

March 31, 2020

Monthly Weather Summary – March 2020

General

March was rainy with temperatures slightly above average. Rainfall was considerably above average, especially in the center and the south of the country. In southern Israel, rainfall was up to 2-3 times the average, making it the rainiest March for this region since 1991. During the month, an extreme storm event occurred, with strong easterly winds causing the uprooting of trees and electricity cuts in many places, and strong southerly winds generating strong waves causing considerable damage to the Eilat sea front.

The accumulated rainfall from the beginning of the season until the end of March is 120-130% of average for most regions of the country, and in some cases it is more than 150%.

Temperatures in March were slightly above the average. There was not any outstanding Sharav¹, though there were several hot and dry days.

Rain in March

March was rainier than average in most regions of the country. Along the Coastal Plain rainfall was 80-110 mm, which is 130-160% of the monthly average, and in the southern Coastal Plain it accounts for 150-200% of the average. In Galilee and the Golan, rainfall was 90-130 mm, or 110-140% of the average. However, in the northeastern parts of this region and in the northern valleys rainfall was close to average (Table 1).

In Samaria and Judea rainfall amounts were 120-150 mm (140-180% of the average), and in Gush Etzion 150-200 mm – 200% and more of the monthly average. In the south of the country rainfall was considerably above average and extraordinarily high with respect to the past. In the northern Negev – 80-100 mm; in the central Negev – 40-60 mm; in the Arava – 15-30 mm. This was one of the rainiest March on record in the south of the country since measurements began.

In many stations, such as Be'er Sheva, Sede Boqer, Be'eri, and Besor, this was the second or third rainiest month on record. In Mizpe Ramon (57 mm) and Eilat (38 mm) this was the rainiest March on record over 60 years ago.

¹ Hot dry weather.

Table 1: Rainfall in March 2020 in comparison with the long term average¹

	Station	Rainfall in March 2020 (mm)	Long term average for March (mm)	% of March Average
Coastal Plain and the Shfela ²	Nahariyya	89	62	144%
	Evron	92	64	143%
	Haifa (Port)	92	60	153%
	En HaShofet	105	77	136%
	En HaHoresh	81	59	137%
	Kefar Hess	108	66	164%
	Nir Eliyyahu	97	63	154%
	Nahshonim	100	56	179%
	HaKefar HaYarok	86	62	139%
	Miqwe Yisrael	95	50	190%
	Bet Dagan	90	56	161%
	Gan Shlomo	88	55	160%
	Qevuzat Yavne	90	53	170%
	Nizzanim	83	47	177%
	Negba	110	55	200%
	Dorot	95	42	226%
	Be'eri	110	38	289%
	Besor	86	25	344%
Northern Mountains	Merom Golan	121	115	105%
	Gamla	97	76	128%
	Elon	139	92	151%
	Kefar Gil'adi	110	112	98%
	Meron	148	109	136%
	Zefat Har Kenaan	119	83	143%
	Yodfat	89	71	125%
Northern Valleys	Newe Ya'ar	71	63	113%
	Merhavva	66	55	120%
	Dafna	63	80	79%
	Kefar Blum	72	65	111%
	Ayelet HaShahar	97	55	176%
	Ginnosar	64	56	114%
	Zemah	49	48	102%
	Sede Eliyyahu	48	36	133%
Central Mountains	Kedumim	123	82	150%
	Eli	128	78	164%
	Zova	184	91	202%
	Jerusalem Centre	120	75	160%
	Beit Jimal	121	67	181%
	Alon Shevut	191	76	251%
Negev	Arad	46	20	230%
	Be'er Sheva	98	29	338%
	Sede Boqer	38	16	238%
	Mizpe Ramon	57	Record since 1953	
Jordan Valley and the Arava ³	Gilgal	42		
	Sedom	16		
	Hatzeva	12		
	Paran	26		
	Yotvata	13		
	Elat	31	Record since 1949	

¹ Multi-year average pertains to 1981-2010. For stations that were not active, averages are computed for these years.

² In arid regions, there is no significance to multi-year averages of months due to the extreme fluctuations of rainfall in these rain sequences.

³ Foot hills between the Coastal Plain and the Central Mountains.

