

## Met Data summary for September 2023 for the Blenheim Meteorological station located at the Grovetown Park campus of the Marlborough Research Centre.

September 2023 recorded 178 sunshine hours, above average mean temperature, average wind-run, below average number of ground frosts, below average rainfall.

**Table 1: Weekly weather data during September 2023**

	Mean (°C)	Mean Max (°C)	Mean Min (°C)	Ground Frosts	Air Frosts	Rainfall (mm)	Sunshine (hours)	Wind-run (km)
1 <sup>st</sup> - 7 <sup>th</sup>	11.3 (+0.1)	16.2 (=)	6.3 (+0.3)	3	0	3.2	37.2	200.1
8 <sup>th</sup> - 14 <sup>th</sup>	12.3 (+1.1)	17.6 (+1.4)	7.1 (+1.1)	0	0	12.2	55.1	293.1
15 <sup>th</sup> - 21 <sup>st</sup>	14.6 (+3.4)	19.5 (+3.3)	9.8 (+3.8)	0	0	0.8	56.7	389.4
22 <sup>nd</sup> - 28 <sup>th</sup>	10.7 (-0.5)	13.1 (-3.1)	8.4 (2.4)	0	0	32.0	14.4	149.0
29 <sup>th</sup> - 30 <sup>th</sup> (2 days)	10.2 (-1.0)	15.7 (-0.5)	4.7 (-1.3)	0	0	0.0	14.6	285.0
1 <sup>st</sup> - 30 <sup>th</sup> September 2023	12.1 (+0.9)	16.5 (+0.3)	7.7 (+1.7)	3 (1.8 less)	0 (0.8 less)	48.2 (92%)	178.0 (91%)	259.7 (95%)
September LTA (1986 - 2022)	11.2	16.2	6.0	4.8	0.8	52.5	196.1	273.9

LTA – Long Term Average

### Temperature

Mean temperature of 12.1°C was 0.9°C above the long-term average (LTA) temperature for September (1986-2022).

September 2022 mean temperature was 11.6°C.

September 2021 mean temperature was 11.1°C.

September 2020 mean temperature was 11.9°C.

The average daily maximum temperature in September 2023 of 16.5°C was 0.3°C above the LTA

The average daily minimum temperature in September 2023 of 7.7°C was 1.7°C above the LTA

The warmest day was 20 September, which recorded a maximum air temperature of 21.2°C.

The coldest day was 2 September, which recorded an air minimum temperature of 1.9°C and grass minimum temperature of -1.7°C.

### Frosts

3 ground frosts were recorded during September 2023 and 0 air frosts

6 ground frosts were recorded during September 2022 and 1 air frost

8 ground frosts were recorded during September 2021 and 1 air frost

LTA is 4.8 ground frosts and 0.8 air frosts

### Sunshine

178 hours sunshine for September is 91% of the LTA for September of 196.1 hours.

September 2022 recorded 195.4 hours sunshine

September 2021 recorded 223.9 hours sunshine

September 2020 recorded 260.3 hours sunshine (highest September total on record).

Total sunshine for January to September 2023 is 1726 hours; 97% of the LTA of LTA of 1787.4.

Napier was the sunniest town in New Zealand in September 2023 with 221 hours sunshine.

## **Rainfall**

Rainfall total of 48.2 mm is 92% of the LTA for September of 52.5 mm.

September 2022 rainfall was 38.6 mm.

September 2021 rainfall was 52.6 mm.

September 2020 rainfall was 64.6 mm.

The January to September 2023 rainfall total of 392.8 mm is 80% of the LTA (1986 to 2022).

## **Wind**

Average daily wind-run for Blenheim during September 2023 was 259.7 km, 95% of the LTA of 273.9 km.

9 days during September exceeded the LTA daily wind-run total of 273.9 km.

The windiest day of the month in Blenheim was 17 September with 678 km wind-run. This is the highest daily wind-run total for Blenheim in the past 10 years. The most recent higher total is 711 km wind-run recorded on 10 September 2013.

The average wind speed on 17 September was 28.25 km/hr, compared to average September wind speed of 11.4 km/hr.

The maximum wind-speed (wind gust) during September was 86 km/hr recorded at 1328 on 17 September. This is the strongest wind gust since 14 October 2013, which recorded a gust of 86.7 km/hr.

According to the Beaufort wind force scale a wind speed of 86 km/hr is classified as a 'Strong Gale' and is able to cause "slight structural damage - chimney pots and slates removed. (Not too many of those left these days). The Beaufort scale was developed in 1805.

Maximum wind gusts under New Zealand's climatic conditions occur over a very short time interval. In order to capture the maximum wind gusts, wind speed at the Blenheim weather station is recorded every three seconds. Although New Zealand does not experience hurricanes (cyclones, typhoons) some coastal areas can occasionally record hurricane force wind gusts; i.e. very short duration wind gusts in excess of 118 km/hr. In an actual hurricane the wind gusts are experienced over a prolonged period of time and do much more damage over a widespread area, than a very short, high speed wind gust in a very confined area in New Zealand.

## **Evapotranspiration**

Penman evapotranspiration for September 2023 was 74.5 mm, compared to the LTA of 72.8 mm.

## **Soil Moisture**

Shallow soil moisture (5-35 cm) on 1 September was 33.6%. With only 16.2 mm rain during the first three weeks of September the shallow soil moisture slowly dropped to 30.6% by 21 September. During the subsequent 7 days there were 32 mm of rain so that by 30 September the soil moisture had risen to 37.7%.

## **Growing Season**

We were anticipating that the 2023-24 growing season would get off to a later start in September 2023 compared to recent years, due to the very cool temperatures in August 2023. However, temperatures in the second and third weeks of September 2023 were well above average. These warm temperatures meant that budburst of grapes in the lower Awatere and central Wairau plains was earlier than we had originally anticipated.

NIWA are predicting a 45% chance of above average, 40% chance of average and only 15% chance of below average temperatures for Marlborough over the whole 3-month period from October to December 2023. The high chance of average to above average temperatures doesn't mean that we won't get periods when the temperature is below average.

*Plant & Food Research / Marlborough Research Centre*

[rob.agnew@plantandfood.co.nz](mailto:rob.agnew@plantandfood.co.nz)



MARLBOROUGH  
RESEARCH  
CENTRE

Te Rito Hiranga o Wairau