



AGROMETEOROLOGICAL BULLETIN

February 2020
3rd 10-day period

- Temperature
- Relative Humidity
- Soil Temperature
- Sunshine Duration
- Precipitation
- Evaporation
- Growing Degrees
- Reference Evapotranspiration
- Accumulated Rainfall from the beginning of wet period
- Accumulated Reference Evapotranspiration
- Number of dry days



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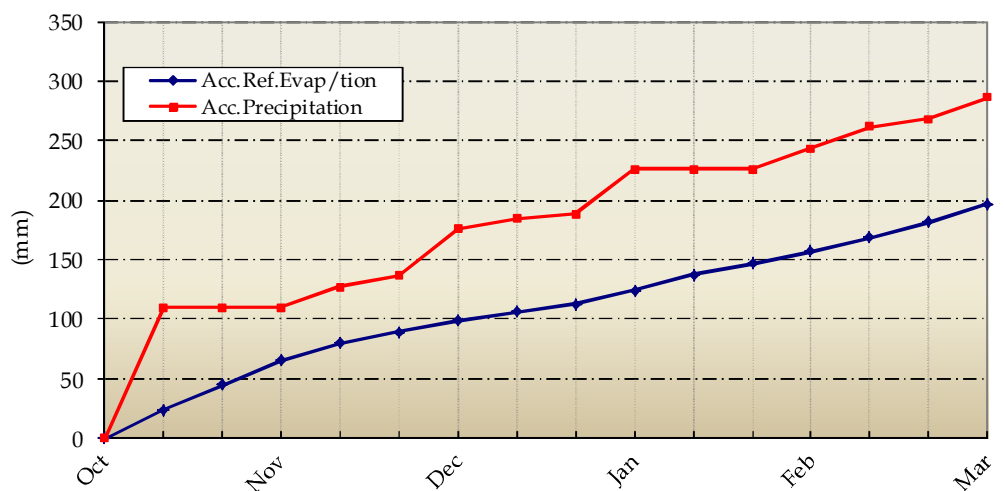
Web addresses of HNMS
www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr

Alexandroupoli

3rd 10-day period (21-29/02/2020)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	12.4	11.2	11.4	14.4	13.8	16.6	17.0	12.4	12.6	13.5	9.6	9.7
	Min	7.0	1.4	-1.6	3.8	2.0	5.4	9.0	1.0	5.0	3.7	-1.3	1.6
Relative Humidity	Max	66	89	92	90	84	90	89	83	85	85	84	-
	Min	48	45	46	61	45	33	66	48	42	48	44	-
Soil Temperature at 10 cm	06 UTC	7.4	6.4	5.6	6.8	6.8	8.0	11.6	7.2	7.6	7.5	4.4	5.7
	12 UTC	9.0	8.6	8.0	9.0	11.4	11.4	13.4	8.2	10.2	9.9	6.7	7.3
Sunshine Duration		4.5	3.9	8.6	4.1	9.2	5.2	0.7	4.7	8.1	5.4	4.8	4.8
Precipitation								1.2		17.4	18.6	2.4	14.4
Evaporation		2.0	0.0	0.0	1.3	2.5	2.4	1.8	2.4	3.3	15.7	6.7	9.4
Growing Degrees	5	4.7	1.3	0.0	4.1	2.9	6.0	8.0	1.7	3.8	32.5	7.1	17.0
	10	0.0	0.0	0.0	0.0	0.0	1.0	3.0	0.0	0.0	4.0	0.0	2.5

3rd 10-day period (21-29/02/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	15.5	12.3	12.0
Precipitation - Reference Evapotranspiration	3.1	-9.9	2.4
Number of Rainy Days	2.0	1.0	1.9
Number of Dry Days	11.0	7.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