Rain events

a. March 5-6:

In the southern Coastal Plain, the Shfela, and around the Gaza strip, rainfall was 15-35 mm, with 57 mm in Nahal Oz. In Samaria and Judea: 15-30 mm; in the northern and central Coastal Plain and Galilee – 5-10 mm, with 28 mm in Elon; in the Golan and northern valleys – several mm; in the northern Negev – 5-8 mm; in the Jordan valley and Arava – several mm, with 16 mm in Bet HaArava.

b. March 12-14:

Very stormy weather. In Gush Etzion rainfall amounts were 60-80 mm, in the northern Negev – 30-50 mm, with 65 mm in Be'er Sheva; in the central and southern Negev 20-40 mm, with 47 mm in Mizpe Ramon; in the Arava – 15-30 mm; in the central and southern Coastal Plain, Samaria, Judea, and the upper Galilee – 30-50 mm; in the northern Coastal Plain – 20-40 mm; in the Golan and northern valleys – 15-25 mm.

This event was accompanied by strong easterly followed by southerly winds that generated very high waves in the Gulf of Eilat causing considerable damage to the Eilat seafront. Trees were uprooted in the Lachish region, and elsewhere, electricity poles were damaged, with subsequent electricity cuts. In several stations record wind speeds were noted, particularly in Mount Harasha in the Binyamin region – 111 km/hr and a gust of 137 km/hr. Previous records there were 98 and 113 km/hr, respectively.

c. March 17-21:

In upper Galilee and the Golan – 50-80 mm, with 109 mm in Hurfesh and 104 mm in El Rom; in Samaria – 50-80 mm; in the northern regions and along the Coastal Plain (from the north and up to south of Ashkelon), Samaria and Judea – 40-60 mm. in the high parts of the central mountains and Gush Etzion – over 80 mm, with 85 mm in Migdal Oz, and 83 mm in Pesagot; around the Sea of Galilee 20-35 mm; in the Jordan valley and northern Negev 15-25 mm; in the central Negev 10-15 mm and in the Dead Sea and the Arava – several mm.

d. March 26-28:

Light rains – several mm in the north and center of the country.

e. March 31:

Rain fell mainly during the morning hours of April 1, but it is regarded as part of the March 31 rainfall day. In the Golan and eastern Galilee – 7-15 mm; Elsewhere in Galilee, the northern valleys and the Sharon region – 3-8 mm.

