

Regional Quality Summary

Winter Rainfall Area (Western Cape)

The Western Cape Province has a Mediterranean climate, characterised by cool, wet winters and hot dry summers. More than 80% of the rainfall occurs in winter between April and September, making the Western Cape a predominantly winter rainfall area. Mean annual rainfall varies from 200 to 450 mm. Arable land in this area covers approximately 1.5 million hectares, with winter cereals (wheat, barley, canola and oats) the major crops cultivated. At present, the Western Cape accounts for half of the wheat produced in South Africa. The Swartland (on the West Coast) and the Rûens (Southern Cape) are the main distinguishable geographic regions of the winter rainfall area.

These two separate wheat farming regions are divided into sub regions according to soil and climatic characteristics. The Swartland region is divided into four sub regions: High Rainfall, Middle Swartland, Koringberg and Sandveld. The Rûens region is divided into three sub regions namely the Western Rûens, Southern Rûens and Eastern Rûens.

The Rûens generally receives higher rainfall than the Swartland, but some areas of the Swartland have better, deeper soils. Wheat is generally planted from the second half of April until the middle of June and harvested during October and November.

The climatic conditions in the Swartland during the 2020 production season, was substantially better than in 2019. Rainfall started as early as April in most regions and the distribution of rainfall during the growing season (May to October) was optimal. The excellent climatic conditions are reflected in the yields obtained.

Climatic conditions in the Rûens were also much more favourable than during the 2019 production season. Less rainfall was received during April than in the Swartland, but good emergence and early development were obtained. Some dry spells occurred in the Eastern Rûens, resulting in lower yields in this area, while high rainfall occurred in other areas of the Rûens during harvesting. In general, the Rûens experienced an excellent year, also reflected in the yields obtained as observed in the Swartland.

The hectolitre mass averaged 78.1 kg/hl compared to the previous season's 77.2 kg/hl. The thousand kernel mass averaged 39.2 g, 5.2 g higher than the previous season and also 1 g higher than the national average of 38.2 g. The average falling number was 401 seconds, the highest of the three production areas. The whole wheat protein content averaged 10.9% (12% mb), a 1.9% decrease compared to the previous season.

The average percentage screenings of 1.75% was 0.64% lower than in the 2019/20 season. This season is the first of several seasons in which the Winter rainfall area's screening percentage is not the highest of the three production areas. The mixogram peak time (Quadromat Junior mill) averaged 3.0 minutes. The Bühler extraction averaged 73.5% (average of wheat grades Super to Grade 3 and COW), compared to the 74.0% in 2019/20. The average wet colour of the flour was -5.0 KJ units and the Konica Minolta CM-5 (dry colour) L* value (indicating lightness) 94.28, previously 93.90. Both these colour values indicate a white/light flour that is preferred by millers and bakers and which also compares well to previous seasons. The average ash content was 0.59%.

The flour protein content averaged 10.5%, compared to the 11.7% of the previous season. The average wet and dry gluten values were 27.8% and 9.4% (14% mb). The gluten index was 95, equal to the previous two seasons. The average farinogram absorption was 59.1% and the development time 4.8 minutes, the stability averaged 8.2 minutes. The average alveogram strength was 36.0 cm²

(40.8 cm² previously) and the P/L value averaged 0.73. The average strength on the extensogram was 85 cm² compared to 109 cm² last season. The decrease in strength values can be attributed to the lower protein content this season. The mixogram peak time on the Bühler milled flour averaged 2.8 minutes, slightly longer than in previous seasons. The 100-gram baking test showed on average an excellent relationship between protein content and bread volume.

Summer Rainfall and Irrigation Area *(Free State)*

The summer rainfall area (predominantly the Free State Province) is a major dryland wheat production region of South Africa. Considerable variation in precipitation, soil types and average temperature occurs from east to west. The Free State is therefore commonly divided into four distinct dryland wheat production regions, namely: the South Western Free State, North Western Free State, Central Free State and Eastern Free State.

Rainfall, particularly the distribution thereof through the growing season, is important for successful wheat production in the summer rainfall areas. Planting dates vary from early to late according to region and commences in May and continues until July. Harvesting takes place from late November to January.

Both the North Western and Eastern Free State received excellent rainfall during the period leading up to planting time. Good rains also occurred during the rest of the growing season (October to December 2020). Extremely high rainfall figures were recorded in the Eastern Free State, specifically at the Bethlehem weather station. These excessive rainfall events unfortunately resulted in a delay in the harvesting process and subsequent pre-harvest sprouting (sprouting in the ear).