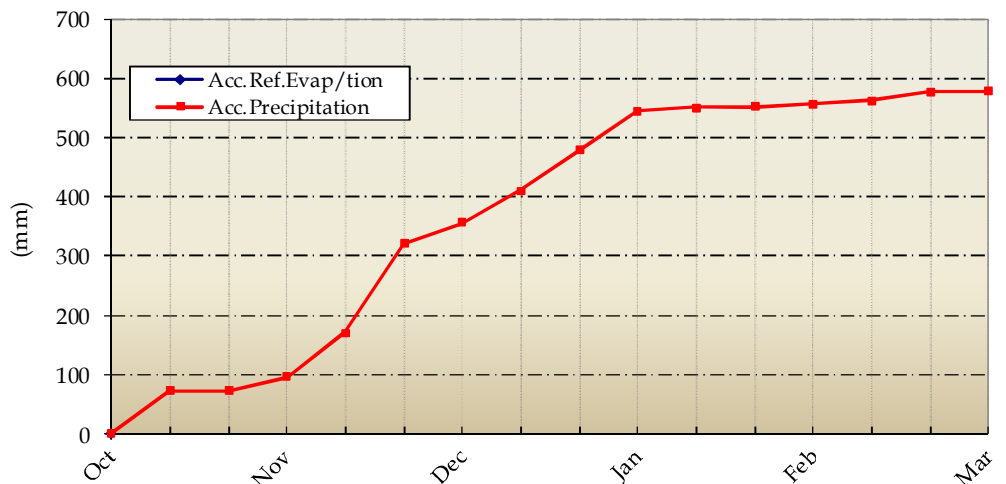


3rd 10-day period (21-29/02/2020)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.0	13.2	14.9	18.0	19.2	17.3	16.9	14.6	15.0	16.0	14.6	14.1
	Min	5.2	1.8	5.4	4.1	4.5	10.6	10.3	4.8	5.8	5.8	4.3	5.3
Relative Humidity	Max	93	90	86	96	96	92	91	86	77	90	89	-
	Min	49	44	26	47	57	66	37	46	23	44	45	-
Soil Temperature at 10 cm	06 UTC	11.2	10.4	9.5	9.8	11.0	12.8	13.2	11.4	11.0	11.1	9.2	9.0
	12 UTC	12.2	10.8	10.4	11.4	12.6	13.6	13.4	12.0	12.0	12.0	11.0	11.2
Sunshine Duration		9.4	2.8	10.0	9.2	9.9	3.3	6.3	1.8	10.1	7.0	6.9	5.7
Precipitation		0.4							1.1		1.5	8.6	22.1
Evaporation		5.0	4.6	4.0	3.8	3.8	3.0	2.0	1.0	4.6	31.8	39.5	19.2
Growing Degrees	5	5.1	2.5	5.2	6.1	6.9	9.0	8.6	4.7	5.4	53.3	35.4	39.2
	10	0.1	0.0	0.2	1.1	1.9	4.0	3.6	0.0	0.4	11.1	3.0	8.3

3rd 10-day period (21-29/02/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	14.3	12.9
Precipitation - Reference Evapotranspiration	-	-5.7	9.2
Number of Rainy Days	2.0	2.0	3.2
Number of Dry Days	0.0	10.0	-

