.47		
Number of samples	4				11					
CULTIVARS										
	SST 0117		34.8		SST 0117		39.1			
	SST 0166		24.0		SST 056		15.9			
	SST 087		16.5		SST 0166		12.6			
	SST 056		14.5		SST 087		12.5			
Cultivars with highest % occurrence	SST 015		6.3		SST 88		10.8			
Number of samples	4				11					
MIXOGRAM (Quadromat Junior)	ave	min	max	stdev	ave	min	max	stdev		
Peak time, min	2.7	2.4	2.9	0.21	3.3	2.9	3.9	0.34		
Tail height (6 min), mm	48	44	51	3.30	44	41	50	2.42		
Number of samples	4				11					
CLASS AND GRADE	COMPOSITE SAMPLES									
	Super	B1	B2	B3	COW	Super	B1	B2	B3	COW
Bühler Extraction, %	-	-	-	-	71.1	-	-	73.4	73.8	73.1
FLOUR										
Protein (12% mb), %	-	-	-	-	10.6	-	-	10.3	9.3	10.2
Moisture, %	-	-	-	-	13.9	-	-	13.6	13.6	13.4
Ash (db), %	-	-	-	-	0.65	-	-	0.60	0.56	0.58
Colour, KJ (wet)	-	-	-	-	-5.0	-	-	-5.0	-5.0	-5.0
Colour, Konica Minolta CM5 (dry)	-	-	-	-	94.44	-	-	94.35	94.58	94.41
L*	-	-	-	-	0.34	-	-	0.33	0.31	0.33
a*	-	-	-	-	9.41	-	-	10.58	10.13	10.46
b*	-	-	-	-		-	-			
RVA										
Peak Viscosity, cP	-	-	-	-	2209	-	-	2433	2534	2390
Minimum viscosity (Trough), cP	-	-	-	-	1607	-	-	1791	1789	1662
Final Viscosity, cP	-	-	-	-	2542	-	-	2929	3015	2836
Peak Time, min	-	-	-	-	7.00	-	-	7.00	7.00	7.00
GLUTEN										
Wet gluten (14% mb), %	-	-	-	-	29.8	-	-	25.8	23.1	26.5
Dry gluten (14% mb), %	-	-	-	-	10.1	-	-	8.9	7.7	8.8
Gluten Index	-	-	-	-	91	-	-	95	95	95
FARINOGRAM										
Water absorption (14% mb), %	-	-	-	-	60.0	-	-	57.0	55.6	56.4
Development time, min	-	-	-	-	4.2	-	-	5.3	2.2	5.2
Stability, min	-	-	-	-	6.7	-	-	9.4	7.6	8.9
Mixing tolerance index, BU	-	-	-	-	38	-	-	31	23	32
EXTENSOGRAM (45 min pull)										
Area, cm²	-	-	-	-	82	-	-	92	83	99
Maximum height, BU	-	-	-	-	329	-	-	372	349	364
Extensibility, mm	-	-	-	-	178	-	-	180	170	198
ALVEOGRAM										
Strength (S), cm²	-	-	-	-	36.4	-	-	34.6	32.6	34.3
Stability (P), mm	-	-	-	-	84	-	-	73	70	69
Distensibility (L), mm	-	-	-	-	109	-	-	120	115	132
Configuration ratio (P/L)	-	-	-	-	0.77	-	-	0.61	0.61	0.52
MIXOGRAM										
Peak time, min	-	-	-	-	2.6	-	-	2.9	3.2	3.2
100 g BAKING TEST										
Loaf volume, cm³	-	-	-	-	998	-	-	1028	993	1015
Evaluation (see page 74)	-	-	-	-	0	-	-	0	0	0

Rheological Graphs Per Production Region

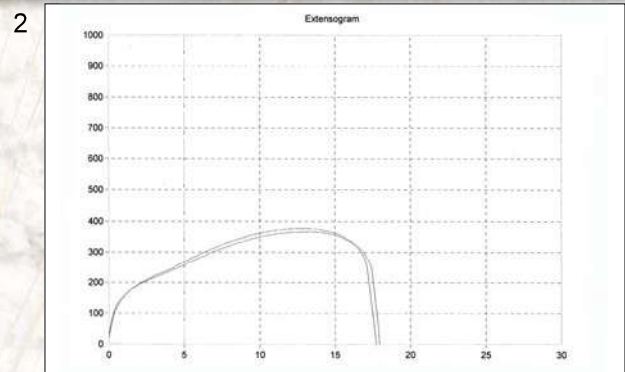
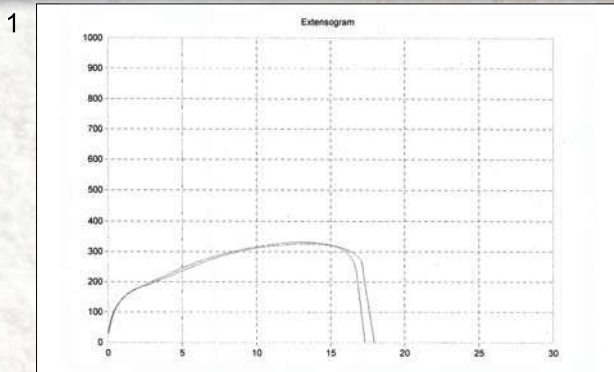
MIXOGRAM



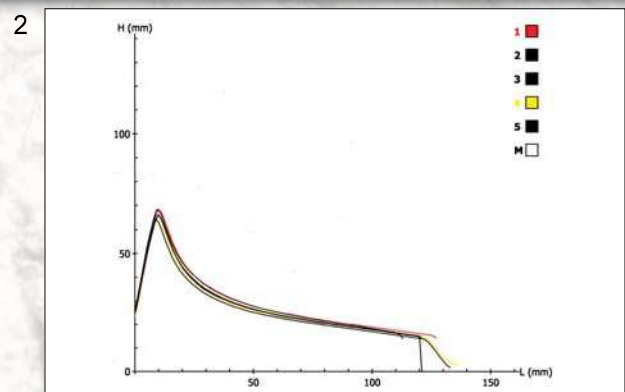
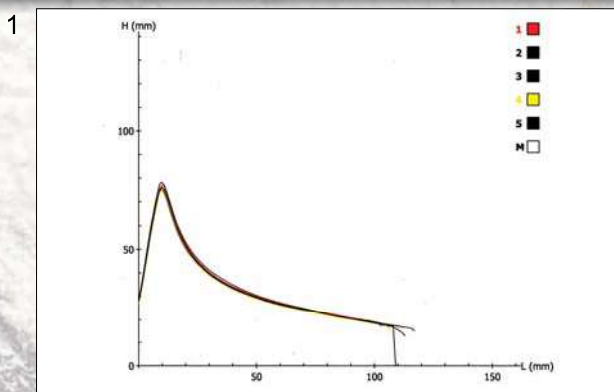
FARINOGRAM



EXTENSOGRAM



ALVEOGRAM



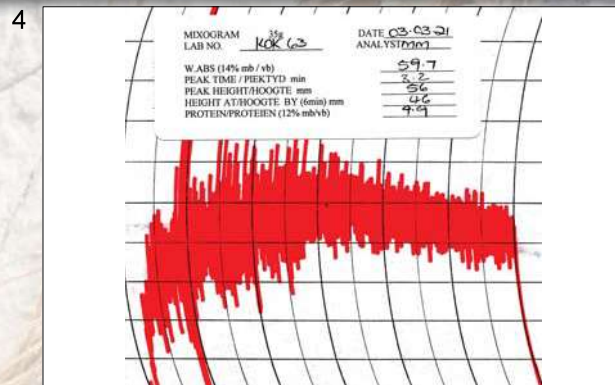
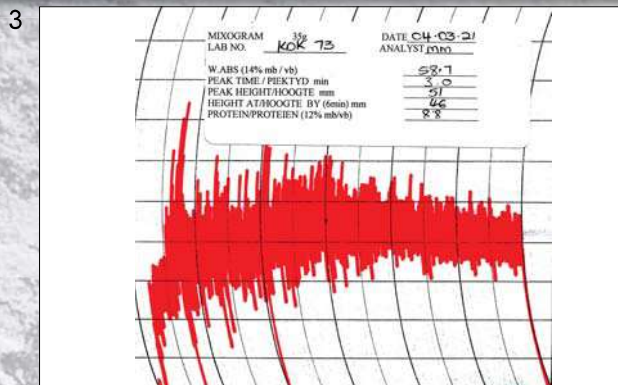
South African quality data per production region

WINTER RAINFALL WHEAT

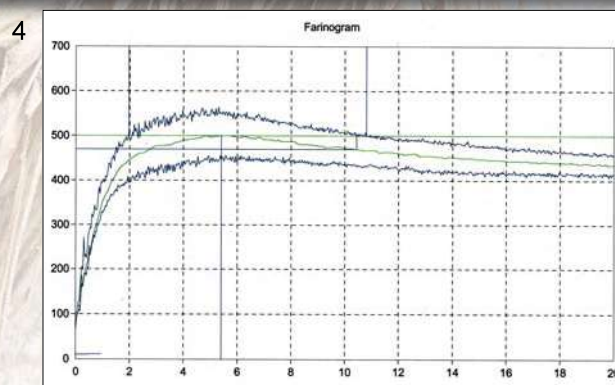
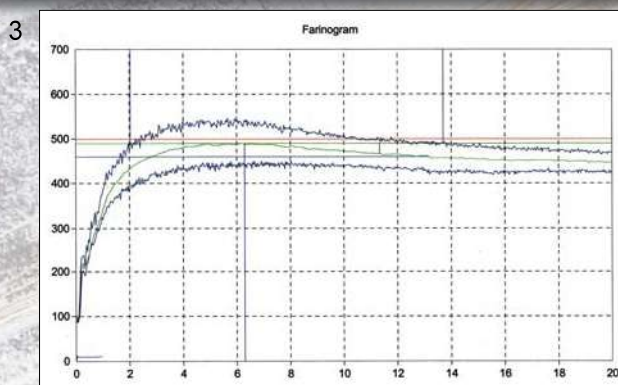
PRODUCTION REGION	(3)				(4)					
	Swartland Central Region				Swartland Eastern Region					
WHEAT	ave	min	max	stdev	ave	min	max	stdev		
Protein (12% mb), %	10.7	8.6	13.5	1.07	10.7	9.0	13.1	1.24		
Falling number, sec	418	334	542	46.25	417	370	494	35.43		
Moisture, %	10.8	9.6	11.6	0.33	10.8	9.9	11.4	0.39		
1000 Kernel mass (13% mb), g	38.3	30.8	43.2	2.52	37.4	29.8	43.6	3.19		
Hectolitre mass (dirty), kg/hl	77.7	72.1	80.6	1.44	78.4	74.6	80.0	1.14		
Screenings (<1.8 mm sieve), %	1.88	0.20	3.62	0.85	2.03	1.25	3.52	0.60		
Total damaged kernels, %	1.07	0.10	9.66	1.56	0.67	0.00	2.88	0.70		
Combined deviations, %	3.71	0.62	12.67	2.14	3.20	1.90	6.06	1.06		
Number of samples	64				24					
CULTIVARS										
	SST 0166 26.5				SST 0117 22.4					
	SST 0117 24.3				SST 0166 21.8					
	SST 056 18.0				SST 056 17.4					
	SST 087 13.5				SST 087 13.9					
Cultivars with highest % occurrence	SST 0127 9.7				SST 0127 9.5					
Number of samples	64				24					
MIXOGRAM (Quadromat Junior)	ave	min	max	stdev	ave	min	max	stdev		
Peak time, min	3.0	2.5	3.7	0.24	3.2	2.6	3.8	0.31		
Tail height (6 min), mm	46	39	52	2.95	45	39	50	2.83		
Number of samples	64				24					
CLASS AND GRADE	COMPOSITE SAMPLES									
	Super	B1	B2	B3	COW	Super	B1	B2	B3	COW
Bühler Extraction, %	72.9	74.2	74.0	73.9	73.6	71.1	70.6	73.5	73.8	74.1
FLOUR										
Protein (12% mb), %	12.1	11.2	10.2	10.2	9.8	12.3	10.9	10.2	9.6	9.4
Moisture, %	13.2	13.0	14.1	13.8	13.5	13.4	13.9	13.2	13.2	14.1
Ash (db), %	0.59	0.57	0.56	0.56	0.59	0.60	0.57	0.60	0.58	0.54
Colour, KJ (wet)	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0	-5.0
Colour, Konica Minolta CM5 (dry)										
L*	94.28	94.31	94.47	94.60	94.43	94.31	94.32	94.34	94.46	94.48
a*	0.38	0.34	0.36	0.33	0.36	0.39	0.37	0.39	0.35	0.37
b*	10.28	9.76	9.74	9.52	9.86	10.18	10.25	10.09	9.80	9.80
RVA										
Peak Viscosity, cP	2305	2269	2410	2435	2389	2226	2290	2280	2353	2315
Minimum viscosity (Trough), cP	1588	1572	1606	1700	1692	1540	1639	1560	1695	1600
Final Viscosity, cP	2655	2636	2841	2881	2818	2524	2627	2721	2814	2788
Peak Time, min	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00
GLUTEN										
Wet gluten (14% mb), %	32.9	30.4	26.4	23.4	25.5	32.3	27.7	26.4	25.3	23.7
Dry gluten (14% mb), %	11.4	10.4	8.6	7.6	8.4	10.9	9.6	8.9	8.0	7.9
Gluten Index	95	94	95	96	94	95	96	94	93	95
FARINOGRAM										
Water absorption (14% mb), %	59.9	60.0	58.2	56.9	58.0	60.1	57.0	57.8	57.4	57.0
Development time, min	6.3	5.7	6.2	4.3	4.0	5.4	6.5	5.3	5.7	5.2
Stability, min	11.7	8.7	9.2	7.9	8.1	8.8	12.6	8.5	8.1	8.1
Mixing tolerance index, BU	22	32	31	35	28	30	24	36	37	35
EXTENSOGRAM (45 min pull)										
Area, cm²	74	105	91	72	84	117	114	80	77	80
Maximum height, BU	258	367	351	305	346	363	452	330	317	312
Extensibility, mm	201	213	188	172	173	230	188	175	176	186
ALVEOGRAM										
Strength (S), cm²	42.7	41.0	35.0	28.9	34.6	46.2	44.5	36.1	33.3	30.6
Stability (P), mm	79	83	75	74	82	77	70	78	74	74
Distensibility (L), mm	137	122	117	92	98	168	175	111	112	98
Configuration ratio (P/L)	0.58	0.68	0.64	0.80	0.84	0.46	0.40	0.70	0.66	0.76
MIXOGRAM										
Peak time, min	2.5	2.6	2.8	3.3	3.1	2.7	3.4	3.0	3.1	2.9
100 g BAKING TEST										
Loaf volume, cm³	1155	1103	1064	983	1001	1168	1108	1072	1057	982
Evaluation (see page 74)	0	0	0	0	0	0	0	0	0	0

Rheological Graphs Per Production Region

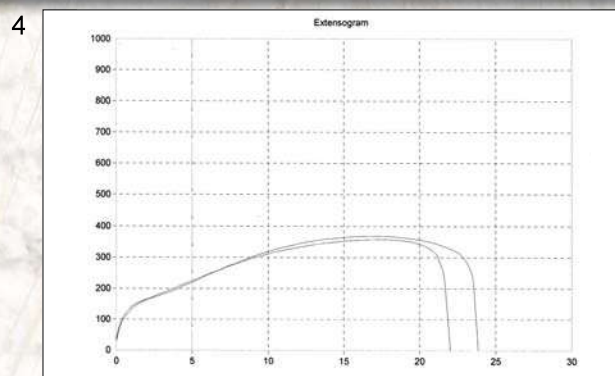
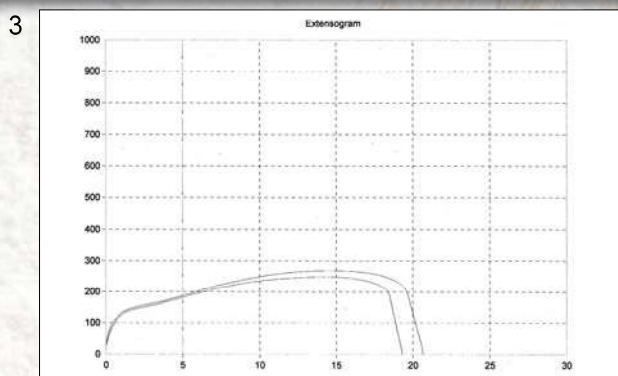
MIXOGRAM



