



AGROMETEOROLOGICAL BULLETIN

*April 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



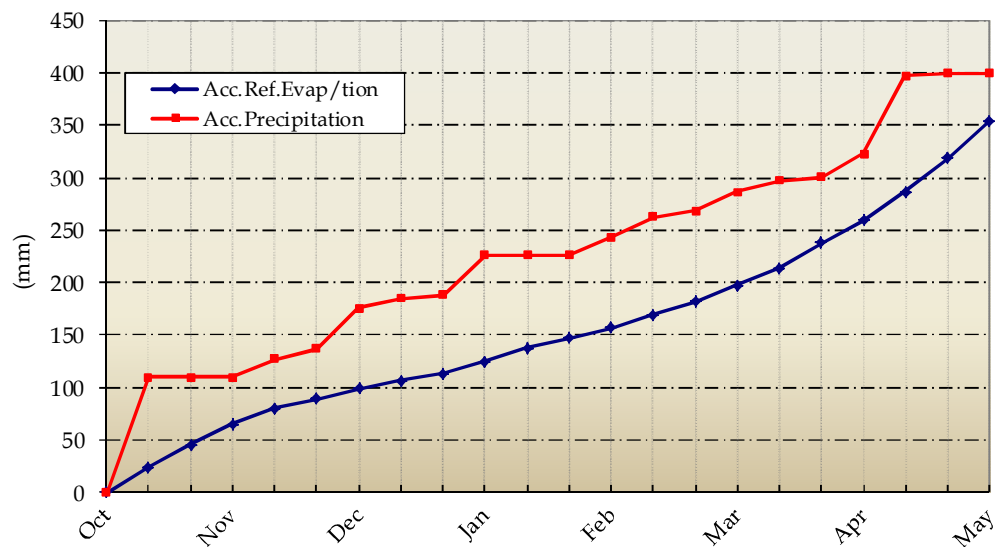
Hellenic National Meteorological Service
Division of Climatology-Applications
El. Venizelou Street 14, 16777
Helliniko, Athens

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

3rd 10-day period (21-30/04/2020)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.0	15.8	17.4	19.6	17.0	22.0	21.0	22.6	21.8	22.0	19.3	19.9	18.4
	Min	8.6	8.2	2.0	9.8	2.6	8.6	14.0	10.0	9.6	17.0	9.0	8.4	7.8
Relative Humidity	Max	76	54	54	50	77	83	79	75	77	83	71	89	-
	Min	48	38	29	28	37	54	48	43	52	54	43	49	-
Soil Temperature at 10 cm	06 UTC	14.0	11.6	11.2	11.2	11.8	14.2	14.6	16.6	17.0	17.0	13.9	13.7	12.7
	12 UTC	13.8	15.0	16.0	17.0	17.6	18.6	19.8	21.6	20.0	21.0	18.0	18.3	16.6
Sunshine Duration		0.0	4.7	12.7	12.7	12.6	10.4	9.8	11.7	8.9	6.8	9.0	9.0	7.4
Precipitation		0.3										0.3	0.0	11.6
Evaporation		4.1	5.6	5.6	6.8	6.5	2.7	5.4	6.2	3.2	5.6	51.7	39.4	46.0
Growing Degrees	5	6.3	7.0	4.7	9.7	4.8	10.3	12.5	11.3	10.7	14.5	91.8	91.9	80.8
	10	1.3	2.0	0.0	4.7	0.0	5.3	7.5	6.3	5.7	9.5	42.3	43.3	32.3

3rd 10-day period (21-30/04/2020)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	35.8	33.2
Precipitation - Reference Evapotranspiration	-35.5	-33.2
Number of Rainy Days	1.0	0.0
Number of Dry Days	5.0	10.0

