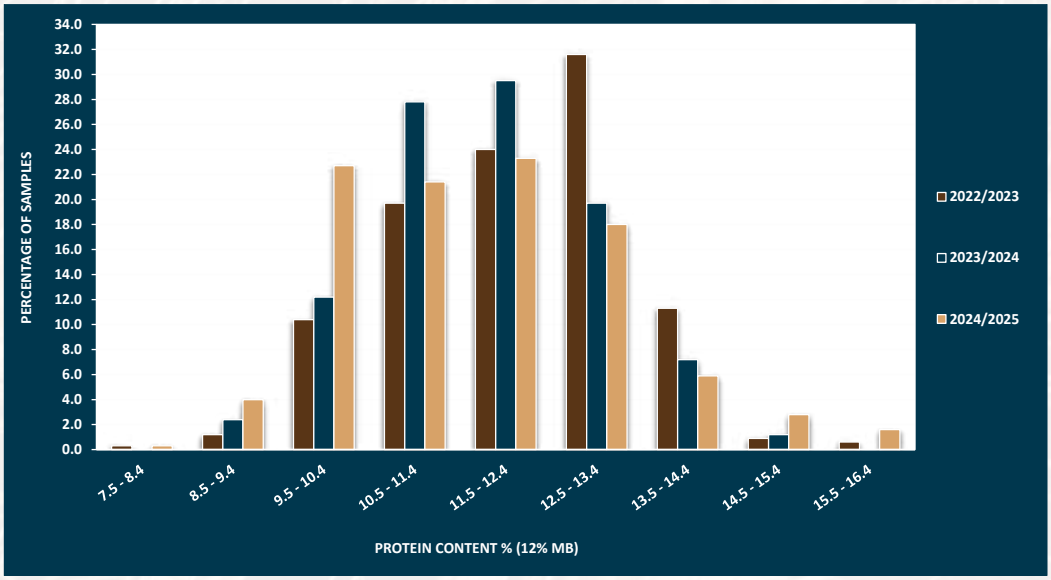
Crop quality of the 2024/25 season

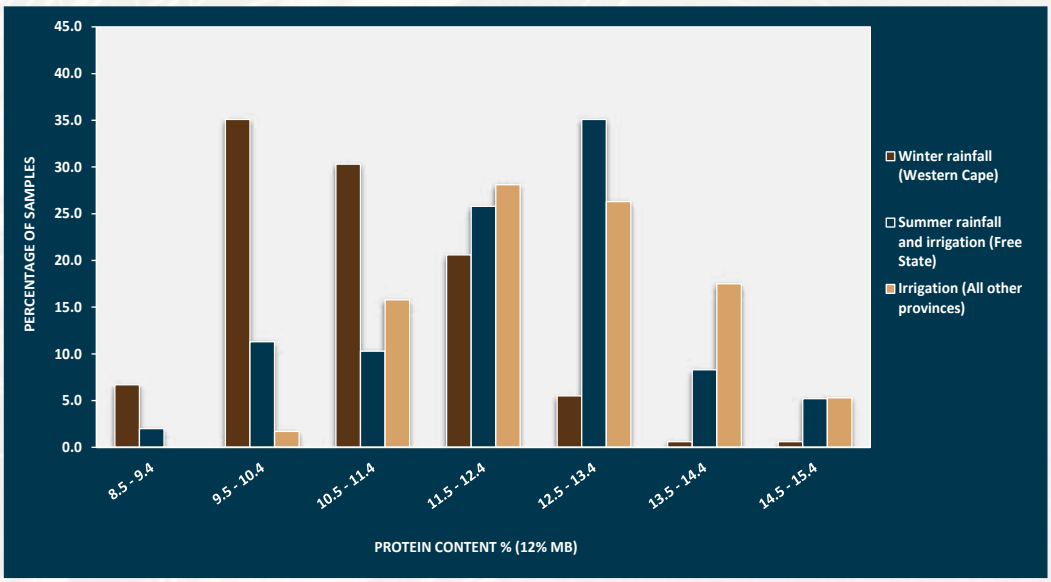
All national, seasonal and regional averages provided in this report are weighted averages.

The national whole wheat protein average decreased from 11.8% in the previous season to 11.6%. This is lowest national average since the 2013/14 season. The ten-year national average is 12.2%. Protein content is generally a function of the growing environment (soil and climatic conditions) as well as fertiliser application. Please see Graphs 22 and 23 for the protein content distribution over the last three seasons and between the three major production areas during 2024/25.



