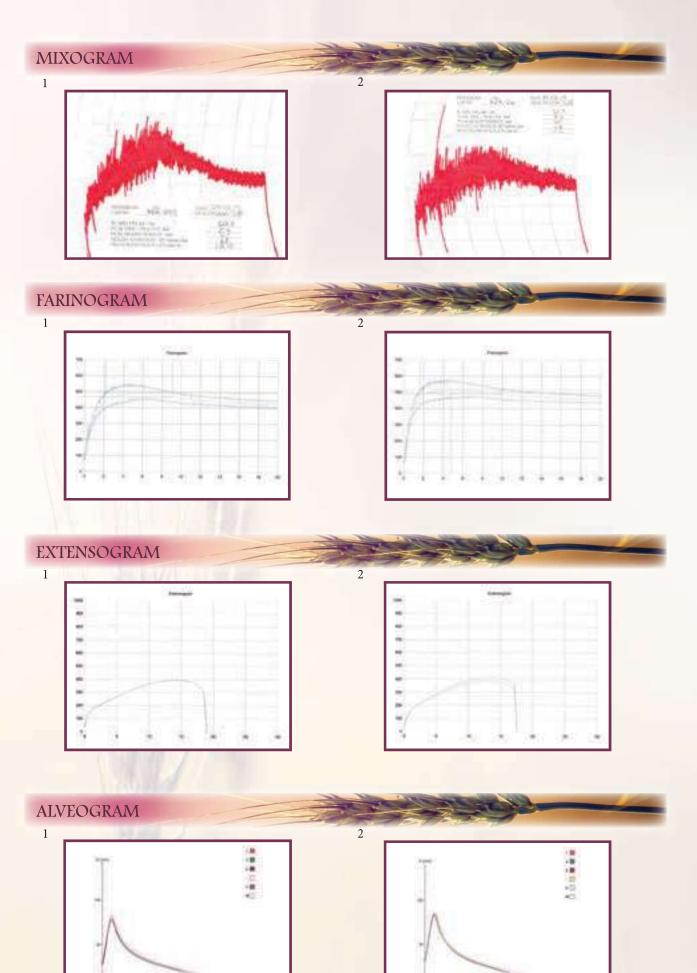
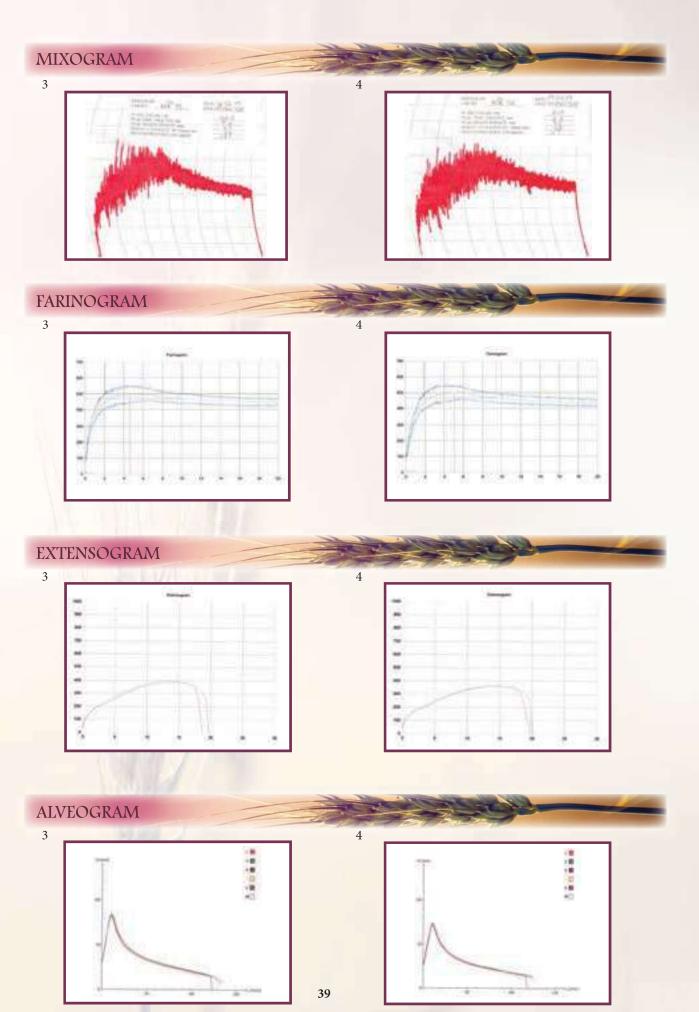
| PRODUCTION REGION | (1) | walan | d Regic | on | | | (2) Swartl Weste | and rn Regi | on | | | |
|---|----------------|-------|-------------------|-------------------|-----|----------------------|------------------------|----------------|-------------------|-------------------|-----|----------------------|
| WHEAT | | | | | | | | | | | | |
| Dratain (40% mak) % | ave | | min | max | | stdev | ave | | min | max | | stdev |
| Protein (12% mb), % Falling number, sec | 11.9 444 | _ | 10.8 437 | 13.3 447 | | 1.27 5.77 | 11.6 409 | | 10.7 351 | 12.5 443 | | 0.50 29.02 |
| 1000 Kernel mass (13% mb), g | 37.5 | | 37.1 | 37.8 | | 0.36 | 37.4 | | 33.4 | 39.6 | | 1.99 |
| Hectolitre mass (dirty), kg/hl | 79.2 | | 77.8 | 80.0 | | 1.22 | 79.3 | | 76.9 | 81.1 | | 1.19 |
| Screenings (<1.8 mm sieve), % | 3.17 | | 2.56 | 3.55 | | 0.53 | 3.16 | | 1.74 | 7.81 | | 2.08 |
| Total damaged kernels, % | 1.25 | | 1.10 | 1.40 | | 0.15 | 0.39 |) | 0.18 | 0.72 | | 0.16 |
| Combined deviations, % | 5.22 | | 4.16 | 6.01 | | 0.95 | 4.28 | 3 | 2.48 | 9.19 | | 2.27 |
| Number of samples | | | | 3 | | | | | 1 | 10 | | |
| CULTIVARS | | SST | Г 0117 | 30 |) 3 | | | SST | 0117 | 27 | 2 | |
| cultivars | | | 0127 | 23 | | | | | 0127 | 22 | | |
| with highest % | | | 056 | 23 | | | | | 056 | | 3.5 | |
| occurrence | | SST | Г 087 | 15 | 5.3 | | | SST | 087 | 13 | 3.8 | |
| | | SST | Г 015 | | .7 | | | SST | | | 3.7 | |
| Number of samples | | - | | 3 | | | | | 1 | 10 | | |
| MIXOGRAM (Quadromat Junior) Peak time, min | ave 2.8 | | min 2.6 | max 2.9 | : : | stdev 0.15 | ave 3.1 | | min 2.8 | max 3.5 | | stdev 0.26 |
| Tail height (6 min), mm | 46 | | 44 | 48 | | 2.00 | 47 | | 45 | 50 | | 1.57 |
| Number of samples | | | | 3 | | | | | | 10 | | |
| | | | | | CO | MPOSIT | E SAMP | LES | | | | |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | cow | B1 | B2 | B3 | B4 | UT | cow |
| Bühler Extraction, % | 72.8 | - | - | - | - | - | 69.6 | 69.9 | - | - | - | - |
| <i>FLOUR</i> Protein (12% mb), % | 11.3 | _ | - | - | _ | - | 11.3 | 10.4 | - | _ | - | - |
| Ash (db), % | 0.61 | - | - | - | - | - | 0.59 | 0.62 | - | - | - | - |
| Colour, KJ (wet) | -4.5 | - | - | - | - | - | -4.5 | -4.6 | - | - | - | - |
| Colour, Konica Minolta CM5 (dry) | | | | | | | | | | | | |
| <u>L*</u> | 93.72 0.40 | - | - | - | - | - | 93.74 0.36 | 94.14 0.40 | - | - | - | - |
| a* b* | 9.84 | - | - | - | - | - | 9.79 | 10.33 | - | - | - | - |
| | | | 1 | | | 1 | 1 | | | | | |
| RVA | | | | | | | | | | | | |
| Peak Viscosity, cP | 2390 | - | - | - | - | - | 1956 | 2051 | - | - | - | - |
| Minimum viscosity (Trough), cP Final Viscosity, cP | 1807 2534 | - | - | - | - | - | 1377 2248 | 1465 2361 | - | - | - | - |
| Peak Time, min | 7.00 | - | - | - | - | | 7.00 | 7.00 | - | - | - | |
| | 1.00 | | | | | 1 | 1.00 | 1.00 | | | | 1 |
| GLUTEN | | 1000 | | | | | | | | | | |
| Wet gluten (14% mb), % | 31.8 | - | - | - | - | - | 30.3 | 25.7 | - | - | - | - |
| Dry gluten (14% mb), % | 10.4 | - | - | - | - | - | 10.4 | 8.6 | - | - | - | - |
| Gluten Index | 89 | - | - | - | - | - | 93 | 96 | - | - | - | |
| FARINOGRAM Water absorption (14% mb), % | 61.1 | _ | - | _ | - | _ | 60.3 | 59.7 | _ | _ | - | |
| Development time, min | 6.0 | - | - | - | - | - | 4.8 | 4.7 | - | - | - | - |
| Stability, min | 6.9 | - | - | - | - | - | 8.4 | 8.9 | - | - | - | - |
| Mixing tolerance index, BU | 41 | - | - | - | - | - | 28 | 23 | - | - | - | - |
| EXTENSOGRAM (45 min pull) Area, cm ² | 105 | _ | _ | _ | _ | | 99 | 79 | | | - | |
| Maximum height, BU | 395 | - | - | - | - | - | 402 | 355 | - | - | - | - |
| Extensibility, mm | 191 | - | - | - | - | - | 177 | 165 | - | - | - | - |
| ALVEOGRAM | 07.5 | | | | | | 07.0 | | | | | |
| Strength (S), cm ² Stability (P), mm | 37.5 87 | - | - | - | - | - | 37.2 93 | 33.8 95 | - | - | | - |
| Distensibility (L), mm | 102 | - | - | - | - | - | 93 | 95 78 | - | - | - | |
| Configuration ratio (P/L) | 0.85 | - | - | - | | - | 0.96 | 1.22 | - | - | | - |
| MIXOGRAM | 2.6 | | | | - | | | 3.0 | _ | | | |
| Peak time, min 100g BAKING TEST | | - | - | - | | • | 2.8 | | | - | - | - |
| Loaf volume, cm ³ | 1054 | - | - | - | - | - | 1021 | 908 | - | - | - | - |
| Evaluation (see page 79) | 0 | - | - | - | - | - | 0 | 0 | - | - | - | - |



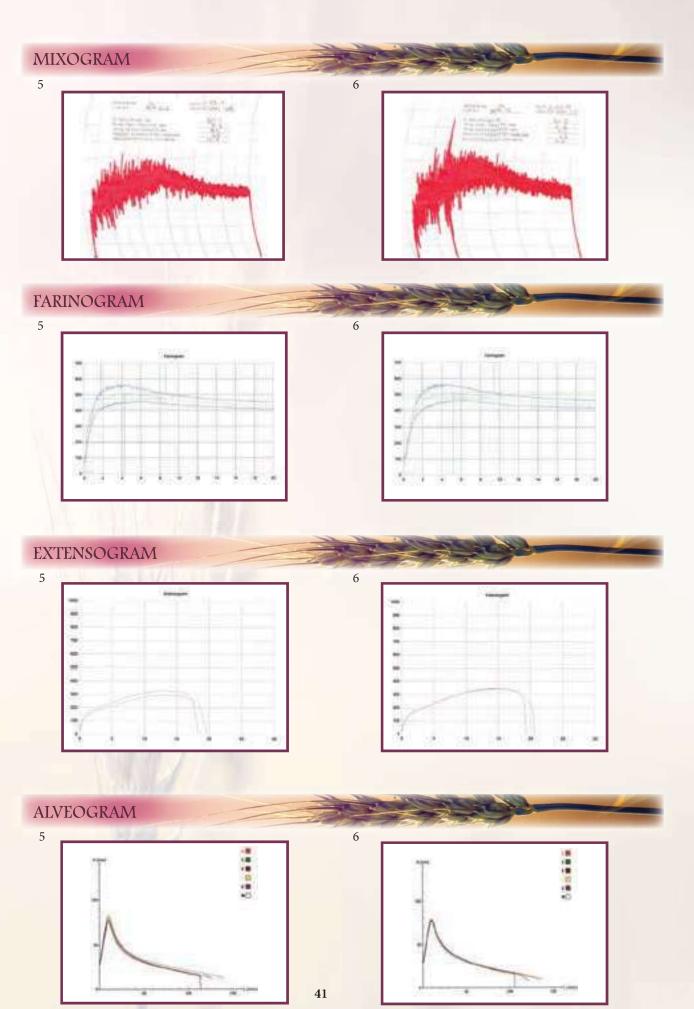
South African Wheat Crop Quality Report 2018/2019 Season

37

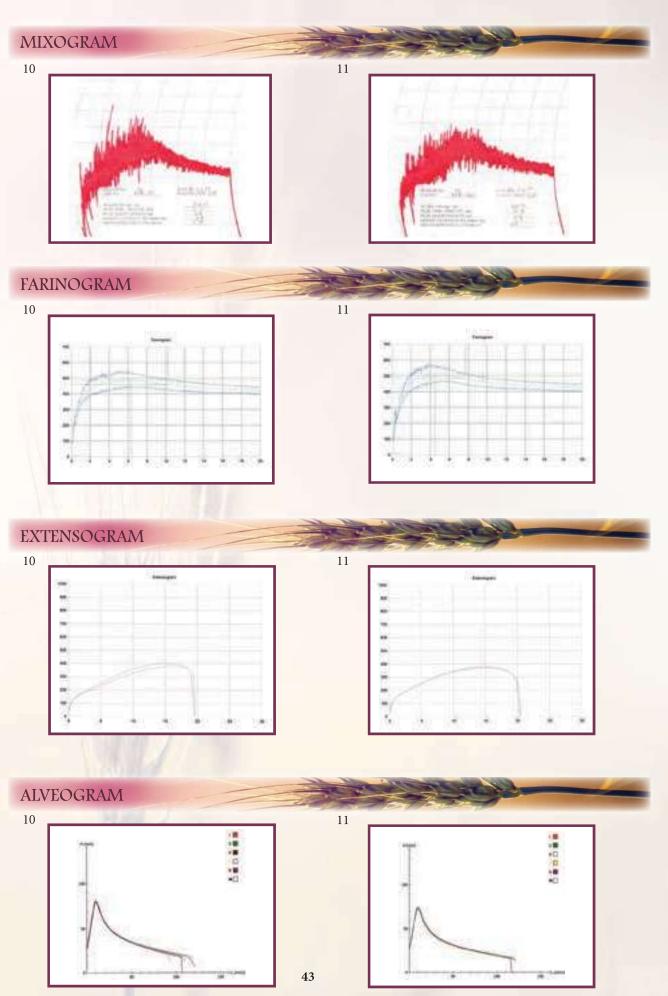
| PRODUCTION REGION | (3) Swartla Central | and I Region | | | | | (4) Swartla Easterr | nd 1 Region | | | | |
|--|---------------------------|-----------------|-----------|------------|--------------|--------|---------------------------|----------------|-----------|---------------------|-----|----------|
| WHEAT | | - | - | | | | | | | | _ | _ |
| | ave | • | min | max | с s | stdev | ave | | min | max | : | stdev |
| Protein (12% mb), % | 12.1 | | 10.2 | 15.4 | | 1.00 | 11.1 | | 9.4 | 12.9 | | 0.91 |
| Falling number, sec | 411 | | 295 | 618 | | 42.66 | 378 | | 333 | 432 | | 28.23 |
| 1000 Kernel mass (13% mb), g | 39.1 | | 28.3 | 46.5 | | 3.24 | 40.5 | | 32.2 | 45.7 | | 2.96 |
| Hectolitre mass (dirty), kg/hl | 79.8 | | 76.0 | 83.5 | | 1.42 | 80.9 | | 78.2 | 82.3 | | 1.14 |
| Screenings (<1.8 mm sieve), % | 1.66 | | 0.18 | 5.05 | | 0.85 | 1.76 | | 0.17 | 4.10 | | 1.17 |
| Total damaged kernels, % Combined deviations, % | 0.80 | | 0.12 | 3.60 | | 0.57 | 0.91 | | 0.56 | <u>1.46</u> 7.18 | | 0.24 |
| Number of samples | 5.5 | | | 7.52 78 | - | 1.51 | 5.40 | , | | 22 | | 1.40 |
| Number of Sumples | | | , | 0 | | | | | | | | |
| CULTIVARS | | SST | 0117 | 26 | 6.8 | | | SST | 0127 | 24 | .4 | |
| cultivars | | | 0127 | | 3.0 | | | | 0117 | | .2 | |
| with highest % | | | 087 | | 3.6 | | | | 087 | | 6.9 | |
| occurrence | | | 056 | | 4.7 | | | | 056 | 14 | 1.6 | |
| | | SST | 88 | 8 | .2 | | | SST | 88 | 8. | .3 | |
| Number of samples | | - | 7 | 8 | | | | | 2 | 22 | | |
| MIXOGRAM (Quadromat Junior) | ave | | min | max | | stdev | ave | | min | max | | stdev |
| Peak time, min | 2.7 | | 2.1 | 3.3 | | 0.23 | 2.8 | | 2.3 | 3.8 | | 0.35 |
| Tail height (6 min), mm | 46 | _ | 40 | 52 | | 2.45 | 45 | | 41 | 49 | | 2.61 |
| Number of samples | | - | / | 8 | 00 | MPOSIT | E SAMP | IES | | 22 | | |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | COW | B1 | B2 | B3 | B4 | UT | cow |
| Bühler Extraction, % | 68.9 | 69.9 | 70.4 | - | 70.1 | - | 69.7 | 70.4 | 70.9 | 70.3 | - | - |
| FLOUR Protein (12% mb), % | 11.9 | 10.7 | 9.6 | _ | 11.0 | _ | 11.5 | 10.6 | 9.5 | 8.7 | - | _ |
| Ash (db), % | 0.56 | 0.55 | 0.55 | - | 0.54 | i - | 0.56 | 0.59 | 0.55 | 0.56 | - | <u> </u> |
| Colour, KJ (wet) | -4.4 | -4.5 | -4.8 | - | -4.7 | - | -4.6 | -4.5 | -4.7 | -4.9 | - | - 1 |
| Colour, Konica Minolta CM5 (dry) | | | | | | | | | | | | |
| <u>L*</u> | 94.02 | 94.27 | 94.24 | - | 94.43 | - | 94.31 | 94.05 | 94.27 | 94.15 | - | - |
| <u>a*</u> | 0.43 | 0.42 | 0.35 | - | 0.34 | - | 0.39 | 0.42 | 0.37 | 0.39 | - | - |
| <u>b*</u> | 10.23 | 10.37 | 10.68 | - | 9.39 | - | 9.52 | 9.79 | 9.69 | 10.57 | - | |
| RVA | | | | | | | | | | | | |
| Peak Viscosity, cP | 2075 | 2094 | 1991 | - | 2088 | - | 1987 | 2145 | 2319 | 2381 | - | |
| Minimum viscosity (Trough), cP | 1463 | 1508 | 1358 | - | 1481 | - | 1426 | 1559 | 1765 | 1809 | - | |
| Final Viscosity, cP | 2387 | 2444 | 2313 | _ | 2431 | - | 2331 | 2540 | 2760 | 2838 | - | <u> </u> |
| Peak Time, min | 7.00 | 7.00 | 7.00 | - | 7.00 | - | 7.00 | 7.00 | 7.00 | 7.00 | - | - |
| GLUTEN | 22.0 | 28.6 | 24.9 | | 20.7 | | 22.0 | 28.0 | 25.0 | | | |
| Wet gluten (14% mb), % Dry gluten (14% mb), % | 32.0 | 28.6 9.6 | 24.8 | - | 30.7 10.7 | - | 32.0 | 28.9 | 25.8 | - | | - |
| Gluten Index | 11.0 94 | 9.6 | 8.1 97 | - | 93 | - | 10.6 93 | 10.2 96 | 8.8 95 | - | - | - |
| FARINOGRAM | 54 | 54 | 51 | _ | 90 | - | | 30 | 95 | - | | - |
| Water absorption (14% mb), % | 62.0 | 59.7 | 58.3 | - | 60.2 | - | 61.0 | 60.0 | 58.2 | 56.1 | - | - |
| Development time, min | 4.7 | 5.3 | 4.2 | - | 4.3 | İ - | 5.1 | 4.3 | 4.4 | 2.8 | - | - |
| Stability, min | 8.0 | 7.2 | 6.7 | - | 7.8 | - | 7.5 | 6.5 | 6.5 | 7.3 | - | - |
| Mixing tolerance index, BU | 29 | 40 | 37 | - | 27 | - | 36 | 35 | 43 | 25 | - | - |
| EXTENSOGRAM (45 min pull) Area, cm ² | 105 | 93 | 87 | - | 94 | _ | 99 | 81 | 70 | 73 | - | - |
| Maximum height, BU | 395 | 380 | 373 | - | 365 | - | 360 | 329 | 310 | 348 | - | - |
| Extensibility, mm | 192 | 182 | 167 | - | 190 | - | 199 | 181 | 160 | 153 | - | - |
| ALVEOGRAM Strength (S), cm ² | 43.1 | 36.9 | 30.7 | _ | 36.1 | _ | 36.7 | 30.9 | 26.6 | 24.2 | - | _ |
| Stability (P), mm | 92 | 81 | 77 | - | 80 | - | 80 | 77 | 70 | 70 | _ | - |
| Distensibility (L), mm | 122 | 120 | 102 | - | 119 | - | 118 | 101 | 98 | 79 | - | - |
| Configuration ratio (P/L) | 0.75 | 0.68 | 0.75 | - | 0.67 | - | 0.68 | 0.76 | 0.71 | 0.89 | - | - |
| MIXOGRAM Peak time, min | 2.3 | 2.3 | 2.3 | _ | 2.4 | _ | 2.4 | 2.3 | 2.9 | 2.9 | - | - |
| 100g BAKING TEST Loaf volume, cm ³ | 991 | 976 | 889 | _ | 979 | _ | 1014 | 1000 | 869 | 857 | - | _ |
| Evaluation (see page 79) | 0 | 0 | 0 | - | 0 | - 1 | 0 | 0 | 0 | 0 | - | - |
| | | | | | | | | | | | | |