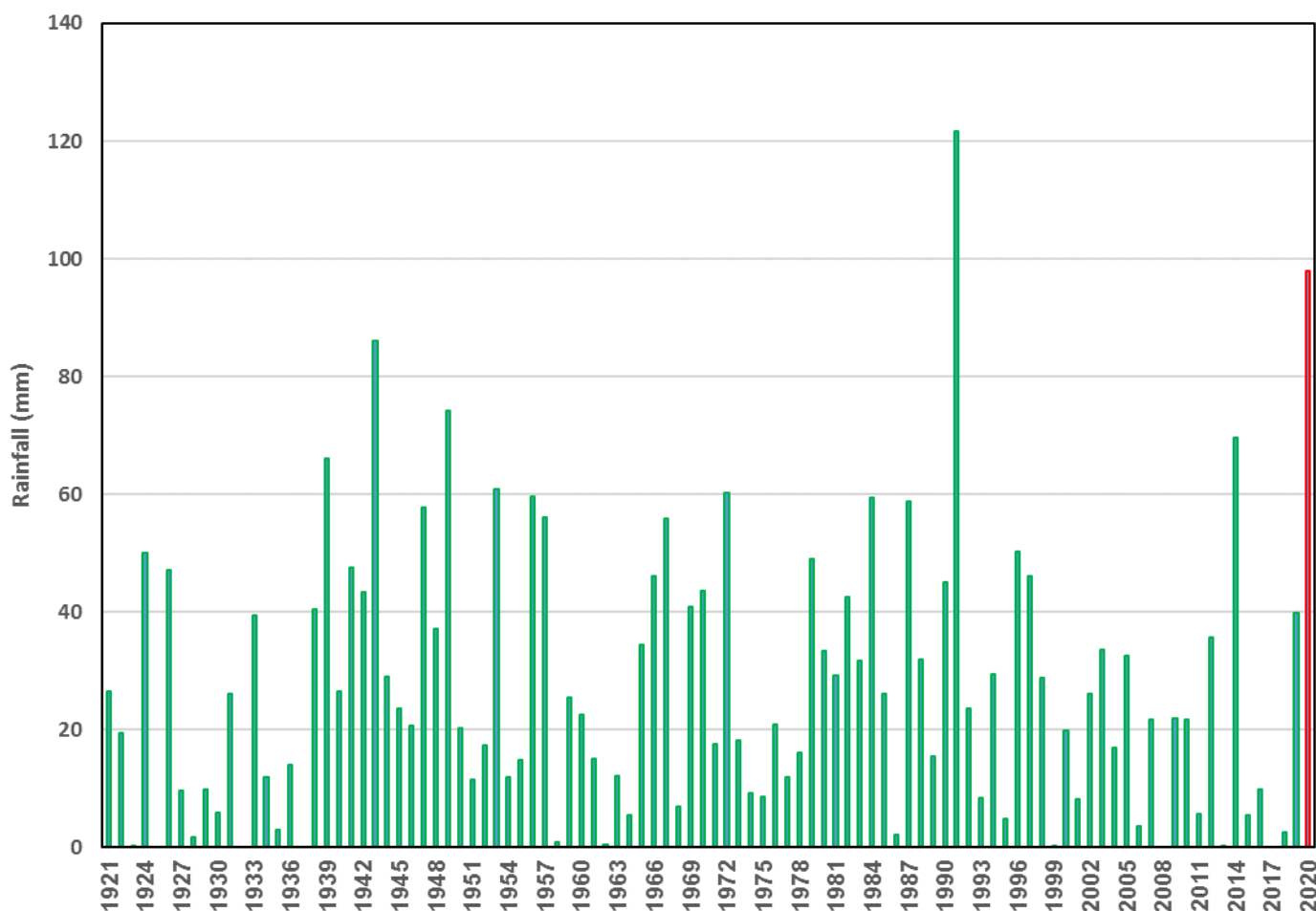


Figure 1: Rainfall in March in Be'er Sheva 1921-2020

Accumulated rainfall from the beginning of the season

The countrywide average of the accumulated rainfall from the beginning of the season is 121-122% of the long-term average for the entire season. In some regions, this percentage is even higher - in the Carmel coast, Ramot Menashe, central and southern Coastal Plain, the northern Hula valley – 130%; in the vicinity of Nahariyya – 150%; in the southern Negev and the Arava – 200% and more. Over 1000 mm were recorded at several stations in the upper Galilee, northern Golan, Mount Carmel, and Ramot Menashe, such as: Hurfesh – 1122 mm; Neve Ativ – 1111 mm; Meron – 1071 mm; Daliat el Carmel – 1027 mm; Keshet – 1019 mm, Ramat HaShofet – 1008 mm. Rainfall of over 1000 mm is not unusual in rainy areas like the upper Galilee and the northern Golan Heights, however it is less common at the central Golan Heights, the Carmel Mt. and Ramot Menashe, especially as it is occurring for the second year in a row. Table 2 shows the accumulated rainfall since the beginning of the season compared with the average at several stations.

Table 2: Accumulated rainfall since the beginning of the season until the end of March 2020 compared with the average

Station	Accumulated rainfall Sep. 2019 to Mar. 2020 (mm)	Annual average (mm)	% of annual average
Nahariyya	795	605	131%
Evron	948	611	155%
Haifa (Port)	807	650	124%
En HaShofet	911	665	137%
En HaHoresh	517	576	90%
Kefar Hess	693	609	114%
Nir Eliyyahu	744	620	120%
Nahshonim	709	538	132%
HaKefar HaYarok	603	583	103%
Miqwe Yisrael	720	513	140%
Bet Dagan	675	524	129%
Gan Shlomo (Rehovot)	622	528	118%
Qevuzat Yavne	605	528	115%
Nizzanim	649	499	130%
Negba	708	492	144%
Dorot	500	377	133%
Be'eri	435	360	121%
Besor	256	217	118%
Merom Golan Picman	917	832	110%
Gamla	713	578	123%
Elon	962	802	120%
Kefar Gil'adi	961	850	113%
Meron	1071	863	124%
Zefat Har Kenaan	814	671	121%
Yodfat	833	630	132%
Newe Ya'ar	699	571	122%
Merhavva	538	466	115%
Dafna	676	618	109%
Kefar Blum	679	500	136%
Ayelet HaShahar	603	456	132%
Ginnosar	571	437	131%
Zemah	446	382	117%
Sede Eliyyahu	287	281	102%
Kedumim	790	650	122%
Eli	811	612	133%
Zova	888	676	131%
Jerusalem Centre	596	537	111%
Beit Jimal	650	509	128%
Alon Shevut	779	561	139%
Arad	145	129	112%
Be'er Sheva	251	195	129%
Sede Boqer	132	93	142%
Mizpe Ramon	160	69	232%
Gilgal	178	165	108%
Sedom	52	41	127%
Hatzeva	78	35	223%
Paran	111	33	336%
Yotvata	62	28	221%
Elat	56	22	255%