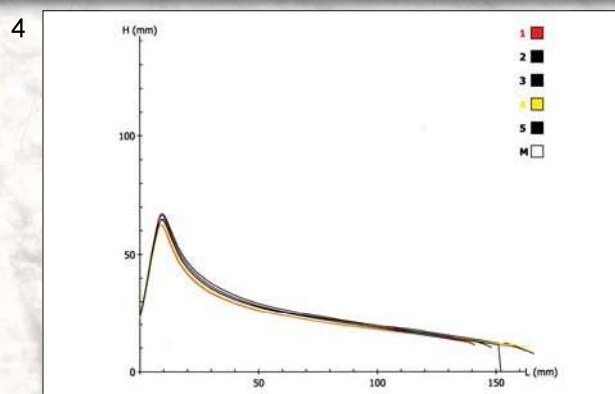
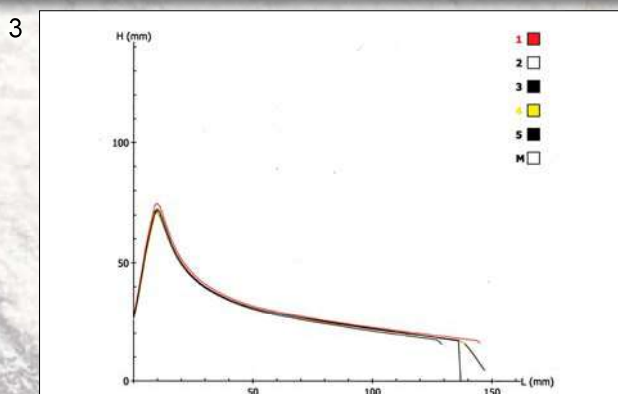
FARINOGRAM



EXTENSOGRAM



ALVEOGRAM



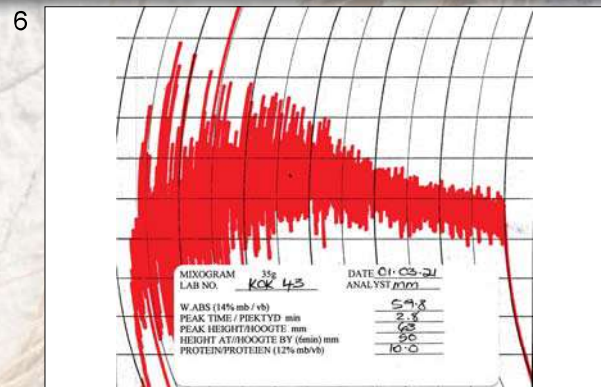
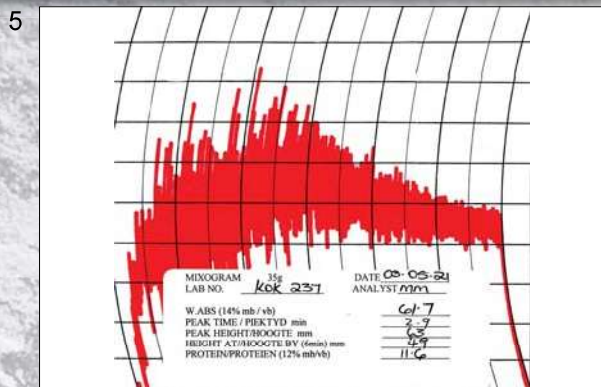
South African quality data per production region

WINTER RAINFALL WHEAT

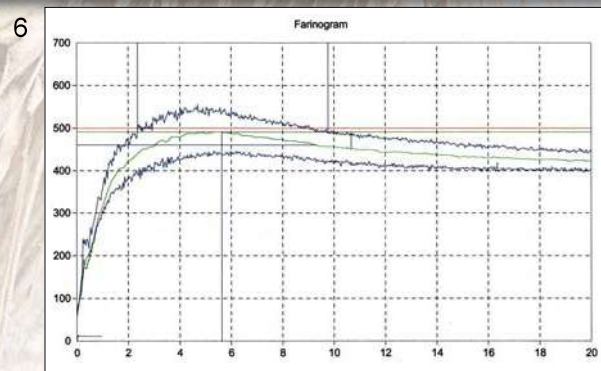
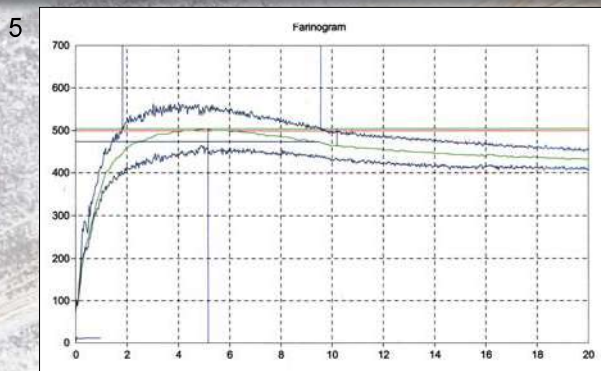
PRODUCTION REGION	(5) Rûens Western Region				(6) Rûens Eastern Region					
WHEAT	ave	min	max	stdev	ave	min	max	stdev		
Protein (12% mb), %	11.3	10.0	13.0	1.09	11.6	10.2	13.6	0.88		
Falling number, sec	386	351	424	24.68	343	293	399	25.47		
Moisture, %	12.1	11.8	12.3	0.18	11.9	11.3	12.2	0.26		
1000 Kernel mass (13% mb), g	44.2	42.1	45.8	1.35	43.0	40.8	45.7	1.33		
Hectolitre mass (dirty), kg/hl	78.8	75.9	81.4	2.03	78.7	74.2	81.4	1.71		
Screenings (<1.8 mm sieve), %	1.07	0.09	3.39	1.08	0.88	0.14	2.79	0.70		
Total damaged kernels, %	0.77	0.32	1.72	0.45	0.78	0.02	2.00	0.56		
Combined deviations, %	2.27	0.57	4.41	1.18	2.10	0.32	6.81	1.57		
Number of samples	8				22					
CULTIVARS										
Cultivars with highest % occurrence	SST 0117 36.9				SST 0117 31.2					
	SST 0166 21.5				SST 0166 22.8					
	SST 087 12.9				SST 056 16.8					
	SST 0127 12.6				SST 087 11.0					
	SST 056 7.0				SST 0127 9.4					
Number of samples	8				22					
MIXOGRAM (Quadromat Junior)	ave	min	max	stdev	ave	min	max	stdev		
Peak time, min	2.8	2.6	3.1	0.16	2.8	2.4	3.2	0.20		
Tail height (6 min), mm	48	44	52	3.11	50	44	55	3.00		
Number of samples	8				22					
CLASS AND GRADE	Super	B1	B2	B3	COW	Super	B1	B2	B3	COW
Bühler Extraction, %	76.5	74.4	74.0	74.1	-	74.1	73.9	73.9	73.8	73.8
FLOUR										
Protein (12% mb), %	11.9	10.9	9.5	9.0	-	12.2	11.1	10.3	9.8	10.1
Moisture, %	13.6	13.7	13.6	13.9	-	13.9	13.9	13.5	13.5	13.1
Ash (db), %	0.59	0.59	0.58	0.63	-	0.62	0.61	0.63	0.60	0.63
Colour, KJ (wet)	-5.0	-5.0	-5.0	-5.0	-	-4.9	-4.9	-5.0	-4.9	-4.7
Colour, Konica Minolta CM5 (dry)										
L*	93.98	93.98	94.18	94.23	-	93.92	94.11	94.07	94.31	93.95
a*	0.47	0.45	0.48	0.38	-	0.54	0.45	0.41	0.37	0.39
b*	9.70	9.35	8.79	9.63	-	9.09	8.94	9.56	8.29	9.24
RVA										
Peak Viscosity, cP	2078	2234	2661	2398	-	2229	2304	2332	2225	2118
Minimum viscosity (Trough), cP	1549	1632	1838	1618	-	1628	1719	1663	1650	1640
Final Viscosity, cP	2368	2572	3111	2848	-	2543	2667	2780	2549	2409
Peak Time, min	7.00	7.00	7.00	7.00	-	7.00	7.00	7.00	7.00	7.00
GLUTEN										
Wet gluten (14% mb), %	32.9	30.3	27.1	23.0	-	33.9	30.6	28.2	25.6	27.7
Dry gluten (14% mb), %	11.5	10.6	9.1	7.7	-	11.8	10.4	9.4	8.5	9.1
Gluten Index	94	97	94	97	-	93	95	94	95	93
FARINOGRAM										
Water absorption (14% mb), %	60.3	60.6	61.2	56.6	-	63.1	63.2	61.1	60.8	61.2
Development time, min	5.2	4.3	3.5	4.2	-	5.7	4.9	3.7	3.8	4.0
Stability, min	7.7	7.1	6.4	7.7	-	7.4	6.9	6.6	7.9	6.8
Mixing tolerance index, BU	40	33	42	37	-	39	41	38	31	39
EXTENSOGRAM (45 min pull)										
Area, cm²	106	84	63	71	-	94	78	73	67	75
Maximum height, BU	364	305	252	294	-	298	280	275	310	286
Extensibility, mm	206	203	175	177	-	220	194	187	153	182
ALVEOGRAM										
Strength (S), cm²	41.1	37.0	31.2	26.3	-	42.2	38.7	34.4	33.6	32.7
Stability (P), mm	76	79	91	70	-	89	95	86	97	86
Distensibility (L), mm	139	122	82	87	-	124	96	104	77	94
Configuration ratio (P/L)	0.55	0.65	1.11	0.80	-	0.72	0.99	0.83	1.26	0.91
MIXOGRAM										
Peak time, min	2.8	2.3	2.4	3.1	-	2.3	2.4	2.4	3.1	2.2
100 g BAKING TEST										
Loaf volume, cm³	1068	1014	888	832	-	1147	1061	1067	925	1004
Evaluation (see page 74)	0	0	0	0	-	0	0	0	0	0

Rheological Graphs Per Production Region

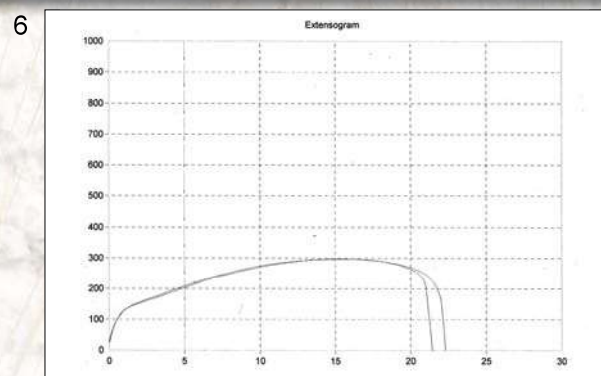
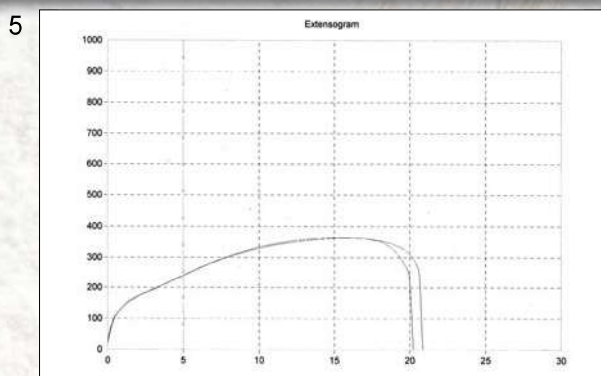
MIXOGRAM



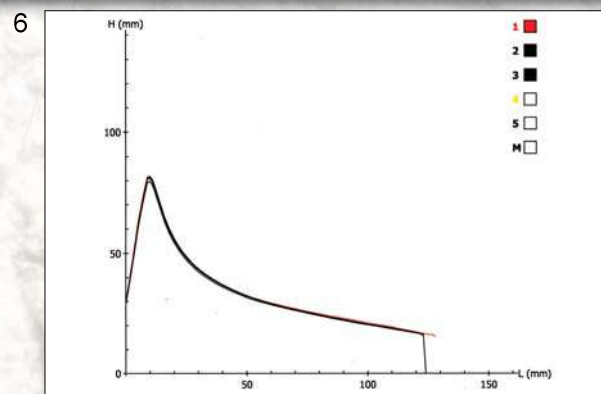
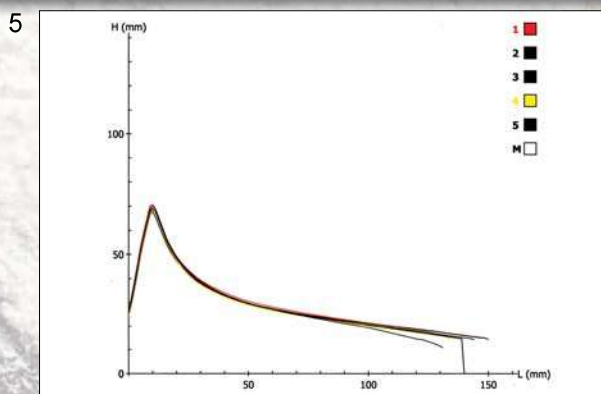
FARINOGRAM



EXTENSOGRAM



ALVEOGRAM



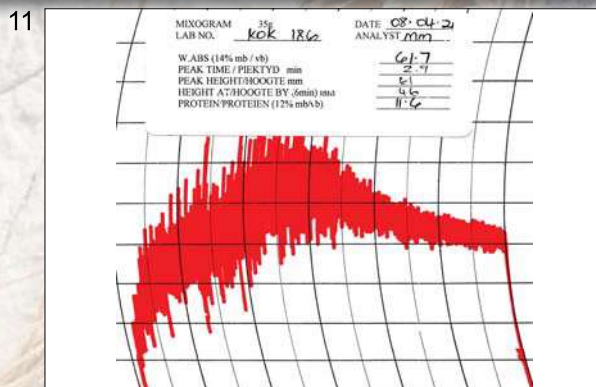
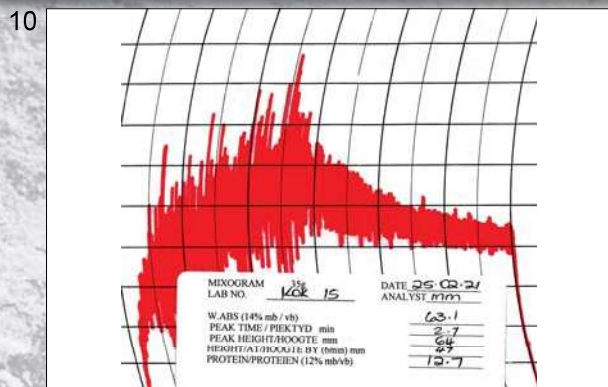
South African quality data per production region