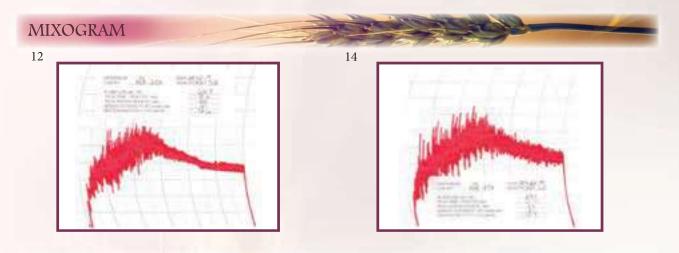
| WHEAT ave min max stdev no max stdev Polen (12k mb), % 11.1 0.0 12.7 1.15 12.0 0.5 13.9 13.3 Falling numbers acc 386 340 437 20.41 341 244 410 25.4 1000 Kernel max (13% mb), g 98.7 26.2 1.61 7.0 7.6 22.8 1.61 7.0 7.6 2.2.8 1.61 7.0 7.6 2.2.8 1.61 0.45 0.57 0.18 1.03 3.66 0.88 10.0 0.81 1.70 0.01 0.81 1.70 0.01 0.85 0.88 1.71 0.01 0.81 0.85 0.88 1.71 0.01 0.81 0.85 0.88 0.88 0.88 0.88 0.85 0.91 0.75 0.8 0.88 0.88 0.88 0.88 0.85 0.91 0.75 0.83 0.38 0.38 0.38 0.38 0.38 0.38 | PRODUCTION REGION | (5) Rûens Westeri | n Regior | 1 | | | | (6) Rûens Easterr | Region | | | | |
|--|----------------------------------|-------------------------|---------------|-------|-------|-----|----------|-------------------------|--------|-------|--|-------|-------|
| Protein (12% mb), % No. 11.1 0.0 12.2 1.1.0 12.0 9.5 13.9 11.03 Falling number, see 386 340 437 20.41 341 28.4 341 28.4 341 28.4 341 28.4 341 28.4 341 28.4 341 28.4 341 28.4 341 28.4 341 28.4 341 28.4 341 28.4 341 28.4 341 28.4 341 28.4 38.5 33.4 43.2 2.41 38.5 38.4 43.2 2.41 38.5 38.4 43.2 2.41 38.5 38.4 43.2 2.41 38.5 38.4 43.2 2.41 38.5 | WHEAT | | | | | | | | | | | | |
| Protein (22× mb), % 11.1 9.0 12.7 1.16 12.0 9.5 13.0 1.03 Falling number see: 386 394 437 26.41 308 38.5 33.4 43.2 24.4 1000 Kernel mass (13%, mb), g 89.3 7.5 82.2 1.51 7.83 7.65 81.8 1.31 Screening L-16 min size(x), % 1.12 0.28 3.86 1.11 2.13 1.03 3.86 0.87 0.85 | WHEAT | ave | | min | max | | stdev | ave | | min | max | | stdev |
| Failing number, see 386 340 437 26.41 341 284 410 28.4 Dio Gerent ass (137, hb), 100 Gerent ass (137, hb), 500 Gerent ass (137, hb), 50 | Protein (12% mb), % | | | | | | | | | | | | |
| Headbill mass (diry), hg/h 99.3 77.5 92.2 1.61 79.3 76.6 91.8 1.31 0.38 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.88 0.18 1.71 0.31 0.56 0.88 0.88 0.18 1.71 0.33 0.56 0.88 0.88 0.18 1.71 0.31 0.55 0.18 1.70 0.31 Number of samples 2.78 2.11 0.83 0.28 1.22 0.85 0.17 2.23 0.8 0.17 2.23 0.8 0.17 2.23 0.8 0.17 2.23 0.8 0.16 1.7 0.18 1.70 0.31 0.35 0.16 1.7 0.16 1.70 0.25 0.16 1.70 0.25 0.17 0.24 0.17 0.25 0.16 0.17 0.25 0.16 0.17 0.25 0.16 0.17 0.16 0.16 0.16 0.16 0.16 0.16 | | 386 | | 340 | 437 | | | 341 | | 284 | 410 | | 25.45 |
| Screening: <1.5 mm size, 1.1 0.28 3.06 1.11 2.13 1.03 3.65 0.68 0.62 0.16 1.70 0.48 0.57 0.18 1.70 0.31 Combined deviations, % 2.28 0.63 5.28 1.24 3.59 1.99 7.29 1.11 Mumber of amples 27 2.4 3.59 1.97 7.23 1.11 Cultivars SST 017 2.2.6 SST 017 2.2.3 | | 38.7 | | 32.6 | 44.1 | | 3.08 | 38.5 | | 33.4 | 43.2 | | 2.41 |
| Total admiged kernels, % 0.62 0.16 1.76 0.48 0.77 0.18 1.70 0.31 Number of samples 21 S2 23 528 1.24 3.59 1.70 0.31 Outhry of samples 21 S37 017 28.8 28.7 70 70.8 | | - | | | | | | ÷ | | | | | |
| Combine of earlies 2.28 0.28 5.28 1.24 3.59 1.99 7.29 1.11 Number of samples 21 28 5.51 017 22.5 0.11 Outlivars SST 057 17.3 SST 057 17.2 1.21 SST 057 17.2 2.5 Outlivars SST 057 17.3 SST 057 17.2 2.5 0.11 SST 057 17.3 SST 057 17.3 SST 057 16.2 0.1 Number of samples 27 Nomber of samples 27 Nomber of samples 27 MXOGRAM (Quadromat Junior) ave min max stdev ave min max stdev Peak time, min 2.9 2.3 3.8 0.35 2.8 2.3 3.3 0.25 CLASS AND GRADE B1 2.0 B3 B4 UT COMPOSITE SAMPLE 2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.4 2.4 | | | | | | | | | | | | | |
| Number of samples 21 27 27 CULTVARS SST 017 28.9 SST 017 22.3 culivars SST 017 28.9 SST 017 12.2 with highest % SST 017 12.3 SST 017 12.3 occurrence SST 057 17.3 SST 057 17.0 Number of samples 21 SST 057 17.0 SST 057 Pask ima, min 29 2.3 0.35 2.8 2.3 0.35 Pask ima, min 46 39 52 3.43 48 38 56 4.04 Number of samples 21 CLASS AND GRAPE B1 D2 2.3 0.35 2.8 2.8 84 4.0 Bibler Extraction, % 69.8 70.6 99.1 70.5 - 70.4 70.6 70.4 70.0 99.9 - FLOW Potein (12% mb), % 0.00 0.82 0.44 0.83 - 0.83 0.85 0.82 0.85 | | 1 | | | | | | | | | | | |
| CULTVARS SST 017 28.9 SST 087 25.6 cultvars with highest % SST 017 12.3 SST 017 12.3 coultwars SST 017 17.3 SST 017 12.3 SST 017 12.3 with highest % SST 017 17.3 SST 017 12.3 SST 017 12.3 with highest % SST 017 17.3 SST 017 12.3 SST 017 12.2 MixOGRAM (Quadromat Junior) ave min max stdev ave min max stdev Peak time, min 2.9 2.3 3.4 0.25 3.3 0.25 Tail height 6 min, mm 46 39 52 3.43 48 38 56 4.04 Minber of samples 27 COMPOSITE SAMPLES 27 CLASS AND GRADE BI B2 B3 B4 UT COW COMPOSITE SAMPLES COMPOSITE SAMPLES COMPOSITE SAMPLES COMPOSITE SAMPLES CLASS AND GRADE B117,1 17,0 0.80,0.82,0.82,0.83,0. | | 2.28 | | | | | 1.24 | 3.58 | | | | | 1.11 |
| SST 0177 28.6 SST 0177 22.6 SST 0172 28.6 SST 0177 28.6 SST 0177 2.3 SST 0127 18.2 SST 056 17.0 SST 056 17.0 SST 056 T VIDE Colspan="4">SST 056 T MXOGRAM (Quadromat Junior) ave min max stdev Peak time, min 2.3 3.3 0.2.6 CLASS AND GRADE B1 B2 B3 B4 UT COMPOSITE SAMPLES CLASS AND GRADE B1 B2 B3 B4 UT COW B1 B2 B3 B4 UT COW COMP Colspan COM B1 | Number of Samples | | | 2 | | | | | | | ., | | |
| SST 0127 28.8 SST 017 22.3 with highes %, occurrence SST 066 11.2 SST 066 17.0 SST 087 17.3 SST 087 17.0 MMDer of samples 21 SST 086 0.5 MINDER OF samples 21 27 23 3.8 0.35 2.8 2.3 3.8 0.25 Tableght (5 min), mn 46 39 52 3.43 48 38 56 4.04 Number of samples 21 - 70.4 70.6 | CULTIVARS | | 557 | 0117 | 29 | 2.0 | | | eet | 087 | 25 | . 6 | |
| With highest % SST 056 17.3 SST 056 17.0 courrence SST 056 11.2 SST 056 17.0 Number of samples 21 SST 056 17.0 MKCGRAM (Quadromat Junior) ave min max stdev Peak time, min 2.9 2.3 3.8 0.25 2.8 2.3 3.0 0.25 Tail height (6 min), mm 46 39 52 3.43 48 38 56 4.04 Mumber of samples 27 COMPOSITE SAMPLES 27 27 4.04 Bühler Extraction, % 69.8 70.6 69.1 70.5 - 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.4 70.6 70.4 70.6 70.4 70.6 70.6 70.6 70.6 70.6 70.6 70.6 70.6 70.6 70.6 70.6 70.6 70.6 70.6 70. | cultivars | | | | | | | | | | | | |
| SST 056 11.2 SST 88 10.4 SST 89 0.7.0 Number of samples 21 SST 89 0.5 SST 89 0.5 MIXOGRAM (Quadromat Junior) ave min max stdev ave min max stdev Peak time, min 2.9 2.3 3.8 0.35 2.8 2.3 3.3 0.25 Tall height (inn), mn 46 39 52 3.43 48 38 56 4.04 Number of samples 21 COMPOSITE SAMPLES 27 70.6 | | | | | | | | | | | | | |
| Number of samples 21 27 MIXO GRAM (Quadromat Junior) ave min max stdev ave min max stdev Peak time, min 2.9 2.3 3.8 0.35 2.8 2.3 3.3 0.25 Talheight (5m), mn 46 39 52 3.43 48 38 56 4.04 Number of samples 27 CLASS AND GRADE B1 B2 B3 B4 UT COW B1 B2 B3 B4 UT COW Buhler Extraction, % 69.8 70.6 69.1 70.5 - - 70.4 70.0 69.9 - Polsin (12% mb), % 11.9 0.9 4.8 9 - 11.7 10.7 9 9.8 11.8 - Colour, K.0 0.60 0.62 0.64 0.63 0.65 0.62 - Colour, K.0 0.64 0.55 0.49 0.51 0.40 0.51 0.40 | - | | | | | | | | | | | | |
| WXCGRAM (Quadromat Junior) ave Peak time, min zve 2.9 z.3 stdev 3.8 output 2.3 stdev 3.8 stdev 2.4 zve 2.3 max 3.8 stdev 3.62 zve 3.43 max 4.8 stdev 3.8 stdev 2.5 z.2 z.3 3.0 2.25 CLASS AND GRADE B1 B2 B4 UT COMPOSITE SAMPLES ZT CLASS AND GRADE B1 B2 B4 UT COMPOSITE SAMPLES ZT FLOIR 19.9 9.4 8.9 - 11.7 10.7 9.9 9.8 11.8 - FLOIR 19.9 9.4 8.9 - 11.7 10.7 9.9 9.8 11.8 - FOIDIN (12% mb), % 41.9 0.62 0.64 0.63 - 0.43 0.60 0.65 0.62 - - 0.33 0.60 0.65 0.62 - - 0.43 - 0.43 - 0.43 - 0.43 - 0.43 - - 0.43 | | | SST | 88 | 10 |).4 | | | SST | 88 | 8 | .5 | |
| ave min max stdev ave min max stdev Tall height (5 min), mm 46 39 52 3.43 48 38 56 4.04 Number of samples - 20 3.43 48 38 56 4.04 CLASS AND GRADE B1 82 B3 H UT COW 50.44 70.0 69.9 - FLOUR B1 0.03 69.1 70.5 - - 70.4 70.6 70.4 70.0 69.9 - FLOUR H1 0.09 4.4 8.9 - -11.7 10.7 9 9.8 11.8 - A1(0b), % 0.60 0.62 0.64 0.63 - - 4.3 4.2 4.4 - - 0.43 0.40 0.65 0.65 0.62 0.64 - 0.43 0.55 0.49 0.51 0.48 - 0.43 0.55 0.49 | Number of samples | | - | 21 | 1 | | | | | 2 | 27 | | |
| Tail height (6 min), mm 46 39 52 3.43 48 38 56 4.04 Number of samples 27 27 27 27 CLASS AND GRADE B1 B2 B3 B4 UT COW 61 B2 B3 B4 UT COW Bulker Extraction, % 69.8 70.6 66.1 70.5 70.4 70.6 70.4 70.0 69.9 - Protein (12% mb), % 11.9 10.9 9.4 8.9 - - 11.7 10.7 9.9 9.8 11.8 - Ash (db), % 0.62 0.64 0.83 - 0.63 0.60 0.66 0.65 0.65 0.42 4.4 4.1 - 4.3 4.2 4.3 4.2 4.4 4.1 - 4.3 4.2 4.3 4.2 4.4 4.1 - 4.3 4.2 4.3 4.2 4.3 4.2 4.3 4.2 4.3 4.2< | | | | | | | | | | | | : : | |
| Number of samples 21 UP 27 CLASS AND GRADE B1 B2 B3 B4 UT COWPOSITE SAMPLES Buhler Extraction, % 69.8 70.6 69.1 70.5 - - 70.4 70.6 70.4 70.0 69.9 - Protein (12% mb), % 11.9 10.9 9.4 8.9 - 11.7 10.7 9.9 9.8 11.8 - Colour, KU (wel) 4.2 4.4 4.1 - -4.3 4.2 4.4 - - 4.3 4.2 4.4 - - - 0.63 0.66 0.65 0.62 - 0.387 9.3.6 0.387 9.3.6 0.43 - 0.48 0.55 0.48 - 9.98 10.54 0.48 - 0.987 9.3.6 0.367 9.3.6 1.0.52 0.48 0.40 0.64 - 0.9.87 9.3.8 1.0.52 0.48 0.40 0.55 0.49 0.51 | | - | | | | | | • | | | | | |
| COMPOSITE SAMPLES CLASS AND CRADE B1 B2 B3 B4 UT COW B1 B2 B3 B4 UT COW Buhler Extraction, % 69.8 70.6 69.1 70.6 - 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.6 70.4 70.4 70.6 70.4 70.6 70.4 70.6 70.4 | | 46 | | | | | 3.43 | 48 | | | | | 4.04 |
| CLASS AND GRADE B1 B2 B3 B4 UT COW B1 B2 B3 B4 UT COW Buhler Extraction, % 69.8 70.6 69.1 70.5 - 70.4 70.6 70.4 70.0 69.9 - FLOUR 11.9 10.9 9.4 8.9 - - 11.7 10.7 9.9 9.8 11.8 - Ash (db), % 0.60 0.62 0.64 0.63 - 0.63 4.2 4.4 4.1 - 4.3 4.2 4.4 - Colour, Kuncia Minolla CM5 (dry) 4.2 4.4 - - 9.8 0.55 9.85 9.365 - - 0.48 0.55 0.48 0.40 0.64 - - 0.48 0.55 0.49 0.51 0.48 - - 9.88 0.55 0.49 0.51 0.48 - - 9.88 0.55 0.49 0.251 0.48 - | Number of samples | | - | 2 | | 00 | | SAMPI | FS | | ./ | | |
| Buther Extraction, % 69.8 70.6 69.1 70.5 - - 70.4 70.6 70.4 70.0 69.9 - FLOUR 11.9 10.9 9.4 8.9 - - 11.7 10.7 9.9 8.8 11.8 - Ash (db), % 0.60 0.62 0.64 0.63 - 0.63 0.60 0.66 0.65 0.62 - Colour, K0 (wet) -4.2 -4.2 -4.4 - - 4.3 -4.2 -4.4 - Colour, K0 (wet) - - 9.387 93.86 93.67 93.87 | CLASS AND GRADE | B1 | B2 | B3 | B4 | | ÷ . | * | | B3 | B4 | UT | cow |
| Protein (12% mb), % 11.9 10.9 9.4 8.8 - - 11.7 10.7 9.9 9.8 11.8 - Ash (db), % 0.60 0.62 0.64 0.63 - - 0.63 0.60 0.66 0.62 - - - 4.3 4.2 -4.4 - - - - 4.3 4.2 -4.4 - - - 4.3 4.2 - 4.4 - - - 4.3 4.2 - 4.4 - - - 4.3 4.2 - 4.4 - - - 4.3 4.2 -4.4 - - - 4.3 4.2 - 4.4 - - - 4.3 4.2 - 4.4 - - 0.48 0.55 0.49 0.55 0.49 0.55 0.48 0.5 0.44 - 0.42 0.43 10.7 10.83 10.7 10.7 10.7 10.7 10.83 20.5 10.5 10.7 10.83 20.5 10.54 10.7 | | | | | - | | - | | | | | | - |
| Ash (db) % 0.60 0.62 0.63 - - 0.63 0.60 0.66 0.65 0.62 - Colour, KJ (wet) -4.2 -4.2 -4.4 -4.1 - - 0.43 -4.2 -4.3 -4.2 -4.4 - Colour, KJ (wet) 93.65 93.87 93.86 93.87 93.86 93.86 93.87 93.86 93.85 93.86 93.86 93.86 93.87 93.86 93.86 93.86 - 93.87 93.86 93.86 93.85 93.86 - - 93.87 93.86 93.86 93.86 - - 93.87 93.86 93.86 93.86 - - 0.85 0.40 0.64 - - 0.43 10.74 10.82 10.25 - 93.86 10.74 10.82 10.25 - RVA Page Page Yatter | | 11.9 | 10.9 | 9.4 | 8.9 | _ | _ | 11 7 | 10.7 | 9.9 | 9.8 | 11 8 | _ |
| Colour, KJ (wet) 4.2 4.2 4.4 4.1 - - 4.3 4.2 4.3 4.2 4.4 - Colour, KJ (wet) 93.65 93.86 93.87 93.86 93.87 93.86 93.87 93.86 93.87 93.86 93.87 93.86 93.87 93.87 93.87 93.87 93.87 93.87 93.87 93.87 93.87 93.87 93.87 93.87 93.87 | | | | | - | - | <u> </u> | i | | | | | - 1 |
| L* 93.65 93.65 93.67 93.46 93.7 93.76 93.66 93.65 93.62 93.87 - a* 0.52 0.48 0.40 0.84 - 0.48 0.55 0.48 0.55 0.49 0.51 0.48 - b* 11.06 10.60 10.17 10.82 - 0.89 10.54 10.74 10.82 10.25 - RVA Peak Viscosity. CP 2468 2420 2225 2433 - 2297 2378 2265 2312 2418 - Minimum viscosity (Trough), CP 1813 1803 1703 1907 - 1775 1841 1927 1837 1857 - Final Viscosity, CP 2883 2840 2561 2285 - 22745 2580 2611 2743 - Peak Time, min 7.00 7.00 7.00 7.00 - 7.00 7.00 7.00 7. | | -4.2 | -4.2 | -4.4 | -4.1 | - | - | -4.3 | -4.2 | -4.3 | -4.2 | -4.4 | - |
| a* 0.52 0.48 0.40 0.64 - - 0.48 0.55 0.49 0.51 0.48 - b* 11.06 10.07 10.82 - - 9.98 10.54 10.74 10.82 10.25 - RVA Peak Viscosity, CP 2468 2420 2225 2433 - - 2297 2378 2266 2312 2418 - Minimum viscosity (Trough), cP 1813 1803 1703 1907 - 1735 1841 1927 1837 1857 - Final Viscosity, cP 2883 2840 2561 2863 - - 7.00 7 | Colour, Konica Minolta CM5 (dry) | | | | | | | | | | | | |
| b* 11.06 10.80 10.17 10.82 - - 9.98 10.54 10.74 10.82 10.25 - RVA Peak Viscosity, cP 2468 2420 2225 2433 - - 2297 2378 2265 2312 2418 - Minimum viscosity, CP 2883 2840 2561 2863 - - 2556 2745 2580 2611 2743 - Final Viscosity, CP 2883 2840 2561 2863 - - 2656 2745 2580 2611 2743 - Peak Time, min 7.00 | | - | | | | | - | i | | | <u>i</u> | | - |
| RVA Peak Viscosity, cP 2468 2420 2225 2433 - - 2297 2378 2265 2312 2418 - Minimum viscosity (Trough), cP 1813 1803 1703 1907 - - 1735 1841 1927 1837 1857 - Final Viscosity, cP 2883 2840 2561 2863 - - 2565 2745 2580 2611 2743 - Peak Time, min 7.00 7.00 7.00 7.00 - 0 7.00 7.00 - 0 0 - 0 7.00 7.00 - 0 - 0 0 0 - 0 0 0 - 0 0 0 0 - 0 | | | | | | | - | | | | | | - |
| Peak Viscosity, CP 2468 2420 2225 2433 - - 2297 2378 2265 2312 2418 - Minimum viscosity (Trough), CP 1813 1803 1703 1907 - 1735 1841 1927 1837 1857 - Peak Time, min 7.00 7.00 7.00 7.00 - - 7.00 <td><u>D</u></td> <td>11.06</td> <td>10.60</td> <td>10.17</td> <td>10.82</td> <td>-</td> <td>-</td> <td>9.98</td> <td>10.54</td> <td>10.74</td> <td>10.82</td> <td>10.25</td> <td></td> | <u>D</u> | 11.06 | 10.60 | 10.17 | 10.82 | - | - | 9.98 | 10.54 | 10.74 | 10.82 | 10.25 | |
| Peak Viscosity, CP 2468 2420 2225 2433 - - 2297 2378 2265 2312 2418 - Minimum viscosity (Trough), CP 1813 1803 1703 1907 - 1735 1841 1927 1837 1857 - Peak Time, min 7.00 7.00 7.00 7.00 - - 7.00 <td>RVA</td> <td></td> | RVA | | | | | | | | | | | | |
| Final Viscosity, cP 2883 2840 2561 2863 - - 2656 2745 2580 2611 2743 - Peak Time, min 7.00 | | 2468 | 2420 | 2225 | 2433 | - | - | 2297 | 2378 | 2265 | 2312 | 2418 | - |
| Peak Time, min 7.00 | Minimum viscosity (Trough), cP | 1813 | 1803 | 1703 | 1907 | - | - | 1735 | 1841 | 1927 | 1837 | 1857 | - |
| GLUTEN Wet gluten (14% mb), % 33.3 30.1 24.9 23.1 - - 31.8 28.2 24.6 26.6 32.5 - Dry gluten (14% mb), % 12.4 10.9 8.6 8.1 - - 11.3 9.6 8.4 9.0 10.7 - Gluten Index 95 96 97 99 - - 96 96 98 97 91 - FARINOGRAM 0 60.0 58.9 57.2 - - 61.0 59.3 57.7 57.8 60.9 - Development time, min 4.3 3.9 3.3 4.3 - - 5.2 4.1 4.2 3.8 4.8 - Development time, min 4.3 3.9 6.0 5.5 - 7.6 6.2 5.7 5.0 6.4 - Stability, min 19 4.8 50 - - 39 40 47 52 50 - | | - | | | | - | - | <u>.</u> | | | | | - |
| Wet gluten (14% mb), % 33.3 30.1 24.9 23.1 - - 31.8 28.2 24.6 26.6 32.5 - Dry gluten (14% mb), % 12.4 10.9 8.6 8.1 - - 11.3 9.6 8.4 9.0 10.7 - Gluten Index 95 96 97 99 - - 96 96 98 97 91 - FARINOGRAM 0 60.9 60.0 58.9 57.2 - - 61.0 59.3 57.7 57.8 60.9 - Development time, min 4.3 3.9 3.3 4.3 - - 7.6 6.2 5.7 5.0 6.4 - Mixing tolerance index, BU 39 44 38 50 - - 7.6 6.2 5.7 5.0 6.4 - EXTENSOGRAM (45 min pull) 309 309 256 252 - - 346 291 301 251 342 - Extensibility, mm 191 | Peak Time, min | 7.00 | 7.00 | 7.00 | 7.00 | - | - | 7.00 | 7.00 | 7.00 | 7.00 | 7.00 | - |
| Dry gluten (14% mb), % 12.4 10.9 8.6 8.1 - - 11.3 9.6 8.4 9.0 10.7 - Gluten Index 95 96 97 99 - - 96 96 98 97 91 - FARINOGRAM Water absorption (14% mb), % 60.9 60.0 58.9 57.2 - - 61.0 59.3 57.7 57.8 60.9 - Development time, min 4.3 3.9 3.3 4.3 - - 7.6 6.2 5.7 5.0 6.4 - Mixing tolerance index, BU 39 44 38 50 - - 39 40 47 52 50 - EXTENSOGRAM (45 min pull) 83 78 60 58 - - 97 82 77 67 102 - Maximum height, BU 309 309 256 252 - 346 291 301 251 342 - Extensibility, mm 191 183 < | | 1 | 100 | | | | | | | | | | |
| Gluten Index 95 96 97 99 - - 96 96 98 97 91 - FARINOGRAM Water absorption (14% mb), % 60.9 60.0 58.9 57.2 - - 61.0 59.3 57.7 57.8 60.9 - Development time, min 4.3 3.9 3.3 4.3 - - 5.2 4.1 4.2 3.8 4.8 - Stability, min 6.9 5.5 6.0 5.5 - - 7.6 6.2 5.7 5.0 6.4 - Mixing tolerance index, BU 39 44 38 50 - - 7.6 6.2 5.7 5.0 6.4 - EXTENSOGRAM (45 min pull) A A 383 78 60 58 - - 97 82 77 67 102 - Maximum height, BU 309 309 256 252 - 346 291 301 251 342 - Extensibility, mm 191 183 | | 1 | | í | | - | - | | | | <u>i</u> | | - |
| FARINOGRAM 60.9 60.0 58.9 57.2 - - 61.0 59.3 57.7 57.8 60.9 - Development time, min 4.3 3.9 3.3 4.3 - - 5.2 4.1 4.2 3.8 4.8 - Stability, min 6.9 5.5 6.0 5.5 - - 7.6 6.2 5.7 5.0 6.4 - Mixing tolerance index, BU 39 44 38 50 - - 39 40 47 52 50 - EXTENSOGRAM (45 min pull) 309 309 256 252 - - 346 291 301 251 342 - Maximum height, BU 309 309 256 252 - - 346 291 301 251 342 - Extensibility, mm 191 183 167 160 - - 200 201 186 186 212 - ALVEOGRAM Strength (S), cm² 38.5 33.2 <td></td> <td>-</td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td> <td>•</td> <td></td> <td></td> <td></td> <td></td> <td>-</td> | | - | | | | - | - | • | | | | | - |
| Water absorption (14% mb), % 60.9 60.0 58.9 57.2 - - 61.0 59.3 57.7 57.8 60.9 - Development time, min 4.3 3.9 3.3 4.3 - - 5.2 4.1 4.2 3.8 4.8 - Stability, min 6.9 5.5 6.0 5.5 - - 7.6 6.2 5.7 5.0 6.4 - Mixing tolerance index, BU 39 44 38 50 - - 39 40 47 52 50 - EXTENSOGRAM (45 min pull) 39 44 38 50 - - 97 82 77 67 102 - Maximum height, BU 309 309 256 252 - - 346 291 301 251 342 - Extensibility, mm 191 183 167 160 - - 200 201 186 186 212 - ALVEOGRAM 38.5 33.2 27.1 | Gluten Index | 95 | 96 | 97 | 99 | - | - | 96 | 96 | 98 | 97 | 91 | |
| Development time, min 4.3 3.9 3.3 4.3 - - 5.2 4.1 4.2 3.8 4.8 - Stability, min 6.9 5.5 6.0 5.5 - - 7.6 6.2 5.7 5.0 6.4 - Mixing tolerance index, BU 39 44 38 50 - - 39 40 47 52 50 - EXTENSOGRAM (45 min pull) Area, cm ² 83 78 60 58 - - 97 82 77 67 102 - Maximum height, BU 309 309 256 252 - - 346 291 301 251 342 - Extensibility, mm 191 183 167 160 - - 200 201 186 186 212 - ALVEOGRAM Sa 33.2 27.1 21.9 - - 36.2 30.9 27.5 29.8 37.0 - Stability (P), mm 113 103 <t< td=""><td></td><td>60.0</td><td>60.0</td><td>59.0</td><td>57.0</td><td></td><td></td><td>61.0</td><td>50.2</td><td>67 7</td><td>57.0</td><td>60.0</td><td></td></t<> | | 60.0 | 60.0 | 59.0 | 57.0 | | | 61.0 | 50.2 | 67 7 | 57.0 | 60.0 | |
| Stability, min 6.9 5.5 6.0 5.5 - - 7.6 6.2 5.7 5.0 6.4 - Mixing tolerance index, BU 39 44 38 50 - - 39 40 47 52 50 - EXTENSOGRAM (45 min pull) Area, cm ² 83 78 60 58 - - 97 82 77 67 102 - Maximum height, BU 309 309 256 252 - - 346 291 301 251 342 - Extensibility, mm 191 183 167 160 - - 200 201 186 186 212 - ALVEOGRAM 38.5 33.2 27.1 21.9 - - 36.2 30.9 27.5 29.8 37.0 - Stability (L), mm 81 81 74 - - 36.2 30.9 27.5 29.8 37.0 - Distensibility (L), mm 113 103 81 69 | | | | | | - | - | | | | | | |
| Mixing tolerance index, BU 39 44 38 50 - - 39 40 47 52 50 - EXTENSOGRAM (45 min pull) Area, cm ² 83 78 60 58 - - 97 82 77 67 102 - Maximum height, BU 309 309 256 252 - - 346 291 301 251 342 - Extensibility, mm 191 183 167 160 - - 200 201 186 186 212 - ALVEOGRAM Strength (S), cm ² 38.5 33.2 27.1 21.9 - - 36.2 30.9 27.5 29.8 37.0 - Stability (P), mm 86 81 81 74 - - 86 74 73 81 77 - Onfiguration ratio (P/L) 0.76 0.79 1.00 1.07 - - 0.82 0.67 0.75 0.80 0.60 - MiXOGRAM Peak time, min 2.5 <t< td=""><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td></t<> | | - | | | | | | | | | | | - |
| Area, cm ² 83 78 60 58 - - 97 82 77 67 102 - Maximum height, BU 309 309 256 252 - - 346 291 301 251 342 - Extensibility, mm 191 183 167 160 - - 200 201 186 186 212 - ALVEOGRAM ALVEOGRAM Automatic and an analysis Automatic and analysis Automatic | | | | | | | | • | | | | | - |
| Maximum height, BU 309 309 256 252 - - 346 291 301 251 342 - Extensibility, mm 191 183 167 160 - - 200 201 186 186 212 - ALVEOGRAM Strength (S), cm² 38.5 33.2 27.1 21.9 - - 36.2 30.9 27.5 29.8 37.0 - Strength (S), cm² 38.5 33.2 27.1 21.9 - - 36.2 30.9 27.5 29.8 37.0 - Strength (S), cm² 38.5 33.2 27.1 21.9 - - 36.2 30.9 27.5 29.8 37.0 - Stability (P), mm 86 81 81 74 - - 86 74 73 81 77 - Distensibility (L), mm 113 103 81 69 - - 10.5 110 97 101 129 - Configuration ratio (P/L) 0.76 | | 83 | 78 | 60 | 58 | - | _ | 97 | 82 | 77 | 67 | 102 | _ |
| Extensibility, mm 191 183 167 160 - - 200 201 186 186 212 - ALVEOGRAM Strength (S), cm ² 38.5 33.2 27.1 21.9 - - 36.2 30.9 27.5 29.8 37.0 - Stability (P), mm 86 81 81 74 - - 86 74 73 81 77 - Distensibility (L), mm 113 103 81 69 - - 105 110 97 101 129 - Configuration ratio (P/L) 0.76 0.79 1.00 1.07 - - 0.82 0.67 0.75 0.80 0.60 - MIXOGRAM Peak time, min 2.5 2.7 2.7 2.7 - - 2.6 2.4 2.8 2.3 2.2 - 100g BAKING TEST Loaf volume, cm ³ 1032 1031 861 841 - - 1066 982 929 989 1128 - <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> <td><u>. </u></td> <td></td> <td>-</td> | | | | | | - | - | | | | <u>. </u> | | - |
| Strength (S), cm ² 38.5 33.2 27.1 21.9 - - 36.2 30.9 27.5 29.8 37.0 - Stability (P), mm 86 81 81 74 - - 86 74 73 81 77 - Distensibility (L), mm 113 103 81 69 - - 105 110 97 101 129 - Configuration ratio (P/L) 0.76 0.79 1.00 1.07 - - 0.82 0.67 0.75 0.80 0.60 - MIXOGRAM Peak time, min 2.5 2.7 2.7 2.7 - - 2.6 2.4 2.8 2.3 2.2 - 100g BAKING TEST Loaf volume, cm ³ 1032 1031 861 841 - - 1066 982 929 989 1128 - | | 191 | 183 | 167 | 160 | - | - | 200 | 201 | 186 | 186 | 212 | - |
| Distensibility (L), mm 113 103 81 69 - - 105 110 97 101 129 - Configuration ratio (P/L) 0.76 0.79 1.00 1.07 - - 0.82 0.67 0.75 0.80 0.60 - MIXOGRAM Peak time, min 2.5 2.7 2.7 2.7 - - 2.6 2.4 2.8 2.3 2.2 - 100g BAKING TEST Loaf volume, cm ³ 1032 1031 861 841 - - 1066 982 929 989 1128 - | Strength (S), cm ² | 38.5 | 33 <u>.</u> 2 | 27.1 | 21.9 | - | - | 36.2 | 30.9 | 27.5 | 29.8 | 37.0 | - |
| Distensibility (L), mm 113 103 81 69 - - 105 110 97 101 129 - Configuration ratio (P/L) 0.76 0.79 1.00 1.07 - - 0.82 0.67 0.75 0.80 0.60 - MIXOGRAM Peak time, min 2.5 2.7 2.7 2.7 - - 2.6 2.4 2.8 2.3 2.2 - 100g BAKING TEST Loaf volume, cm ³ 1032 1031 861 841 - - 1066 982 929 989 1128 - | | 86 | 81 | 81 | 74 | - | - | 86 | 74 | | 81 | 77 | - |
| MIXOGRAM Peak time, min 2.5 2.7 2.7 2.7 - - 2.6 2.4 2.8 2.3 2.2 - 100g BAKING TEST Loaf volume, cm ³ 1032 1031 861 841 - - 1066 982 929 989 1128 - | Distensibility (L), mm | | | | | - | - | | | | | | - |
| Peak time, min 2.5 2.7 2.7 2.7 - 2.6 2.4 2.8 2.3 2.2 - 100g BAKING TEST Loaf volume, cm ³ 1032 1031 861 841 - - 1066 982 929 989 1128 - | Configuration ratio (P/L) | 0.76 | 0.79 | 1.00 | 1.07 | - | - | 0.82 | 0.67 | 0.75 | 0.80 | 0.60 | |
| Loaf volume, cm ³ 1032 1031 861 841 1066 982 929 989 1128 - | | 2.5 | 2.7 | 2.7 | 2.7 | - | - | 2.6 | 2.4 | 2.8 | 2.3 | 2.2 | _ |
| Evaluation (see page 79) 0 0 0 0 - 0 0 0 - - 0 0 0 - - 0 0 0 - - 0 0 0 - - 0 0 0 0 - - 0 0 0 0 - - 0 0 0 0 - - 0 0 0 0 - - 0 0 0 0 - - 0 0 0 0 - - 0 0 0 0 - - 0 0 0 0 - - 0 0 0 0 - - 0 0 0 0 - - 0 0 0 0 - - 0 0 0 0 - - 0 0 0 0 0 - 1 0 <td>Loaf volume, cm³</td> <td>1032</td> <td>1031</td> <td>861</td> <td></td> <td>_</td> <td>_</td> <td>1066</td> <td>982</td> <td>929</td> <td>989</td> <td>1128</td> <td>_</td> | Loaf volume, cm ³ | 1032 | 1031 | 861 | | _ | _ | 1066 | 982 | 929 | 989 | 1128 | _ |
| | Evaluation (see page 79) | 0 | 0 | 0 | 0 | - | - | 0 | 0 | 0 | 0 | 0 | - |