Temperatures and weather during the month

Temperatures in March were slightly above average (1995-2009) during the day in the northern and central parts of the country by 0.5-1⁰C. In the south they were close to the average. Nighttime temperatures were above average, especially in the Coastal Plain and the northern valleys, where they were higher by 1-2⁰C. In the rest of the country they were higher than the average by 0.5-1⁰C.

The first 2-3 days of the month were cool, but later it warmed up and on March 5 there was a mild Sharav with 28-30⁰C in the Coastal Plain Shfela, the Negev and the northern valleys, and 30-32⁰C in the Arava. After a short cool period, a warming up started on March 8, and up to March 13 it was warmer than usual with mild Sharav days on March 9 and March 12.

After that temperatures dropped, and March 17-22 was the coldest part of the month.

Minimum temperatures in the northern valleys were 3-5⁰C and in the Coastal Plain 5-7⁰C.

Daytime temperatures were also low, with a maximum of 6-8⁰C in the mountains and 14-16⁰C in the Coastal Plain.

On March 23, a rapid warming occurred and it as warmer than usual, with sharp fluctuations in temperature over the following days. March 31 was warmer than usual with 28-30⁰C in the Coastal Plain, Shfela, Negev, and the eastern valleys.

Table 3: March 2020 temperatures² (°C) compared with the average

Region	Station	March 2020		Deviation from the average 1995-2009	
		Maximum	Minimum	Maximum	Minimum
Coastal Plain and the Shfela	Haifa (Technion)	19.6	12.1	+1.0	+0.7
	En HaHoresh	21.7	10.1	+0.9	+2.3
	Bet Dagan	22.1	11.5	+0.9	+1.4
	Negba	21.6	10.8	+0.9	+0.9
Northern mountains	Elon (western Galilee)	19.9	11.0	+0.5	+0.5
	Merom Golan Picman	15.0	5.5	+0.5	+1.4
	Avne Etan	19.8	10.0	+0.7	+2.5
	Zefat Har Kenaan	14.7	7.5	-0.2	0.0
	Tavor	21.9	10.7	+0.8	+1.5
Northern valleys	Afula, Nir HaEmeq	21.9	9.7	+0.4	+2.5
	Kefar Blum	22.6	10.1	+0.8	+1.4
	Zemah	23.7	11.8	+0.6	+1.6
	Eden Farm (Bet Shean)	23.2	11.7	+0.3	+1.7
Central mountains	Karne Shomron	20.9	11.0	+1.7	+1.4
	Jerusalem	17.3	9.3	+0.3	+0.1
	Bet Jimal	20.9	11.3	+0.5	+0.4
	Rosh Zurim	15.6	7.6	+0.7	-0.1
Negev	Besor	22.0	10.9	+0.1	+1.0
	Arad	19.4	9.8	0.0	+0.6
	Be'er Sheva	22.4	10.5	+0.4	+0.7
	Sede Boqer	20.6	9.2	+0.3	+1.5
Arava	Sedom	26.4	18.5	+0.6	+0.7
	Elat	26.3	15.7	-0.1	+1.1

² Due to installment of new temperature sensors, maximum temperatures might be higher by several tenths of °C when compared with readings of older sensors. This is currently being investigated.