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

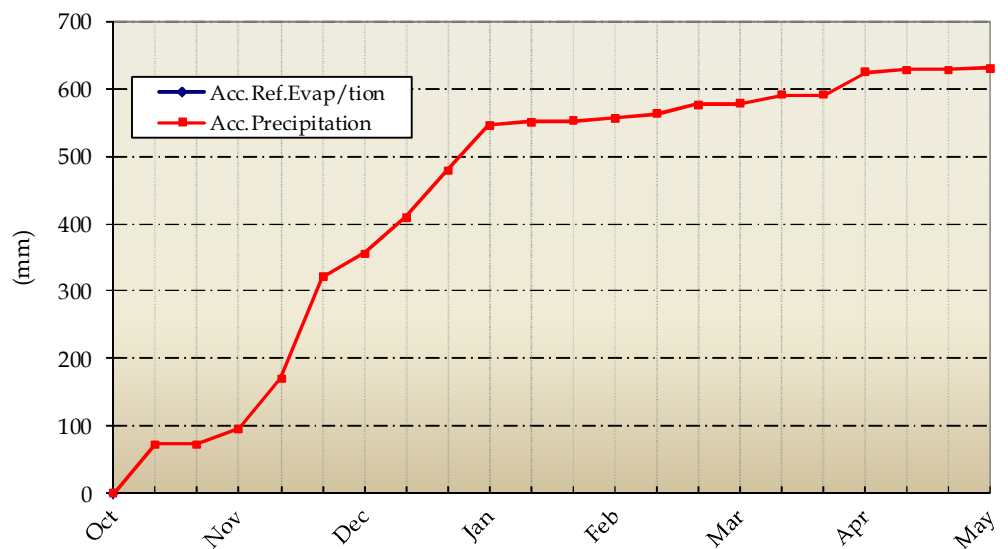


3rd 10-day period (21-30/04/2020)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.5	19.2	20.0	19.6	21.2	21.4	22.3	22.2	23.9	22.7	21.8	23.5	20.2
	Min	11.2	12.3	10.9	6.6	7.4	9.1	8.6	12.0	12.2	13.8	10.4	10.7	9.8
Relative Humidity	Max	96	97	84	95	96	97	96	97	96	93	95	95	-
	Min	43	56	43	30	45	31	44	46	51	51	44	41	-
Soil Temperature at 10 cm	06 UTC	17.6	17.0	16.2	15.0	15.6	17.0	17.2	18.4	19.0	19.6	17.3	16.7	15.0
	12 UTC	20.0	18.4	18.2	18.2	19.2	20.0	20.2	21.8	22.2	23.0	20.1	19.3	18.4
Sunshine Duration		5.9	0.0	4.3	12.2	11.8	9.1	12.0	10.6	7.0	11.1	8.4	7.0	8.8
Precipitation			1.8	1.1								2.9	0.0	8.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	53.1	43.9
Growing Degrees	5	13.4	10.8	10.5	8.1	9.3	10.3	10.5	12.1	13.1	13.3	111.1	120.9	100.1
	10	8.4	5.8	5.5	3.1	4.3	5.3	5.5	7.1	8.1	8.3	61.1	70.9	50.1

3rd 10-day period (21-30/04/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	32.5	33.2
Precipitation - Reference Evapotranspiration	-	-32.5	-24.4
Number of Rainy Days	2.0	0.0	1.8
Number of Dry Days	16.0	15.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