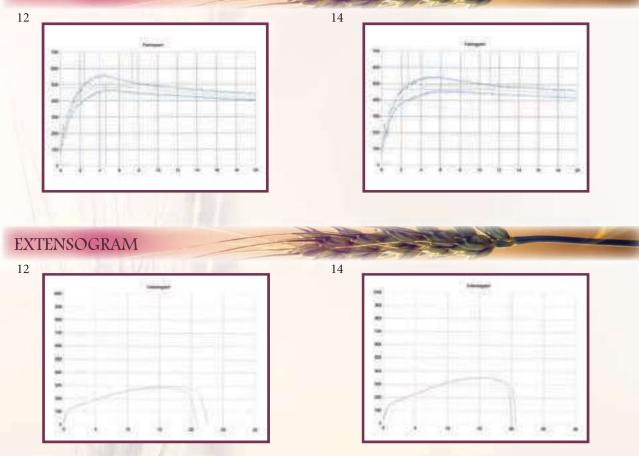
| PRODUCTION REGION | (10) Griqual | land Wes | st Regio | n | | | (11) Vaalhai | ts Regio | 'n | | | |
|--|-----------------|-------------|-------------|-----------------|----|--------------|-----------------|-------------|--------------|-------------|----|---------------|
| I RODOO HON REGION | Onqua | | stricgio | | | | vaannai | to negic | | | | |
| WHEAT | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Protein (12% mb), % | 12.1 | | 10.2 | 13.6 | | 0.76 | 12.0 | | 10.7 | 13.0 | | 0.75 |
| Falling number, sec | 377 39.8 | | 279 33.4 | 528 44.7 | | 51.07 | 446 40.0 | | 366 34.1 | 639 46.0 | | 99.03 3.63 |
| 1000 Kernel mass (13% mb), g Hectolitre mass (dirty), kg/hl | 84.5 | | 79.4 | 86.5 | | 2.30 1.92 | 83.5 | | 34.1 80.8 | 86.0 | | 1.88 |
| Screenings (<1.8 mm sieve), % | 0.93 | | 0.25 | 3.36 | | 0.87 | 1.59 | | 0.21 | 4.76 | | 1.34 |
| Total damaged kernels, % | 0.41 | | 0.16 | 1.06 | | 0.22 | 0.57 | | 0.00 | 1.56 | | 0.42 |
| Combined deviations, % | 1.65 | 5 | 0.65 | 4.98 | | 1.15 | 2.87 | | 0.52 | 5.94 | | 1.79 |
| Number of samples | | | 3 | 80 | | | | | 1 | 14 | | |
| CULTIVARS | | | | | | | | | | | | |
| aultivara | | | 884 | 19 | | | | | 3471 | 20 | | |
| cultivars with highest % | | | 3471 895 | <u>15</u> 11 | | | | | 884 | 13 13 | | |
| occurrence | | | 8154 | 10 | | | | | 8154 | 10 | | |
| | | | 8135 | 10 | | | | | 3400 | 9. | | |
| Number of samples | | | 3 | 80 | | | | | 1 | 14 | | |
| MIXOGRAM (Quadromat Junior) | | | | | | | | | | | | |
| | ave | | min | max | | stdev | ave | | min | max | | stdev |
| Peak time, min | 2.7 | | 2.4 | 3.2 | | 0.23 | 2.8 | | 2.4 | 3.6 | | 0.30 |
| Tail height (6 min), mm | 47 | | 41 | 53 | | 3.13 | 46 | | 40 | 53 | | 3.41 |
| Number of samples | | | 3 | 80 | | | | | 1 | 14 | | |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | COW | E SAMP | LES B2 | B3 | B4 | UT | cow |
| Bühler Extraction, % | 72.7 | 73.6 | 73.5 | 69.0 | - | - | 73.1 | 73.4 | 73.6 | 70.6 | - | - |
| | | | | | | | | | | | | |
| FLOUR | | | | | | | | | | | | |
| Protein (12% mb), % | 11.4 | 10.7 | 10.0 | 12.2 | - | - | 11.7 | 10.4 | 9.7 | 11.2 | - | - |
| Ash (db), % | 0.60 | 0.61 | 0.64 | 0.71 | - | - | 0.60 | 0.62 | 0.63 | 0.62 | - | - |
| Colour, KJ (wet) Colour, Konica Minolta CM5 (dry) | -4.8 | -5.0 | -5.0 | -4.3 | - | - | -4.6 | -4.6 | -4.8 | -4.5 | - | - |
| L* | 93.74 | 93.89 | 93.96 | 93.63 | _ | - | 93.83 | 93.60 | 93.75 | 93.37 | _ | - |
| a* | 0.55 | 0.53 | 0.49 | 0.52 | - | - | 0.43 | 0.51 | 0.52 | 0.49 | - | - |
| b* | 10.63 | 10.53 | 9.97 | 9.95 | - | - | 9.47 | 10.32 | 10.27 | 10.78 | - | - |
| RVA | | | | | | | | | | | | |
| Peak Viscosity, cP | 2159 | 2152 | 2170 | 2240 | - | - | 2313 | 2234 | 2255 | 2221 | _ | - |
| Minimum viscosity (Trough), cP | 1622 | 1632 | 1579 | 1648 | - | - | 1741 | 1730 | 1756 | 1712 | - | - |
| Final Viscosity, cP | 2413 | 2402 | 2491 | 2461 | - | - | 2483 | 2557 | 2565 | 2551 | _ | - |
| Peak Time, min | 7.00 | 7.00 | 7.00 | 7.00 | - | - | 7.00 | 7.00 | 7.00 | 7.00 | - | - |
| CLUTEN | | Care I | | | | | | | | | | |
| GLUTEN Wet gluten (14% mb), % | 32.6 | 30.1 | 27.7 | 34.0 | _ | - | 33.5 | 29.8 | 27.3 | 29.8 | _ | |
| Dry gluten (14% mb), % | 11.0 | 9.7 | 9.1 | 11.0 | - | - | 11.1 | 9.4 | 9.1 | 9.9 | - | - |
| Gluten Index | 95 | 97 | 96 | 91 | - | - | 93 | 89 | 91 | 97 | - | - |
| | | | | | | | | | | | | |
| FARINOGRAM | 00.4 | 04.7 | 01.0 | | | | 01.0 | 00.4 | 50.0 | 01.0 | | |
| Water absorption (14% mb), % Development time, min | 62.4 6.3 | 61.7 6.3 | 61.0 4.8 | 60.8 6.4 | - | - | 61.9 4.5 | 60.4 4.0 | 59.2 4.0 | 61.2 6.0 | - | - |
| Stability, min | 8.1 | 7.7 | 5.8 | 10.3 | - | - | 5.7 | 4.6 | 5.5 | 7.8 | - | - |
| Mixing tolerance index, BU | 37 | 42 | 48 | 24 | - | - | 50 | 54 | 50 | 39 | - | - |
| C Inner | | | | | | | | | | | | |
| EXTENSOGRAM (45 min pull) | | | | 100 | | | 107 | | 70 | | | |
| Area, cm ² Maximum height, BU | 104 390 | 111 383 | 82 320 | 132 491 | - | - | 107 373 | 80 287 | 72 294 | 101 347 | - | - |
| Extensibility, mm | 197 | 211 | 187 | 202 | - | - | 205 | 198 | 177 | 209 | - | |
| | 107 | | 101 | 202 | | | 200 | 100 | | | | |
| ALVEOGRAM | | | | | | | | | | | | |
| Strength (S), cm ² | 40.2 | 37.3 | 33.5 | 43.7 | - | - | 38.1 | 27.2 | 28.4 | 33.9 | - | - |
| Stability (P), mm | 88 107 | 87 98 | 85 102 | 92 102 | - | - | 80 117 | 72 95 | 70 107 | 83 97 | - | <u> </u> |
| Distensibility (L), mm Configuration ratio (P/L) | 0.82 | 0.89 | 0.83 | 0.90 | - | - | 0.68 | 95 0.76 | 0.65 | 97 0.86 | - | |
| | 5.02 | 5.00 | 5.00 | 0.00 | | | 0.00 | 5.10 | 0.00 | 5.00 | | |
| MIXOGRAM | | | | | | | | | | | | |
| Peak time, min | 2.5 | 2.6 | 2.3 | 2.8 | - | - | 2.3 | 2.4 | 2.6 | 2.7 | - | - |
| | | | | | | | | | | | | |
| 100g BAKING TEST Loaf volume, cm ³ | 1099 | 1014 | 1001 | 1083 | | | 1127 | 1072 | 993 | 1139 | | |
| Evaluation (see page 79) | 0 | 0 | 0 | 0 | - | - | 0 | 0 | 993 | 0 | - | - |
| | 5 | | | | | | | 5 | 5 | | | |