Table 4: Extreme temperatures in March 2020 (°C) compared with the past

Station	March 2020				Extreme Values in record				Period of measurements
	Extreme Max.		Extreme Min.		Extreme Max.		Extreme Max.		
	Temp.	Date	Temp.	Date	Temp.	Date	Temp.	Date	
Bet Dagan	29.4	9/3/20 31/3/20	6.8	23/3/20	38.2	23/3/08	0.9-	3/3/76	1962-2020
Negba	28.5	31/3/20	6.2	23/3/20	37.7	11/3/10	0.0	3/3/76	1950-2020
Zefat Har Kenaan	21.4	12/3/20	2.0	21/3/20	30.9	24/3/08	-3.4	1/3/76	1939-2020
Jerusalem ³	23.8	11/3/20 31/3/20	2.6	21/3/20	32.7	24/3/08	-2.4	6/3/43	1935-2020
Be'er Sheva ⁴	29.9	31/3/20	6.1	22/3/20	38.4	24/3/08	-1.0	23/3/45	1922-2020
Elat	31.7	4/3/20	12.8	18/3/20	38.7	31/3/58	3.0	1/3/76	1949-2020

³ For Jerusalem: Giv'at Ram 2019; Center 1950-2018; Talbiye 1948-1949; Palace Hotel 1935-1947.

⁴ For Be'er Sheva: Negev Institute 1957-2019; Old Town 1922-1957.

Figure 1: Daily minimum and maximum temperatures in Jerusalem in March 2020 compared with the long-term average