IRRIGATION WHEAT

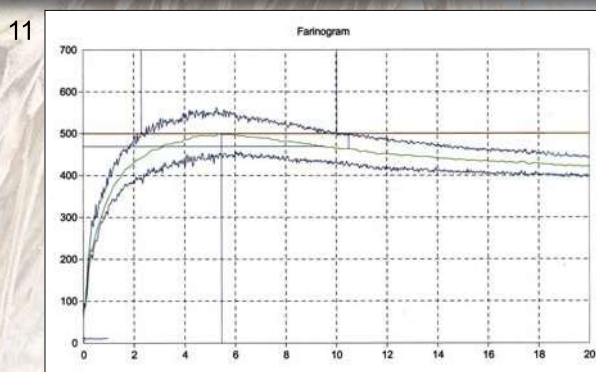
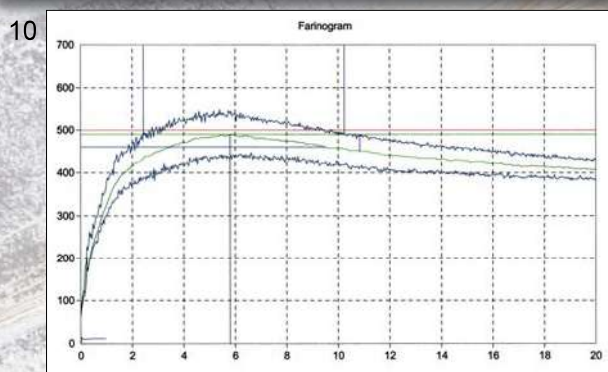
PRODUCTION REGION	(10) Griqualand West Region				(11) Vaalharts Region					
	ave	min	max	stdev	ave	min	max	stdev		
WHEAT										
Protein (12% mb), %	13.1	12.1	13.6	0.43	12.6	11.2	13.5	0.81		
Falling number, sec	369	318	432	25.71	410	367	453	42.25		
Moisture, %	10.4	9.4	11.4	0.69	10.7	10.1	11.2	0.55		
1000 Kernel mass (13% mb), g	36.2	33.8	38.4	0.99	36.5	32.6	40.5	3.00		
Hectolitre mass (dirty), kg/hl	82.5	78.3	85.3	1.60	81.2	78.7	83.6	2.45		
Screenings (<1.8 mm sieve), %	0.81	0.19	3.24	0.75	1.54	0.16	3.28	1.51		
Total damaged kernels, %	0.42	0.02	0.90	0.27	0.22	0.00	0.68	0.25		
Combined deviations, %	1.47	0.33	4.10	0.99	2.41	0.40	4.04	1.64		
Number of samples	22				6					
CULTIVARS										
	SST 8135 18.4				SST 8135 25.8					
	PAN 3400 14.5				PAN 3400 14.2					
	SST 884 13.3				SST 884 12.8					
	SST 8154 12.3				SST 8154 12.3					
Cultivars with highest % occurrence	PAN 3497 7.5				PAN 3471 10.5					
Number of samples	22				6					
MIXOGRAM (Quadromat Junior)										
	ave	min	max	stdev	ave	min	max	stdev		
Peak time, min	2.7	2.5	3.0	0.12	2.9	2.6	3.0	0.15		
Tail height (6 min), mm	47	41	50	2.46	47	45	49	1.72		
Number of samples	22				6					
CLASS AND GRADE	COMPOSITE SAMPLES									
	Super	B1	B2	B3	COW	Super	B1	B2	B3	COW
Bühler Extraction, %	76.0	76.0	-	-	-	75.3	-	-	-	-
FLOUR										
Protein (12% mb), %	12.4	11.4	-	-	-	12.2	-	-	-	-
Moisture, %	14.4	13.9	-	-	-	14.0	-	-	-	-
Ash (db), %	0.58	0.55	-	-	-	0.60	-	-	-	-
Colour, KJ (wet)	-5.0	-5.0	-	-	-	-4.9	-	-	-	-
Colour, Konica Minolta CM5 (dry)										
L*	93.92	94.06	-	-	-	93.90	-	-	-	-
a*	0.59	0.56	-	-	-	0.53	-	-	-	-
b*	10.47	10.61	-	-	-	10.39	-	-	-	-
RVA										
Peak Viscosity, cP	2235	2435	-	-	-	2474	-	-	-	-
Minimum viscosity (Trough), cP	1764	1954	-	-	-	2002	-	-	-	-
Final Viscosity, cP	2413	2805	-	-	-	2737	-	-	-	-
Peak Time, min	7.00	7.00	-	-	-	7.00	-	-	-	-
GLUTEN										
Wet gluten (14% mb), %	34.3	31.3	-	-	-	32.7	-	-	-	-
Dry gluten (14% mb), %	11.5	10.4	-	-	-	10.7	-	-	-	-
Gluten Index	95	94	-	-	-	95	-	-	-	-
FARINOGRAM										
Water absorption (14% mb), %	60.5	58.6	-	-	-	59.8	-	-	-	-
Development time, min	5.8	5.7	-	-	-	5.5	-	-	-	-
Stability, min	7.8	8.0	-	-	-	7.7	-	-	-	-
Mixing tolerance index, BU	40	38	-	-	-	36	-	-	-	-
EXTENSOGRAM (45 min pull)										
Area, cm²	112	100	-	-	-	119	-	-	-	-
Maximum height, BU	353	370	-	-	-	399	-	-	-	-
Extensibility, mm	234	199	-	-	-	221	-	-	-	-
ALVEOGRAM										
Strength (S), cm²	39.9	35.2	-	-	-	40.0	-	-	-	-
Stability (P), mm	63	64	-	-	-	66	-	-	-	-
Distensibility (L), mm	165	136	-	-	-	159	-	-	-	-
Configuration ratio (P/L)	0.38	0.47	-	-	-	0.42	-	-	-	-
MIXOGRAM										
Peak time, min	2.6	2.8	-	-	-	2.8	-	-	-	-
100 g BAKING TEST										
Loaf volume, cm³	1187	1143	-	-	-	1256	-	-	-	-
Evaluation (see page 74)	0	0	-	-	-	0	-	-	-	-

Rheological Graphs Per Production Region

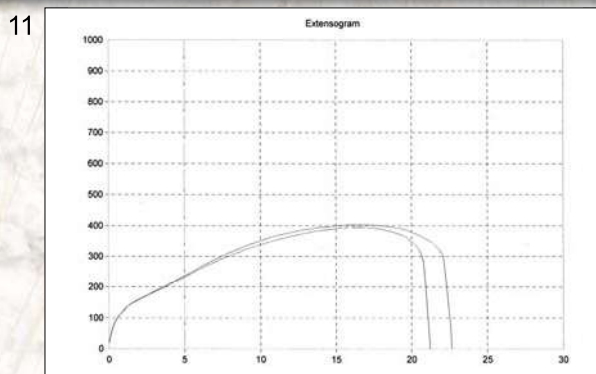
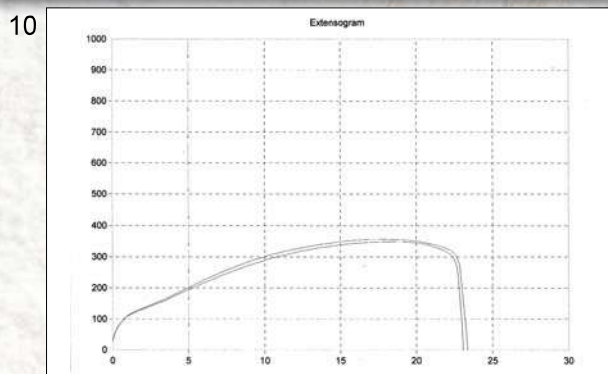
MIXOGRAM



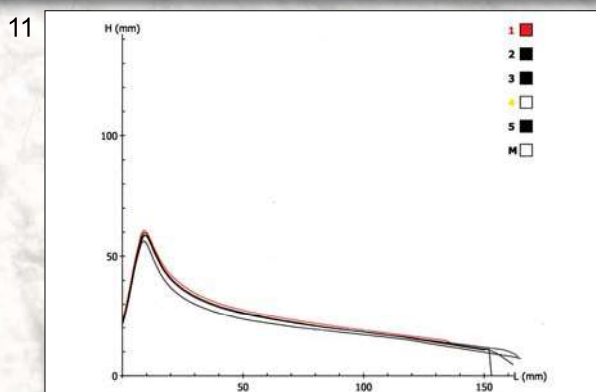
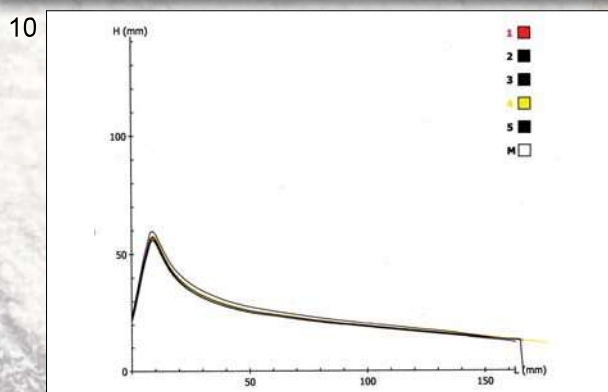
FARINOGRAM



EXTENSOGRAM



ALVEOGRAM



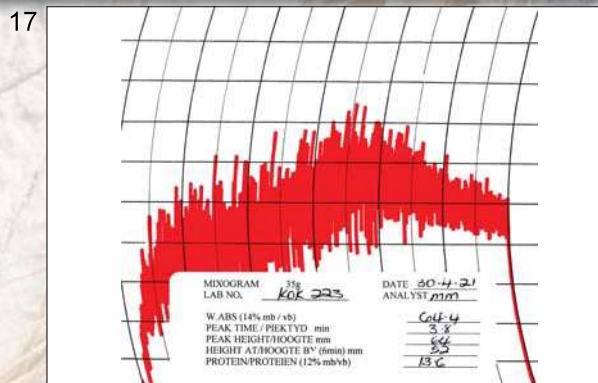
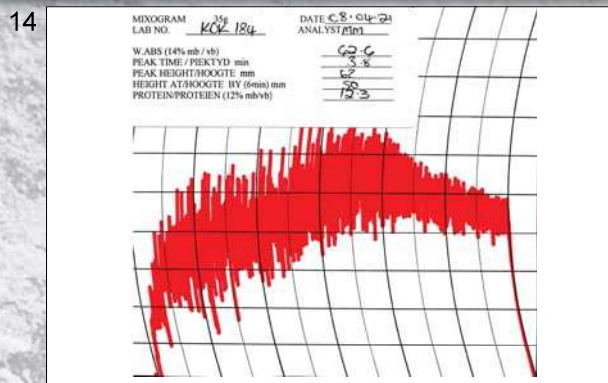
South African quality data per production region

IRRIGATION WHEAT

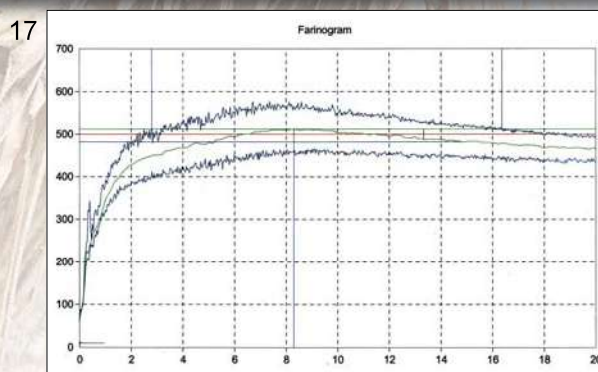
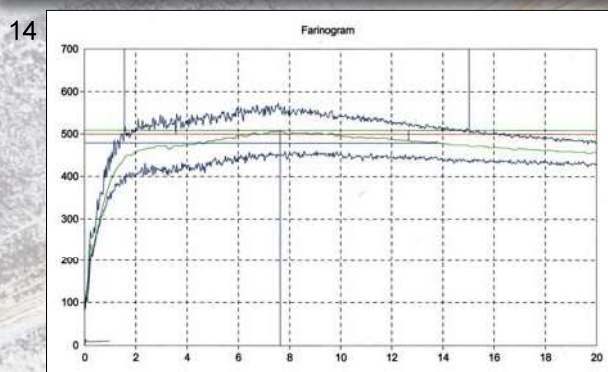
PRODUCTION REGION	(14) North West Southern Region				(17) North West Central-Northern Region (Ottosdal)					
	ave	min	max	stdev	ave	min	max	stdev		
WHEAT										
Protein (12% mb), %	13.9	13.3	14.2	0.40	14.5	-	-	-		
Falling number, sec	397	384	417	15.59	422	-	-	-		
Moisture, %	11.7	11.6	11.8	0.10	11.5	-	-	-		
1000 Kernel mass (13% mb), g	35.2	34.0	36.8	1.17	34.0	-	-	-		
Hectolitre mass (dirty), kg/hl	78.1	76.9	79.7	1.28	78.9	-	-	-		
Screenings (<1.8 mm sieve), %	0.37	0.13	0.60	0.21	1.64	-	-	-		
Total damaged kernels, %	0.59	0.48	0.82	0.16	0.08	-	-	-		
Combined deviations, %	1.99	0.95	2.80	0.80	1.92	-	-	-		
Number of samples	4				1					
CULTIVARS										
	SST 843		25.8		SST 843		59.0			
	SST 8154		21.0		SST 8135		41.0			
	SST 8135		18.8		-		-			
	SST 8156		16.8		-		-			
Cultivars with highest % occurrence	PAN 3497		6.8		-		-			
Number of samples	4				1					
MIXOGRAM (Quadromat Junior)	ave	min	max	stdev	ave	min	max	stdev		
Peak time, min	3.8	3.1	4.8	0.76	3.8	-	-	-		
Tail height (6 min), mm	51	49	56	3.20	52	-	-	-		
Number of samples	4				1					
CLASS AND GRADE	COMPOSITE SAMPLES									
	Super	B1	B2	B3	COW	Super	B1	B2	B3	COW
Bühler Extraction, %	72.6	-	-	-	-	72.9	-	-	-	-
FLOUR										
Protein (12% mb), %	13.2	-	-	-	-	13.5	-	-	-	-
Moisture, %	13.9	-	-	-	-	13.9	-	-	-	-
Ash (db), %	0.62	-	-	-	-	0.69	-	-	-	-
Colour, KJ (wet)	-4.9	-	-	-	-	-4.7	-	-	-	-
Colour, Konica Minolta CM5 (dry)										
L*	93.90	-	-	-	-	93.65	-	-	-	-
a*	0.49	-	-	-	-	0.48	-	-	-	-
b*	9.16	-	-	-	-	9.22	-	-	-	-
RVA										
Peak Viscosity, cP	2504	-	-	-	-	2486	-	-	-	-
Minimum viscosity (Trough), cP	1881	-	-	-	-	1842	-	-	-	-
Final Viscosity, cP	2697	-	-	-	-	2646	-	-	-	-
Peak Time, min	7.00	-	-	-	-	7.00	-	-	-	-
GLUTEN										
Wet gluten (14% mb), %	33.6	-	-	-	-	33.0	-	-	-	-
Dry gluten (14% mb), %	11.9	-	-	-	-	12.4	-	-	-	-
Gluten Index	97	-	-	-	-	99	-	-	-	-
FARINOGRAM										
Water absorption (14% mb), %	60.4	-	-	-	-	61.4	-	-	-	-
Development time, min	7.7	-	-	-	-	8.3	-	-	-	-
Stability, min	13.5	-	-	-	-	13.6	-	-	-	-
Mixing tolerance index, BU	23	-	-	-	-	25	-	-	-	-
EXTENSOGRAM (45 min pull)										
Area, cm²	138	-	-	-	-	155	-	-	-	-
Maximum height, BU	466	-	-	-	-	539	-	-	-	-
Extensibility, mm	226	-	-	-	-	211	-	-	-	-
ALVEOGRAM										
Strength (S), cm²	54.9	-	-	-	-	58.3	-	-	-	-
Stability (P), mm	79	-	-	-	-	87	-	-	-	-
Distensibility (L), mm	149	-	-	-	-	144	-	-	-	-
Configuration ratio (P/L)	0.53	-	-	-	-	0.60	-	-	-	-
MIXOGRAM										
Peak time, min	3.4	-	-	-	-	3.3	-	-	-	-
100 g BAKING TEST										
Loaf volume, cm³	1407	-	-	-	-	1160	-	-	-	-
Evaluation (see page 74)	0	-	-	-	-	0	-	-	-	-