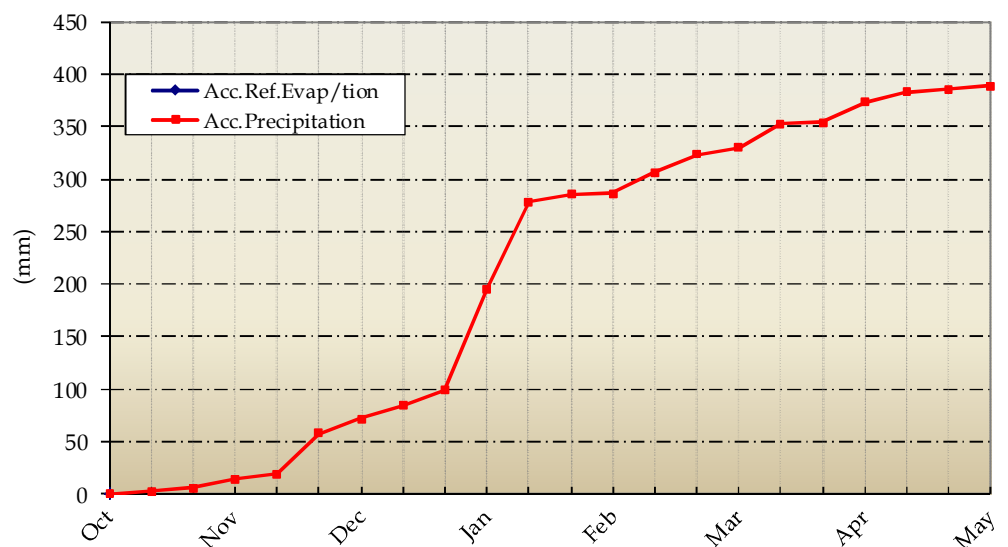


3rd 10-day period (21-30/04/2020)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.0	16.4	16.6	17.2	18.6	20.0	19.8	20.2	22.4	22.4	19.4	21.9	20.6
	Min	12.4	15.8	14.0	12.0	9.2	10.0	11.4	12.0	11.0	16.8	12.5	14.4	12.6
Relative Humidity	Max	92	89	86	86	82	83	88	91	91	89	88	80	-
	Min	59	70	58	50	59	35	57	67	46	55	56	42	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		10.2	0.0	1.3	11.8	13.0	11.1	12.3	12.2	12.0	9.7	9.4	8.9	8.9
Precipitation				2.0	0.6							2.6		5.6
Evaporation		1.8	1.9	3.3	3.6	4.8	2.7	4.7	3.5	3.0	1.9	31.2	50.1	52.8
Growing Degrees	5	11.2	11.1	10.3	9.6	8.9	10.0	10.6	11.1	11.7	14.6	109.1	131.2	115.8
	10	6.2	6.1	5.3	4.6	3.9	5.0	5.6	6.1	6.7	9.6	59.1	81.2	65.8

3rd 10-day period (21-30/04/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	41.9	-
Precipitation - Reference Evapotranspiration	-	-41.9	5.6
Number of Rainy Days	2.0	0.0	1.3
Number of Dry Days	6.0	14.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

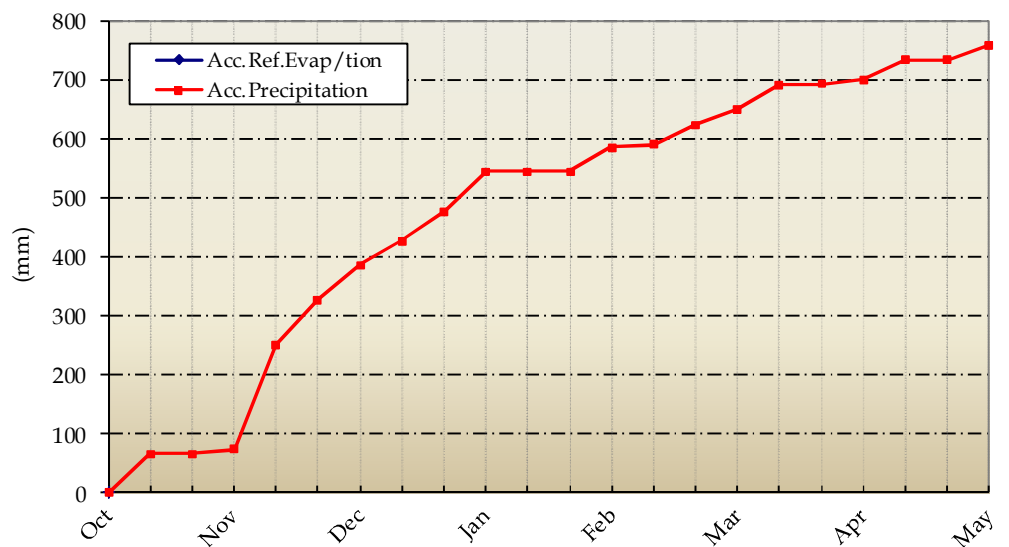


3rd 10-day period (21-30/04/2020)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.0	15.0	15.0	19.6	20.4	20.8	23.8	23.6	19.2	21.0	19.9	21.7	18.6
	Min	13.0	8.0	6.0	10.0	3.5	7.0	6.8	7.2	9.6	8.0	7.9	8.1	6.5
Relative Humidity	Max	100	100	91	100	84	100	100	99	98	93	96	97	-
	Min	47	74	45	33	36	37	41	42	48	48	45	40	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	11.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	14.9
Sunshine Duration		2.4	0.0	2.6	9.2	10.8	8.9	7.9	9.4	5.0	10.0	6.6	6.1	6.6
Precipitation		2.0	7.1	15.2								24.3	2.4	15.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	36.5
Growing Degrees	5	12.0	6.5	5.5	9.8	7.0	8.9	10.3	10.4	9.4	9.5	89.3	99.0	75.1
	10	7.0	1.5	0.5	4.8	2.0	3.9	5.3	5.4	4.4	4.5	39.3	49.0	27.7