Graph 22: Protein content distribution over the last three seasons

The Summer rainfall and Irrigation areas of the Free State reported the highest whole wheat protein average, namely 12.6%. This production region traditionally reports the highest average protein content, however during the previous three seasons (2021/22 – 2023/24) the highest average protein contents were observed in the Irrigation areas. The Irrigation areas averaged 12.3% this season and the production regions in the Winter rainfall area of the Western Cape averaged 10.8%. See the Regional quality weighted averages summarized in Table 5 on pages 26 and 27.



Graph 23: Protein content distribution between the three production areas during the 2024/25 season

Flour protein content is on average 0.5 to 1.2% lower than that of whole wheat and averaged 10.8% this season, equal to the previous season. The difference in the protein content between the whole wheat and flour protein, can be attributed to the removal of the bran and aleuron layer as well as the germ during milling. The protein content is reported on a 12% moisture basis.

The average hectoliter mass of 80.3 kg/hl is 0.4 kg/hl lower than the previous season and equal to the ten-year national average. Twenty-three samples (7%) reported values below the 76 kg/hl minimum level for Super grade, Grade 1 and Grade 2 wheat. Eighteen of these samples originated in the Western Cape and five in the Free State. Five samples, three from the Western Cape and two from the Free State reported values below 74 kg/hl and were downgraded to Class Other wheat as a result. Regional averages ranged from 78.5 kg/hl in the Western Cape, 80.8 kg/hl in the Free State and 83.0 kg/hl in the Irrigation areas.

The average 1000 kernel mass, reported on a 13% moisture basis, decreased from 39.1 g last season to 38.4 g this season. The 2022/23 season's average was 37.0 g. Averages over production areas varied from 37.4 g in the Summer rainfall and irrigation areas of the Free State to 38.4 g in the Winter rainfall areas and 39.1 g in the Irrigation areas.

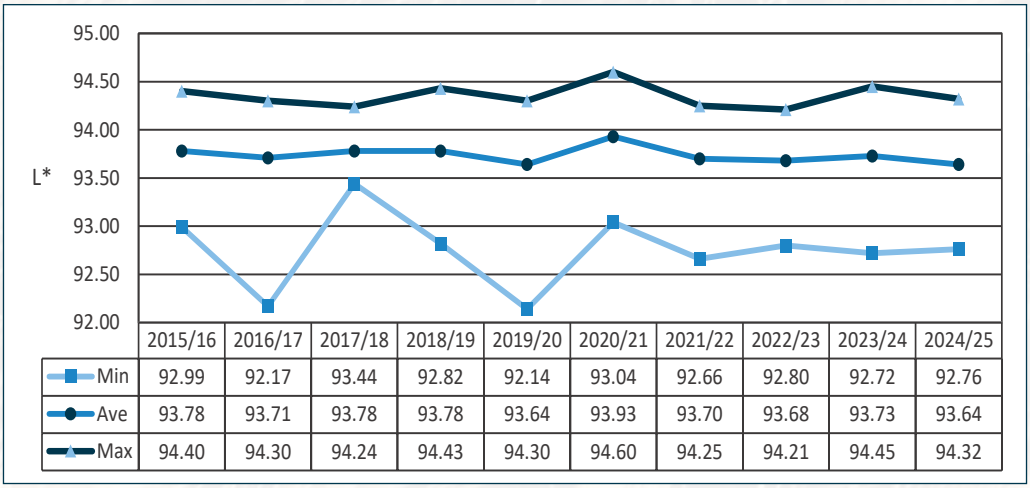
The weighted average percentage screenings obtained with a 1.8 mm slotted sieve was 1.52%, compared to the 1.45% and 1.69% of the previous two seasons respectively. The Summer rainfall and irrigation areas reported the highest average percentage namely 1.86%, followed by the 1.67% of the Winter rainfall areas and the 1.04% of the Irrigation areas. Almost 10% (32) of the 322 samples exceeded the 3% maximum permissible screenings level for Super grade to Grade 3. 53% of these samples originated in the Western Cape, 25% in the Free State, 13% in the Northern Cape, with single samples in North West and Limpopo.

The national weighted average falling number value was 371 seconds, compared to last season's average of 375 seconds. The ten-year weighted average value is 368 seconds. Only five (2%) of the samples analysed for this survey reported falling number values below 250 seconds. Of these, two samples (one from Mpumalanga and one from KwaZulu-Natal) were below 220 seconds and were downgraded to COW as a result. Last season 1% (4) samples analysed as part of the survey, was downgraded to COW due to a low falling number. Falling number values this season ranged between 194 and 542 seconds. All falling number values reported, are corrected for the altitude at which the test is performed.