Rheological Graphs Per Production Region

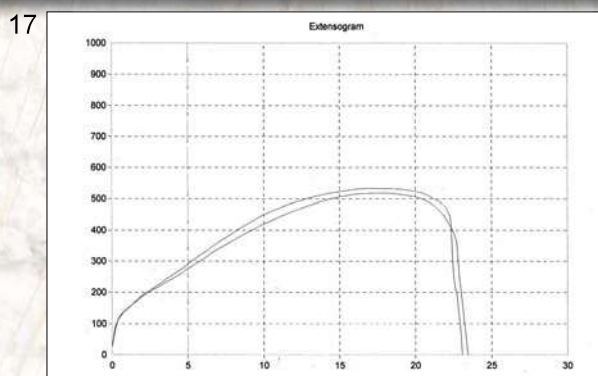
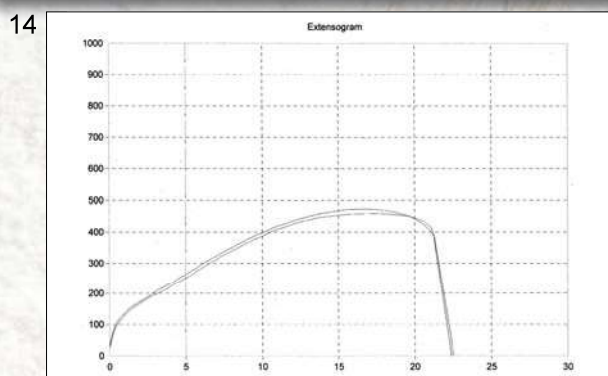
MIXOGRAM



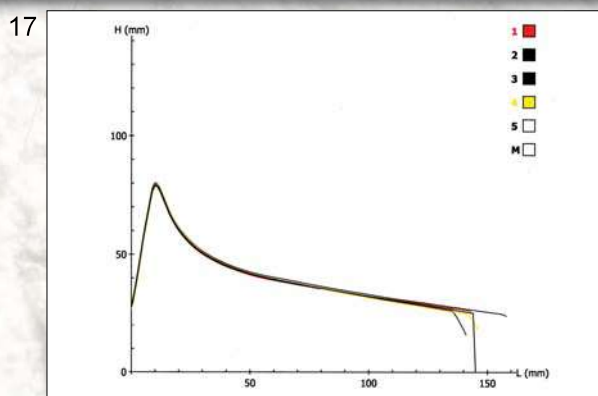
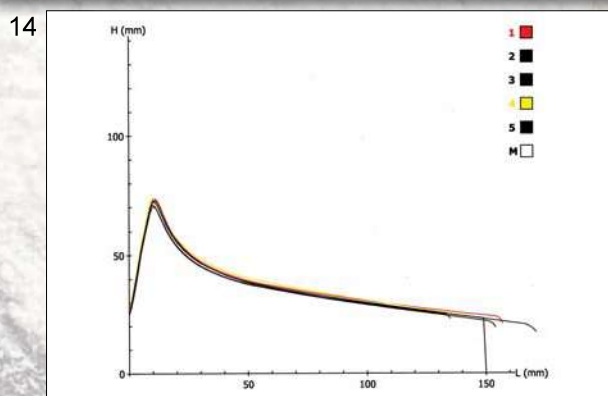
FARINOGRAM



EXTENSOGRAM



ALVEOGRAM



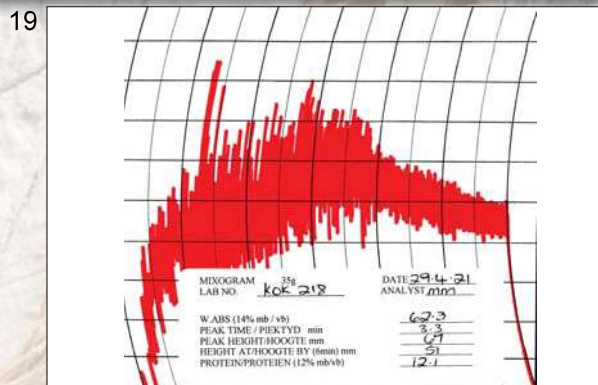
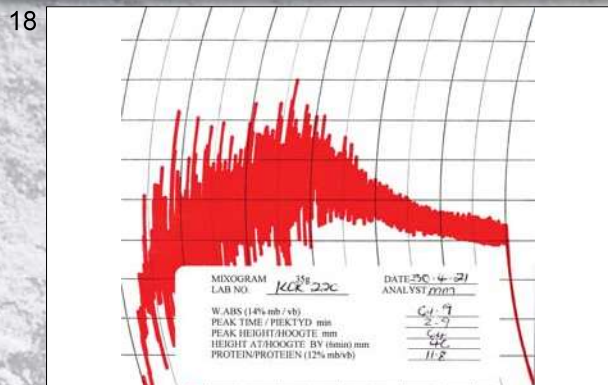
South African quality data per production region

IRRIGATION WHEAT

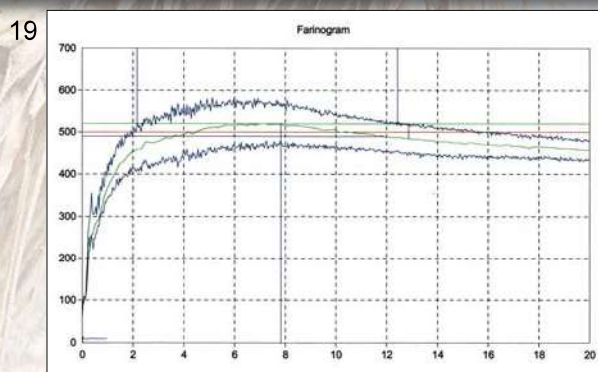
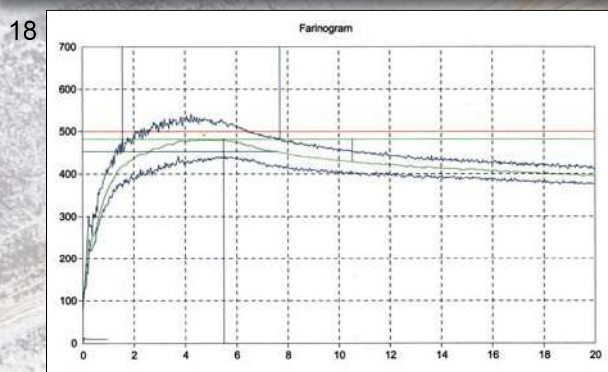
PRODUCTION REGION	(18)				(19)					
	North West Central Region (Ventersdorp)				North West Central Region (Lichtenburg)					
WHEAT	ave	min	max	stdev	ave	min	max	stdev		
Protein (12% mb), %	13.5	13.1	13.8	0.49	13.3	12.6	14.4	0.66		
Falling number, sec	367	364	369	3.54	366	313	426	47.87		
Moisture, %	12.2	12.0	12.3	0.21	11.8	11.5	12.2	0.31		
1000 Kernel mass (13% mb), g	37.5	37.1	37.8	0.49	37.0	33.5	39.3	2.16		
Hectolitre mass (dirty), kg/hl	78.7	78.0	79.4	0.99	79.0	77.3	79.9	1.01		
Screenings (<1.8 mm sieve), %	1.23	0.95	1.51	0.40	1.01	0.05	2.32	0.96		
Total damaged kernels, %	1.52	1.34	1.70	0.25	0.29	0.10	0.62	0.20		
Combined deviations, %	2.99	2.91	3.07	0.11	1.41	0.23	2.62	1.15		
Number of samples	2				5					
CULTIVARS										
	SST 884		72.0		SST 843		35.2			
	PAN 3471		19.0		SST 8135		24.0			
	SST 843		9.0		SST 884		23.4			
	-		-		SST 895		10.4			
Cultivars with highest % occurrence	-		-		PAN 3497		5.0			
Number of samples	2				5					
MIXOGRAM (Quadromat Junior)	ave	min	max	stdev	ave	min	max	stdev		
Peak time, min	2.8	2.6	2.9	0.21	3.6	3.0	4.5	0.65		
Tail height (6 min), mm	46	46	46	0.00	52	50	57	2.77		
Number of samples	2				5					
CLASS AND GRADE	COMPOSITE SAMPLES									
	Super	B1	B2	B3	COW	Super	B1	B2	B3	COW
Bühler Extraction, %	72.4	-	-	-	-	74.2	-	-	-	-
FLOUR										
Protein (12% mb), %	12.1	-	-	-	-	12.4	-	-	-	-
Moisture, %	13.9	-	-	-	-	13.7	-	-	-	-
Ash (db), %	0.74	-	-	-	-	0.60	-	-	-	-
Colour, KJ (wet)	-4.1	-	-	-	-	-4.8	-	-	-	-
Colour, Konica Minolta CM5 (dry)										
L*	93.04	-	-	-	-	93.72	-	-	-	-
a*	0.59	-	-	-	-	0.45	-	-	-	-
b*	9.97	-	-	-	-	9.64	-	-	-	-
RVA										
Peak Viscosity, cP	2298	-	-	-	-	2448	-	-	-	-
Minimum viscosity (Trough), cP	1704	-	-	-	-	1902	-	-	-	-
Final Viscosity, cP	2412	-	-	-	-	2651	-	-	-	-
Peak Time, min	7.00	-	-	-	-	7.00	-	-	-	-
GLUTEN										
Wet gluten (14% mb), %	33.8	-	-	-	-	31.2	-	-	-	-
Dry gluten (14% mb), %	11.3	-	-	-	-	11.1	-	-	-	-
Gluten Index	90	-	-	-	-	95	-	-	-	-
FARINOGRAM										
Water absorption (14% mb), %	61.0	-	-	-	-	60.4	-	-	-	-
Development time, min	5.5	-	-	-	-	7.9	-	-	-	-
Stability, min	6.1	-	-	-	-	10.3	-	-	-	-
Mixing tolerance index, BU	53	-	-	-	-	36	-	-	-	-
EXTENSOGRAM (45 min pull)										
Area, cm²	95	-	-	-	-	138	-	-	-	-
Maximum height, BU	370	-	-	-	-	454	-	-	-	-
Extensibility, mm	186	-	-	-	-	228	-	-	-	-
ALVEOGRAM										
Strength (S), cm²	31.3	-	-	-	-	45.9	-	-	-	-
Stability (P), mm	78	-	-	-	-	79	-	-	-	-
Distensibility (L), mm	93	-	-	-	-	134	-	-	-	-
Configuration ratio (P/L)	0.84	-	-	-	-	0.59	-	-	-	-
MIXOGRAM										
Peak time, min	2.8	-	-	-	-	3.3	-	-	-	-
100 g BAKING TEST										
Loaf volume, cm³	1095	-	-	-	-	1267	-	-	-	-
Evaluation (see page 74)	0	-	-	-	-	0	-	-	-	-

Rheological Graphs Per Production Region

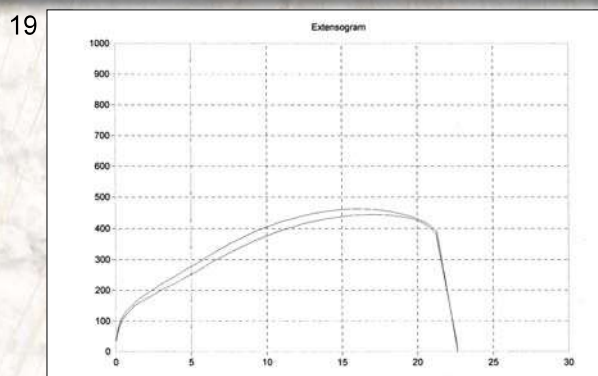
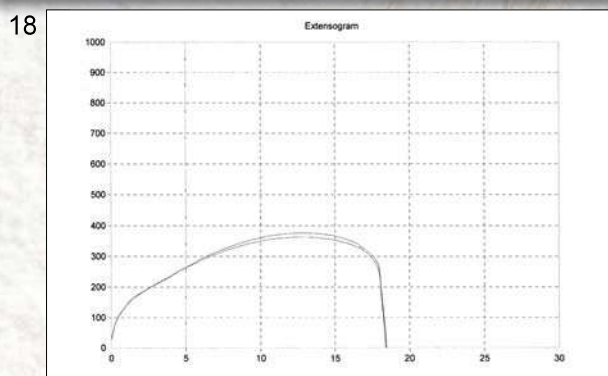
MIXOGRAM



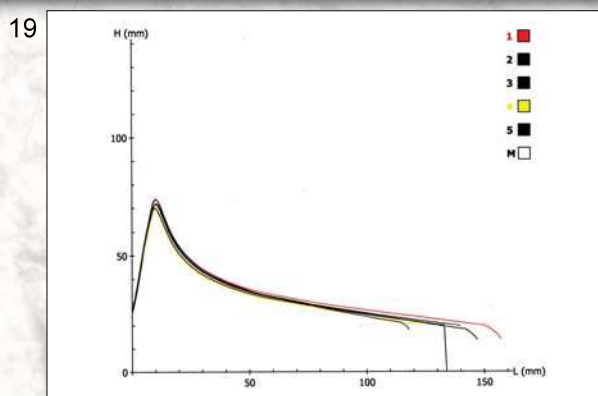
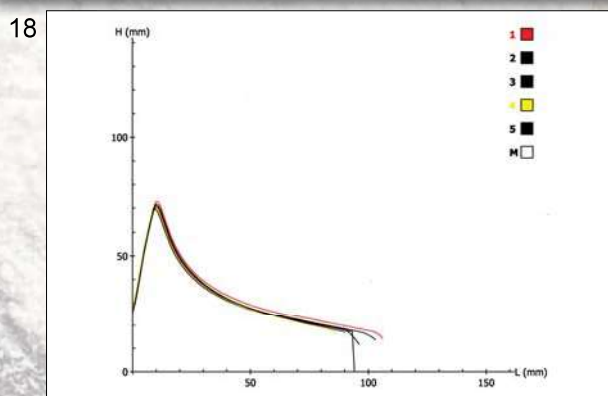
FARINOGRAM