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



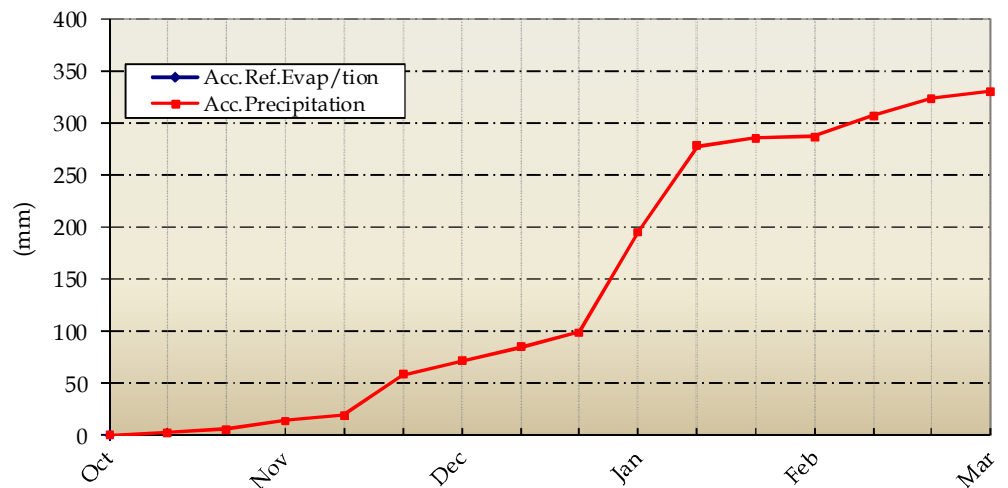
Iraklio

3rd 10-day period (21-29/02/2020)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.4	13.4	12.2	15.0	17.4	19.8	20.2	16.0	13.6	15.7	14.2	14.9
	Min	8.8	11.6	10.4	9.0	8.4	8.4	14.0	9.2	10.4	10.0	9.2	8.9
Relative Humidity	Max	89	75	84	83	95	92	87	95	68	85	87	-
	Min	57	55	56	49	58	52	43	44	40	50	60	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		1.5	6.0	0.1	10.0	8.9	9.6	0.7	10.0	8.3	6.1	4.4	4.7
Precipitation		4.6	0.2	1.5						0.4	6.7	65.3	19.7
Evaporation		1.1	5.1	2.0	3.8	0.3	1.9	2.8	5.2	4.2	26.4	17.0	26.4
Growing Degrees	5	6.1	7.5	6.3	7.0	7.9	9.1	12.1	7.6	7.0	70.6	53.7	57.1
	10	1.1	2.5	1.3	2.0	2.9	4.1	7.1	2.6	2.0	25.6	13.7	18.9

3rd 10-day period (21-29/02/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	15.6	-
Precipitation - Reference Evapotranspiration	-	49.7	19.7
Number of Rainy Days	4.0	5.0	3.4
Number of Dry Days	4.0	5.0	-

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

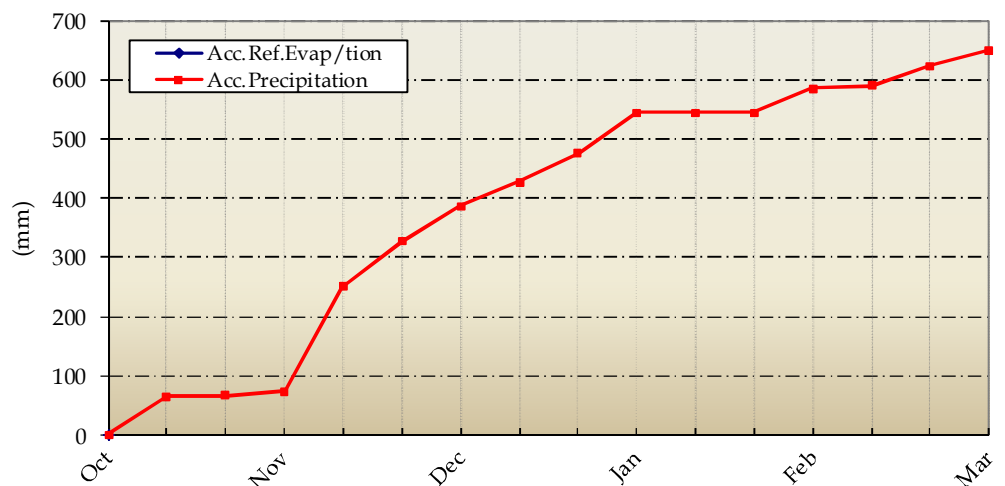


3rd 10-day period (21-29/02/2020)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.5	10.9	15.6	18.5	19.8	17.0	11.4	6.4	13.4	14.1	10.8	10.4
	Min	-1.5	0.0	-5.0	-0.2	0.0	6.0	3.6	-2.2	-2.2	-0.2	0.8	1.4
Relative Humidity	Max	92	100	100	100	100	100	100	100	100	99	70	-
	Min	36	35	27	37	36	64	63	91	32	47	33	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	4.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	5.7
Sunshine Duration		7.6	6.7	8.0	8.0	8.0	2.7	2.6	0.0	8.8	5.8	5.4	4.3
Precipitation								15.4	11.2		26.6	0.0	21.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	6.7
Growing Degrees	5	1.0	0.5	0.3	4.2	4.9	6.5	2.5	0.0	0.6	20.4	10.9	14.5
	10	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	1.5	0.2	1.1

3rd 10-day period (21-29/02/2020)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	10.3
Precipitation - Reference Evapotranspiration	-	10.8
Number of Rainy Days	2.0	2.9
Number of Dry Days	6.0	-

The missing info in the tables and the graph are due to the absence of data.