3rd 10-day period (21-30/04/2020)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	29.4
Precipitation - Reference Evapotranspiration	-	-14.2
Number of Rainy Days	3.0	3.6
Number of Dry Days	5.0	-

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

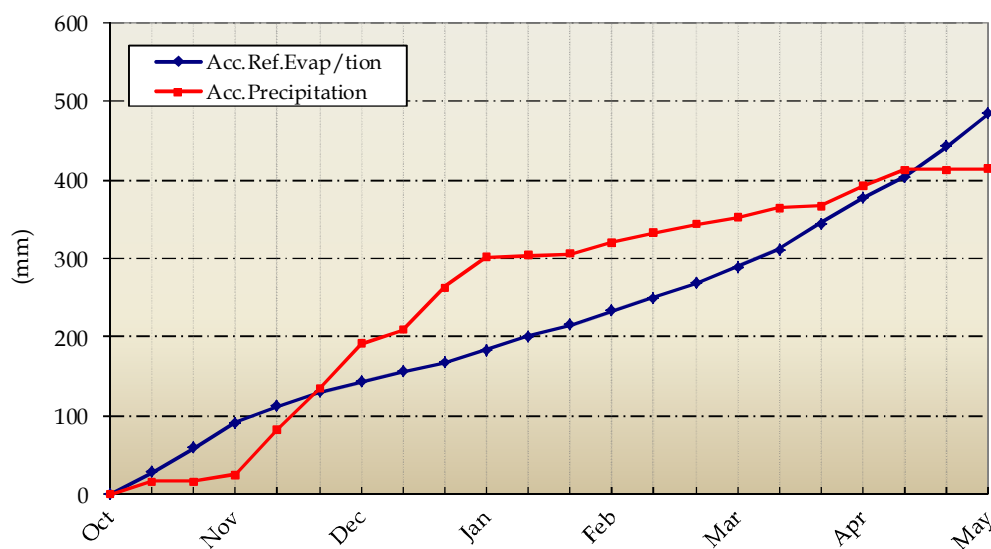
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-30/04/2020)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.0	20.0	20.9	19.5	24.4	23.2	22.2	23.3	24.6	25.0	23.0	22.8	20.8
	Min	11.6	14.3	12.4	7.3	8.0	8.0	8.8	9.6	10.0	12.7	10.3	10.3	9.1
Relative Humidity	Max	95	72	76	64	86	91	87	91	92	97	85	86	-
	Min	24	51	40	35	44	22	32	37	32	27	34	40	-
Soil Temperature at 10 cm	06 UTC	17.4	18.0	17.0	16.0	16.5	17.5	17.5	18.6	18.6	19.6	17.7	15.9	15.1
	12 UTC	21.5	19.5	19.5	20.0	20.5	22.2	21.5	21.5	22.5	22.5	21.1	19.2	18.5
Sunshine Duration		7.0	1.0	2.1	12.0	12.0	9.7	12.0	11.9	6.7	8.8	8.3	6.6	8.3
Precipitation				0.3								0.3	3.7	12.2
Evaporation		6.7	4.8	3.0	5.0	7.8	7.2	9.2	4.4	7.4	7.2	62.7	38.0	46.5
Growing Degrees	5	14.3	12.2	11.7	8.4	11.2	10.6	10.5	11.5	12.3	13.9	116.4	115.3	99.4
	10	9.3	7.2	6.7	3.4	6.2	5.6	5.5	6.5	7.3	8.9	66.4	65.3	49.4

3rd 10-day period (21-30/04/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	41.6	36.0	34.1
Precipitation - Reference Evapotranspiration	-41.3	-32.3	-21.9
Number of Rainy Days	1.0	3.0	2.6
Number of Dry Days	16.0	4.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