EXTENSOGRAM



ALVEOGRAM



South African quality data per production region

IRRIGATION WHEAT

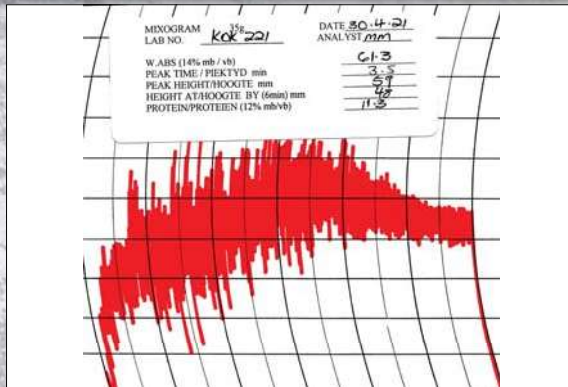
SUMMER RAINFALL AND IRRIGATION

PRODUCTION REGION					(20) North West Eastern Region					(21) Free State North-Western Region (Viljoenskroon)				
WHEAT					ave	min	max	stdev	ave	min	max	stdev		
Protein (12% mb), %					12.6	11.9	13.4	0.53	12.6	-	-	-		
Falling number, sec					380	164	560	113.59	399	-	-	-		
Moisture, %					11.5	10.7	12.2	0.48	11.0	-	-	-		
1000 Kernel mass (13% mb), g					38.7	36.6	40.1	1.33	35.2	-	-	-		
Hectolitre mass (dirty), kg/hl					79.1	76.2	82.3	2.05	76.1	-	-	-		
Screenings (<1.8 mm sieve), %					0.89	0.34	1.40	0.33	4.01	-	-	-		
Total damaged kernels, %					1.23	0.02	3.20	1.28	1.12	-	-	-		
Combined deviations, %					2.54	0.36	5.06	1.66	5.49	-	-	-		
Number of samples					8				1					
CULTIVARS														
Cultivars with highest % occurrence					SST 843		23.4		PAN 3400		45.0			
					SST 884		21.9		SST 8156		33.0			
					SST 8135		20.3		SST 8154		13.0			
					DUZI		10.8		SST 884		9.0			
PAN 3400					7.9				-		-			
Number of samples					8				1					
MIXOGRAM (Quadromat Junior)					ave	min	max	stdev	ave	min	max	stdev		
Peak time, min					3.5	2.7	4.1	0.46	2.9	-	-	-		
Tail height (6 min), mm					48	44	56	3.70	47	-	-	-		
Number of samples					8				1					
CLASS AND GRADE					COMPOSITE SAMPLES									
					Super	B1	B2	B3	COW	Super	B1	B2	B3	COW
Bühler Extraction, %					75.0	76.6	-	-	-	-	-	-	-	75.9
FLOUR														
Protein (12% mb), %					12.2	11.3	-	-	-	-	-	-	-	12.0
Moisture, %					13.5	13.3	-	-	-	-	-	-	-	13.9
Ash (db), %					0.56	0.60	-	-	-	-	-	-	-	0.63
Colour, KJ (wet)					-4.4	-4.3	-	-	-	-	-	-	-	-4.2
Colour, Konica Minolta CM5 (dry)														
L*					93.38	93.52	-	-	-	-	-	-	-	93.17
a*					0.47	0.45	-	-	-	-	-	-	-	0.53
b*					9.79	9.90	-	-	-	-	-	-	-	10.87
RVA														
Peak Viscosity, cP					2416	2319	-	-	-	-	-	-	-	2098
Minimum viscosity (Trough), cP					1822	1895	-	-	-	-	-	-	-	1773
Final Viscosity, cP					2621	2478	-	-	-	-	-	-	-	2210
Peak Time, min					7.00	7.00	-	-	-	-	-	-	-	6.80
GLUTEN														
Wet gluten (14% mb), %					33.1	29.3	-	-	-	-	-	-	-	33.3
Dry gluten (14% mb), %					11.5	9.9	-	-	-	-	-	-	-	11.4
Gluten Index					97	97	-	-	-	-	-	-	-	94
FARINOGRAM														
Water absorption (14% mb), %					60.7	57.9	-	-	-	-	-	-	-	59.7
Development time, min					7.0	5.9	-	-	-	-	-	-	-	5.7
Stability, min					8.4	8.4	-	-	-	-	-	-	-	6.9
Mixing tolerance index, BU					42	37	-	-	-	-	-	-	-	48
EXTENSOGRAM (45 min pull)														
Area, cm²					131	108	-	-	-	-	-	-	-	101
Maximum height, BU					421	403	-	-	-	-	-	-	-	347
Extensibility, mm					230	201	-	-	-	-	-	-	-	215
ALVEOGRAM														
Strength (S), cm²					37.2	38.1	-	-	-	-	-	-	-	35.0
Stability (P), mm					75	64	-	-	-	-	-	-	-	62
Distensibility (L), mm					108	153	-	-	-	-	-	-	-	157
Configuration ratio (P/L)					0.69	0.42	-	-	-	-	-	-	-	0.39
MIXOGRAM														
Peak time, min					3.1	3.2	-	-	-	-	-	-	-	2.9
100 g BAKING TEST														
Loaf volume, cm³					1216	1144	-	-	-	-	-	-	-	1142
Evaluation (see page 74)					0	0	-	-	-	-	-	-	-	0

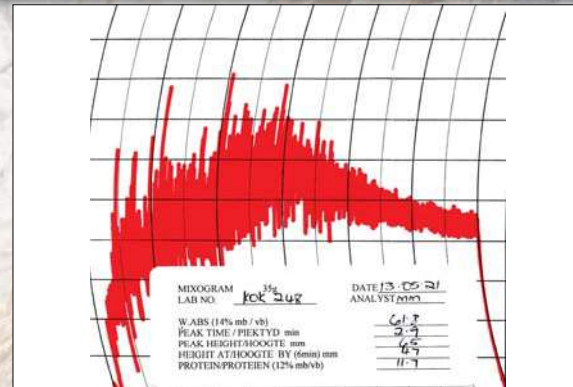
Rheological Graphs Per Production Region

MIXOGRAM

20

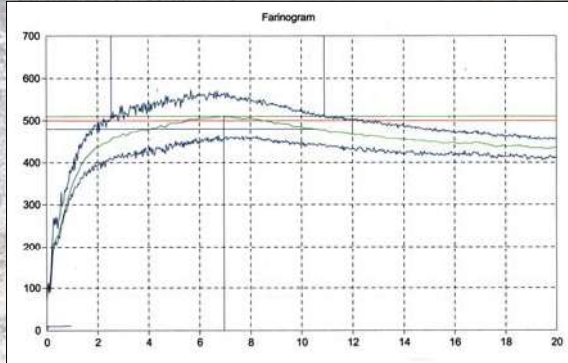


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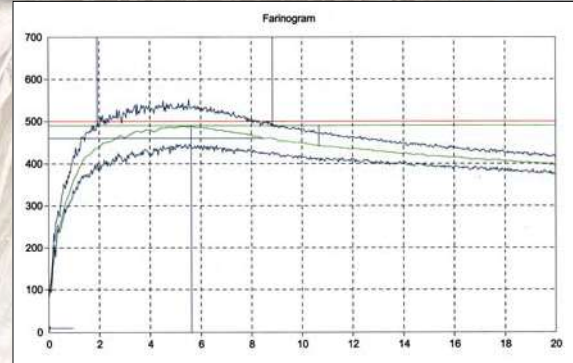


FARINOGRAM

20

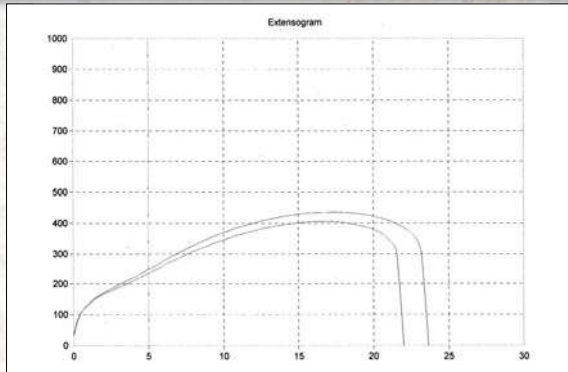


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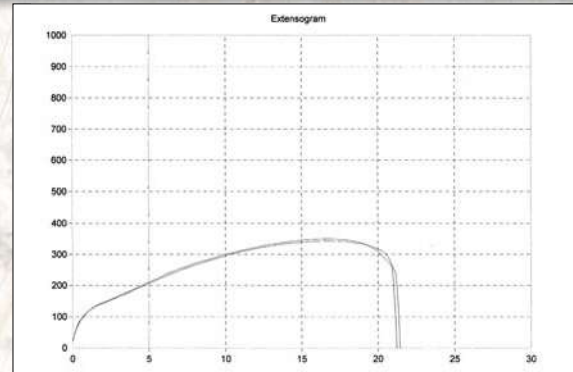


EXTENSOGRAM

20

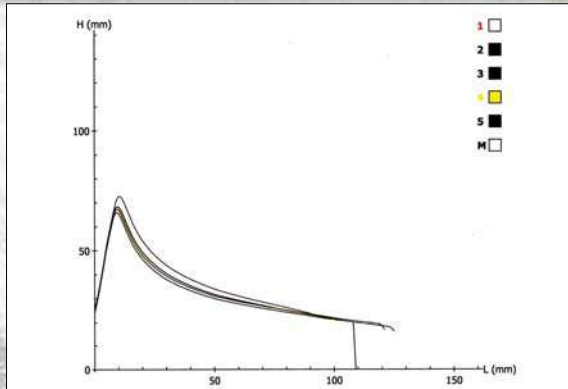


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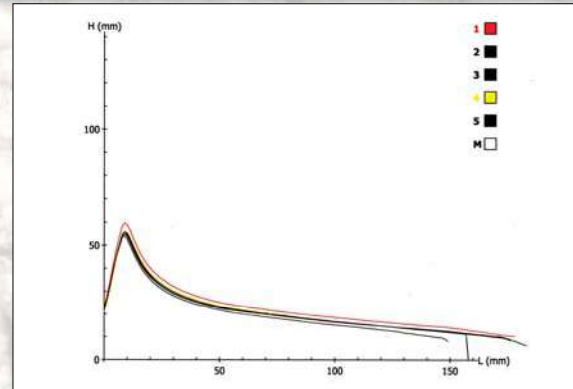


ALVEOGRAM

20



21



South African quality data per production region

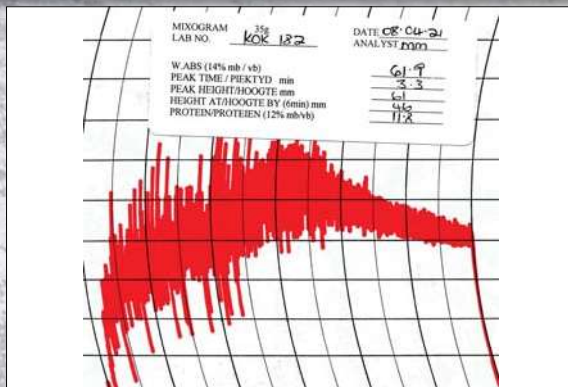
SUMMER RAINFALL AND IRRIGATION WHEAT

PRODUCTION REGION	(22)				(23)					
	Free State North-Western Region (Bothaville)				Free State North-Western Region (Bultfontein)					
WHEAT	ave	min	max	stdev	ave	min	max	stdev		
Protein (12% mb), %	13.3	12.8	13.8	0.71	12.6	11.3	13.8	1.01		
Falling number, sec	385	242	527	201.53	413	325	504	81.70		
Moisture, %	10.8	10.4	11.1	0.49	10.9	10.1	11.6	0.69		
1000 Kernel mass (13% mb), g	33.1	30.7	35.4	3.32	36.4	32.2	38.9	2.54		
Hectolitre mass (dirty), kg/hl	69.9	66.0	73.7	5.44	81.3	79.1	83.8	1.99		
Screenings (<1.8 mm sieve), %	6.28	2.74	9.81	5.00	1.41	0.28	2.11	0.68		
Total damaged kernels, %	1.32	1.28	1.36	0.06	0.39	0.20	0.64	0.18		
Combined deviations, %	10.13	5.22	15.03	6.94	2.06	0.52	2.91	0.93		
Number of samples	2				5					
CULTIVARS										
	PAN 3497 50.0				PAN 3368 23.8					
	PAN 3400 26.5				PAN 3111 19.2					
	PAN 3541 8.0				SST 884 13.6					
	SST 8156 6.5				SST 8135 10.8					
Cultivars with highest % occurrence	SST 8154 4.5				PAN 3400 8.4					
Number of samples	2				5					
MIXOGRAM (Quadromat Junior)	ave	min	max	stdev	ave	min	max	stdev		
Peak time, min	2.8	2.3	3.3	0.71	3.0	2.6	3.2	0.25		
Tail height (6 min), mm	43	40	46	4.24	47	42	52	4.22		
Number of samples	2				5					
CLASS AND GRADE	COMPOSITE SAMPLES									
	Super	B1	B2	B3	COW	Super	B1	B2	B3	COW
Bühler Extraction, %	-	-	-	-	-	74.4	-	-	-	-
FLOUR										
Protein (12% mb), %	-	-	-	-	-	11.8	-	-	-	-
Moisture, %	-	-	-	-	-	14.2	-	-	-	-
Ash (db), %	-	-	-	-	-	0.52	-	-	-	-
Colour, KJ (wet)	-	-	-	-	-	-5.0	-	-	-	-
Colour, Konica Minolta CM5 (dry)	-	-	-	-	-	93.68	-	-	-	-
L*	-	-	-	-	-	0.45	-	-	-	-
a*	-	-	-	-	-	10.43	-	-	-	-
b*	-	-	-	-	-		-	-	-	-
RVA										
Peak Viscosity, cP	-	-	-	-	-	2149	-	-	-	-
Minimum viscosity (Trough), cP	-	-	-	-	-	1821	-	-	-	-
Final Viscosity, cP	-	-	-	-	-	2478	-	-	-	-
Peak Time, min	-	-	-	-	-	7.00	-	-	-	-
GLUTEN										
Wet gluten (14% mb), %	-	-	-	-	-	31.5	-	-	-	-
Dry gluten (14% mb), %	-	-	-	-	-	10.7	-	-	-	-
Gluten Index	-	-	-	-	-	97	-	-	-	-
FARINOGRAM										
Water absorption (14% mb), %	-	-	-	-	-	60.1	-	-	-	-
Development time, min	-	-	-	-	-	5.4	-	-	-	-
Stability, min	-	-	-	-	-	9.6	-	-	-	-
Mixing tolerance index, BU	-	-	-	-	-	23	-	-	-	-
EXTENSOGRAM (45 min pull)										
Area, cm²	-	-	-	-	-	110	-	-	-	-
Maximum height, BU	-	-	-	-	-	401	-	-	-	-
Extensibility, mm	-	-	-	-	-	205	-	-	-	-
ALVEOGRAM										
Strength (S), cm²	-	-	-	-	-	48.5	-	-	-	-
Stability (P), mm	-	-	-	-	-	82	-	-	-	-
Distensibility (L), mm	-	-	-	-	-	138	-	-	-	-
Configuration ratio (P/L)	-	-	-	-	-	0.59	-	-	-	-
MIXOGRAM										
Peak time, min	-	-	-	-	-	3.0	-	-	-	-
100 g BAKING TEST										
Loaf volume, cm³	-	-	-	-	-	1141	-	-	-	-
Evaluation (see page 74)	-	-	-	-	-	0	-	-	-	-

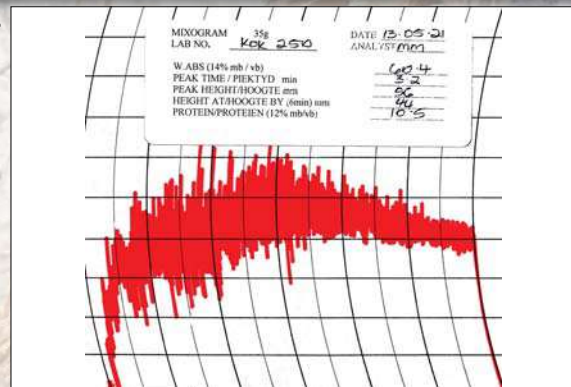
Rheological Graphs Per Production Region