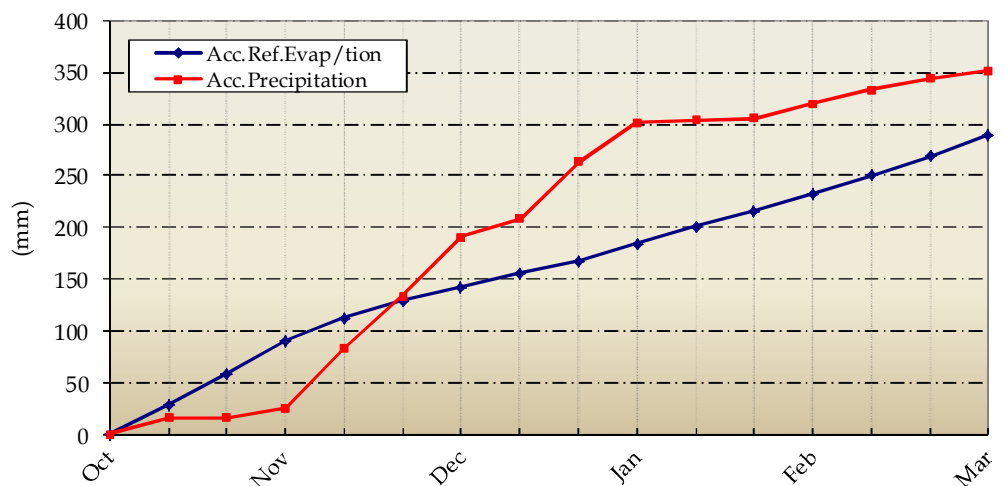
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-29/02/2020)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.6	12.8	16.6	19.7	19.4	17.5	18.8	14.8	16.5	16.9	14.8	14.8
	Min	5.4	3.7	2.4	1.8	4.9	4.4	11.8	1.7	8.4	4.9	4.7	5.1
Relative Humidity	Max	88	89	86	91	95	99	95	87	79	90	82	-
	Min	48	45	29	41	41	60	35	46	22	41	43	-
Soil Temperature at 10 cm	06 UTC	11.4	1.5	10.0	9.8	11.0	11.4	12.8	11.2	11.4	10.1	9.5	9.6
	12 UTC	12.4	11.2	11.0	11.4	12.5	12.6	13.7	12.8	13.0	12.3	10.4	11.1
Sunshine Duration		5.5	1.4	9.0	9.9	9.0	6.3	7.7	3.0	9.3	6.8	5.4	5.3
Precipitation		1.4	3.9						1.1	1.5	7.9	8.4	28.6
Evaporation		1.1	2.5	2.4	3.7	3.8	2.3	3.0	0.0	4.6	23.4	19.6	20.1
Growing Degrees	5	5.5	3.3	4.5	5.8	7.2	6.0	10.3	3.3	7.5	53.1	38.3	40.8
	10	0.5	0.0	0.0	0.8	2.2	1.0	5.3	0.0	2.5	12.1	2.6	8.0

3rd 10-day period (21-29/02/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	20.5	17.6	13.5
Precipitation - Reference Evapotranspiration	-12.6	-9.2	15.1
Number of Rainy Days	4.0	4.0	3.3
Number of Dry Days	0.0	9.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