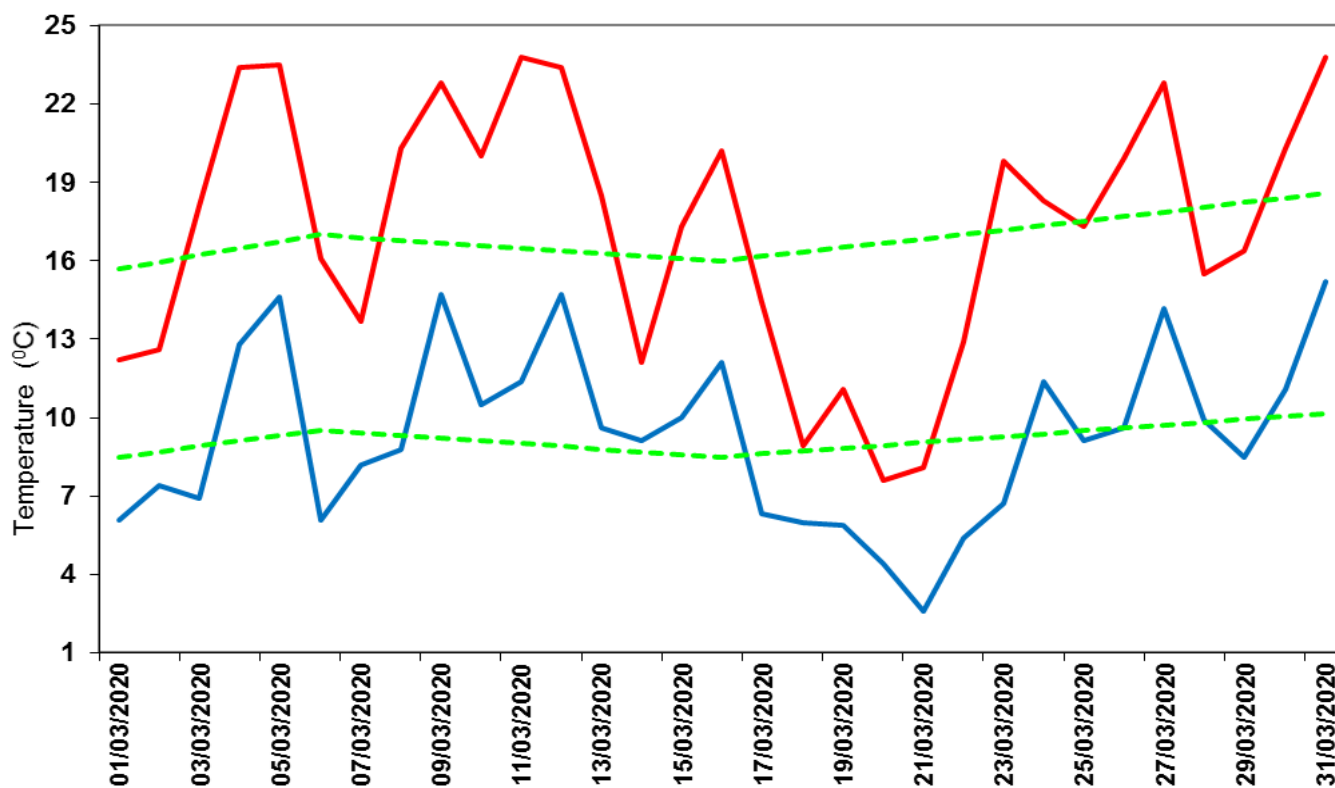
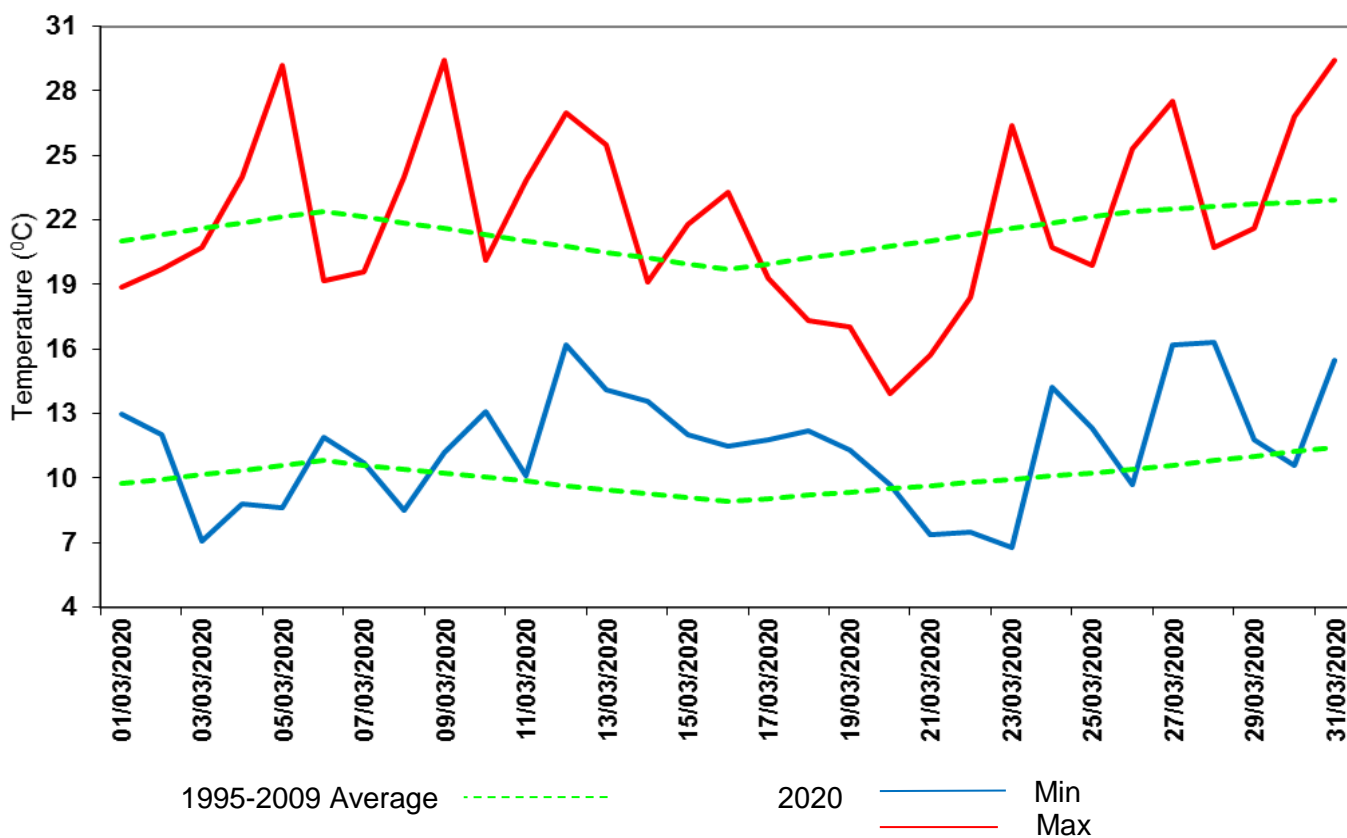


Figure 2: Daily minimum and maximum temperatures in Bet Dagan in March 2020 compared with the long-term average



1995-2009 Average 2020 Min Max