MIXOGRAM

22



23

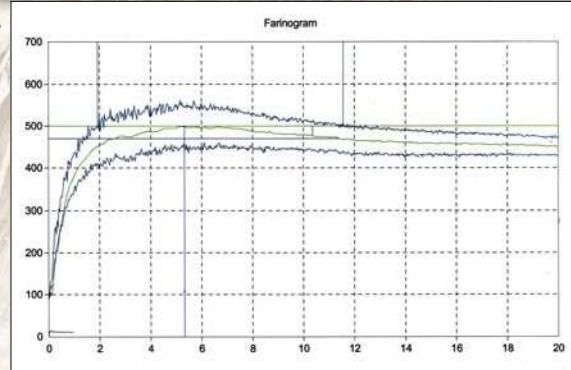


FARINOGRAM

22



23

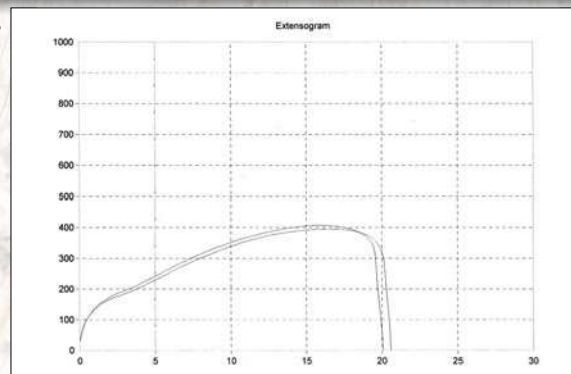


EXTENSOGRAM

22



23

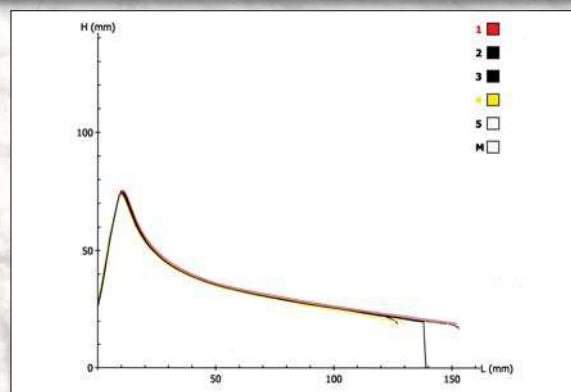


ALVEOGRAM

22



23



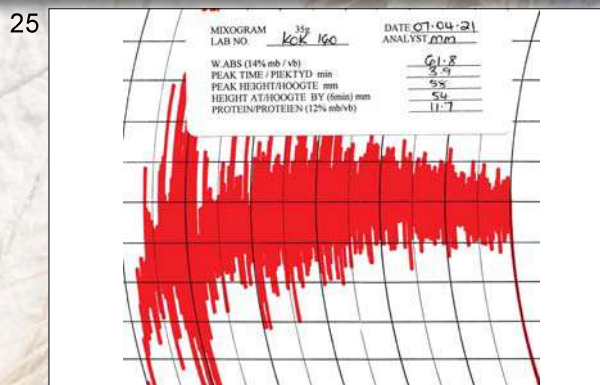
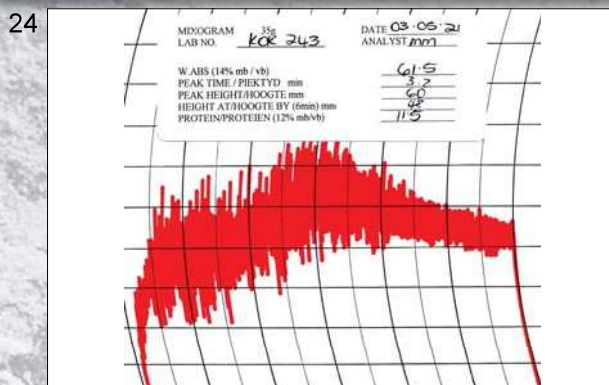
South African quality data per production region

SUMMER RAINFALL AND IRRIGATION WHEAT

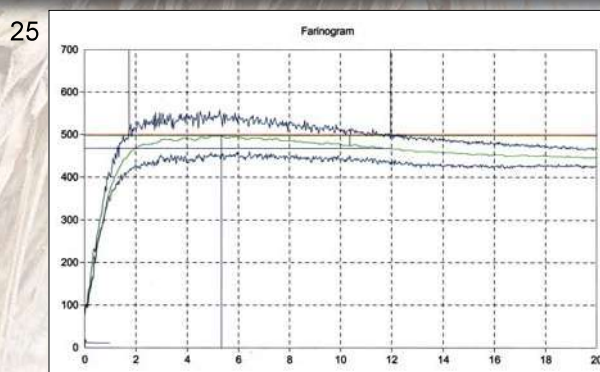
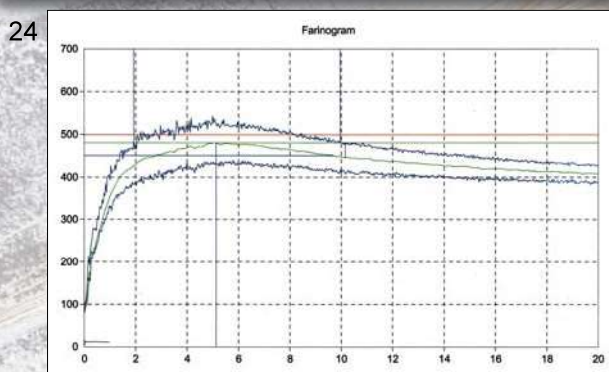
PRODUCTION REGION	(24) Free State Central Region				(25) Free State South-Western Region					
	ave	min	max	stdev	ave	min	max	stdev		
WHEAT										
Protein (12% mb), %	12.8	11.7	13.6	0.76	14.9	13.5	16.2	1.09		
Falling number, sec	363	313	385	30.55	173	47	303	118.56		
Moisture, %	10.8	10.4	11.3	0.36	12.0	11.7	12.3	0.24		
1000 Kernel mass (13% mb), g	32.1	27.0	36.8	3.73	36.3	32.9	39.8	3.10		
Hectolitre mass (dirty), kg/hl	77.1	68.7	81.4	4.58	73.5	70.1	76.7	2.42		
Screenings (<1.8 mm sieve), %	2.91	1.51	4.62	1.07	2.86	1.06	5.31	1.69		
Total damaged kernels, %	0.55	0.00	0.84	0.32	5.67	0.74	11.70	4.90		
Combined deviations, %	4.80	2.87	9.44	2.52	9.40	3.97	13.18	3.72		
Number of samples	6				5					
CULTIVARS										
	SST 8135		18.0		PAN 3161		40.4			
	PAN 3368		17.2		PAN 3368		16.2			
	PAN 3400		11.7		SST 347		16.2			
	SCHEEPERS 69		8.5		MATLABAS		13.8			
	SST 347		8.2		SST 356		8.0			
Number of samples	6				5					
MIXOGRAM (Quadromat Junior)	ave	min	max	stdev	ave	min	max	stdev		
Peak time, min	3.2	2.9	3.4	0.16	4.0	3.1	5.7	0.99		
Tail height (6 min), mm	46	43	50	2.61	51	43	54	4.58		
Number of samples	6				5					
CLASS AND GRADE	COMPOSITE SAMPLES									
	Super	B1	B2	B3	COW	Super	B1	B2	B3	COW
Bühler Extraction, %	75.0	74.3	-	-	-	72.7	-	-	-	-
FLOUR										
Protein (12% mb), %	12.2	10.3	-	-	-	11.7	-	-	-	-
Moisture, %	13.8	13.6	-	-	-	13.3	-	-	-	-
Ash (db), %	0.61	0.70	-	-	-	0.55	-	-	-	-
Colour, KJ (wet)	-4.6	-4.5	-	-	-	-3.8	-	-	-	-
Colour, Konica Minolta CM5 (dry)										
L*	93.49	93.66	-	-	-	93.21	-	-	-	-
a*	0.50	0.49	-	-	-	0.42	-	-	-	-
b*	10.42	10.19	-	-	-	10.85	-	-	-	-
RVA										
Peak Viscosity, cP	2190	1563	-	-	-	1488	-	-	-	-
Minimum viscosity (Trough), cP	1741	1309	-	-	-	1257	-	-	-	-
Final Viscosity, cP	2331	1682	-	-	-	1645	-	-	-	-
Peak Time, min	7.00	6.40	-	-	-	6.53	-	-	-	-
GLUTEN										
Wet gluten (14% mb), %	33.7	29.2	-	-	-	32.2	-	-	-	-
Dry gluten (14% mb), %	12.1	9.5	-	-	-	11.0	-	-	-	-
Gluten Index	94	95	-	-	-	99	-	-	-	-
FARINOGRAM										
Water absorption (14% mb), %	59.3	58.0	-	-	-	61.4	-	-	-	-
Development time, min	5.2	5.0	-	-	-	5.4	-	-	-	-
Stability, min	8.0	5.6	-	-	-	10.2	-	-	-	-
Mixing tolerance index, BU	34	60	-	-	-	24	-	-	-	-
EXTENSOGRAM (45 min pull)										
Area, cm²	110	79	-	-	-	85	-	-	-	-
Maximum height, BU	373	330	-	-	-	321	-	-	-	-
Extensibility, mm	219	176	-	-	-	192	-	-	-	-
ALVEOGRAM										
Strength (S), cm²	38.2	24.9	-	-	-	42.2	-	-	-	-
Stability (P), mm	62	64	-	-	-	90	-	-	-	-
Distensibility (L), mm	165	93	-	-	-	100	-	-	-	-
Configuration ratio (P/L)	0.38	0.69	-	-	-	0.90	-	-	-	-
MIXOGRAM										
Peak time, min	2.8	2.8	-	-	-	3.2	-	-	-	-
100 g BAKING TEST										
Loaf volume, cm³	1243	1030	-	-	-	1067	-	-	-	-
Evaluation (see page 74)	0	0	-	-	-	0	-	-	-	-

Rheological Graphs Per Production Region

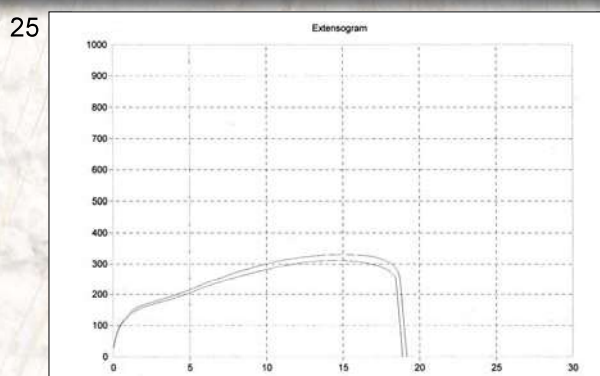
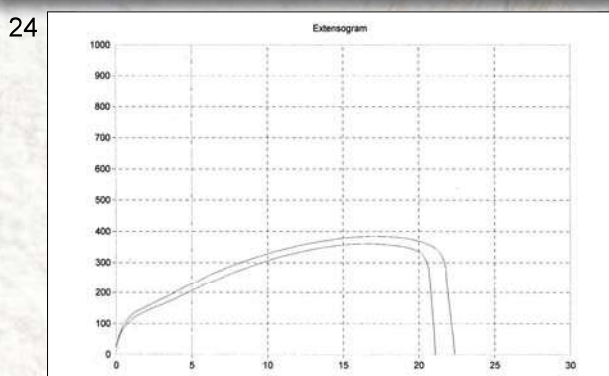
MIXOGRAM



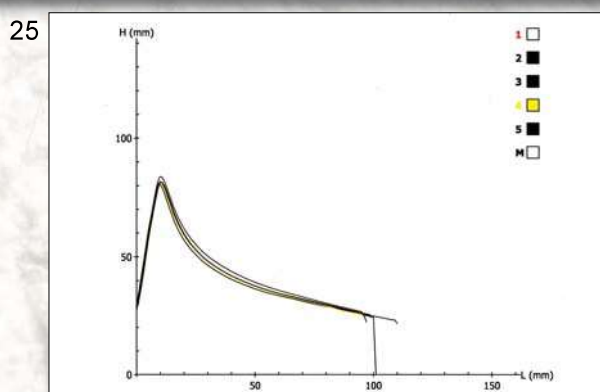
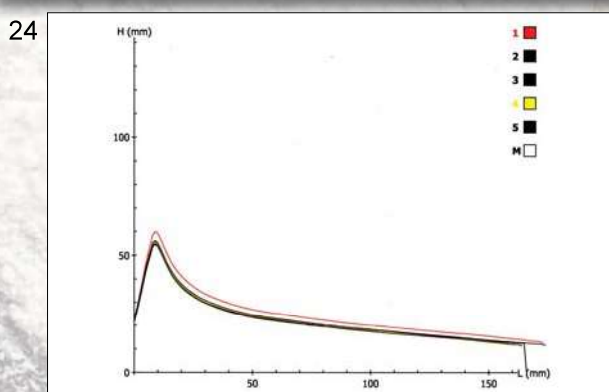
FARINOGRAM



EXTENSOGRAM



ALVEOGRAM



South African quality data per production region

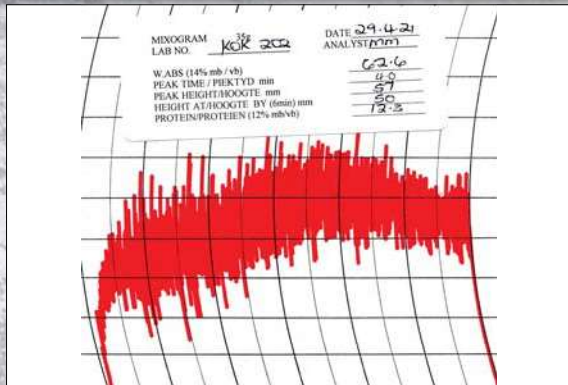
SUMMER RAINFALL AND IRRIGATION WHEAT

PRODUCTION REGION	(26)				(28)					
	Free State South-Eastern Region				Free State Eastern Region					
WHEAT	ave	min	max	stdev	ave	min	max	stdev		
Protein (12% mb), %	15.0	13.7	16.4	1.11	13.3	11.1	14.9	0.91		
Falling number, sec	277	50	391	132.53	282	73	417	95.85		
Moisture, %	11.7	11.5	12.0	0.22	12.1	11.4	12.4	0.27		
1000 Kernel mass (13% mb), g	37.6	30.8	41.6	4.15	38.4	29.3	42.5	3.11		
Hectolitre mass (dirty), kg/hl	77.5	71.9	79.7	3.18	79.1	71.2	83.8	3.33		
Screenings (<1.8 mm sieve), %	1.28	0.35	3.50	1.28	1.69	0.37	7.00	1.43		
Total damaged kernels, %	1.60	0.00	4.28	1.60	1.03	0.00	2.96	0.91		
Combined deviations, %	3.36	0.92	5.73	2.11	3.08	0.78	7.76	2.05		
Number of samples	5				21					
CULTIVARS										
	PAN 3161 52.4				SST 8135 22.7					
	PAN 3368 20.4				SST 884 13.2					
	MATLABAS 10.0				PAN 3161 10.8					
	SST 387 10.0				PAN 3400 10.6					
Cultivars with highest % occurrence	SST 347 3.4				SST 387 8.8					
Number of samples	5				21					
MIXOGRAM (Quadromat Junior)	ave	min	max	stdev	ave	min	max	stdev		
Peak time, min	5.0	3.6	8.0	1.87	3.5	2.6	5.0	0.63		
Tail height (6 min), mm	50	45	55	3.54	50	41	57	4.21		
Number of samples	5				21					
CLASS AND GRADE	COMPOSITE SAMPLES									
	Super	B1	B2	B3	COW	Super	B1	B2	B3	COW
Bühler Extraction, %	72.8	-	-	-	-	74.2	-	-	-	73.3
FLOUR										
Protein (12% mb), %	13.2	-	-	-	-	12.3	-	-	-	12.1
Moisture, %	14.3	-	-	-	-	13.6	-	-	-	13.3
Ash (db), %	0.53	-	-	-	-	0.58	-	-	-	0.57
Colour, KJ (wet)	-4.1	-	-	-	-	-4.6	-	-	-	-3.7
Colour, Konica Minolta CM5 (dry)										
L*	93.34	-	-	-	-	93.55	-	-	-	93.30
a*	0.45	-	-	-	-	0.48	-	-	-	0.40
b*	10.20	-	-	-	-	9.40	-	-	-	9.43
RVA										
Peak Viscosity, cP	2271	-	-	-	-	2165	-	-	-	760
Minimum viscosity (Trough), cP	1858	-	-	-	-	1699	-	-	-	473
Final Viscosity, cP	2544	-	-	-	-	2312	-	-	-	763
Peak Time, min	6.93	-	-	-	-	7.00	-	-	-	5.33
GLUTEN										
Wet gluten (14% mb), %	31.9	-	-	-	-	33.4	-	-	-	32.8
Dry gluten (14% mb), %	11.4	-	-	-	-	10.9	-	-	-	11.3
Gluten Index	98	-	-	-	-	96	-	-	-	96
FARINOGRAM										
Water absorption (14% mb), %	58.3	-	-	-	-	60.8	-	-	-	60.4
Development time, min	15.2	-	-	-	-	6.5	-	-	-	6.9
Stability, min	18.5	-	-	-	-	8.9	-	-	-	9.8
Mixing tolerance index, BU	0	-	-	-	-	37	-	-	-	33
EXTENSOGRAM (45 min pull)										
Area, cm²	175	-	-	-	-	129	-	-	-	115
Maximum height, BU	616	-	-	-	-	427	-	-	-	409
Extensibility, mm	217	-	-	-	-	224	-	-	-	209
ALVEOGRAM										
Strength (S), cm²	61.2	-	-	-	-	44.9	-	-	-	42.5
Stability (P), mm	92	-	-	-	-	78	-	-	-	73
Distensibility (L), mm	131	-	-	-	-	140	-	-	-	144
Configuration ratio (P/L)	0.70	-	-	-	-	0.56	-	-	-	0.51
MIXOGRAM										
Peak time, min	4.9	-	-	-	-	3.2	-	-	-	3.3
100 g BAKING TEST										
Loaf volume, cm³	1251	-	-	-	-	1172	-	-	-	1157
Evaluation (see page 74)	0	-	-	-	-	0	-	-	-	0