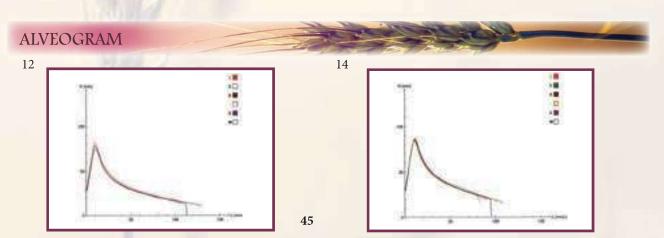


| | (12) | | | | | | (14) | | | | | |
|---|-------------------|-----|--------------|-------------------|-------------------|----------------------|-------------------|------------------|-----------------|-------------------|-----|---------------|
| PRODUCTION REGION | North V Wester | | n | | | | North V Southe | Vest rn Regio | on | | | |
| | | Ű | | | | | | | | | | |
| WHEAT | ave | | min | max | | stdev | ave | | min | max | | stdev |
| Protein (12% mb), % | 12.7 | | 11.2 | 14.2 | | 1.50 | 13.5 | | 13.1 | 13.7 | | 0.32 |
| Falling number, sec | 439 | | 397 | 461 | | 36.12 | 440 | | 424 | 449 | | 13.65 |
| 1000 Kernel mass (13% mb), g | 42.9 | | 41.1 | 44.8 | | 1.85 | 32.8 | | 30.9 | 35.6 | | 2.48 |
| Hectolitre mass (dirty), kg/hl | 84.3 | | 84.1 0.18 | 84.4 0.27 | | 0.15 | 80.2 | | 78.0 0.36 | 84.2 | | 3.47 0.35 |
| Screenings (<1.8 mm sieve), % Total damaged kernels, % | 0.23 | | 0.18 | 1.10 | | 0.05 | 0.60 | | 0.36 | <u> </u> | | 0.35 |
| Combined deviations, % | 1.21 | | 0.94 | 1.43 | | 0.25 | 1.63 | | 1.31 | 2.08 | | 0.40 |
| Number of samples | | | | 3 | | 0.20 | | | | 3 | | 0.110 |
| CULTIVARS | | 001 | - 0405 | 4.0 | 7 | | | 0.01 | 5.0405 | | 7 | |
| cultivars | | | 8135 806 | 19 | <u>8.7</u> 8.0 | | | | Г 8135 Г 843 | 63 | 1.0 | |
| with highest % | | | 843 | 15 | | | | | T 895 | | .7 | |
| occurrence | | | 3471 | 14 | | | | | 3471 | 6 | | |
| Number of complete | | SST | 835 | | 1.3 | | | PAN | 3497 | | .7 | |
| Number of samples | | - | | 3 | | | | | | 3 | | |
| MIXOGRAM (Quadromat Junior) | | | malua | | | | | | | | | - 4 - 1 |
| Peak time, min | ave 2.4 | | min 2.0 | max 2.9 | | stdev 0.45 | ave 2.8 | | min 2.5 | max 2.9 | | stdev 0.23 |
| Tail height (6 min), mm | 45 | | 41 | 47 | | 3.21 | 50 | | 49 | 51 | | 1.00 |
| Number of samples | | | | 3 | | | | | | 3 | | |
| | | | | | | | E SAMP | | | _ | | |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | cow | B1 | B2 | B3 | B4 | UT | cow |
| Bühler Extraction, % | 71.8 | - | - | - | - | - | 69.3 | - | - | - | - | |
| FLOUR | | | - | | | | | | | | | |
| Protein (12% mb), % | 12.7 | - | - | - | - | - 1 | 12.3 | - | - | - | - | - |
| Ash (db), % | 0.62 | - | - | - | - | - | 0.67 | - | - | - | - | - |
| Colour, KJ (wet) | -4.8 | - | - | - | - | - | -4.5 | - | - | - | - | - |
| Colour, Konica Minolta CM5 (dry) | | | | | | | | | | | | |
| <u>L*</u> | 93.83 0.49 | - | - | - | - | - | 93.66 0.48 | - | - | - | - | - |
| <u>a*</u> b* | 9.50 | - | - | - | - | - | 10.14 | - | - | - | - | - |
| 51/4 | | | | | | | | | | | | |
| RVA Peak Viscosity, cP | 2446 | | | | _ | | 2288 | - | | | | |
| Minimum viscosity (Trough), cP | 1774 | - | - | - | - | - | 1645 | - | - | - | - | <u> </u> |
| Final Viscosity, cP | 2602 | - | - | - | - | - 1 | 2585 | - | - 1 | - | - | - 1 |
| Peak Time, min | 7.00 | - | - 1 | - | - | - 1 | 7.00 | - | İ - | - | - | - |
| | | | | | | | | | | | | |
| GLUTEN | 36.6 | | | | | | 33.5 | | | | | |
| Wet gluten (14% mb), % Dry gluten (14% mb), % | 12.1 | - | - | - | - | - | 11.3 | - | - | - | - | - |
| Gluten Index | 84 | - | - | - | - | - | 94 | _ | - | - | - | - |
| | | | | | | | | | | | | |
| FARINOGRAM | | | | | | | | | | | | |
| Water absorption (14% mb), % | 64.7 | - | - | - | - | - | 63.6 | - | - | - | - | - |
| Development time, min | 4.7 | - | - | - | - | - | 5.9 | - | - | - | - | |
| Stability, min Mixing tolerance index, BU | 4.9 42 | - | - | - | - | - | 8.4 26 | - | - | - | - | - |
| Mixing tolerance index, bo | 42 | - | - | - | - | - | 20 | - | | - | | <u> </u> |
| EXTENSOGRAM (45 min pull) | | | | | | | | | | | | |
| Area, cm ² | 88 | - | - | - | - | - | 100 | - | | - | - | - |
| Maximum height, BU | 290 | - | - | - | - | - | 352 | - | | - | - | - |
| Extensibility, mm | 219 | - | - | - | - | - | 205 | - | - | - | - | |
| ALVEOGRAM | | | | | | | | | | | | |
| Strength (S), cm ² | 37.2 | - | - | - | - | - | 39.1 | _ | - | - | - | - |
| Stability (P), mm | 86 | - | - | - | - | - | 93 | - | - | - | - | <u> </u> |
| Distensibility (L), mm | 112 | - | - | - | - | - | 95 | - | - | - | - | |
| Configuration ratio (P/L) | 0.77 | - | - | - | - | - | 0.98 | - | - | - | - | |
| MIXOGRAM | | | | | | | | | | | | |
| Peak time, min | 1.9 | _ | - | - | - | - | 2.7 | - | - | - | - | - |
| | | | | | | | | | | | | |
| 100g BAKING TEST | | | | | | | | | | | | |
| Loaf volume, cm ³ | 1187 | - | - | - | - | - | 1205 | - | - | - | - | - |
| Evaluation (see page 79) | 0 | - | - | - | - | - | 0 | - | - | - | - | - |