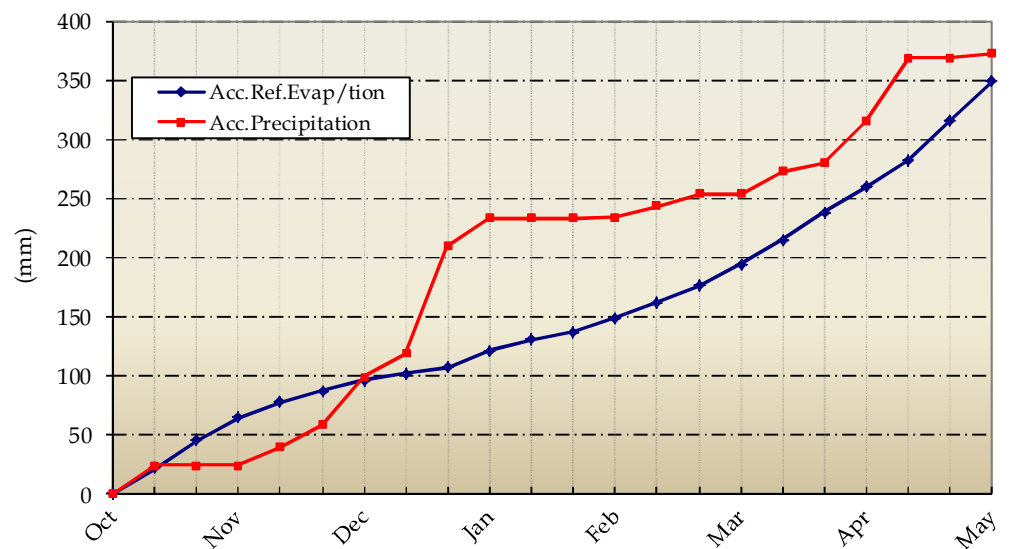
Larisa

3rd 10-day period (21-30/04/2020)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.2	11.0	15.0	20.0	24.0	24.2	24.0	25.0	26.4	26.2	21.3	22.7	21.1
	Min	10.2	9.2	7.0	2.9	3.0	6.0	8.4	8.6	12.0	8.9	7.6	7.4	7.3
Relative Humidity	Max	88	91	96	97	94	91	91	92	92	84	92	95	-
	Min	74	67	46	37	31	31	40	47	32	31	44	40	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	14.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	16.2
Sunshine Duration		2.2	0.0	3.0	10.6	11.6	11.6	10.3	10.4	8.2	8.2	7.6	7.5	7.9
Precipitation		1.2	0.9	1.7								3.8	1.8	10.7
Evaporation		0.8	4.4	1.6	1.4	8.3	4.8	6.5	7.5	7.1	5.1	47.5	59.2	43.9
Growing Degrees	5	8.7	5.1	6.0	6.5	8.5	10.1	11.2	11.8	14.2	12.6	94.6	100.9	91.9
	10	3.7	0.1	1.0	1.5	3.5	5.1	6.2	6.8	9.2	7.6	44.6	50.9	42.7

3rd 10-day period (21-30/04/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	33.2	36.2	34.0
Precipitation - Reference Evapotranspiration	-29.4	-34.4	-23.3
Number of Rainy Days	3.0	4.0	2.7
Number of Dry Days	14.0	4.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