The average hectolitre mass was 77.8 kg/hl, the lowest average of the three production areas. The average in 2019/20 was 77.4 kg/hl. The thousand kernel mass of 36.7 g, was 4.3 g higher than the previous season, but still the lowest of the three areas. The average percentage screenings was 2.16%, the highest average of the different production areas. The average whole wheat protein content of 13.5% was 0.2% lower than in the previous season, but still the highest of the three areas. The national average this season is 12.0%. The falling number averages 302 seconds, again the lowest average of the three production areas.

The mixogram (Quadromat Junior) peak time increased to 3.6 minutes, compared to the 3.1 minutes of the previous season and the national average of 3.2 minutes. The average Bühler extraction percentage in the Free State was 74.1%, equal to this season's national average. The Kent Jones flour colour was -4.3 KJ units and the Konica Minolta CM-5 L* value 93.43, compared to the -4.1 KJ and 92.93 of the previous season. The average ash content was 0.59% and the average flour protein content 1.0% lower than the previous season at 12.0%. The wet gluten content (14% mb) was 32.3% and the dry gluten 11.0%, decreasing by 2.2% and 0.9% respectively compared to the previous season. The gluten index averaged 96 as in 2019/20.

The average farinogram water absorption of 59.8% showed a 1.8% reduction compared to the previous season's 61.3% but was still the highest of the three areas this season. The development time averaged 6.9 minutes and the stability 9.7 minutes, respectively 0.7 and 1.1 minutes longer than in 2019/20. The average alveogram strength of 42.2 cm² was 5.9 cm² lower than the previous season, while the extensogram strength decreased by 7 cm² compared to last season. The Bühler milled flour had an average mixograph peak time of 3.3 minutes, the longest of the three areas. The national average is 2.9 minutes this season. The 100-gram baking test showed that the relationship between protein content and bread volume was excellent between the different grades.

Irrigation Areas

(Northern Cape, North West, Mpumalanga, Gauteng, Limpopo and KwaZulu-Natal)

Generally, the irrigation wheat production area of South Africa can be divided into four main geographic regions – the Cooler Central irrigation region in the Northern Cape, the Warmer Northern irrigation region in the North West, Limpopo and Gauteng provinces, the Highveld region in Mpumalanga and the Free State and lastly, the KwaZulu-Natal region.

Planting commences as early as the end of May and continues until July depending on the region. Harvesting takes place from the end of October to December also depending on the specific region.

Temperature conditions during this season showed slight deviations to the long-term average in all of the production regions. Minimum temperatures in the KwaZulu-Natal and Cooler Irrigation regions were below normal during July and August, which could explain the higher yields obtained in these regions. In the Highveld region, minimum temperatures were very close to the long-term average. In the Warmer Irrigation region, the minimum temperatures were slightly lower than the long-term average.

As in the previous season, the irrigation wheat had the highest weighted average hectolitre mass of the three production areas, namely 80.9 kg/hl. This value is slightly higher than the 80.7 kg/hl of the 2019/20 season. The thousand kernel mass decreased by almost a gram to 37.4 g. The average falling number was 363 seconds, 360 seconds in the previous season. The screenings averaged 1.07%, again the lowest of the three areas as observed in the previous three seasons.

The whole wheat protein content was on average 12.9% compared to the 12.6% of the previous season. The flour protein content was 11.8%, 11.6% previously. The mixogram (Quadromat Junior) peak time averaged 3.1 minutes, similar to the previous season and the national average. The average Bühler extraction was 74.9%, again the highest of the three areas.

The dry colour L* value was 93.71 and the Kent Jones wet colour value -4.7 KJ units, very similar to the previous season. The ash content averaged 0.61%. The average wet and dry gluten values were 31.6% and 10.8% respectively, both higher than in the previous season. The gluten index averaged 95, equal to the previous season. The average farinogram water absorption was 59.5% (60.3% during the previous season), the development time and stability averaged 5.9 minutes and 8.2 minutes respectively.

Alveogram strength averaged 39.5 cm² and the P/L 0.51 (41.7 cm² and 0.65 respectively the previous season). The average extensogram strength was 111 cm², compared to 112 cm² last season. The mixogram peak time averaged 3.0 minutes. The relationship between protein content and 100 g bread volume was shown to be excellent.

Production area and climatic condition information were obtained from the National Wheat Cultivar Evaluation Programme reports of the ARC-Small Grain.

Please see the results provided per individual production region on pages 38 to 63.