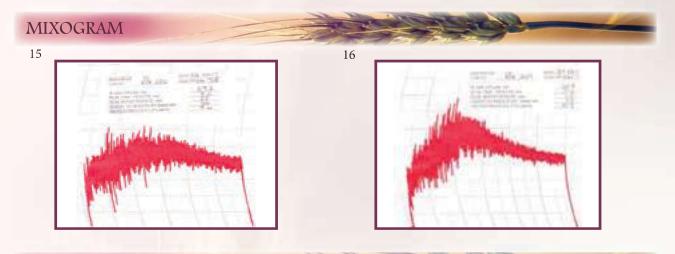


FARINOGRAM

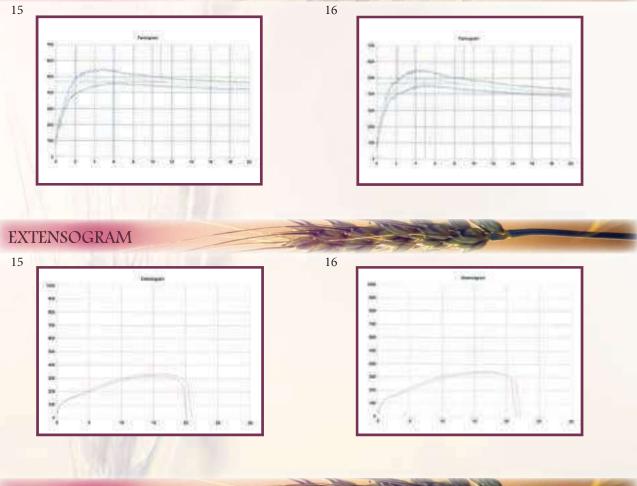


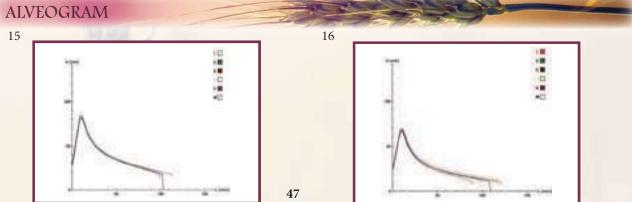


| PRODUCTION REGION | (15) North V South-I | Vest Eastern I | Region | | | | (16) North V Central | Vest -Eastern | n Region | 1 | | |
|---|----------------------------|-------------------|-------------|-------------|----|--------|----------------------------|------------------|----------|-----------|-----|----------|
| WALLAT | | | | | | | | | | | | |
| WHEAT | ave | | min | max | | stdev | ave | | min | max | | stdev |
| Protein (12% mb), % | 11.5 | | 9.2 | 14.5 | | 1.67 | 12.0 | | 11.5 | 12.7 | | 0.62 |
| Falling number, sec | 368 | | 236 | 460 | | 87.24 | 399 | | 381 | 431 | | 21.97 |
| 1000 Kernel mass (13% mb), g | 36.5 | j | 31.2 | 40.6 | | 4.27 | 40.2 | | 37.6 | 43.1 | | 2.55 |
| Hectolitre mass (dirty), kg/hl | 80.8 | ; | 77.3 | 85.0 | | 2.58 | 83.0 | | 82.1 | 83.7 | | 0.76 |
| Screenings (<1.8 mm sieve), % | 1.12 | | 0.21 | 2.50 | | 1.09 | 1.27 | | 0.20 | 2.20 | | 0.85 |
| Total damaged kernels, % | 0.25 | | 0.08 | 0.50 | | 0.14 | 0.51 | | 0.36 | 0.56 | | 0.10 |
| Combined deviations, % Number of samples | 1.72 | 2 | 0.55 | 3.46 8 | | 1.39 | 2.07 | | 0.56 | 3.32 4 | | 1.17 |
| Number of samples | | | | 0 | | _ | | | | 4 | | |
| CULTIVARS | | DAN | l 3400 | 33 | 0 | | | 557 | 884 | 27 | '.3 | |
| cultivars | | | 3368 | 14 | | | | | 8135 | | .3 | |
| with highest % | | | 884 | 13 | | | | | 8154 | | 1.3 | |
| occurrence | | | 3111 | 9. | | | | | 895 | | .0 | |
| | | | 3471 | 8. | | | | | I 3471 | | .5 | |
| Number of samples | | | i | 8 | | | | | | 4 | | |
| MIXOGRAM (Quadromat Junior) | ave | | min | max | | stdev | ave | | min | max | (| stdev |
| Peak time, min | 3.0 | | 2.3 | 4.2 | | 0.59 | 2.4 | | 2.3 | 2.7 | | 0.19 |
| Tail height (6 min), mm | 43 | | 34 | 48 | | 4.80 | 47 | | 45 | 48 | | 1.50 |
| Number of samples | | | | 8 | | MDOOIT | | | | 4 | | |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | COW | E SAMP | B2 | B3 | B4 | UT | cow |
| Bühler Extraction, % | 69.7 | 71.9 | 69.0 | 66.6 | - | | 73.2 | 72.5 | | | | |
| FLOUR | ./ | | | | | | | | | | | |
| Protein (12% mb), % | 11.9 0.53 | 10.5 0.61 | 9.2 0.57 | 7.8 0.56 | - | - | 11.9 0.60 | 10.8 0.61 | - | - | - | - |
| Ash (db), % Colour, KJ (wet) | -4.6 | -4.7 | -4.7 | -4.8 | - | - | -4.8 | -4.9 | - | - | - | <u> </u> |
| Colour, Konica Minolta CM5 (dry) | -4.0 | -4./ | -4.7 | -4.0 | _ | - | -4.0 | -4.0 | | | | <u> </u> |
| L* | 94.02 | 93.80 | 93.93 | 93.88 | - | - | 93.84 | 94.06 | - | - | - | - |
| a* | 0.45 | 0.47 | 0.44 | 0.37 | - | - | 0.50 | 0.44 | - | - | - | - 1 |
| b* | 11.00 | 10.13 | 10.76 | 10.75 | - | - | 10.92 | 10.34 | - | - | - | - |
| 51/4 | | | | | | | | | _ | | | |
| RVA Peak Viscosity, cP | 2102 | 2256 | 1633 | 1254 | - | | 2244 | 2373 | _ | | | |
| Minimum viscosity (Trough), cP | 1565 | 1622 | 1499 | 993 | | - | 1815 | 1802 | - | | - | |
| Final Viscosity, cP | 2490 | 2538 | 1909 | 1480 | - | - | 2585 | 2701 | - | - | - | - |
| Peak Time, min | 7.00 | 7.00 | 6.67 | 5.93 | - | - 1 | 7.00 | 7.00 | - | - | - | - 1 |
| GLUTEN | | | | | | | | | | | | |
| Wet gluten (14% mb), % | 32.6 | 29.3 | 23.2 | - | - | - | 32.8 | 29.1 | - | - | - | - |
| Dry gluten (14% mb), % | 10.8 | 9.9 | 7.7 | - | - | - | 11.2 | 9.7 | - | - | - | - |
| Gluten Index | 92 | 96 | 99 | - | - | - | 96 | 97 | - | - | - | - |
| FARINOGRAM | 62.6 | 61.0 | 57.0 | 52.0 | | | 0.7 | <u> </u> | | | | |
| Water absorption (14% mb), % Development time, min | 62.6 6.0 | 61.8 5.9 | 57.3 4.3 | 53.8 1.4 | - | - | 60.7 5.0 | 60.6 4.9 | - | - | - | |
| Stability, min | 8.8 | 7.0 | 7.9 | 3.0 | - | - | 6.8 | 6.2 | - | - | - | <u> </u> |
| Mixing tolerance index, BU | 29 | 44 | 33 | 50 | - | - | 43 | 45 | - | - | - | - |
| EXTENSOGRAM (45 min pull) Area, cm ² | 92 | 100 | 75 | 69 | - | | 102 | 93 | _ | _ | - | |
| Maximum height, BU | 327 | 396 | 339 | 374 | _ | - | 340 | 356 | - | - | - | - |
| Extensibility, mm | 207 | 187 | 159 | 132 | - | - | 220 | 190 | - | - | - | - 1 |
| ALVEOGRAM Strength (S), cm ² | 39.8 | 35.3 | 32.0 | 21.7 | _ | - | 30.4 | 36.5 | _ | _ | - | |
| Stability (P), mm | 91 | 90 | 76 | 72 | - | - | 75 | 67 | - | - | - | - |
| Distensibility (L), mm | 102 | 90 | 101 | 59 | - | - | 108 | 157 | - | - | | - |
| Configuration ratio (P/L) | 0.89 | 0.99 | 0.75 | 1.22 | - | - | 0.69 | 0.43 | - | - | - | - |
| MIXOGRAM | 24 | 2.6 | 3.3 | 4.5 | | | 2.3 | 2.4 | | | | |
| Peak time, min 100g BAKING TEST | 2.4 | 2.6 | | | - | - | 2.3 | | - | - | - | - |
| Loaf volume, cm ³ | 1054 | 984 | 911 | 815 | - | - | 1217 | 1045 | - | - | - | - |
| Evaluation (see page 79) | 0 | 0 | 0 | 0 | - | - | 0 | 0 | - | - | - | - |

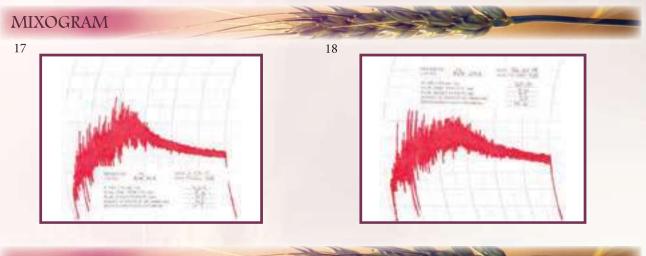


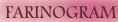
FARINOGRAM

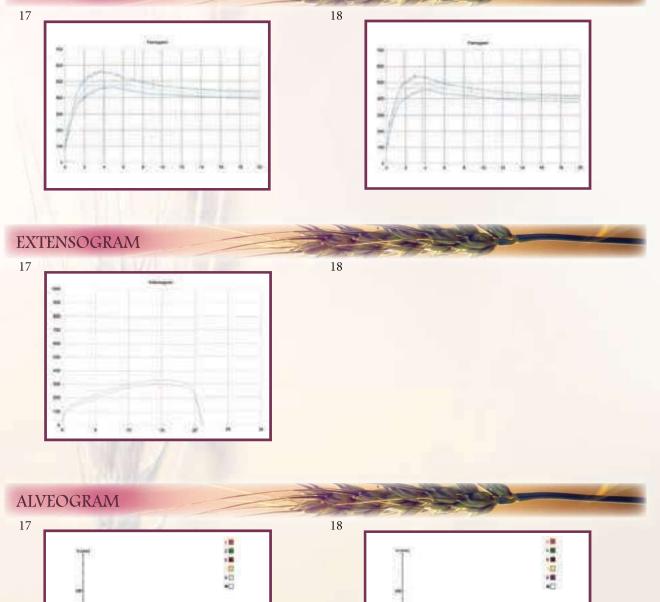




| PRODUCTION REGION | (17) North V Central | | rn Regio | n (Ottos | dal) | | (18) North V Central | | (Venters | sdorp) | | |
|--|----------------------------|-----|----------|----------|------|--------|----------------------------|-----|----------|---------|----------|-------|
| WHEAT | | | | | | | | | | | | |
| | ave | | min | max | | stdev | ave | | min | max | | stdev |
| Protein (12% mb), % | 13.0 | | 12.8 | 13.1 | | 0.21 | 11.9 | | 11.7 | 12.0 | | 0.21 |
| Falling number, sec | 390 | | 367 | 413 | | 32.53 | 418 | | 405 | 431 | | 18.38 |
| 1000 Kernel mass (13% mb), g | 39.3 | | 38.5 | 40.0 | | 1.06 | 40.8 | | 40.5 | 41.0 | | 0.35 |
| Hectolitre mass (dirty), kg/hl | 81.8 | | 81.5 | 82.1 | | 0.42 | 81.8 | | 81.7 | 81.9 | | 0.14 |
| Screenings (<1.8 mm sieve), % | 1.23 | | 1.03 | 1.43 | | 0.28 | 0.70 | | 0.66 | 0.74 | | 0.06 |
| Total damaged kernels, % Combined deviations, % | 0.74 | | 0.58 | 0.90 | | 0.23 | 0.41 | | 0.38 | 0.44 | | 0.04 |
| Number of samples | 2.00 | | | 2.00 | | 0.05 | 1.00 | | | 2 | | 0.14 |
| CULTIVARS | | 661 | Г 884 | 39 | 0 | | | 667 | 884 | 35 | 5 | |
| cultivars | | | F 8135 | 24 | | | | | 895 | | .5 .5 | |
| with highest % | | | T 835 | 18 | | | | | 8154 | | .5 | |
| occurrence | | | 3400 | 7. | | | | | 8135 | 8. | | |
| | | SST | F 895 | 7. | .0 | | | PAN | 3471 | 7. | .5 | |
| Number of samples | | | | 2 | | | | | | 2 | | |
| MIXOGRAM (Quadromat Junior) | ave | | min | max | : • | stdev | ave | | min | max | | stdev |
| Peak time, min | 2.4 | | 2.4 | 2.4 | | 0.00 | 2.5 | | 2.3 | 2.6 | | 0.21 |
| Tail height (6 min), mm Number of samples | 45 | | 44 | 45 2 | | 0.71 | 42 | | 41 | 42 2 | | 0.71 |
| Number of samples | | - | | 2 | 0.0 | MPOSIT | L E SAMPI | ES | | 2 | | |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | COW | B1 | B2 | B3 | B4 | UT | cow |
| Bühler Extraction, % | 72.3 | - | - | - | - | - | 71.5 | - | - | - | - | - |
| FLOUR | . 14 | | | | | | | | | | | |
| Protein (12% mb), % | 11.8 | - | - | - | - | - | 11.3 | - | - | - | - | - |
| Ash (db), % | 0.66 | - | - | - | - | - | 0.63 | - | - | - | - | - |
| Colour, KJ (wet) | -4.8 | - | - | - | - | - | -4.7 | - | - | - | - | |
| Colour, Konica Minolta CM5 (dry) | 0.4.00 | | | | | | 0.1.00 | | | | | |
| L* a* | 94.06 0.49 | - | - | - | - | - | 94.00 0.48 | - | - | - | - | - |
| a b* | 9.85 | - | - | - | - | - | 9.49 | - | - | - | - | - |
| RVA | | | | | | | | | | | | |
| Peak Viscosity, cP | 2264 | - | - | - | - | - | 2116 | - | - | - | - | - |
| Minimum viscosity (Trough), cP | 1648 | - | - | - | - | - | 1569 | - | - | - | - | - |
| Final Viscosity, cP | 2599 | - | - | - | - | - | 2345 | - | - | - | - | - |
| Peak Time, min | 7.00 | - | - | - | - | - | 7.00 | - | - | - | - | - |
| GLUTEN | | 100 | | | | | | | | | | |
| Wet gluten (14% mb), % | 32.9 | - | - | - | - | - | 30.1 | - | - | - | - | - |
| Dry gluten (14% mb), % | 11.0 | - | - | - | - | - | 10.4 | - | - | - | _ | - |
| Gluten Index | 92 | - | - | - | - | - | 97 | - | - | - | - | - |
| FARINOGRAM | | | | | | | | | | | | |
| Water absorption (14% mb), % | 60.4 | - | - | - | - | - | 60.4 | - | - | - | - | - |
| Development time, min | 4.1 | - | - | - | - | - | 3.8 | - | - | - | - | - |
| Stability, min | 5.2 | - | - | - | - | - | 4.3 | - | - | - | - | - |
| Mixing tolerance index, BU | 54 | - | - | - | - | - | 52 | - | - | - | - | - |
| EXTENSOGRAM (45 min pull) Area, cm ² | 93 | _ | _ | - | _ | _ | - | - | _ | _ | _ | _ |
| Maximum height, BU | 318 | - | - | - | - | - | - | - | - | - | - | - 1 |
| Extensibility, mm | 213 | - | - | - | - | - | - | - | - | - | - | - |
| ALVEOGRAM Strength (S), cm ² | 34.0 | - | | - | | - | 27.8 | | _ | - | - | - |
| Stability (P), mm | 69 | - | - | - | - | - | 68 | - | - | - | - | - |
| Distensibility (L), mm | 143 | - | - | - | - | - | 115 | - | - | - | - | - |
| Configuration ratio (P/L) | 0.48 | - | - | - | - | - | 0.59 | - | - | - | - | - |
| MIXOGRAM Peak time, min | 2.3 | _ | _ | - | _ | - | 2.1 | - | _ | _ | - | - |
| 100g BAKING TEST Loaf volume, cm ³ | 1176 | _ | _ | - | - | _ | 1085 | - | _ | - | - | _ |
| Evaluation (see page 79) | 0 | - | - | - | - | - | 0 | - | - | - | - | - |
| | | | | | | | | | | | | |





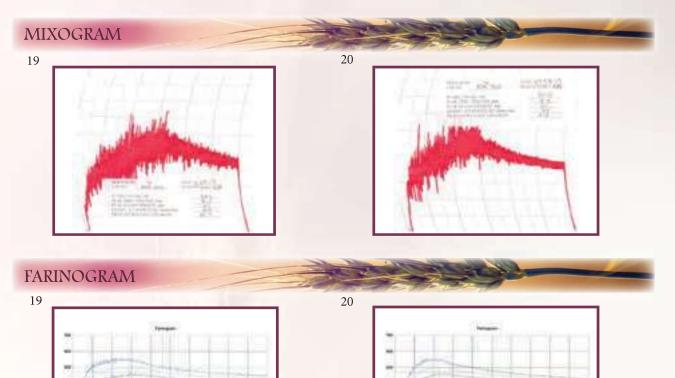


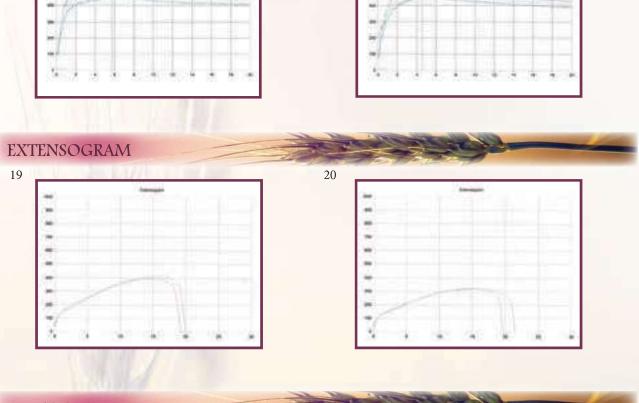
South African Wheat Crop Quality Report 2018/2019 Season