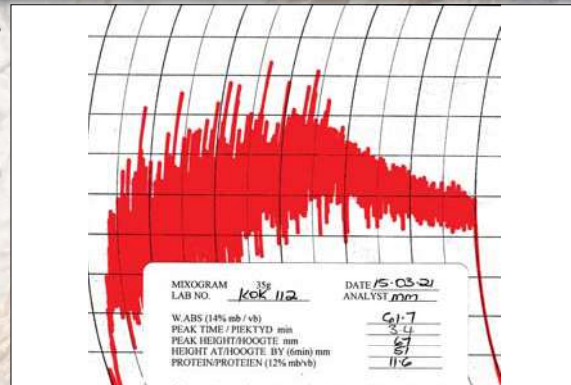
Rheological Graphs Per Production Region

MIXOGRAM

26

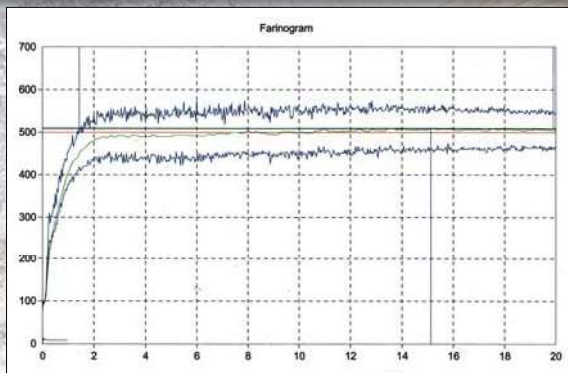


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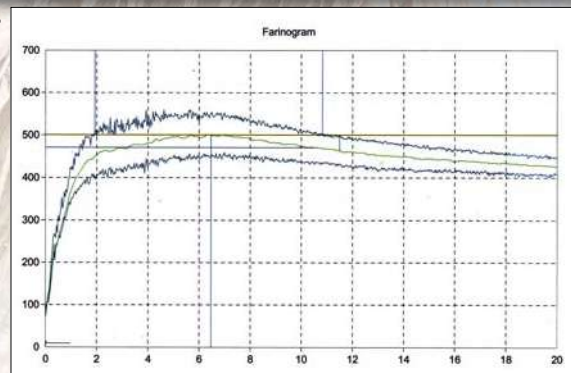


FARINOGRAM

26

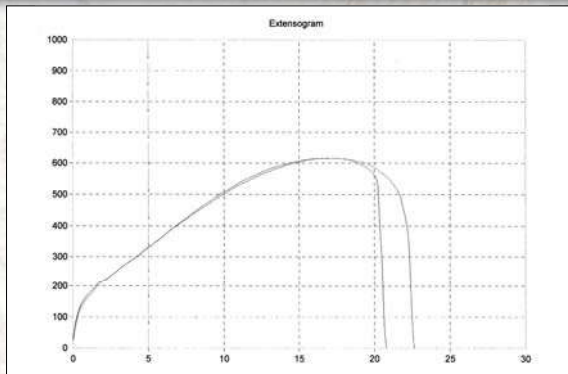


28

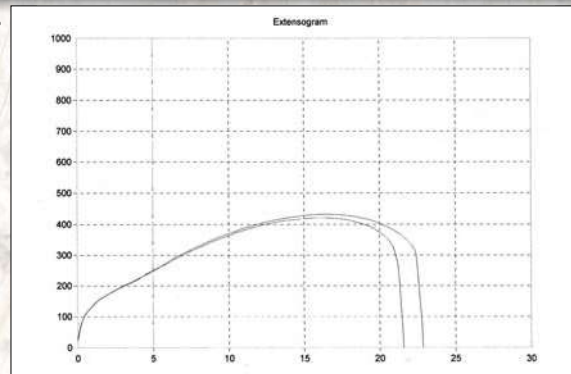


EXTENSOGRAM

26

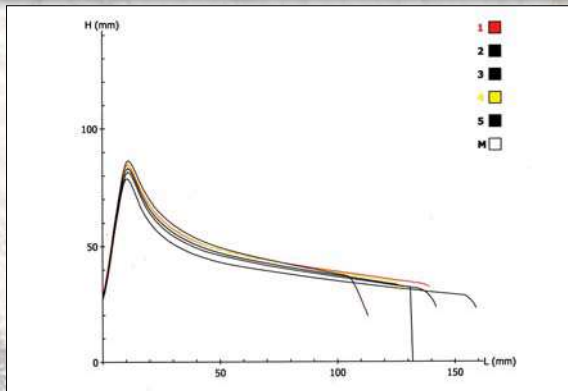


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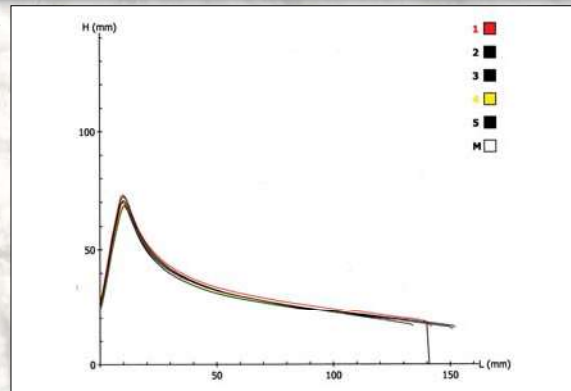


ALVEOGRAM

26



28



South African quality data per production region

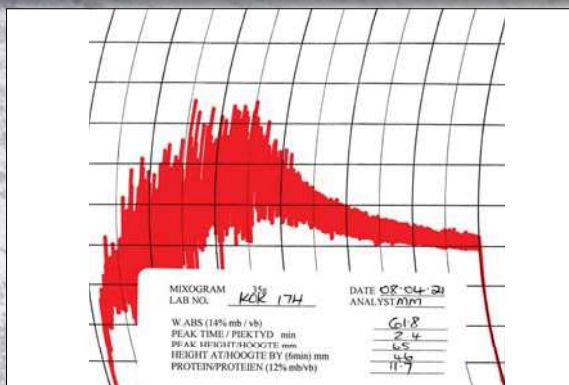
IRRIGATION WHEAT

PRODUCTION REGION	(29) Mpumalanga Southern Region				(32) Mpumalanga Western Region					
	ave	min	max	stdev	ave	min	max	stdev		
WHEAT										
Protein (12% mb), %	12.7	-	-	-	12.9	11.5	14.2	1.36		
Falling number, sec	345	-	-	-	271	210	329	59.53		
Moisture, %	11.8	-	-	-	11.9	11.3	12.5	0.60		
1000 Kernel mass (13% mb), g	46.2	-	-	-	40.2	37.1	42.5	2.77		
Hectolitre mass (dirty), kg/hl	83.3	-	-	-	79.4	77.8	80.8	1.50		
Screenings (<1.8 mm sieve), %	0.42	-	-	-	0.60	0.19	0.93	0.38		
Total damaged kernels, %	0.72	-	-	-	1.17	0.84	1.66	0.43		
Combined deviations, %	1.42	-	-	-	2.06	1.03	2.77	0.91		
Number of samples	1				3					
CULTIVARS										
	SST 884		54.0		SST 884		36.0			
	PAN 3471		32.0		SST 8135		25.3			
	SST 8156		14.0		SST 8156		19.3			
	-		-		SST 8154		7.0			
Cultivars with highest % occurrence	-		-		SST 843		7.0			
Number of samples	1				3					
MIXOGRAM (Quadromat Junior)	ave	min	max	stdev	ave	min	max	stdev		
Peak time, min	2.4	-	-	-	3.7	3.3	4.1	0.40		
Tail height (6 min), mm	46	-	-	-	49	48	49	0.58		
Number of samples	1				3					
CLASS AND GRADE	COMPOSITE SAMPLES									
	Super	B1	B2	B3	COW	Super	B1	B2	B3	COW
Bühler Extraction, %	77.2	-	-	-	-	75.9	74.0	-	-	-
FLOUR										
Protein (12% mb), %	11.7	-	-	-	-	12.0	10.8	-	-	-
Moisture, %	13.9	-	-	-	-	13.5	13.3	-	-	-
Ash (db), %	0.63	-	-	-	-	0.60	0.61	-	-	-
Colour, KJ (wet)	-5.0	-	-	-	-	-3.9	-4.6	-	-	-
Colour, Konica Minolta CM5 (dry)										
L*	94.29	-	-	-	-	93.38	93.73	-	-	-
a*	0.45	-	-	-	-	0.42	0.42	-	-	-
b*	8.22	-	-	-	-	9.11	9.71	-	-	-
RVA										
Peak Viscosity, cP	2249	-	-	-	-	1959	1401	-	-	-
Minimum viscosity (Trough), cP	1781	-	-	-	-	1671	1182	-	-	-
Final Viscosity, cP	2441	-	-	-	-	2070	1518	-	-	-
Peak Time, min	7.00	-	-	-	-	6.93	6.47	-	-	-
GLUTEN										
Wet gluten (14% mb), %	33.4	-	-	-	-	31.6	28.7	-	-	-
Dry gluten (14% mb), %	11.5	-	-	-	-	11.0	9.5	-	-	-
Gluten Index	94	-	-	-	-	96	94	-	-	-
FARINOGRAM										
Water absorption (14% mb), %	59.2	-	-	-	-	58.9	58.2	-	-	-
Development time, min	4.5	-	-	-	-	5.7	3.5	-	-	-
Stability, min	5.0	-	-	-	-	6.7	7.8	-	-	-
Mixing tolerance index, BU	65	-	-	-	-	58	30	-	-	-
EXTENSOGRAM (45 min pull)										
Area, cm²	95	-	-	-	-	102	103	-	-	-
Maximum height, BU	300	-	-	-	-	356	415	-	-	-
Extensibility, mm	223	-	-	-	-	208	188	-	-	-
ALVEOGRAM										
Strength (S), cm²	34.7	-	-	-	-	37.6	37.6	-	-	-
Stability (P), mm	58	-	-	-	-	61	75	-	-	-
Distensibility (L), mm	205	-	-	-	-	170	116	-	-	-
Configuration ratio (P/L)	0.28	-	-	-	-	0.36	0.65	-	-	-
MIXOGRAM										
Peak time, min	2.3	-	-	-	-	3.0	3.2	-	-	-
100 g BAKING TEST										
Loaf volume, cm³	1195	-	-	-	-	1196	1086	-	-	-
Evaluation (see page 74)	0	-	-	-	-	0	0	-	-	-

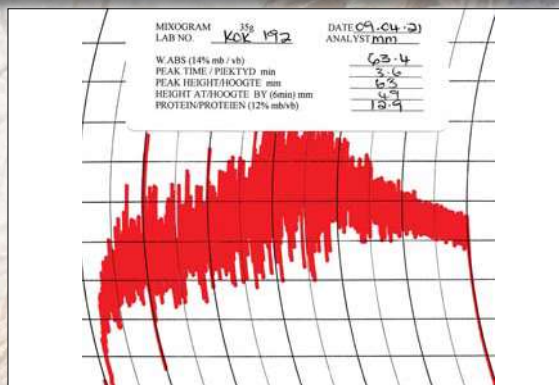
Rheological Graphs Per Production Region

MIXOGRAM

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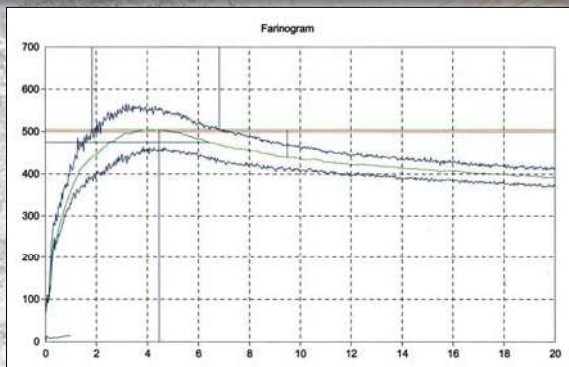


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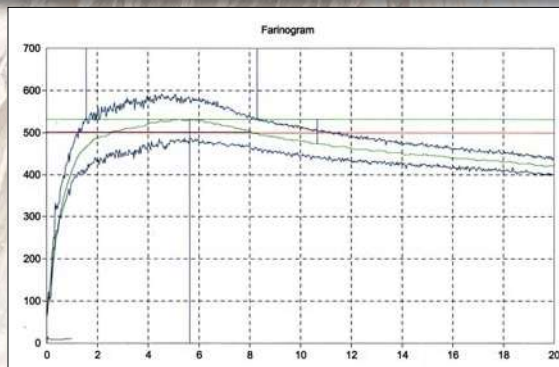


FARINOGRAM

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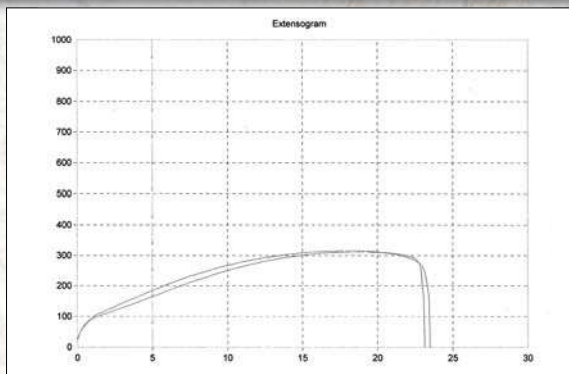


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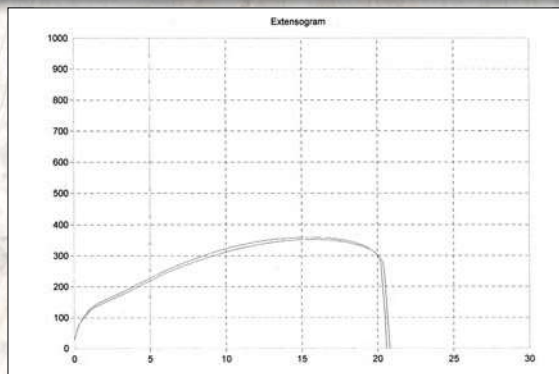


EXTENSOGRAM

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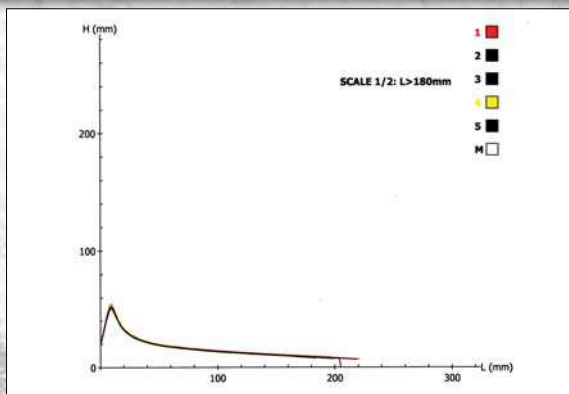


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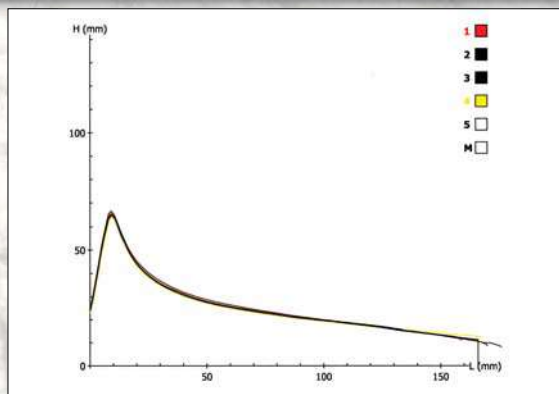