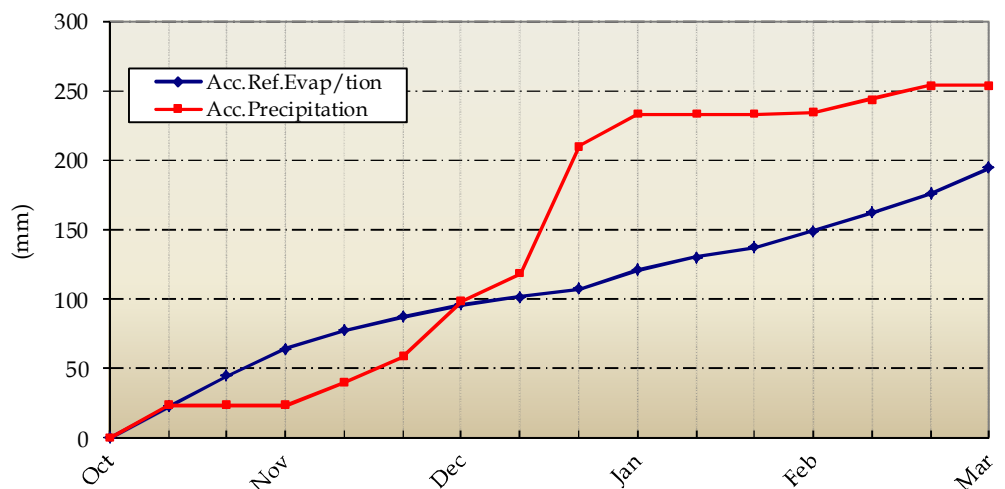
Larisa

3rd 10-day period (21-29/02/2020)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.1	11.6	13.6	19.2	18.4	20.4	16.6	15.8	14.5	15.9	11.6	11.9
	Min	5.4	1.0	-1.6	-0.6	3.8	1.8	4.6	0.7	5.2	2.3	-0.2	1.7
Relative Humidity	Max	92	93	84	93	95	97	84	85	72	88	86	-
	Min	45	39	35	39	45	40	26	39	22	37	40	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	7.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	7.7
Sunshine Duration		5.6	4.9	9.6	8.9	9.6	6.4	6.2	6.7	9.8	7.5	4.4	4.6
Precipitation												0.1	13.4
Evaporation		2.0	0.0	0.0	3.0	5.4	1.7	4.7	4.6	0.0	21.4	11.4	9.6
Growing Degrees	5	4.3	1.3	1.0	4.3	6.1	6.1	5.6	3.3	4.9	36.8	12.2	20.2
	10	0.0	0.0	0.0	0.0	1.1	1.1	0.6	0.0	0.0	2.8	0.0	2.5

3rd 10-day period (21-29/02/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	18.5	19.0	11.5
Precipitation - Reference Evapotranspiration	-18.5	-18.9	1.9
Number of Rainy Days	0.0	1.0	2.6
Number of Dry Days	9.0	6.0	-

The missing info in the tables are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