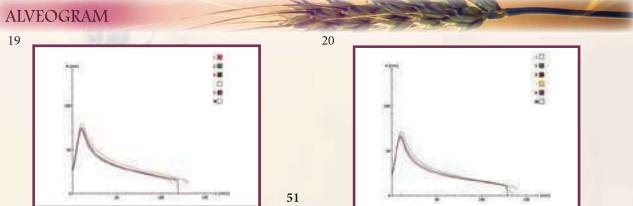
49

-

| PRODUCTION REGION | (19) North V Central | Vest Region | (Lichten | ıburg) | | | (20) North V Easterr | Vest ı Region | 1 | | | |
|--|----------------------------|----------------|--------------------|--------------------|-----|----------------------|----------------------------|------------------|--------------------|-------------|---------|----------------------|
| | | | | | | | | | | | | |
| WHEAT | | | | | | | | | | | | - 4 -1 |
| Brotoin (12% mb) % | ave 12.1 | | min 10.8 | max 12.7 | | stdev 0.67 | ave 12.1 | | min 10.7 | max 14.4 | | stdev 0.97 |
| Protein (12% mb), % Falling number, sec | 403 | | 372 | 437 | | 20.57 | 424 | | 345 | 568 | | 52.00 |
| 1000 Kernel mass (13% mb), g | 38.0 | | 36.1 | 40.1 | | 1.52 | 43.4 | | 38.7 | 54.3 | | 3.73 |
| Hectolitre mass (dirty), kg/hl | 82.4 | | 81.2 | 83.5 | | 0.75 | 82.6 | | 79.1 | 86.3 | | 1.90 |
| Screenings (<1.8 mm sieve), % | 1.45 | | 0.61 | 3.00 | | 1.02 | 1.20 | | 0.12 | 2.38 | | 0.80 |
| Total damaged kernels, % | 0.51 | | 0.08 | 0.98 | | 0.33 | 0.85 | 5 | 0.12 | 4.12 | | 0.97 |
| Combined deviations, % | 2.34 | ļ. | 1.16 | 4.38 | | 1.31 | 2.32 | 2 | 0.44 | 4.32 | | 1.22 |
| Number of samples | | | : | 7 | | | | | 1 | 8 | | |
| CULTIVARS | | SST | 843 | 25 | 5.6 | | | SST | 884 | 27 | 9 | |
| cultivars | | | 884 | 15 | | | | | 8135 | | .5 | |
| with highest % | | | 895 | 13 | | | | DUZ | | 12 | | |
| occurrence | | | 8154 | |).7 | | | | 8154 | 9. | | |
| | | | 3471 | 9 | | | | | 3471 | | .2 | |
| Number of samples | | | | 7 | - | | | | | 8 | _ | |
| MIXOGRAM (Quadromat Junior) | ave | | min | max | | stdev | ave | | min | max | [| stdev |
| Peak time, min | 3.1 | | 2.7 | 3.8 | | 0.37 | 2.7 | | 1.9 | 3.5 | | 0.33 |
| Tail height (6 min), mm | 49 | | 47 | 52 | | 1.60 | 45 | | 43 | 48 | | 1.50 |
| Number of samples | | | | 7 | | | | | 1 | 8 | | |
| | | | D 0 | | | | E SAMP | | | | | 0.0014 |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | COW | B1 | B2 | B3 | B4 | UT - | cow |
| Bühler Extraction, % | 71.9 | 72.4 | - | - | - | - | 72.2 | 72.9 | 72.8 | - | - | - |
| FLOUR | | | | | | | | | | | | |
| Protein (12% mb), % | 11.4 | 10.7 | - | - | - | - 1 | 11.6 | 10.4 | 9.6 | - | - | - |
| Ash (db), % | 0.59 | 0.59 | - | - | - | i - | 0.58 | 0.61 | 0.61 | - | - | - 1 |
| Colour, KJ (wet) | -4.6 | -4.9 | - | - | - | - | -4.5 | -4.7 | -4.5 | - | - | - |
| Colour, Konica Minolta CM5 (dry) | | | | | | | | | | | | |
| <u>L*</u> | 93.68 | 93.93 | - | - | - | - | 93.88 | 93.85 | 93.80 | - | - | - |
| a* | 0.49 | 0.45 | - | - | - | - | 0.44 | 0.44 | 0.42 | - | - | - |
| <u>b*</u> | 10.13 | 9.57 | - | - | - | - | 9.65 | 9.77 | 9.70 | - | - | - |
| RVA | | | | | | | | | | | | |
| Peak Viscosity, cP | 2335 | 2304 | - | - | - | - | 2260 | 2382 | 2591 | - | - | - |
| Minimum viscosity (Trough), cP | 1691 | 1704 | - | - | - | - | 1805 | 1761 | 1957 | - | - | - |
| Final Viscosity, cP | 2684 | 2650 | - | - | - | - | 2494 | 2685 | 2855 | - | - | - |
| Peak Time, min | 7.00 | 7.00 | - | - | - | - | 7.00 | 7.00 | 7.00 | - | - | - |
| GLUTEN | | 1 | | | | | | | | | | |
| Wet gluten (14% mb), % | 31.3 | 28.0 | | _ | | | 33.1 | 29.2 | 26.6 | | | |
| Dry gluten (14% mb), % | 10.4 | 9.5 | - | - | - | - | 10.9 | 9.5 | 8.8 | - | | |
| Gluten Index | 93 | 97 | - | - | - | - | 86 | 88 | 95 | - | | |
| | | 01 | | | | | | | | | | |
| FARINOGRAM | | | | | | | |] | | | | |
| Water absorption (14% mb), % | 61.0 | 61.2 | - | - | - | - | 61.3 | 60.7 | 59.8 | - | - | - |
| Development time, min | 5.8 | 5.5 | - | - | - | - | 4.6 | 4.2 | 4.8 | - | - | - |
| Stability, min | 7.3 | 7.7 | - | - | - | - | 5.9 | 5.0 | 5.6 | - | - | - |
| Mixing tolerance index, BU | 42 | 41 | - | - | - | - | 43 | 49 | 50 | - | - | - |
| EXTENSOGRAM (45 min pull) Area, cm ² | 106 | 101 | - | - | _ | _ | 91 | 75 | 71 | _ | - | |
| Maximum height, BU | 403 | 396 | - | - | - | - | 321 | 296 | 333 | - | - | - |
| Extensibility, mm | 198 | 190 | - | - | - | - | 207 | 180 | 158 | - | - | - |
| ALVEOGRAM | | | | | | | | | | | | |
| Strength (S), cm ² | 39.8 | 36.4 | - | - | - | - | 34.4 | 32.4 | 28.0 | - | - | - |
| Stability (P), mm | 82 | 89 | - | - | - | - | 74 | 76 | 81 | - | - | |
| Distensibility (L), mm | 119 | 91 | - | - | - | - | 129 | 115 | 84 | - | - | |
| Configuration ratio (P/L) | 0.69 | 0.98 | - | - | - | - | 0.57 | 0.66 | 0.96 | - | - | |
| MIXOGRAM Peak time, min | 2.8 | 2.9 | _ | - | _ | _ | 2.2 | 2.3 | 2.6 | - | | - |
| 100g BAKING TEST Loaf volume, cm ³ | 1136 | 1026 | _ | - | _ | _ | 1114 | 972 | 929 | - | - | - |
| Evaluation (see page 79) | 0 | 0 | - | - | - | - | 0 | 0 | 0 | - | - | - |
| | | | 1 | | | | - | | | | | _ |

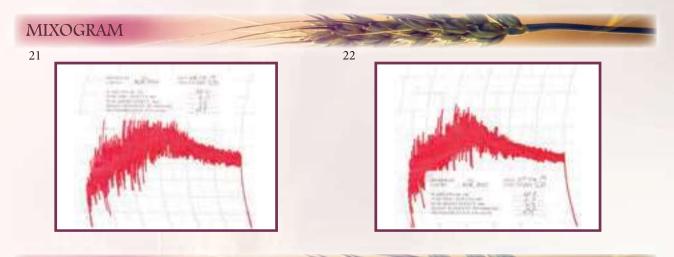




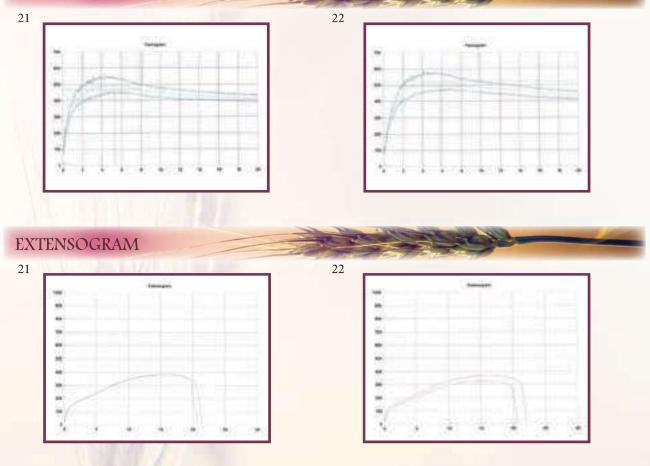


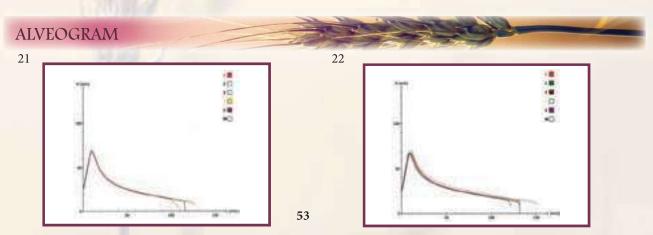
South African Quality data per production region summer RAINFALL AND IRRIGATION WHEAT

| PRODUCTION REGION | (21) Free St | | | (Viljoens | kroen | | (22) Free St | | Pagion | (Bothavi | llo) —— | |
|--|-----------------|---------|--------|-----------|--------|-------|-----------------|---------|-------------|----------------|---------|-------|
| | North-V | western | Region | viijoens | kroon) | | North-V | vestern | Region | (Bothavi | ne) | |
| WHEAT | | | | | | | | | | | | |
| | ave | | min | max | | stdev | ave | | min | max | | stdev |
| Protein (12% mb), % | 12.2 | | 11.8 | 12.5 | | 0.49 | 11.7 | | 10.7 | 12.6 | | 0.95 |
| Falling number, sec | 456 | | 452 | 460 | | 5.66 | 387 | | 380 | 396 | | 8.08 |
| 1000 Kernel mass (13% mb), g | 38.8 | | 38.2 | 39.4 | | 0.85 | 40.1 | | 38.8 | 41.0 | | 1.15 |
| Hectolitre mass (dirty), kg/hl | 83.3 | | 82.9 | 83.7 | | 0.57 | 82.0 | | 81.8 | 82.2 | | 0.20 |
| Screenings (<1.8 mm sieve), % | 2.18 | | 2.12 | 2.24 | | 0.08 | 1.75 | | 1.66 | 1.84 | | 0.09 |
| Total damaged kernels, % | 0.91 | | 0.84 | 0.98 | | 0.10 | 0.59 | | 0.44 | 0.78 | | 0.17 |
| Combined deviations, % | 3.35 | 5 | 3.34 | 3.36 | | 0.01 | 3.05 | | 2.98 | 3.20 | | 0.13 |
| Number of samples | | | | 2 | | | | | | 3 | | |
| CULTIVARS | | 597 | 884 | 32 | 5 | | | DAN | I 3497 | 29 | 0 | |
| oultivoro | | | 835 | 21 | | | | | | 29 19 | | |
| cultivars | | | | | | | | | 8135 | | | |
| with highest % | | | 8154 | 16 | | | | | 8154 | 19 | | |
| occurrence | | | 3471 | | .5 | | | | 3471 835 | 13 | | |
| Number of samples | | PAN | 3497 | 2 | .0 | | | 551 | | 9. 3 | 3 | |
| | | 1.5 | | 2 | | | | | | 5 | | |
| MIXOGRAM (Quadromat Junior) | ave | | min | max | | stdev | ave | | min | max | | stdev |
| Peak time, min | 2.9 | | 2.7 | 3.0 | | 0.21 | 2.5 | | 2.4 | 2.7 | | 0.15 |
| Tail height (6 min), mm | 48 | | 48 | 48 | | 0.00 | 48 | | 46 | 50 | | 2.00 |
| Number of samples | | | | 2 | | | | | | 3 | | |
| | | | | | | | E SAMP | | | | | |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | cow | B1 | B2 | B3 | B4 | UT | cow |
| Bühler Extraction, % | 73.0 | 72.6 | - | - | - | - | 74.3 | 74.7 | 74.7 | - | - | - |
| FLOUR | 11.5 | 10.7 | _ | | | | 11 4 | 10.8 | 9.7 | | | |
| Protein (12% mb), % Ash (db), % | 0.61 | 0.60 | - | - | - | - | 11.4 0.60 | 0.61 | 0.62 | - | - | - |
| Colour, KJ (wet) | -4.6 | -4.7 | - | - | - | - | -4.8 | -4.8 | -4.9 | - | - | - |
| | -4.0 | -4.7 | - | - | - | - | -4.0 | -4.0 | -4.9 | - | - | - |
| Colour, Konica Minolta CM5 (dry) L* | 93.80 | 93.75 | | | _ | _ | 93.73 | 93.70 | 93.82 | | | |
| <u> </u> | 0.44 | 0.43 | - | - | - | - | 0.46 | 0.50 | 0.52 | - | - | - |
| a b* | 9.55 | 9.55 | - | - | - | - | 11.39 | 11.43 | 11.35 | - | - | |
| 2 | 0.00 | 0.00 | | | | | 11.00 | 11.40 | 11.00 | | | |
| RVA | | | | | | | | | | | | |
| Peak Viscosity, cP | 2322 | 2403 | - | - | - | - | 2095 | 2116 | 1996 | - | - | - |
| Minimum viscosity (Trough), cP | 1695 | 1787 | - | - | - | - | 1624 | 1650 | 1604 | - | - | - |
| Final Viscosity, cP | 2587 | 2750 | - | - | - | - | 2395 | 2439 | 2270 | - | - | - |
| Peak Time, min | 7.00 | 7.00 | - | - | - | - | 7.00 | 7.00 | 7.00 | - | - | - |
| GLUTEN | | | | | | | | | | | | |
| Wet gluten (14% mb), % | 32.2 | 29.0 | - | - | - | - | 31.6 | 29.1 | 26.8 | - | - | - |
| Dry gluten (14% mb), % | 10.8 | 9.4 | - | - | - | - | 10.1 | 9.6 | 8.6 | - | - | - |
| Gluten Index | 90 | 96 | - | - | - | - | 95 | 95 | 90 | - | - | - |
| FARINOGRAM Water absorption (14% mb), % | 60.6 | 60.6 | _ | _ | _ | | 61.2 | 60.6 | 58.9 | - | _ | |
| Development time, min | 5.3 | 4.7 | - | - | - | - | 5.8 | 5.2 | 4.5 | | | |
| Stability, min | 6.1 | 6.6 | - | - | - | - | 7.8 | 6.6 | 5.2 | - | - | - |
| Mixing tolerance index, BU | 51 | 42 | - | - | - | - | 38 | 43 | 5.2 | - | - | - |
| EXTENSOGRAM (45 min pull) | | | | | | | | | | | | |
| Area, cm ² | 110 | 100 | - | - | - | - | 103 | 98 | 75 | - | - | - |
| Maximum height, BU | 364 | 376 | - | - | - | - | 348 | 338 | 288 | - | - | - |
| Extensibility, mm | 219 | 196 | - | - | - | - | 215 | 214 | 185 | - | - | - |
| ALVEOGRAM Strength (S), cm ² | 34.6 | 34.9 | - | _ | _ | - | 38.5 | 31.7 | 23.1 | - | _ | - |
| Stability (P), mm | 78 | 86 | - | - | - | - | 74 | 70 | 62 | - | - | - |
| Distensibility (L), mm | 111 | 94 | - | - | - | - | 131 | 118 | 100 | - | - | - |
| Configuration ratio (P/L) | 0.70 | 0.91 | - | - | - | - | 0.56 | 0.59 | 0.62 | - | - | - |
| MIXOGRAM | | | | | | | | | | | | |
| Peak time, min | 2.5 | 2.8 | - | - | - | - | 2.4 | 2.4 | 2.4 | - | - | - |
| 100g BAKING TEST Loaf volume, cm ³ | 1102 | 1054 | _ | - | | - | 1166 | 1113 | 1085 | - | - | - |
| Evaluation (see page 79) | 0 | 0 | - | - | - | - | 0 | 0 | 0 | - | - | - |



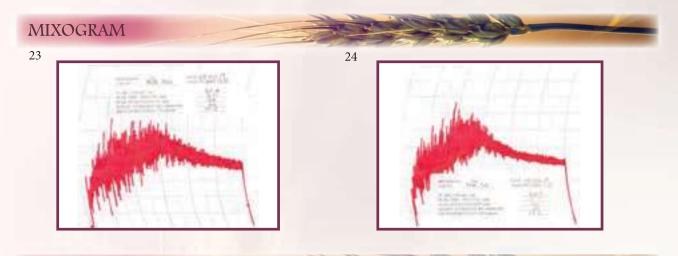
FARINOGRAM





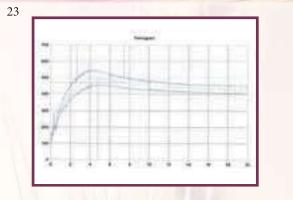
South African Quality data per production region summer RAINFALL AND IRRIGATION WHEAT

| PRODUCTION REGION | (23) Free St | ate | | (Bultfont | ein) | | (24) Free St Central | ate Region | | | | |
|--|-----------------|------------|------|-----------|------|--------|----------------------------|---------------|------|----------|-----|-------|
| WHEAT | | _ | - | | | | | | | | | |
| | ave | | min | max | | stdev | ave | | min | max | | stdev |
| Protein (12% mb), % | 12.9 | | 11.4 | 14.3 | | 2.05 | 12.8 | | 11.0 | 16.0 | | 1.42 |
| Falling number, sec | 504 | | 499 | 509 | | 7.07 | 473 | | 310 | 565 | | 80.46 |
| 1000 Kernel mass (13% mb), g | 39.2 | | 38.2 | 40.2 | | 1.41 | 35.2 | | 28.7 | 45.4 | | 5.02 |
| Hectolitre mass (dirty), kg/hl | 83.1 | | 82.3 | 83.8 | | 1.06 | 81.4 | | 76.6 | 83.8 | | 2.09 |
| Screenings (<1.8 mm sieve), % | 1.61 | | 0.52 | 2.70 | | 1.54 | 2.26 | | 0.17 | 7.61 | | 2.61 |
| Total damaged kernels, % | 0.95 | | 0.18 | 1.72 | | 1.09 | 0.42 | | 0.08 | 1.18 | | 0.36 |
| Combined deviations, % | 2.81 | | 0.70 | 4.92 | | 2.98 | 3.30 | | 0.46 | 8.83 | | 3.19 |
| Number of samples | 2.0 | | | 2 | | 2.00 | 0.00 | | | 9 | | 0.10 |
| CULTIVARS | | SST | 884 | 50 | 0 | | | PAN 347 | 71 | 21 | 6 | |
| cultivars | | | 3111 | 45 | | | | PAN 311 | | | 3.6 | |
| with highest % | | | 3471 | 5. | | | | SCHEEF | | | | |
| occurrence | | 1743 | | | | | | PAN 340 | | | 2.7 | |
| occurrence | | _ | | _ | _ | _ | | PAN 349 | | | .4 | |
| Number of samples | | | | 2 | | | | 17410-10 | | 9 | | |
| MIXOGRAM (Quadromat Junior) | ave | | min | max | : | stdev | ave | | min | max | , | stdev |
| Peak time, min | 2.6 | | 2.3 | 2.9 | | 0.42 | 2.8 | | 1.2 | 3.9 | | 0.72 |
| Tail height (6 min), mm | 46 | | 44 | 48 | | 2.83 | 46 | | 38 | 56 | | 4.97 |
| Number of samples | | | | 2 | | | | | | 9 | | |
| | | | | | CO | MPOSIT | E SAMP | LES | | | | |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | cow | B1 | B2 | B3 | B4 | UT | COW |
| Bühler Extraction, % | 70.6 | 71.6 | - | - 1 | - | - | 69.8 | 71.9 | - | - 1 | - | - |
| <i>FLOUR</i> Protein (12% mb), % | 13.1 | 10.3 | | _ | _ | _ | 11.5 | 10.2 | _ | _ | - | |
| | 0.61 | 0.62 | - | 1 1 | | 1 | 0.60 | 0.64 | i | 1 | | - |
| Ash (db), % Colour, KJ (wet) | -4.1 | -4.6 | - | - | - | - | -4.3 | -4.5 | - | - | - | - |
| Colour, Konica Minolta CM5 (dry) | -4.1 | -4.0 | - | - | - | - | -4.5 | -4.5 | - | - | - | - |
| | 02.42 | 02.70 | | | | | 02 55 | 02.75 | | | | |
| <u>L*</u> | 93.42 | 93.79 | - | - | - | - | 93.55 | 93.75 | - | - | - | - |
| a* b* | 0.49 9.62 | 0.48 | - | - | - | - | 0.43 | 0.39 9.77 | - | - | - | - |
| <u>u</u> | 9.02 | 9.09 | - | - | - | - | 10.17 | 9.77 | - | | - | |
| RVA | | | | | | | | | | | | |
| Peak Viscosity, cP | 2090 | 2416 | - | - | _ | | 2196 | 2298 | - | | - | |
| Minimum viscosity (Trough), cP | 1545 | 1816 | - | | _ | - | 1652 | 1711 | - | - | - | |
| Final Viscosity, cP | 2227 | 2635 | - | | - | | 2417 | 2612 | - | - | - | |
| Peak Time, min | 7.00 | 7.00 | - | | - | | 7.00 | 7.00 | - | - | - | |
| | 7.00 | 7.00 | - | | - | | 7.00 | 7.00 | | - | - | - |
| GLUTEN | | Const 1 | | | | | | | | | | |
| Wet gluten (14% mb), % | 38.9 | 28.6 | - | - | - | - | 31.1 | 27.7 | - | - | - | - |
| Dry gluten (14% mb), % | 13.1 | 9.3 | - | 1 - 1 | - | - | 10.5 | 9.0 | - 1 | - | - | - |
| Gluten Index | 71 | 93 | - | - | - | - | 92 | 90 | - | - | - | - |
| FARINOGRAM | | | | | | | 02 | | | | | |
| Water absorption (14% mb), % | 63.9 | 59.9 | - | - | - | - | 60.9 | 60.1 | l . | - | | _ |
| Development time, min | 4.8 | 4.9 | - | - | - | - | 5.5 | 3.5 | - | - | | - |
| Stability, min | 4.0 | 4.9 6.5 | - | - | - | - | 5.5 7.1 | 4.5 | - | - | - | - |
| Mixing tolerance index, BU | 4.0 | 44 | - | - | - | - | 43 | 4.5 59 | - | - | - | - |
| | 4/ | 44 | - | - | | - | 43 | - 59 | - | <u> </u> | - | - |
| EXTENSOGRAM (45 min pull) | | | | | | | | | | | | |
| Area, cm ² | 89 | 99 | - | - | - | - | 95 | 72 | - | - | - | - |
| Maximum height, BU | 301 | 403 | - | - | - | - | 373 | 296 | - | - | - | - |
| Extensibility, mm | 211 | 178 | - | - | - | - | 182 | 171 | - | - | - | - |
| ALVEOGRAM | 27.0 | 20.2 | | | | | 26.0 | 26.5 | | | | |
| Strength (S), cm ² Stability (P), mm | 37.8 88 | 30.3 88 | - | - | - | - | 36.9 90 | 26.5 77 | - | - | - | - |
| | _ | | - | - | - | - | | | - | - | - | - |
| Distensibility (L), mm | 107 | 77 | - | - | - | - | 95 | 89 | - | - | - | - |
| Configuration ratio (P/L) | 0.82 | 1.14 | - | - | - | - | 0.95 | 0.87 | - | - | - | - |
| MIXOGRAM Peak time, min | 2.0 | 2.8 | _ | - | - | _ | 2.6 | 2.3 | _ | _ | - | - |
| 100g BAKING TEST Loaf volume, cm ³ | 1090 | 1026 | _ | - | _ | - | 991 | 1064 | _ | - | - | |
| Evaluation (see page 79) | 0 | 0 | - | | | | 0 | 0 | | | | - |
| Evaluation (see page 13) | 0 | 0 | | | - | - | | 0 | | | - | |