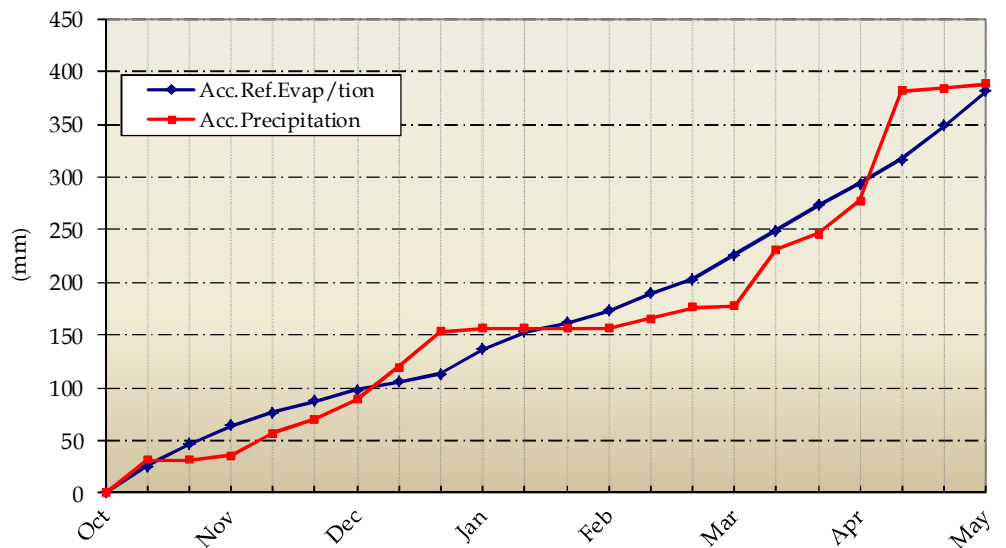
Mikra

3rd 10-day period (21-30/04/2020)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.0	12.2	16.2	19.8	22.2	24.0	23.0	23.6	22.2	25.2	20.5	21.9	20.2
	Min	10.6	9.1	8.4	5.0	5.0	7.1	8.7	11.6	12.5	10.2	8.8	10.5	8.4
Relative Humidity	Max	90	90	91	90	86	86	88	89	90	90	89	86	-
	Min	66	62	46	37	35	29	42	44	51	37	45	39	-
Soil Temperature at 10 cm	06 UTC	16.0	13.4	13.0	12.8	13.6	14.0	15.0	15.4	16.4	17.0	14.7	14.9	14.2
	12 UTC	9.2	15.2	14.8	15.8	15.8	16.4	17.6	17.6	19.0	19.2	16.1	17.8	18.8
Sunshine Duration		0.0	0.4	3.5	12.1	12.2	11.5	11.3	7.7	9.4	11.8	8.0	8.5	7.6
Precipitation		2.6	1.5							0.0		4.1	1.7	11.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	45.8
Growing Degrees	5	8.8	5.7	7.3	7.4	8.6	10.6	10.9	12.6	12.4	12.7	96.8	112.0	93.3
	10	3.8	0.7	2.3	2.4	3.6	5.6	5.9	7.6	7.4	7.7	46.8	62.0	43.8

3rd 10-day period (21-30/04/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	32.9	37.4	33.7
Precipitation - Reference Evapotranspiration	-28.8	-35.7	-22.5
Number of Rainy Days	2.0	2.0	3.0
Number of Dry Days	5.0	2.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