ALVEOGRAM

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South African quality data per production region

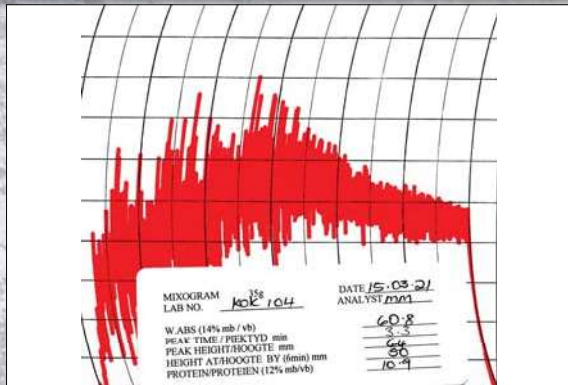
IRRIGATION WHEAT

PRODUCTION REGION	(33) Mpumalanga Northern Region				(34) Gauteng Region						
	ave	min	max	stdev	ave	min	max	stdev			
WHEAT											
Protein (12% mb), %	12.1	10.6	13.0	0.96	12.9	-	-	-			
Falling number, sec	368	281	402	36.02	347	-	-	-			
Moisture, %	11.0	10.4	11.4	0.43	12.0	-	-	-			
1000 Kernel mass (13% mb), g	37.9	34.5	42.8	2.39	44.0	-	-	-			
Hectolitre mass (dirty), kg/hl	82.5	79.8	84.6	1.60	81.2	-	-	-			
Screenings (<1.8 mm sieve), %	0.95	0.37	2.09	0.50	0.65	-	-	-			
Total damaged kernels, %	0.76	0.00	1.76	0.58	1.28	-	-	-			
Combined deviations, %	2.00	0.89	3.03	0.73	1.93	-	-	-			
Number of samples	9				1						
CULTIVARS											
	SST 8135		49.4		SST 884		100.0				
	SST 884		27.2		-		-				
	SST 835		7.3		-		-				
	SST 895		7.0		-		-				
Cultivars with highest % occurrence	SST 843		3.6		-		-				
Number of samples	9				1						
MIXOGRAM (Quadromat Junior)	ave	min	max	stdev	ave	min	max	stdev			
Peak time, min	3.3	2.5	3.8	0.42	2.7	-	-	-			
Tail height (6 min), mm	48	38	55	5.12	46	-	-	-			
Number of samples	9				1						
CLASS AND GRADE	COMPOSITE SAMPLES										
	Super	B1	B2	B3	COW	Super	B1	B2	B3	COW	
	Bühler Extraction, %	75.2	74.2	75.5	-	-	75.0	-	-	-	-
	FLOUR										
	Protein (12% mb), %	12.2	11.2	10.0	-	-	11.8	-	-	-	-
	Moisture, %	13.5	14.1	13.3	-	-	14.2	-	-	-	-
	Ash (db), %	0.59	0.62	0.65	-	-	0.62	-	-	-	-
	Colour, KJ (wet)	-4.7	-4.9	-5.0	-	-	-4.7	-	-	-	-
	Colour, Konica Minolta CM5 (dry)										
	L*	93.38	93.47	93.73	-	-	93.89	-	-	-	-
	a*	0.51	0.58	0.50	-	-	0.46	-	-	-	-
	b*	9.78	10.30	9.90	-	-	8.54	-	-	-	-
RVA											
Peak Viscosity, cP	2088	2408	2505	-	-	2297	-	-	-	-	
Minimum viscosity (Trough), cP	1708	1831	1955	-	-	1849	-	-	-	-	
Final Viscosity, cP	2239	2667	2725	-	-	2461	-	-	-	-	
Peak Time, min	7.00	7.00	7.00	-	-	7.00	-	-	-	-	
GLUTEN											
Wet gluten (14% mb), %	32.9	30.5	27.1	-	-	32.7	-	-	-	-	
Dry gluten (14% mb), %	11.5	10.1	8.9	-	-	11.6	-	-	-	-	
Gluten Index	98	95	97	-	-	94	-	-	-	-	
FARINOGRAM											
Water absorption (14% mb), %	60.0	59.3	58.1	-	-	58.2	-	-	-	-	
Development time, min	5.3	5.7	5.5	-	-	4.2	-	-	-	-	
Stability, min	8.3	7.7	6.9	-	-	5.4	-	-	-	-	
Mixing tolerance index, BU	37	40	47	-	-	58	-	-	-	-	
EXTENSOGRAM (45 min pull)											
Area, cm²	116	98	83	-	-	89	-	-	-	-	
Maximum height, BU	400	373	351	-	-	278	-	-	-	-	
Extensibility, mm	218	197	171	-	-	228	-	-	-	-	
ALVEOGRAM											
Strength (S), cm²	43.6	37.2	30.0	-	-	31.4	-	-	-	-	
Stability (P), mm	75	73	69	-	-	49	-	-	-	-	
Distensibility (L), mm	144	122	107	-	-	218	-	-	-	-	
Configuration ratio (P/L)	0.52	0.60	0.64	-	-	0.22	-	-	-	-	
MIXOGRAM											
Peak time, min	2.9	2.8	3.2	-	-	2.6	-	-	-	-	
100 g BAKING TEST											
Loaf volume, cm³	1229	1163	1017	-	-	1150	-	-	-	-	
Evaluation (see page 74)	0	0	0	-	-	0	-	-	-	-	

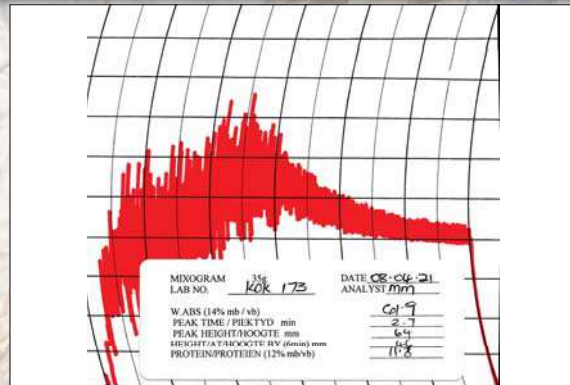
Rheological Graphs Per Production Region

MIXOGRAM

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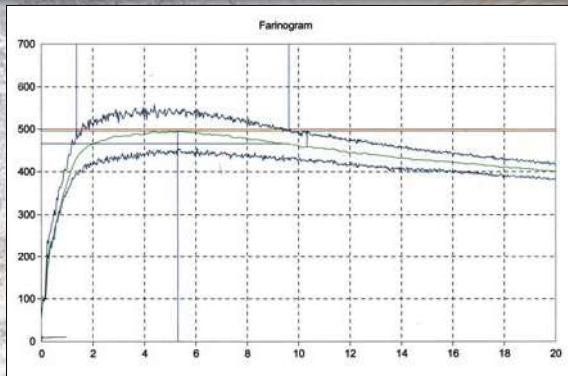


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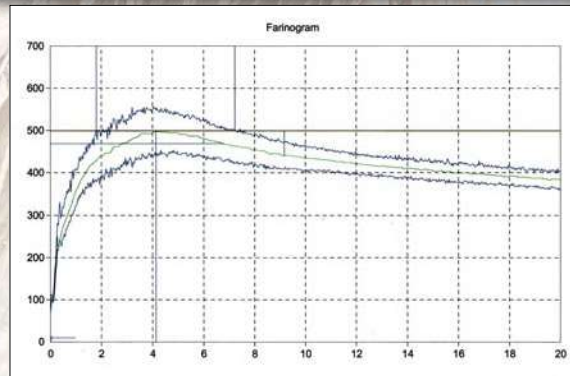


FARINOGRAM

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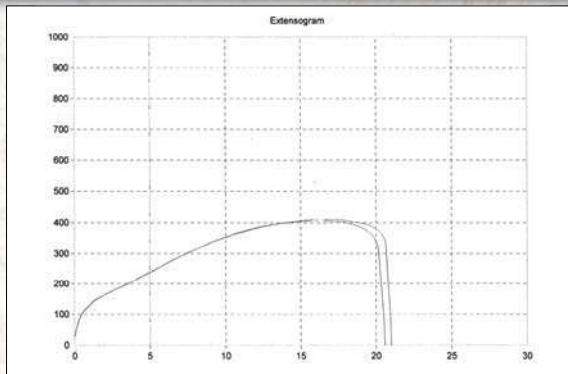


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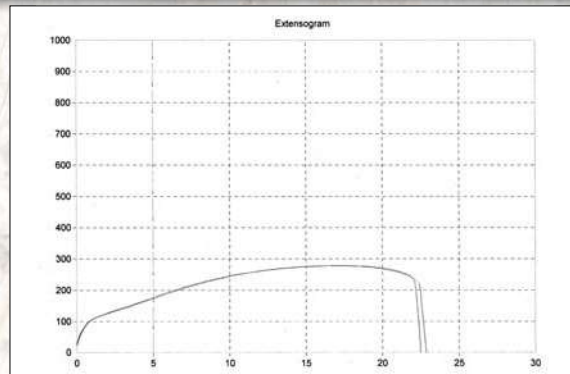


EXTENSOGRAM

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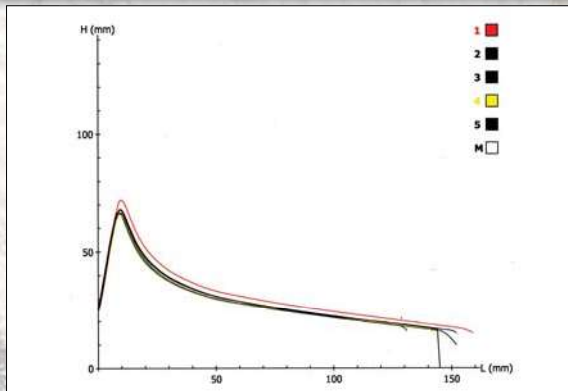


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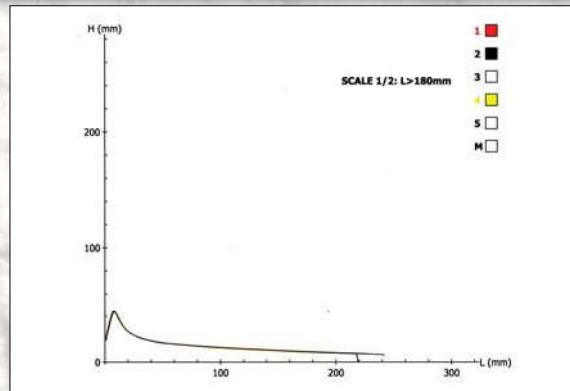


ALVEOGRAM

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South African quality data per production region

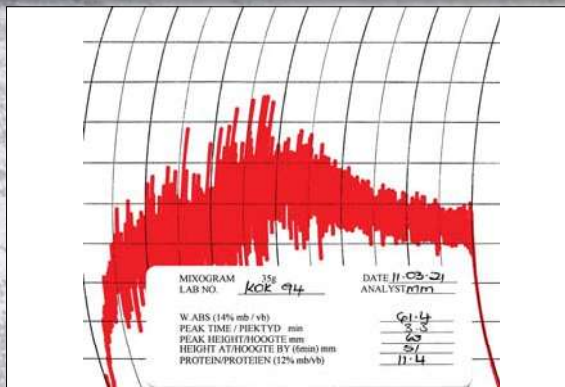
IRRIGATION WHEAT

PRODUCTION REGION	(36) KwaZulu-Natal				
WHEAT	ave	min	max	stdev	
Protein (12% mb), %	12.7	11.3	13.4	0.63	
Falling number, sec	311	110	385	76.53	
Moisture, %	11.1	10.7	11.6	0.28	
1000 Kernel mass (13% mb), g	37.8	34.6	40.3	1.65	
Hectolitre mass (dirty), kg/hl	80.2	74.6	83.2	2.66	
Screenings (<1.8 mm sieve), %	2.06	0.76	8.92	2.42	
Total damaged kernels, %	1.08	0.00	4.14	1.27	
Combined deviations, %	3.78	0.76	16.60	4.59	
Number of samples	10				
CULTIVARS					
	SST 8135		49.8		
	SST 835		14.3		
	PAN 3400		11.9		
	SST 884		11.6		
Cultivars with highest % occurrence	SST 8154		7.8		
Number of samples	10				
MIXOGRAM (Quadromat Junior)	ave	min	max	stdev	
Peak time, min	3.3	2.9	4.4	0.44	
Tail height (6 min), mm	50	43	55	3.50	
Number of samples	10				
CLASS AND GRADE	Super	B1	B2	B3	COW
	75.5	-	75.5	-	-
Bühler Extraction, %					
FLOUR					
Protein (12% mb), %	12.2	-	9.9	-	-
Moisture, %	13.8	-	13.8	-	-
Ash (db), %	0.56	-	0.56	-	-
Colour, KJ (wet)	-5.0	-	-5.0	-	-
Colour, Konica Minolta CM5 (dry)					
L*	93.87	-	94.01	-	-
a*	0.46	-	0.36	-	-
b*	9.75	-	9.90	-	-
RVA					
Peak Viscosity, cP	1950	-	1761	-	-
Minimum viscosity (Trough), cP	1676	-	1548	-	-
Final Viscosity, cP	2091	-	1938	-	-
Peak Time, min	6.80	-	7.00	-	-
GLUTEN					
Wet gluten (14% mb), %	32.6	-	26.6	-	-
Dry gluten (14% mb), %	10.9	-	7.8	-	-
Gluten Index	97	-	96	-	-
FARINOGRAM					
Water absorption (14% mb), %	59.9	-	57.8	-	-
Development time, min	7.3	-	5.2	-	-
Stability, min	9.5	-	6.9	-	-
Mixing tolerance index, BU	36	-	47	-	-
EXTENSOGRAM (45 min pull)					
Area, cm²	132	-	92	-	-
Maximum height, BU	426	-	340	-	-
Extensibility, mm	230	-	196	-	-
ALVEOGRAM					
Strength (S), cm²	45.4	-	32.4	-	-
Stability (P), mm	72	-	64	-	-
Distensibility (L), mm	162	-	134	-	-
Configuration ratio (P/L)	0.44	-	0.48	-	-
MIXOGRAM					
Peak time, min	3.2	-	2.9	-	-
100 g BAKING TEST					
Loaf volume, cm³	1208	-	1027	-	-
Evaluation (see page 74)	0	-	0	-	-

Rheological Graphs Per Production Region

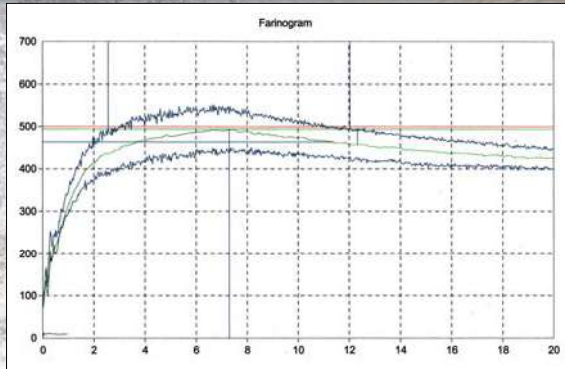
MIXOGRAM

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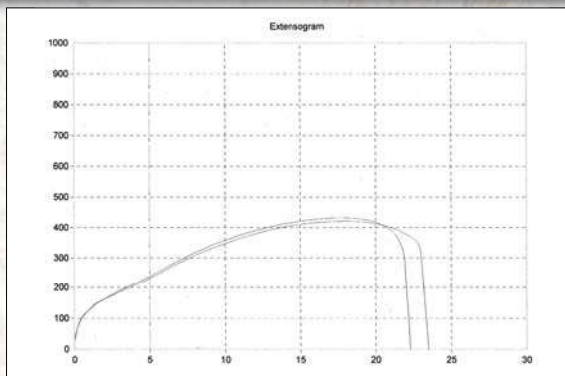
FARINOGRAM

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EXTENSOGRAM

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ALVEOGRAM

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