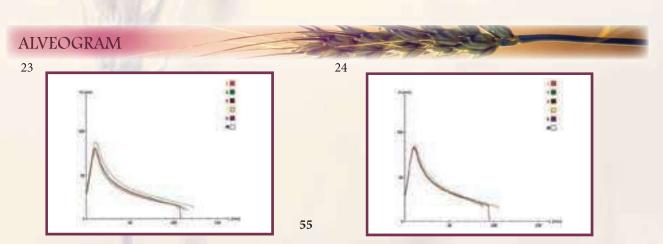
24

FARINOGRAM



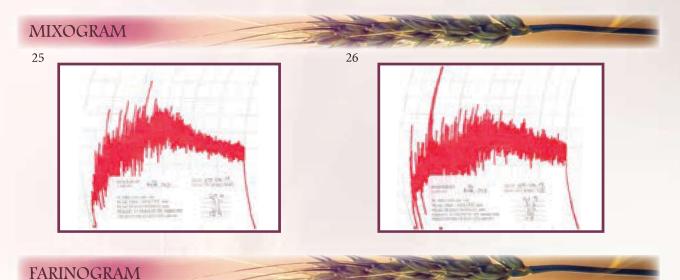
| * | 1 | | | | |
|---|-----|---|--|------|--|
| 1 | Bot | + | | | |
| 2 | | | | | |
| 1 | | | | | |
| 4 | | | | 1.00 | |

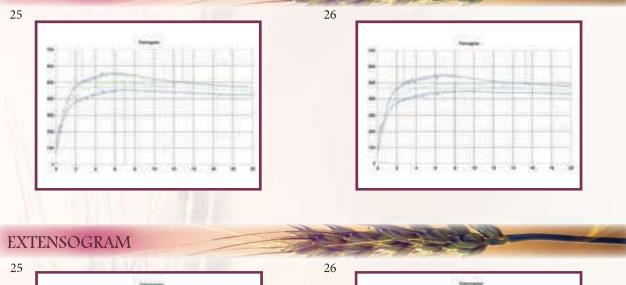
EXTENSOGRAM



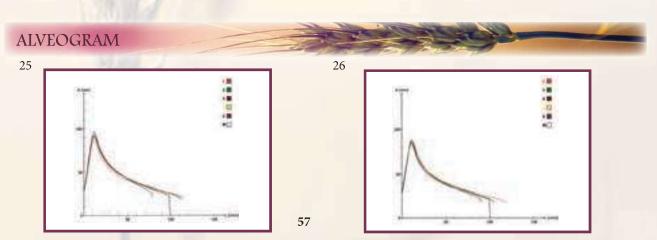
South African Quality data per production region summer RAINFALL AND IRRIGATION WHEAT

| PRODUCTION REGION | (25) Free Sta South-V | ate | Region | | | | (26) Free St South-I | ate ∃astern ∣ | Region | | | |
|---|-----------------------------|-----|-----------------|---------|-----|--------|----------------------------|------------------|--------------|----------------|------------|--------------|
| WHEAT | | | | | | | | | | | | |
| | ave | | min | max | : : | stdev | ave | | min | max | c . | stdev |
| Protein (12% mb), % | 13.5 | | 13.0 | 14.3 | | 0.45 | 13.5 | | 11.0 | 16.4 | | 2.22 |
| Falling number, sec | 405 | | 360 | 433 | | 25.48 | 356 | | 304 | 415 | | 46.45 |
| 1000 Kernel mass (13% mb), g | 35.9 | | 29.0 | 39.2 | | 3.06 | 34.0 | | 28.0 | 38.9 | | 4.55 |
| Hectolitre mass (dirty), kg/hl Screenings (<1.8 mm sieve), % | 81.5 | | 80.3 1.79 | 82.5 | | 0.73 | 78.5 | | 76.3 0.19 | 79.9 2.56 | | 1.55 1.15 |
| Total damaged kernels, % | 0.29 | | 0.12 | 0.46 | | 0.19 | 0.19 | | 0.19 | 0.30 | | 0.10 |
| Combined deviations, % | 2.80 | | 2.47 | 3.42 | | 0.32 | 1.97 | | 0.83 | 3.40 | | 1.20 |
| Number of samples | | | | 8 | | | | | | 4 | | |
| CULTIVARS | | DA | 1 0 0 0 0 | | | | | DAN | 0404 | | | |
| eultivere | | | N 3368 F 374 | 22 | | | | | 3161 374 | 35 | 5.0 5.3 | |
| cultivars with highest % | | | N 3161 | 15 | | | | | NDS | | 3.5 3.5 | |
| occurrence | | | N 3111 | 12 | | | | | 356 | | .3 | |
| | | | NDS | 10 | | | | | 3368 | | .3 | |
| Number of samples | | | | 8 | | | | | | 4 | | |
| MIXOGRAM (Quadromat Junior) | ave | | min | max | : : | stdev | ave | | min | max | (| stdev |
| Peak time, min | 3.0 | | 2.7 | 3.8 | | 0.37 | 3.0 | | 2.0 | 3.3 | | 0.65 |
| Tail height (6 min), mm Number of samples | 54 | | 52 | 61 8 | | 3.01 | 50 | | 44 | 55 4 | | 5.32 |
| Number of Samples | | - | | 0 | co | MPOSIT | E SAMP | LES | | - | | |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | COW | B1 | B2 | B3 | B4 | UT | COW |
| Bühler Extraction, % | 70.2 | - | - | - | - | - | 70.6 | 67.6 | - | - | - | - |
| <i>FLOUR</i> Protein (12% mb), % | 12.4 | _ | - | | | _ | 12.2 | 12.5 | _ | _ | - | - |
| Ash (db), % | 0.57 | - | - | - | - | - | 0.55 | 0.65 | - | - | - | - |
| Colour, KJ (wet) | -4.3 | - | - | - | - | - | -4.1 | -3.7 | - | - | - | - |
| Colour, Konica Minolta CM5 (dry) | 10.000 | | | | | | | | | | | |
| <u>L*</u> | 93.40 | - | - | - | - | - | 93.57 | 92.82 | - | - | - | - |
| a* b* | 0.44 | - | - | - | - | - | 0.32 | 0.46 | - | - | - | - |
| | | | 1 | | | | | | | | | |
| RVA | | | | | | | | | | | | |
| Peak Viscosity, cP | 2172 | - | - | - | - | - | 2301 | 2470 | - | - | - | - |
| Minimum viscosity (Trough), cP Final Viscosity, cP | 1537 2491 | - | - | - | - | - | 1723 2564 | 1696 2895 | - | - | - | - |
| Peak Time, min | 7.00 | - | - | - | - | - | 7.00 | 7.00 | - | - | - | - |
| | 7.00 | | | | | - | 7.00 | 7.00 | | - | _ | |
| GLUTEN | | | | | | | | | | | | |
| Wet gluten (14% mb), % | 34.2 | - | - | - | - | - | 33.2 | 34.5 | - | - | - | - |
| Dry gluten (14% mb), % | 11.7 | - | - | - | - | - | 11.3 | 11.5 | - | - | - | - |
| Gluten Index | 96 | - | - | - | - | - | 97 | 90 | - | - | - | - |
| FARINOGRAM | | | | | | | | | | | | |
| Water absorption (14% mb), % | 63.2 | - | - | - | - | - | 61.7 | 61.6 | - | - | - | - |
| Development time, min Stability, min | 7.0 | - | - | - | - | - | 8.0 12.6 | 5.3 10.2 | - | - | - | - |
| Mixing tolerance index, BU | 30 | | | - | - | | 27 | 17 | | - | - | <u> </u> |
| EXTENSOGRAM (45 min pull) | | | | | | | | | | | | |
| Area, cm ² | 109 | - | - | - | - | - | 121 | 77 | - | - | - | - |
| Maximum height, BU Extensibility, mm | 379 210 | - | - | - | - | - | 443 204 | 301 182 | - | - | - | - |
| ALVEOGRAM | | | | | | | | | | | | |
| Strength (S), cm ² | 46.2 | - | - | - | - | - | 50.8 | 35.5 | - | - | - | - |
| Stability (P), mm Distensibility (L), mm | 102 98 | - | - | - | - | - | 99 110 | 88 86 | - | - | - | - |
| Configuration ratio (P/L) | 1.04 | - | - | - | - | - | 0.90 | 1.02 | - | - | - | - |
| MIXOGRAM Peak time, min | 2.8 | | | _ | | _ | 3.1 | 2.3 | _ | | | |
| 100g BAKING TEST | | | | | | | | | | - | - | - |
| Loaf volume, cm ³ | 1071 | - | - | - | - | - | 1073 | 1105 | - | - | - | - |
| Evaluation (see page 79) | 0 | - | - | - | - | - | 0 | 0 | - | - | - | - |



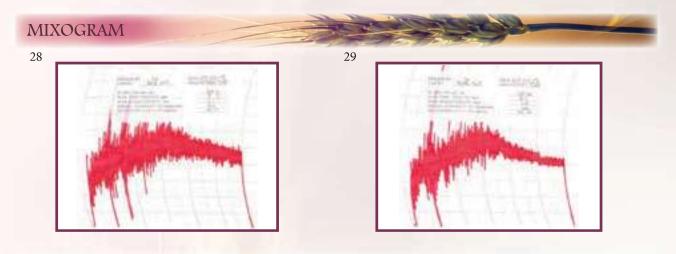


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|----|----|--|---|------|--|----------|
| - | | | | 1.1 | | |
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| ÷ | 1 | | | 24 | | |
| | | | | 1.00 | | |
| | | | | 100 | | |
| 1 | | | | 45 | | |

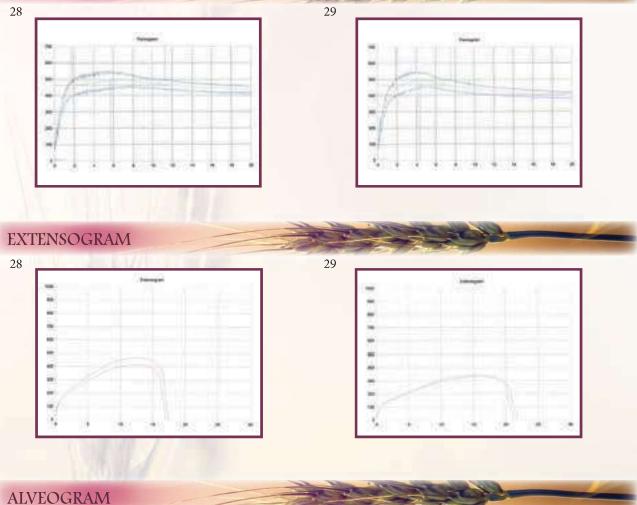


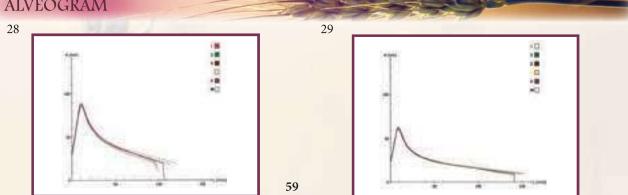
South African Quality data per production region summer RAINFALL AND IRRIGATION WHEAT

| PRODUCTION REGION | (28) Free State Eastern Region | | | | | | | (29) Mpumalanga Southern Region | | | | | | | |
|---|--------------------------------------|------|--------------|-----------|-----|--------------|-----------|---------------------------------------|--------------|---------|-----|----------|--|--|--|
| WHEAT | | | | | | | | | | | | _ | | | |
| | ave | | min | max | | stdev | ave | | min | max | | stdev | | | |
| Protein (12% mb), % | 13.4 | | 12.1 | 15.3 | | 1.26 | 11.9 | | 11.7 | 12.0 | | 0.21 | | | |
| Falling number, sec | 353 | | 271 | 425 | | 46.03 | 379 | | 376 | 381 | | 3.54 | | | |
| 1000 Kernel mass (13% mb), g | 35.3 | _ | 27.9 | 42.1 | | 4.34 | 43.3 | | 41.8 | 44.7 | | 2.05 | | | |
| Hectolitre mass (dirty), kg/hl Screenings (<1.8 mm sieve), % | 80.2 | | 78.4 0.08 | 82.1 | | 1.18 0.98 | 84.5 | | 84.2 1.36 | 84.8 | | 0.42 | | | |
| Total damaged kernels, % | 0.68 | - | 0.08 | 1.32 | | 0.98 | 0.55 | | 0.54 | 0.56 | | 0.08 | | | |
| Combined deviations, % | 2.30 | | 0.55 | 4.81 | | 1.65 | 2.24 | | 2.14 | 2.34 | | 0.14 | | | |
| Number of samples | | 0.00 | | 9 | | | | | | 2.04 | | | | | |
| CULTIVARS | | DAN | N 3161 | 19 | 8.6 | | | 557 | 884 | 37 | 7.0 | | | | |
| cultivars | | | V 3111 | 14 | | | | | 8154 | | 2.5 | | | | |
| with highest % | | | 3368 | 12 | | | | | 8135 | | 3.0 | | | | |
| occurrence | | | NDS | 11 | | | | | 3471 | | 2.0 | | | | |
| | | | Г 374 | | .3 | | | | 835 | |).5 | | | | |
| Number of samples | | | | 9 | | | | | | 2 | | | | | |
| MIXOGRAM (Quadromat Junior) | ave | | min | max | | stdev | ave | | min | max | (| stdev | | | |
| Peak time, min Tail height (6 min), mm | 3.1 | - | 2.6 | 4.6 59 | | 0.61 | 3.0 45 | | 2.8 | 3.1 | | 0.21 | | | |
| Number of samples | 51 | | 48 | <u>59</u> | | 3.24 | 45 | | 44 | 46 2 | | 1.41 | | | |
| Number of Samples | | _ | _ | 9 | 0.0 | MPOSIT | E SAMP | IES | | 2 | | | | | |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | COW | B1 | B2 | B3 | B4 | UT | cow | | | |
| Bühler Extraction, % | 70.5 | - | - | 67.2 | - | - | 72.8 | 72.3 | - | - | - | - | | | |
| <i>FLOUR</i> Protein (12% mb), % | 11.8 | | _ | 13.8 | _ | | 11.0 | 10.6 | - | | - | | | | |
| Ash (db), % | 0.59 | - | - | 0.57 | _ | - | 0.57 | 0.60 | - | - | - | <u> </u> | | | |
| Colour, KJ (wet) | -3.9 | - | - | -3.8 | - | - | -4.8 | -4.7 | - | - | - | - | | | |
| Colour, Konica Minolta CM5 (dry) | | | | | | | | | | | | | | | |
| L* | 93.18 | - | - 1 | 93.13 | - | - | 94.08 | 93.96 | - 1 | - | - | - 1 | | | |
| a* | 0.46 | - | - | 0.47 | - | - | 0.43 | 0.42 | - | - | - | - | | | |
| <u>b*</u> | 10.07 | - | - | 10.86 | - | - | 9.30 | 9.41 | - | - | - | - | | | |
| RVA | | | | | | | | | | | | | | | |
| Peak Viscosity, cP | 2161 | - | - | 2199 | - | - | 2334 | 2245 | - | - | - | - | | | |
| Minimum viscosity (Trough), cP | 1619 | - | - | 1565 | - | - | 1772 | 1682 | - | - | - | - | | | |
| Final Viscosity, cP | 2342 | - | - | 2635 | - | - | 2625 | 2519 | - | - | - | - | | | |
| Peak Time, min | 7.00 | - | - | 7.00 | - | - | 7.00 | 7.00 | - | - | - | - | | | |
| GLUTEN | 1. | | | | | | | | | | | | | | |
| Wet gluten (14% mb), % | 32.2 | - | - | 36.9 | - | - | 30.3 | 28.1 | - | - | - | - | | | |
| Dry gluten (14% mb), % | 10.7 | - | - | 12.5 | - | - | 10.1 | 9.8 | - | - | - | - | | | |
| Gluten Index | 89 | - | - | 96 | - | - | 88 | 94 | - | - | - | | | | |
| FARINOGRAM Water absorption (14% mb), % | 62.0 | - | _ | 63.5 | - | - | 60.1 | 59.4 | - | - | - | - | | | |
| Development time, min | 5.7 | - | - | 6.9 | - | - 1 | 4.4 | 4.7 | - | - 1 | - | - | | | |
| Stability, min | 9.5 | - | - | 10.6 | - | - | 5.7 | 6.0 | - | - | - | - | | | |
| Mixing tolerance index, BU | 26 | - | - | 25 | - | - | 50 | 50 | - | - | - | - | | | |
| EXTENSOGRAM (45 min pull) Area, cm ² | 103 | _ | _ | 94 | - | _ | 95 | 97 | - | _ | - | - | | | |
| Maximum height, BU | 441 | - | - 1 | 343 | - | l - | 340 | 375 | | - 1 | - | - | | | |
| Extensibility, mm | 173 | - | - | 199 | - | - | 212 | 196 | - | - | - | - | | | |
| ALVEOGRAM Strength (S), cm ² | 44.3 | | - | 43.4 | - | - | 33.6 | 29.5 | - | - | - | _ | | | |
| Stability (P), mm | 96 | - | - | 95 | - | - | 68 | 72 | - | - | - | - | | | |
| Distensibility (L), mm | 105 | - | - | 99 | - | - | 141 | 101 | - | - | - | - | | | |
| Configuration ratio (P/L) MIXOGRAM | 0.91 | - | - | 0.96 | - | - | 0.48 | 0.71 | - | - | - | - | | | |
| Peak time, min | 2.9 | - | - | 2.8 | - | - | 2.6 | 2.7 | - | - | - | - | | | |
| 100g BAKING TEST Loaf volume, cm ³ | 1033 | _ | _ | 1237 | _ | _ | 995 | 992 | _ | - | - | - | | | |
| Evaluation (see page 79) | 0 | - | - | 0 | - | - | 0 | 0 | - | - | - | - | | | |