The mixogram peak time on flour milled on the Quadromat Junior mill averaged 3.2 minutes compared to the 3.1 minutes of the 2023/24 season. The ten-year average is 3.0 minutes. The weighted mixogram peak time of the flour from the Bühler mill was 2.9 minutes and on par with the 3.0 minutes of the previous season. Mixing time is a measure of optimum dough development and thus also of protein quality.

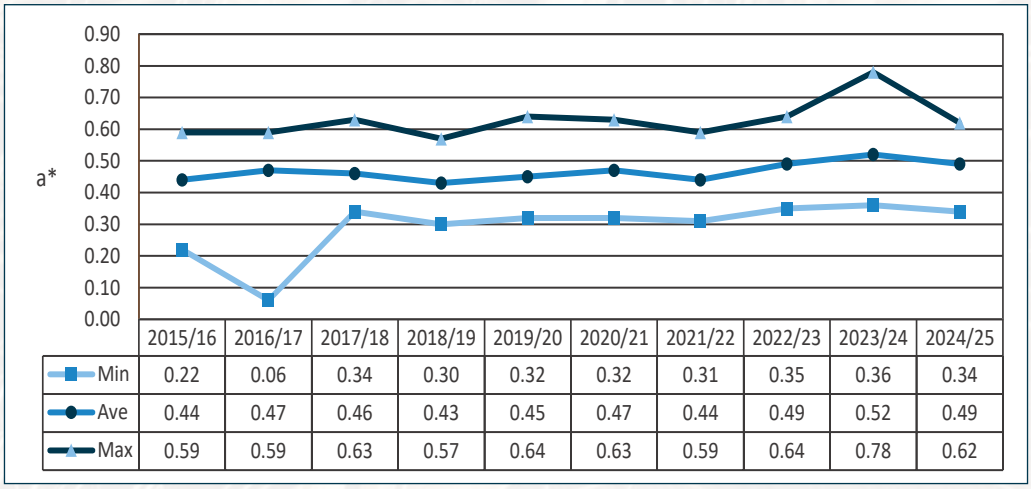
Extraction rate is an indication of the flour yield that can be obtained from a given amount of wheat. The extraction rate achievable on industrial scale mills is a number of percentage points higher than on laboratory scale mills due to an increase in roller surface area. Industrial type mills are also set to obtain optimum extraction rates within certain quality parameters, whereas the milling procedure and laboratory scale mills at SAGL is not set to optimise extraction but rather indicate differences in milling quality. Composite samples per class and grade per production region are cleaned, tempered/conditioned and then milled to facilitate flour and dough quality assessment. The weighted average Bühler MLU 202 laboratory mill extraction for the composite samples was 73.2% compared to the 72.8% of the previous season.

Colour is an important parameter of milled wheat since the colour of wheat flour affects the colour of the finished product, like the crumb colour of a loaf of bread. In general, a bright white colour flour is more desirable for most products. The CIE L*a*b* (CIELAB) colour model uses lightness (L*) and two colour values (a* and b*), these colour coordinates define where a specific sample's colour lies in a Cartesian graph. L* represents lightness (100 being white and 0 being black), a* represents green to red variation and b* represents variation from blue to yellow. Please see Graphs 24a (L*), 24b (a*) and 24c (b*) for a comparison of the ranges in the CIE L*a*b* values obtained over ten seasons. The minimum and maximum values are based on a single composite sample's result in a specific season.



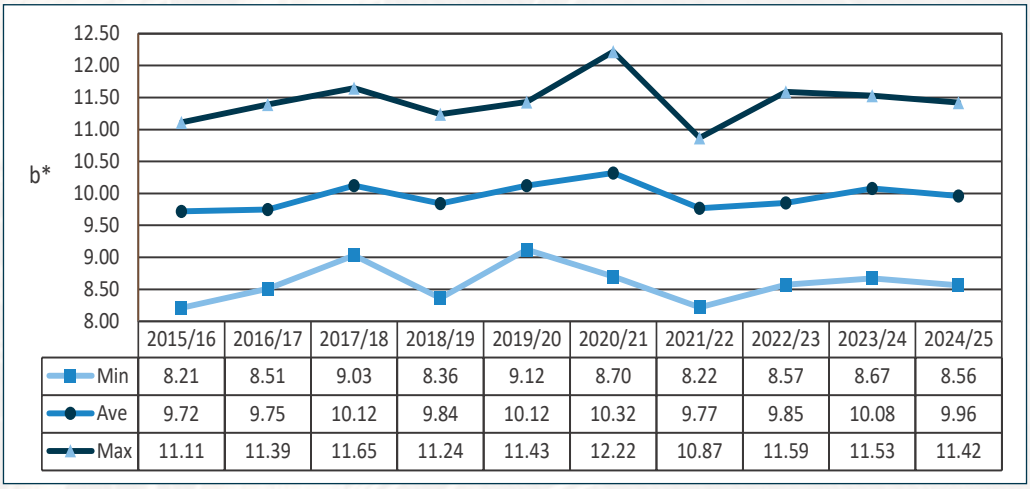
	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Min	92.99	92.17	93.44	92.82	92.14	93.04	92.66	92.80	92.72	92.76
Ave	93.78	93.71	93.78	93.78	93.64	93.93	93.70	93.68	93.73	93.64
Max	94.40	94.30	94.24	94.43	94.30	94.60	94.25	94.21	94.45	94.32