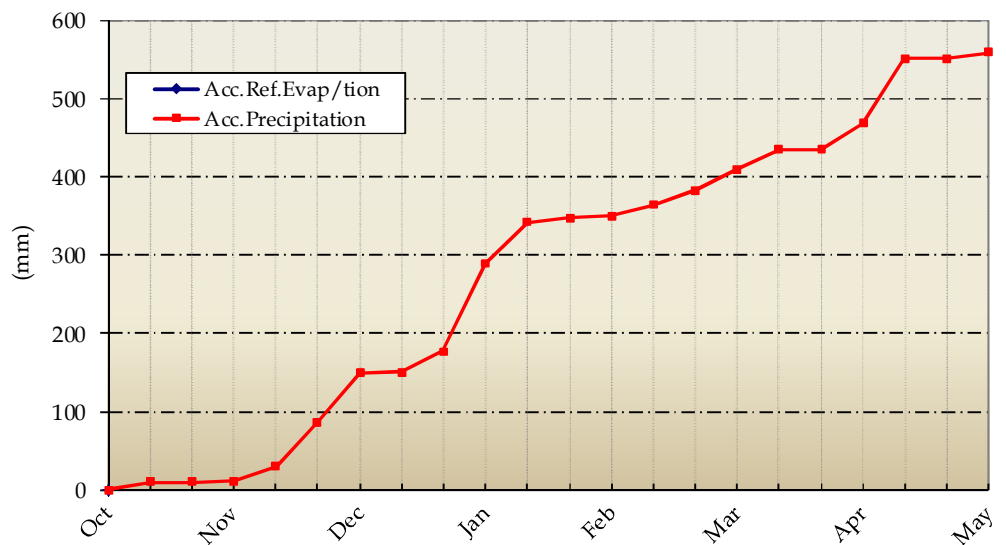


3rd 10-day period (21-30/04/2020)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.9	13.4	14.6	17.0	23.4	23.4	22.6	23.3	24.6	24.4	20.2	22.1	20.7
	Min	13.8	8.5	8.8	5.2	2.0	8.6	9.2	9.2	11.0	11.6	8.8	8.2	7.9
Relative Humidity	Max	96	99	80	81	71	80	83	88	85	78	84	96	-
	Min	67	54	37	27	21	32	33	34	33	33	37	37	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		0.0	2.2	8.6	12.2	12.4	10.2	10.7	11.2	5.7	11.7	8.5	7.7	
Precipitation			8.1	0.1								8.2	0.2	7.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	9.4	6.0	6.7	6.1	7.7	11.0	10.9	11.3	12.8	13.0	94.8	101.4	
	10	4.4	1.0	1.7	1.1	2.7	6.0	5.9	6.3	7.8	8.0	44.8	51.4	

3rd 10-day period (21-30/04/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	32.2	
Precipitation - Reference Evapotranspiration	-	-32.0	7.9
Number of Rainy Days	2.0	1.0	2.8
Number of Dry Days	14.0	4.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



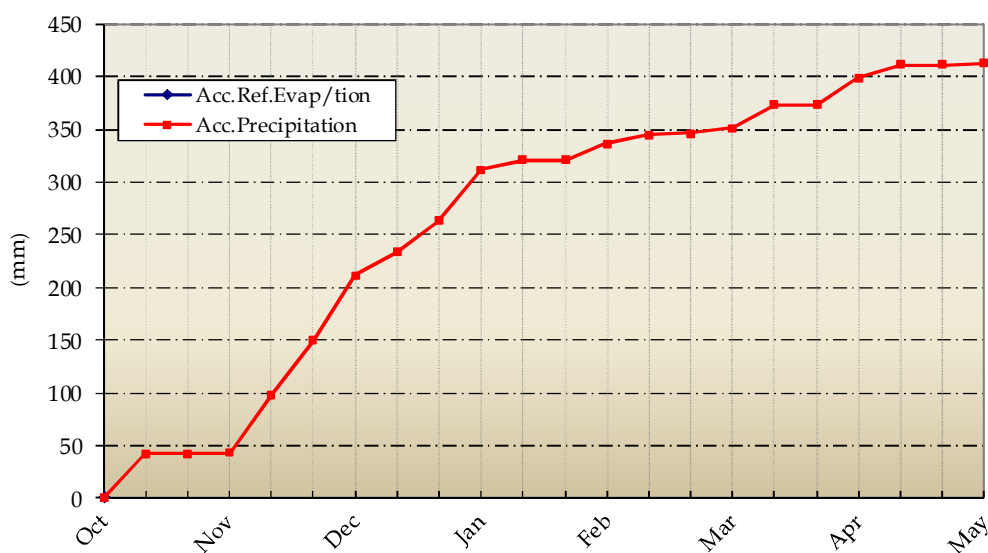
Tripoli

3rd 10-day period (21-30/04/2020)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.5	14.8	12.2	18.5	20.0	-	21.5	22.8	22.8	20.2	19.0	19.9	18.7
	Min	9.3	8.4	6.7	0.3	0.4	-	2.5	3.4	6.7	13.2	5.7	5.4	5.4
Relative Humidity	Max	89	89	91	79	-	88	97	99	88	92	90	94	-
	Min	41	41	54	30	-	27	32	26	28	28	34	31	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	12.6	12.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	18.2	14.3
Sunshine Duration		7.0	0.0	1.3	9.4	9.6	9.9	6.4	7.7	8.0	9.3	6.9	6.3	8.0
Precipitation		0.0	0.1	0.5				1.5				2.1	0.2	14.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	35.0
Growing Degrees	5	8.9	6.6	4.5	4.4	5.2	-	7.0	8.1	9.8	11.7	-	76.3	70.7
	10	3.9	1.6	0.0	0.0	0.2	-	2.0	3.1	4.8	6.7	-	26.9	24.2

3rd 10-day period (21-30/04/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	30.8	29.2	32.9
Precipitation - Reference Evapotranspiration	-28.7	-29.0	-18.4
Number of Rainy Days	3.0	1.0	2.7
Number of Dry Days	17.0	2.0	-

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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Division of Climatology-Applications

Issue Editors :

Papakrivou Anastasia

The present bulletin was designed and implemented under the support of Water Resources Management Division of Agriculture University of Athens