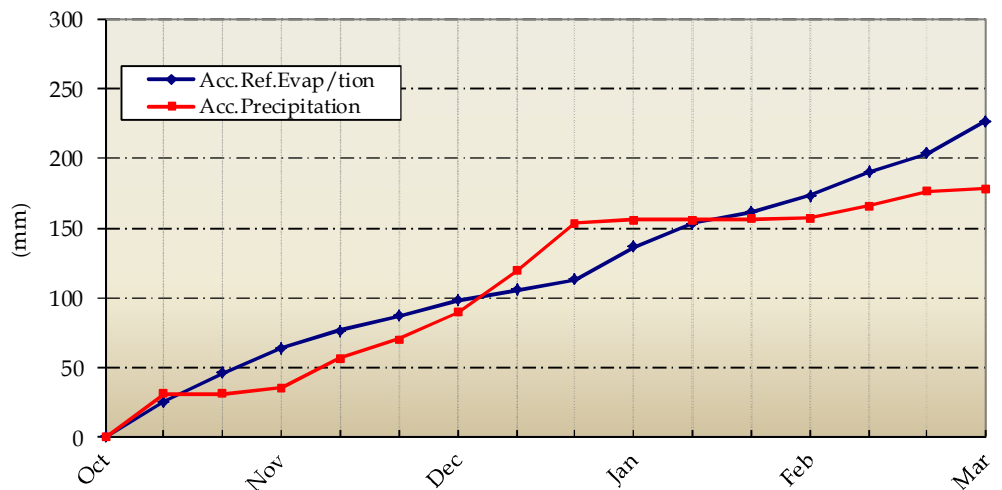
Mikra

3rd 10-day period (21-29/02/2020)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.1	12.3	13.6	19.0	17.2	18.6	16.2	14.6	13.0	15.3	11.4	11.1
	Min	7.2	3.6	-0.2	1.3	5.8	3.8	9.6	3.0	7.0	4.6	1.9	2.8
Relative Humidity	Max	82	65	85	87	84	93	67	86	67	80	84	-
	Min	42	44	37	33	36	45	33	34	41	38	41	-
Soil Temperature at 10 cm	06 UTC	8.0	8.0	7.4	8.0	9.2	9.2	10.7	9.0	8.2	8.6	5.6	6.7
	12 UTC	9.0	10.2	9.2	10.0	10.1	10.3	11.4	10.4	9.2	10.0	7.4	9.0
Sunshine Duration		8.0	6.9	10.2	7.3	7.1	6.4	4.4	4.4	9.3	7.1	4.5	4.4
Precipitation			0.0					0.3	1.3		1.6	1.1	13.2
Evaporation		-	-	-	-	-	-	-	-	-	-	16.8	13.2
Growing Degrees	5	5.2	3.0	1.7	5.2	6.5	6.2	7.9	3.8	5.0	44.4	19.4	21.0
	10	0.2	0.0	0.0	0.2	1.5	1.2	2.9	0.0	0.0	5.9	0.4	2.4

3rd 10-day period (21-29/02/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	23.0	16.6	11.8
Precipitation - Reference Evapotranspiration	-21.4	-15.5	1.4
Number of Rainy Days	2.0	1.0	2.4
Number of Dry Days	6.0	10.0	-

The missing info in the tables are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

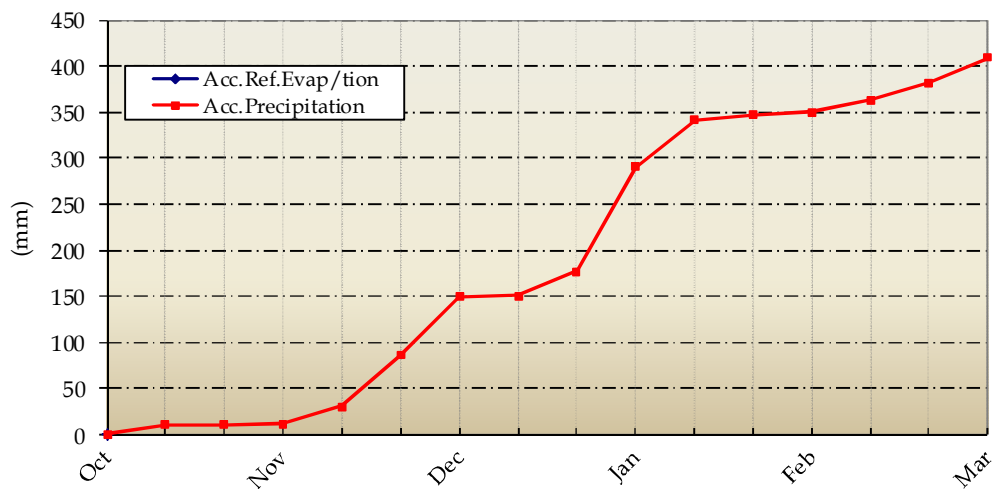


3rd 10-day period (21-29/02/2020)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	8.8	7.4	10.8	20.0	17.4	20.2	17.8	15.4	12.0	14.4	10.5	12.6
	Min	6.2	0.2	5.8	-0.7	4.8	5.7	9.6	2.3	4.3	4.2	3.3	3.5
Relative Humidity	Max	98	100	93	98	94	94	74	81	81	90	92	-
	Min	69	64	50	33	43	37	28	37	30	43	52	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		0.4	0.2	5.0	8.8	8.9	6.3	6.6	6.5	10.1	5.9	4.7	-
Precipitation		15.8	8.3	3.2	-	-	-	-	-	-	27.3	23.3	17.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	2.5	0.0	3.3	4.7	6.1	8.0	8.7	3.9	3.2	40.2	18.0	-
	10	0.0	0.0	0.0	0.0	1.1	3.0	3.7	0.0	0.0	7.8	0.0	-

3rd 10-day period (21-29/02/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	11.5	-
Precipitation - Reference Evapotranspiration	-	11.8	17.9
Number of Rainy Days	3.0	4.0	3.5
Number of Dry Days	0.0	6.0	-