Graph 24a: Range of L* values over ten seasons



	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Min	0.22	0.06	0.34	0.30	0.32	0.32	0.31	0.35	0.36	0.34
Ave	0.44	0.47	0.46	0.43	0.45	0.47	0.44	0.49	0.52	0.49
Max	0.59	0.59	0.63	0.57	0.64	0.63	0.59	0.64	0.78	0.62

Graph 24b: Range of a* values over ten seasons



	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Min	8.21	8.51	9.03	8.36	9.12	8.70	8.22	8.57	8.67	8.56
Ave	9.72	9.75	10.12	9.84	10.12	10.32	9.77	9.85	10.08	9.96
Max	11.11	11.39	11.65	11.24	11.43	12.22	10.87	11.59	11.53	11.42

Graph 24c: Range of b* values over ten seasons

The average ash content was 0.59% on a dry basis (moisture free basis), equal to the previous two seasons' average. According to the Wheat product regulations (Government Notice No. R. 405 of 5 May 2017), cake flour's ash content should not exceed 0.65%, white bread flour's ash content should be between 0.60 to 1.00% and that of all-purpose wheat flour between 0.55 and 0.75%.

The Rapid Visco Analyser (RVA) average peak viscosity of the samples analysed was 2385 cP (centipoise) (1151 – 2829 cP), the minimum viscosity 1868 cP (828 – 2391 cP) and the final viscosity 2675 cP (1223 – 3221 cP). The range of the values are provided in brackets. The previous season the average peak viscosity was 2291 cP (centipoise) (1548 – 2703 cP), the minimum viscosity 1773 cP (1266 – 2154 cP) and the final viscosity 2576 cP (1654 – 3071 cP). The RVA test parameters were kept constant during all the analyses. Results are reported on a 14% moisture basis. The effect of sprout damage on starch characteristics as measured by the RVA instrument was again observed as during the 2019/20 season, with reductions in the peak, minimum and final viscosities and shortening of the peak time measured in minutes.

Both the wet and dry gluten content averaged 0.1% lower than in the 2023/24 season. The wet gluten content (14% mb) averaged 29.0% and the dry gluten, also on a 14% moisture basis, 9.5%. The average gluten index value was 92 compared to the 96 of the previous season. Gluten index values ranged between 75 and 98. The gluten index provides an indication of the gluten strength (higher being better) and is not influenced by the protein content. A value between 70 and 100 is generally accepted as good quality for pan bread baking purposes.

The farinograph analysis resulted in an average water absorption of 59.7% (60.0% the previous season) and an average development time of 5.2 minutes, slightly shorter than the 5.4 minutes of the previous season. The stability value of 10.3 minutes was 0.9 minutes shorter than the previous average (11.2 minutes). The mixing tolerance index compared well, 39 BU this season, 35 BU previously.

The average alveogram strength was 38.8 cm² and the average P/L value 0.64 (39.3 cm² and 0.71 the previous season). The distensibility of the dough (127 mm) increased slightly on average compared to the previous season (122 mm). The average stability value of 78 mm was similar to the 80 mm of the previous season.

The average extensogram strength of 106 cm² compared very well with the 110 cm² in the previous season. The maximum height in Brabender Units was slightly lower than last season, 397 BU in 2024/25 versus 403 BU in 2023/24. The average extensibility value this season (194 mm) was slightly shorter than the previous season's 198 mm.

The 100 g loaves baked using the straight-dough optimised bread making method, showed on average an excellent relationship between the protein content and the bread volume.

Please see the results per production region on pages 34 to 55.

The mycotoxin results are provided on pages 56 to 58.