

Table 1: Blenheim Weather Data – February 2005

	February 2005	February LTA	Period of LTA	Deviation from or % of LTA	February 2004
Growing Degree Days for month	260.3	222.1	(1947-1978)	117%	205.5
Growing Degree Days Total from July onwards	922.1	958.7	(1947-1978)	96%	992.3
Mean Maximum (°C)	24.8	23.5	(1932-1980)	+1.3°C	21.9
Mean Minimum (°C)	13.8	12.1	(1932-1980)	+1.7°C	12.3
Mean Temp (°C)	19.3	17.8	(1932-2000)	+1.5°C	17.1
Grass Frosts (<= -1.0°C)	0	0.1 0.05	(1932-1980) (1986-2003)		0
Air Frosts (0.0°C)	0	0 0	(1932-1980) (1986-2003)		0
Sunshine hours	237.5	227	(1935-2000)	105%	173.0
Sunshine hours – lowest		160	1938		
Sunshine hours – highest		298	1968		
Sunshine hours total - 2004	511.3	488	(1935-2000)	105%	428.7
Rainfall (mm)	27.6	45	(1930-2000)	61%	123.8
Rainfall (mm) – lowest		1	1973 & 1983		
Rainfall (mm) – highest		129	1936		
Rainfall total (mm) – 2004	92.8	95	(1930-2000)	98%	148.8
Evapotranspiration – mm	114.9	109.6	(1996-2004)	105%	105.5
Avg. Daily Windrun (km)	260.5	284.5	(1996-2004)	92%	312.9
Mean soil temp – 10cm	19.7	17.9	(1986-2004)	+1.8°C	16.4
Mean soil temp – 30cm	21.2	20.3	(1986-2004)	+0.9°C	18.7

February 2005 can be described as hot, dry and sunny. This was in marked contrast to February 2004, which was cold, very wet and cloudy.

The mean temperature of 19.3°C for February was 1.5°C above normal. February 2004 was 0.7°C below normal. February 2005 was the warmest February since 1998. February 1998 being the hottest month ever recorded in Blenheim with a mean temperature of 20.7°C. In the past 20 years only February 1990 and 1998 have been warmer than February 2005.

Although February was warm it didn't set any records with sunshine hours. About half the days during the month were fairly much cloud free and therefore recorded close to maximum sunshine. However on the other days sunshine hours were restricted due to cloud cover. As a matter of interest although Blenheim and Nelson have the reputation as being the sunniest towns in New Zealand the amount of sunshine recorded is actually only about 58 percent of possible sunshine. In other words for 42% of the daylight hours the sun is blocked by clouds. One of the consequences of being an island nation surrounded by ocean.

Blenheim's rainfall for February 2005 of 27.6mm was 61 percent of the long-term average. However of that 27.6mm of rain, 22.8mm was recorded on the 11th, 13th and 14th. From the 10th of January until the 10th of February only 1.0mm rain was recorded.

The potential evapotranspiration for February was 114.9mm. Bearing in mind that this is the calculated amount of evapotranspiration for a grass surface. The total evapotranspiration on a number of the hot days during February was not particularly high. This was largely due to the fact that there was not a lot of wind. Days with high wind run really drive up the potential evapotranspiration.

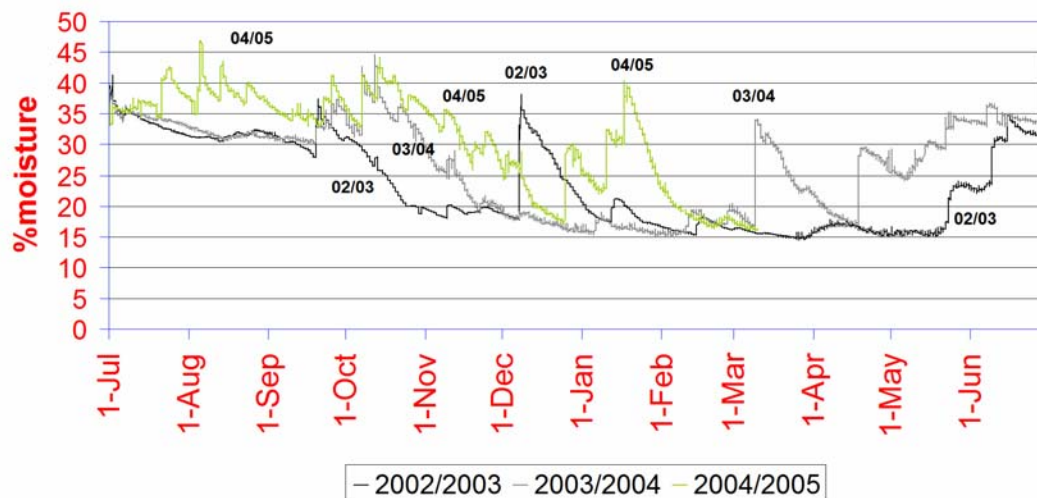
Total evapotranspiration for January and February was 250.5mm compared to total rainfall at 92.8mm. i.e. evapotranspiration was 2.7 times the rainfall. It is this water deficit over the summer

months that causes Marlborough to turn brown fairly quickly. Not due to low rainfall, as many in Marlborough would believe. I have mentioned in previous articles that Marlborough's average monthly rainfall is fairly consistent at around 50mm per month. Obviously large fluctuations from the mean occur on a regular basis but we do not receive periods each year with almost no rainfall, as happens in some fruit growing regions elsewhere in the world.

Soil Moisture

Figure 1 presents a picture of soil moisture at the Blenheim weather station under a mown grass

Figure 1: Blenheim soil moisture - 5 to 35cm depth under a mown grass surface with no irrigation



surface. As the moisture is being measured in the upper part of the soil profile it responds very rapidly to large amounts of rainfall. The grass is also extracting moisture from the soil and consequently the soil dries out rapidly without rainfall. It is interesting to note the marked differences in soil moisture over the three seasons. The lack of rainfall from 10 January to 10 February 2005 caused the soil moisture to drop very rapidly from about 39 percent to 17 percent by mid February. As of mid February early March the soil moisture for all three seasons converges for a brief period.

Growing Degree Days

In the second to last paragraph in last month's Met Update I said: "with the current growing degree-day total well below average it is never going to get back up close to average this season. The temperature would have to be massively above average for this to occur". I began to have my doubts that I was going to be proved wrong. The seven day period from the 3rd to the 9th of February was just that; massively above average with an average temperature of 21.5°C. This was the hottest week since late January / early February 1998. That week alone reduced the growing degree-day deficit from 64 to 34 compared to the long-term average. However since then the deficit has not been reduced much further.

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