

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 2021 production season, was very favourable for wheat production. Rainfall started as early as April in most regions and the distribution of rainfall during the growing season (May to October) was optimal in most areas. The excellent climatic conditions are reflected in the yields obtained.

The Rûens experienced a very wet 2021 production season. Rainfall exceeded 300 mm during the month of May with follow up rains received. High rainfall also occurred in some areas during harvesting (November through December) resulting in late harvesting and some grain losses. In general, the Rûens experienced an excellent year, also reflected in the yields obtained.

The hectolitre mass averaged 79.2 kg/hl compared to the previous season's 78.1 kg/hl. The thousand kernel mass averaged 40.1 g, 0.9 g higher than the previous season and just lower than the national average of 40.3 g. The average falling number was 386 seconds, the highest of the three production areas. The whole wheat protein content averaged 11.1% (12% mb), a 0.2% increase compared to the previous season.

The average percentage screenings of 1.43% was 0.32% lower than in the 2020/21 season. This season is the second consecutive season 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 3.1 minutes. The Bühler extraction averaged 73.1% (average of wheat grades Super to Grade 3 and COW), compared to the 73.5% in 2020/21. The average wet colour of the flour was -5.0 KJ units and the Konica Minolta CM-5 (dry colour) L* value (indicating lightness) 93.97, previously 94.28. 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 0.62%.

The flour protein content averaged 10.6%, slightly higher than the 10.5% of the previous season. The average wet and dry gluten values were 27.4% and 9.2% (14% mb). The gluten index averaged 96, 95 during the previous two seasons. The average farinogram absorption was 59.5% and the development time 4.3 minutes, the stability averaged 9.6 minutes. The average alveogram strength was 39.1 cm² (36.0 cm² previously) and the P/L value averaged 0.78. The average strength on the extensogram was 91 cm² compared to 85 cm² last season. The mixogram peak time on the Bühler milled flour averaged 2.7 minutes, compared to the 2.8 minutes in the previous season. 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/early December to January.

The Eastern Free State received excellent rainfall during spring. Extremely high rainfall figures were also recorded in the Eastern Free State during wheat ripening 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) causing low falling numbers.

The average hectolitre mass was 78.8 kg/hl, the lowest average of the three production areas. The average in 2020/21 was 77.8 kg/hl. The thousand kernel mass of 39.7 g, was 3 g higher than the previous season, but still the lowest of the three areas. The average percentage screenings was 1.49%, the highest average of the different production areas. The average whole wheat protein content of 12.2% was 1.3% lower than in the previous season, but still higher than the national average this season of 11.9%. The falling number averaged 288 seconds, again the lowest average of the three production areas.

The mixogram (Quadromat Junior) peak time of 3.5 minutes compared well with the 3.6 minutes of the previous season. The national average was 3.2 minutes. The average Bühler extraction percentage in the Free State was 73.5%, this season's national average was 73.9%. The Kent Jones flour colour was -4.9 KJ units and the Konica Minolta CM-5 L* value 93.50, compared to the -4.3 KJ and 93.43 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 11.0%. The wet gluten content (14% mb) was 28.8% and the dry gluten 9.5%, decreasing by 3.5% and 1.5% respectively compared to the previous season, which can be explained by the lower protein content. The gluten index averaged 96 as in the previous two seasons.

The average farinogram water absorption of 60.3% showed a 0.5% increase compared to the previous season's 59.8% and was as in the previous season the highest of the three areas. The development time averaged 5.9 minutes and the stability 9.9 minutes, compared to the 6.9 and 9.7 minutes respectively in 2020/21. The average alveogram strength of 43.6 cm² was slightly higher than in the previous season, while the extensogram strength decreased by 7 cm² to 106 cm² compared to last season. The Bühler milled flour had an average mixograph peak time of 3.2 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)

Irrigation wheat is increasingly becoming important to the South African wheat industry, as the area under dryland wheat in the summer rainfall area decreased significantly over the last number of years. 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 second half 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.

2021 was an exceptionally wet year as record rainfall figures were reported in most production regions. Hailstorms were also prevalent. The wet conditions during wheat ripening had a negative effect on quality, especially falling numbers. Minimum temperatures were close to long-term averages.

As in the previous season, the irrigation wheat had the highest weighted average hectolitre mass of the three production areas, namely 81.3 kg/hl. This value is slightly higher than the 80.9 kg/hl of the 2020/21 season. The thousand kernel mass increased by 3.6 g to 41.0 g. The average falling number was 327 seconds, 363 seconds in the previous season. The screenings averaged 0.76%, again the lowest of the three areas as observed in the previous four seasons.

The whole wheat protein content was on average 12.5% compared to the 12.9% of the previous season. The flour protein content was 11.3%, 11.8% previously. The mixogram (Quadromat Junior) peak time averaged 3.2 minutes, similar to the previous season and the national average. The average Bühler extraction was 74.8%, again the highest of the three areas.

The dry colour L* value was 93.65 and the Kent Jones wet colour value -5.0 KJ units, very similar to the previous season. The ash content averaged 0.60%. The average wet and dry gluten values were 30.1% and 10.0% respectively, both lower than in the previous season. The gluten index averaged 95, equal to the previous season. The average farinogram water absorption was 60.1% (59.5% during the previous season), the development time and stability averaged 6.5 minutes and 9.6 minutes respectively.

Alveogram strength averaged 44.5 cm² and the P/L 0.62 (39.5 cm² and 0.51 respectively the previous season). The average extensogram strength was 111 cm², equal to 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 ARC-Small Grain's National Small Grain Cultivar Evaluation Programme reports for the 2021 season.

Please see the results provided per individual production region on pages 37 to 64.