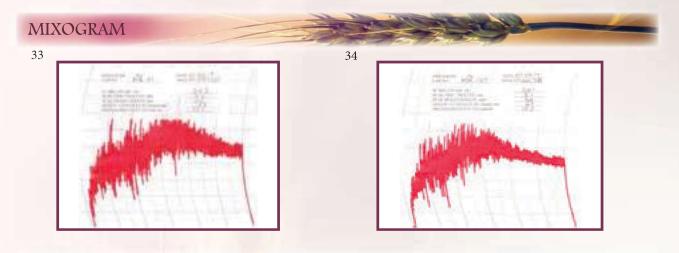


FARINOGRAM

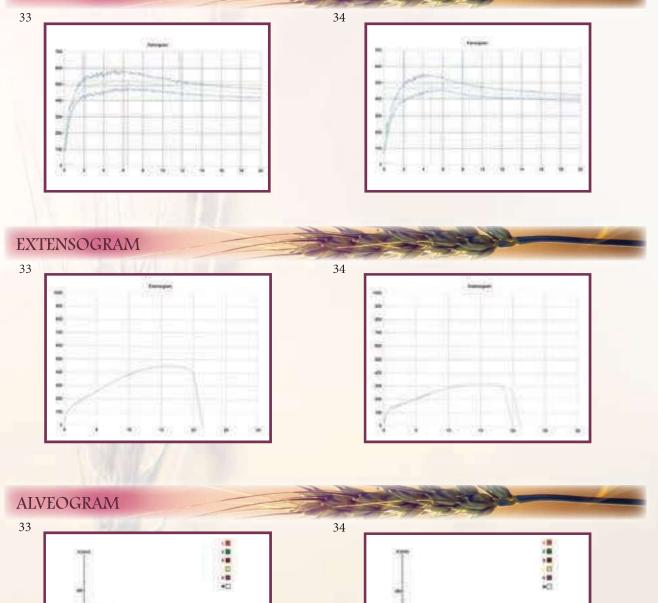




| | (33) ODUCTION REGION Mpumalanga | | | | | | (34) Gauteng Region | | | | | | | |
|---|------------------------------------|--------------------|-------------|-------------|-----------|-------|------------------------|-------|-------------|---------------------|----|----------|--|--|
| PRODUCTION REGION | | ilanga rn Regio | n | | | | Gauteng Region | | | | | | | |
| | | | | | | | | | | | | | | |
| WHEAT | | | | | | | | | | | | | | |
| Duratain (100(mb) 0/ | ave | | min | max | | stdev | ave | | min | max | | stdev | | |
| Protein (12% mb), % | 12.5 | | 11.4 203 | 14.0 474 | | 0.95 | 11.4 373 | | 10.1 299 | 12.5 425 | | 0.88 | | |
| Falling number, sec 1000 Kernel mass (13% mb), g | 330 | | 36.9 | 474 | | 1.98 | 373 | | 37.9 | 42.5 | | 1.98 | | |
| Hectolitre mass (dirty), kg/hl | 80.1 | | 75.4 | 83.9 | | 3.46 | 83.1 | | 81.0 | 84.3 | | 1.18 | | |
| Screenings (<1.8 mm sieve), % | 0.94 | | 0.54 | 1.42 | | 0.35 | 0.94 | | 0.48 | | | 0.44 | | |
| | | | 0.54 | 2.20 | | | | | 0.48 | 1.53 | | 0.44 | | |
| Total damaged kernels, % Combined deviations, % | 0.68 | | 1.24 | 3.04 | | 0.79 | 0.79 | | 1.49 | <u>1.40</u> 2.81 | | 0.43 | | |
| Number of samples | 1.00 |) | | <u> </u> | | 0.04 | 1.94 | | | 7 2.01 | | 0.43 | | |
| Number of Sumples | | | | 0 | | | | | | , | | | | |
| CULTIVARS | | | | | | | | | | | | | | |
| | | | 895 | | 3.2 | | | | 884 | 36 | | | | |
| cultivars | | | 884 | | 7.7 | | | | 8135 | 21 | | | | |
| with highest % | | | 3471 | | 5.0 | | | | 895 | 12 10 | | | | |
| occurrence | | | 835 | | 1.5 .2 | _ | | | 8154 | 9. | | | | |
| Number of samples | | 331 | | 6 | .2 | | | 331 | | . 7 | .5 | | | |
| | | - | | <u> </u> | | | | | | | | | | |
| MIXOGRAM (Quadromat Junior) | | | | | | | | | | | | | | |
| | ave | | min | max | с з | stdev | ave | | min | max | | stdev | | |
| Peak time, min | 3.5 | | 3.0 | 4.0 | | 0.36 | 3.2 | | 2.5 | 3.7 | | 0.43 | | |
| Tail height (6 min), mm | 52 | | 48 | 55 | | 2.42 | 49 | | 47 | 55 | | 2.88 | | |
| Number of samples | | | | 6 | | | | | | 7 | | | | |
| | | | | | | | E SAMP | | | | | | | |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | cow | B1 | B2 | B3 | B4 | UT | cow | | |
| Bühler Extraction, % | 73.0 | 72.1 | - | - | - | - | 73.2 | 72.3 | 71.6 | - | - | - | | |
| 51 0118 | | | | | | | | | | | | | | |
| FLOUR | 110 | 10.1 | | | | | | 10.5 | | | | | | |
| Protein (12% mb), % | 11.8 | 10.1 | - | - | - | - | 11.5 | 10.5 | 9.6 | - | - | - | | |
| Ash (db), % | 0.59 | 0.61 | - | - | - | - | 0.62 | 0.60 | 0.61 | - | - | - | | |
| Colour, KJ (wet) | -4.3 | -4.8 | - | - | - | - | -4.6 | -4.4 | -4.8 | - | - | | | |
| Colour, Konica Minolta CM5 (dry) | 00.40 | 00.05 | | | | | 00.00 | 00.54 | 00.70 | | | | | |
| <u>L*</u> | 93.43 | 93.95 | - | - | - | - | 93.66 | 93.54 | 93.78 | - | - | - | | |
| <u>a*</u> | 0.48 | 0.47 | - | - | - | - | 0.45 | 0.42 | 0.39 | - | - | <u> </u> | | |
| <u>b*</u> | 10.03 | 9.33 | - | - | - | - | 9.26 | 9.28 | 9.12 | - | - | | | |
| RVA | | | | | | | | | | | | | | |
| Peak Viscosity, cP | 1810 | 2462 | - | - | l _ | | 2317 | 2273 | 1731 | _ | | - I | | |
| Minimum viscosity (Trough), cP | 1616 | 1789 | - | - | - | - | 1796 | 1802 | 1497 | - | - | <u> </u> | | |
| Final Viscosity, cP | 1976 | 2765 | - | - | - | - | 2601 | 2473 | 1870 | - | _ | - | | |
| Peak Time, min | 6.80 | 7.00 | - | - | - | _ | 7.00 | 7.00 | 6.60 | - | - | - | | |
| | 0.00 | 1.00 | | | | | 1 1.00 | 1.00 | 0.00 | | | | | |
| GLUTEN | | free 1 | | | | | | | | | | | | |
| Wet gluten (14% mb), % | 31.6 | 26.6 | - | - | - | - | 32.1 | 28.7 | 25.4 | - | - | - | | |
| Dry gluten (14% mb), % | 10.5 | 9.0 | - | - | - | - | 10.8 | 9.6 | 8.5 | - | - | - | | |
| Gluten Index | 98 | 97 | - | - | - | - | 91 | 95 | 98 | - | - | - | | |
| | | | | | | 1 | 1 | | | | | | | |
| FARINOGRAM | | | | | | | | | | | | | | |
| Water absorption (14% mb), % | 60.3 | 58.7 | - | - | - | - | 61.9 | 59.1 | 58.8 | - | - | - | | |
| Development time, min | 6.5 | 5.3 | - | - | - | - | 4.8 | 5.5 | 5.0 | - | _ | - | | |
| Stability, min | 9.9 | 9.1 | - | - | - | - | 5.9 | 6.9 | 7.3 | - | - | - | | |
| Mixing tolerance index, BU | 35 | 30 | - | - | - | - | 51 | 46 | 48 | - | - | - | | |
| | | | | | | | | | | | | | | |
| EXTENSOGRAM (45 min pull) | | | | | | | | | | | | | | |
| Area, cm ² | 126 | 101 | - | - | - | - | 89 | 90 | 81 | - | - | - | | |
| Maximum height, BU | 451 | 406 | - | - | - | - | 316 | 378 | 339 | - | - | | | |
| Extensibility, mm | 215 | 188 | - | - | - | - | 207 | 174 | 172 | - | - | | | |
| ALVEOCRAM | | | | | | | | | | | | | | |
| ALVEOGRAM | 47.0 | 26.0 | | | | | 35.0 | 20.4 | 20.7 | | | | | |
| Strength (S), cm ² | 47.2 | 36.2 | - | - | - | - | 35.9 | 32.4 | 30.7 | - | - | - | | |
| Stability (P), mm | 80 | 85 | - | - | - | - | 74 | 75 | 72 | - | - | | | |
| Distensibility (L), mm | 139 | 92 | - | - | - | - | 131 | 102 | 100 | - | - | | | |
| Configuration ratio (P/L) | 0.58 | 0.92 | - | - | - | - | 0.56 | 0.74 | 0.72 | - | - | | | |
| MIXOCDAM | | | | | | | | | | | | | | |
| | 2.0 | 2.0 | | | | | 24 | 2.0 | 2.0 | | | | | |
| Peak time, min | 3.2 | 3.2 | - | - | - | - | 2.4 | 2.9 | 3.0 | - | - | - | | |
| 100g BAKING TEST | | | | | | | | | | | | | | |
| 100g BAKING TEST Loaf volume, cm ³ | 1144 | 980 | | - | | | 1064 | 1030 | 963 | | | | | |
| Evaluation (see page 79) | 0 | 980 | - | - | - | - | 0 | 0 | 963 | - | - | | | |
| Evaluation (see page 13) | 0 | 5 | | | <u> </u> | | | | 0 | | _ | | | |



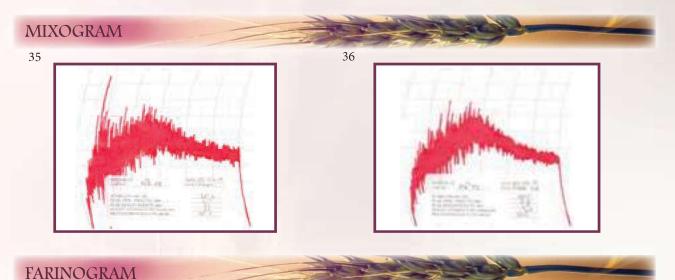
FARINOGRAM



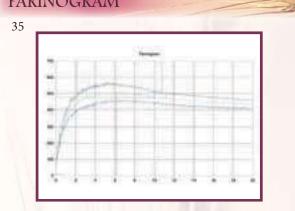
South African Wheat Crop Quality Report 2018/2019 Season

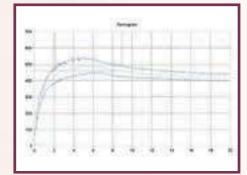
61

| PRODUCTION REGION | (35) Limpor | oo Regio | | | | | (36) KwaZulu-Natas | | | | | | | |
|--|----------------|----------|--------------|--------------|-----------|----------------------|-----------------------|-----------|--------------|--------------|----|---------------|--|--|
| PRODUCTION REGION | Lunbor | JU Regio | 11 | | | | rwa∠u | iu-inatas | | | | | | |
| WHEAT | | | | | | | | | | | | | | |
| | ave | | min | max | | stdev | ave | | min | max | | stdev | | |
| Protein (12% mb), % | 12.0 | | 9.9 | 13.8 | | 1.09 | 12.6 | | 11.8 | 13.5 | | 0.66 | | |
| Falling number, sec | 380 | | 233 | 474 | | 58.85 | 450 | | 397 | 547 | | 53.16 | | |
| 1000 Kernel mass (13% mb), g Hectolitre mass (dirty), kg/hl | 41.0 | | 31.1 | 52.6 | | 4.88 | 41.2 | | 36.3 80.9 | 44.7 | | 2.78 | | |
| Screenings (<1.8 mm sieve), % | 83.2 0.82 | | 80.3 0.14 | 85.1 2.25 | | 1.17 0.55 | 84.0 1.25 | | 0.56 | 85.8 2.41 | | 1.51 0.69 | | |
| Total damaged kernels, % | 0.82 | | 0.14 | 5.14 | | 1.03 | 0.62 | | 0.36 | 1.44 | | 0.89 | | |
| Combined deviations, % | 1.81 | | 0.83 | 5.36 | | 1.03 | 2.42 | | 0.90 | 4.51 | | 1.21 | | |
| Number of samples | 1.01 | | | 3 | | 1.00 | 2.12 | | | 10 | | 1.21 | | |
| | | | | | | | | | | | | | | |
| CULTIVARS | | 0.07 | | | _ | | | | | | | | | |
| eultivere | | | 884 | | 7.4 | | | | 806 | 26 | | | | |
| cultivars | | DUZ | 8154 | | 5.2 | | | | 8154 | 17 | | | | |
| with highest % occurrence | | | 895 | | 3.4 .1 | | | | 884 | 15 | | | | |
| occurrence | | | 395 3471 | | .0 | | | | 843 | 11 | | | | |
| Number of samples | | | | 3 | | | | 001 | | 10 | .0 | | | |
| | | | | | | | | | | | | | | |
| MIXOGRAM (Quadromat Junior) | | | main | | | - televi | | | un in | | | atalau | | |
| Peak time, min | ave 3.1 | | min 2.3 | ma) 3.8 | | stdev 0.49 | 2.6 | | min 2.2 | max 3.2 | | stdev 0.37 | | |
| Tail height (6 min), mm | 51 | | 44 | 62 | | 4.82 | 48 | _ | 45 | 51 | | 2.10 | | |
| Number of samples | 51 | | | 3 | | 4.02 | 40 | | | 10 | | 2.10 | | |
| | | - | | | CO | MPOSIT | E SAMP | LES | | | | | | |
| CLASS AND GRADE | B1 | B2 | B3 | B4 | UT | COW | B1 | B2 | B3 | B4 | UT | cow | | |
| Bühler Extraction, % | 71.6 | 69.8 | 70.9 | - | 72.1 | - | 73.1 | 72.3 | - | - | - | - | | |
| | | | | | | | | | | | | | | |
| FLOUR | 1.5 | | | | | | | | | | | | | |
| Protein (12% mb), % | 11.9 | 10.5 | 9.4 | - | 11.1 | - | 12.0 | 10.6 | - | - | - | - | | |
| Ash (db), % | 0.57 | 0.55 | 0.59 | - | 0.56 | - | 0.55 | 0.56 | - | - | - | - | | |
| Colour, KJ (wet) | -4.3 | -4.6 | -4.6 | - | -4.4 | - | -4.7 | -4.6 | - | - | - | - | | |
| Colour, Konica Minolta CM5 (dry) | | | | | | | | | | | | | | |
| <u>L*</u> | 93.42 | 94.22 | 93.57 | - | 93.68 | - | 93.64 | 93.62 | - | - | - | - | | |
| a* | 0.49 | 0.35 | 0.43 | - | 0.40 | - | 0.44 | 0.44 | - | - | - | - | | |
| <u>b*</u> | 10.36 | 9.59 | 10.07 | - | 9.82 | - | 9.44 | 10.11 | - | - | - | <u> </u> | | |
| RVA | | | | | | | | | | | | | | |
| Peak Viscosity, cP | 2368 | 2338 | 2380 | - | 1877 | - | 2291 | 2302 | - | - | - | - | | |
| Minimum viscosity (Trough), cP | 1809 | 1803 | 1724 | - | 1613 | - | 1712 | 1700 | - | - | - | - | | |
| Final Viscosity, cP | 2598 | 2618 | 2753 | - | 2077 | - | 2559 | 2607 | - | - | - | - | | |
| Peak Time, min | 7.00 | 7.00 | 7.00 | - | 6.53 | - | 7.00 | 7.00 | - | - | - | - | | |
| | | 1 | | | | | | | | | | | | |
| GLUTEN | | | | | | | | | | | | | | |
| Wet gluten (14% mb), % | 33.3 | 29.1 | 25.0 | - | 30.8 | - | 34.4 | 29.1 | - | - | - | - | | |
| Dry gluten (14% mb), % | 11.5 | 9.8 | 8.1 | - | 10.5 | - | 11.5 | 9.6 | - | - | - | - | | |
| Gluten Index | 96 | 96 | 96 | - | 96 | - | 86 | 97 | - | - | - | - | | |
| FARINOGRAM | | | | | | | | | | | | | | |
| Water absorption (14% mb), % | 62.0 | 60.7 | 60.2 | _ | 62.2 | <u> </u> | 63.0 | 62.9 | l - | - | | - | | |
| Development time, min | 6.2 | 6.2 | 6.0 | - | 4.5 | - 1 | 6.0 | 5.5 | - | - 1 | - | - | | |
| Stability, min | 8.7 | 9.3 | 8.1 | - | 6.3 | - | 6.8 | 5.6 | - | - 1 | - | - | | |
| Mixing tolerance index, BU | 36 | 33 | 33 | - | 44 | - | 47 | 39 | - | - | - | - | | |
| 10100 | | | | | | | | | | | | | | |
| EXTENSOGRAM (45 min pull) | | | | | | | | | | | | | | |
| Area, cm ² | 129 | 112 | 91 | - | 93 | - | 90 | 68 | - | - | - | | | |
| Maximum height, BU Extensibility, mm | 411 | 443 | 396 | - | 338 | - | 328 | 272 | - | - | - | - | | |
| Extensibility, mm | 229 | 189 | 169 | - | 201 | - | 204 | 176 | - | - | - | | | |
| ALVEOGRAM | | | | | | | | | | | | | | |
| Strength (S), cm ² | 44.5 | 39.1 | 31.5 | - | 36.4 | - | 36.7 | 31.3 | - | - | - | - | | |
| Stability (P), mm | 82 | 94 | 94 | - | 83 | İ - | 87 | 90 | - 1 | - 1 | - | - 1 | | |
| Distensibility (L), mm | 132 | 96 | 69 | - | 107 | - | 98 | 85 | - | - | - | - | | |
| Configuration ratio (P/L) | 0.62 | 0.98 | 1.36 | - | 0.78 | - | 0.89 | 1.06 | - | - | - | - | | |
| | | | | | | | | | | | | | | |
| MIXOGRAM | | | | | | | | | | | | | | |
| Peak time, min | 2.8 | 2.7 | 2.9 | - | 2.4 | - | 2.3 | 2.3 | - | - | - | - | | |
| 1000 BAKING TEST | | | | | | | | | | | | | | |
| 100g BAKING TEST Loaf volume, cm ³ | 1099 | 982 | 869 | _ | 1147 | _ | 1061 | 946 | | | | | | |
| Evaluation (see page 79) | 0 | 0 | 0 | - | 0 | - | 0 | 0 | - | - | | | | |
| | | | , , | | | | | | | | | | | |



36





EXTENSOGRAM