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



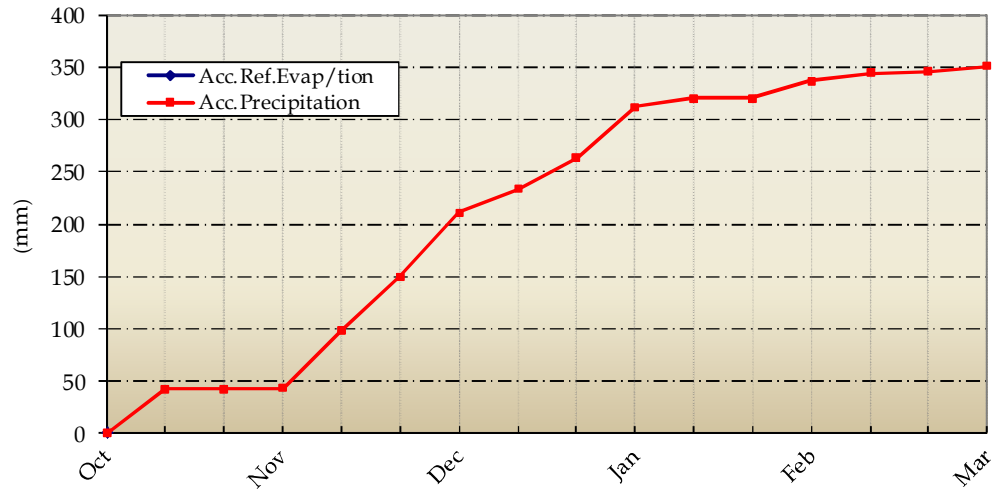
Tripoli

3rd 10-day period (21-29/02/2020)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	-	-	-	19.5	19.7	14.5	13.3	10.9	12.7	15.1	9.6	10.1
	Min	-	-	-	-3.2	0.1	4.9	9.4	-2.9	-0.8	1.2	0.1	1.0
Relative Humidity	Max	-	-	87	93	90	80	80	88	-	86	91	-
	Min	-	-	31	27	34	48	40	48	17	35	47	-
Soil Temperature at 10 cm	06 UTC	-	-	-	3.8	-	-	-	-	-	3.8	3.3	5.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	7.4	6.2
Sunshine Duration		2.5	1.2	8.3	0.0	9.8	6.4	8.5	4.2	8.8	5.5	5.5	5.1
Precipitation								0.0	2.1	2.7	4.8	3.1	27.0
Evaporation		-	-	-	-	-	-	-	-	-	-	-	9.7
Growing Degrees	5	-	-	-	3.2	4.9	4.7	6.4	0.0	1.0	-	7.5	14.5
	10	-	-	-	0.0	0.0	0.0	1.4	0.0	0.0	-	0.0	1.4

3rd 10-day period (21-29/02/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	12.1	12.6
Precipitation - Reference Evapotranspiration	-	-9.0	14.4
Number of Rainy Days	2.0	1.0	3.2
Number of Dry Days	7.0	6.0	-

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





◆ **List of Symbols and Abbreviations**

Reference Evapotranspiration ETo (mm):

Calculated by the FAO Penman-Montieth equation

$$ET_0 = \frac{0.408 * \Delta * (R_n - G) + \gamma * \frac{900}{T + 273} * u_2 * (e_s - e_a)}{\Delta + \gamma * (1 + 0.34 * u_2)}$$

using 10-day step.

R_n is estimated from sunshine measurements and G assumed to be zero.

Growing Degrees: Degrees with mean temperature exceeding the base of 5 or 10 °C.

Number of Rainy Days: Number of days with precipitation of at least 0.1 mm.

Number of Dry Days: Number of dry days recorded since the last rainy day.

Measurements Units

- ◆ Temperature : °C
- ◆ Relative Humidity : %
- ◆ Soil Temperature : °C
- ◆ Sunshine Duration : Hours
- ◆ Precipitation : mm
- ◆ Evaporation (Pan) : mm
- ◆ Growing Degrees : °C

UTC (Universal Time coordinates) in Greece

- ◆ Winter : Time(UTC) = Local time - 2
- ◆ Summer : Time(UTC) = Local time - 3

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ΕΘΝΙΚΗ
ΜΕΤΕΩΡΟΛΟΓΙΚΗ
ΥΠΗΡΕΣΙΑ

HELLENIC NATIONAL METEOROLOGICAL SERVICE

Division of Climatology-Applications

Issue Editors :

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