

REGIONAL QUALITY SUMMARY

WINTER RAINFALL AREA (Western Cape)

The Western Cape Province has a Mediterranean climate, characterized 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. 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 the following sub regions: High Rainfall Area, Middle Swartland, Koringberg and Sandveld. The Rûens region is divided into 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 to December.

The climatic conditions in the Swartland region showed better prospects prior to planting, compared to the previous season. Soil moisture was sufficient in 2018, in contrast to 2017 when there was very little to no soil moisture during planting. This can be attributed to higher rainfall during April and May 2018.

Climatic conditions in the Rûens (apart from the Western Rûens) leading up to planting, showed bleak prospects for the year ahead. As was the case in 2017, the Eastern Rûens region was the hardest hit by dry conditions pre and post planting. Although good rains were recorded during June and July, the yield potential was already lower than normal. Rainfall for 2018 was only about 10% more than that of 2017. Most of the rain occurred in the later part of the growing season and that had a negative impact on growth and yield. Excessively warm temperatures in October also played a part in lower yields.

The hectolitre mass averaged 79.9 kg/hl compared to the previous season's 79.1 kg/hl. The thousand kernel mass averaged 39.0 g, 2.8 g higher than the previous season and compared well with the national average of 39.2 g. The average falling number was 392 seconds, while the whole wheat protein content averaged 11.8% (12% mb).

The percentage screenings of 1.80% was similar to the previous season's 1.79% and still the highest average of the three areas, as in previous seasons. The mixogram peak time (Quadromat Junior mill) averaged 2.8 minutes, equal to the national average. The Bühler extraction averaged 70.2% (average of wheat grades B1 to B4 and UT), lower than the 71.5% in 2017/2018. The average wet colour of the flour was -4.5 KJ units and the dry colour L* value (indicating lightness) 93.93, previously 93.77. These colour values indicate a white/light flour that is preferred by millers and bakers and compare well to previous seasons. The average ash content was 0.60%.

The flour protein content averaged 10.6%, lower than the 12.0% of the drought stricken previous season. The average wet and dry gluten values of 28.7% and 9.9% (14% mb) were in line with values obtained in seasons with normal rainfall. The gluten index was 95. The average farinogram absorption was 59.5% and the development time 4.4 minutes, the stability averaged 6.8 minutes. The average alveogram strength was 32.8 cm² and the P/L value averaged 0.81. The average strength on the extensogram was 84 cm². The rheological tests' values this season were more in line with long term averages, compared to the previous season, where high protein contents due to the drought conditions resulted in increased rheological strength. The mixogram peak time on the Bühler milled flour averaged 2.6 minutes, similar to last 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 December to January.

Climatic conditions before and during the growing season were very similar to the 2017/2018 season. Good rains occurred in the fallow period from January to March in all regions. During January the rainfall was close to the long-term average, in February and March however the precipitation was almost three times more than the average figures. In the months leading up to planting time (April to June), low rainfall figures were recorded in all regions. This led to sub-optimum conditions during planting time and the early stages of development, unless soil moisture conservation practices were at an optimum level. Rain was recorded monthly from the middle of August to November, but unfortunately extremely high temperatures during these months neutralized the possible positive effect of these rainfall events.

The average hectolitre mass was 81.1 kg/hl, 1.2 kg/hl higher than in 2017/2018. The thousand kernel mass of 36.1 g, was 1.8 g lower than the previous season. The average percentage screenings was 1.46%, similar to the national average of 1.49%. The average whole wheat protein content increased from 12.6% the previous season to 13.1% (12% mb) this season. The falling number of 410 seconds was the highest average of the three areas.

The mixogram (Quadromat Junior) peak time was 2.9 minutes, equal to the previous season and slightly higher than the national average. The average Bühler extraction percentage in the Free State was 71.4% and compared well with the national average of 71.3%. The Kent Jones flour colour was -4.4 KJ units and the Konica Minolta CM-5 L* value 93.53, compared to the -4.1 KJ and 93.69 of the previous season. The average ash content was 0.60% and the average flour protein content 0.7% higher than the previous season at 11.6%. The wet gluten content (14% mb) was 31.9% and the dry gluten 10.6%, an increase of 2.0% and 0.6% respectively compared to the previous season. The gluten index averaged 91.

The average farinogram water absorption of 61.3% was higher than the previous season's 59.8% and also the highest of the three areas this season. The development time averaged 5.5 and the stability 7.7 minutes, both 0.5 minutes longer than in 2017/2018. The average alveogram strength of 36.8 cm² was 1.2 cm² higher than the previous season, while the extensogram strength equaled the 96 cm² of last season. The Bühler milled flour had an average mixograph peak time of 2.6 minutes, slightly shorter than last season's 2.8 minutes. 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 areas 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 late 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 higher than the long-term average.

The irrigation wheat had the highest weighted average hectolitre mass of 83.1 kg/hl, as in the previous season. The thousand kernel mass increased by 0.6 g to 40.2 g. The average falling number was 399 seconds. The screenings averaged 1.07%, comparing very well with the 1.05% of the previous season and was also the lowest of the three areas as in 2017/2018.

The whole wheat protein content was on average 12.1%, 0.2% higher than last season and equal to this season's national average. The flour's protein content of 11.0%, equaled that of the previous two seasons. The mixogram (Quadromat Junior) peak time averaged 2.9 minutes. The average Bühler extraction was 71.9%, 2.1% lower than last season's average.

The dry colour L* value was 93.79 and the Kent Jones wet colour value -4.7 KJ units. The ash content averaged 0.60%. The wet and dry gluten contents were 30.2% and 10.1% respectively and the gluten index 94, all three these values were slightly higher than in the previous season. The average farinogram water absorption was 60.8% (60.1% during the previous season), the development time and stability averaged 6.6 minutes and 6.8 minutes respectively.

Alveogram strength averaged 34.8 cm² and the P/L 0.79 (38.9 cm² and 0.80 respectively the previous season). A P/L value of 0.79 is very well situated within the general acceptable range of P/L values for bread baking purposes. The average extensogram strength was 94 cm², compared to 106 cm² last season. Lower strength values compared to the previous season, at equal flour protein content, indicate lower rheological quality this season. The mixogram peak time averaged 2.6 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 36 to 63.