



AGROMETEOROLOGICAL BULLETIN

*April 2023
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



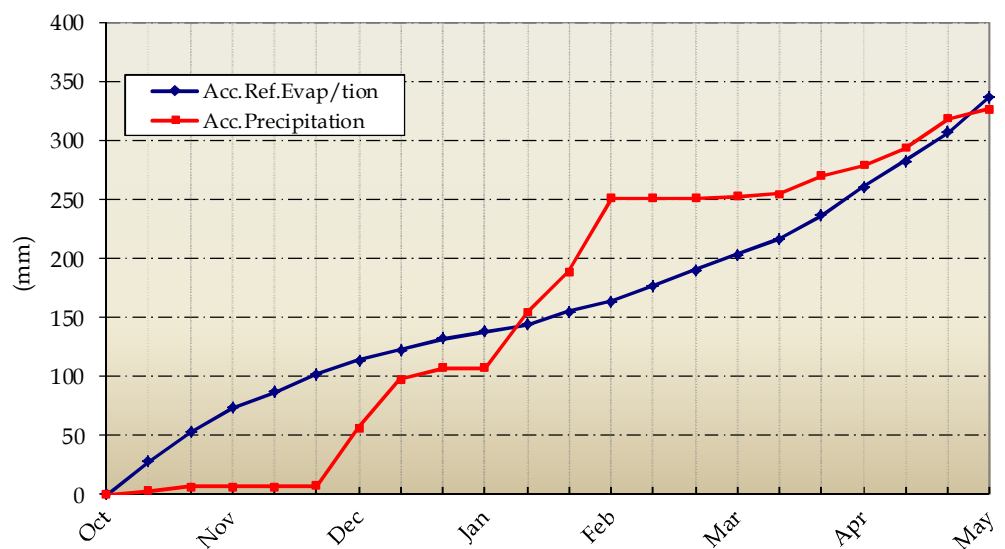
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www.emy.gov.gr
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www.meteohellas.gr

3rd 10-day period (21-30/04/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.0	19.8	19.4	18.0	19.4	19.6	16.2	16.2	16.6	18.6	18.2	22.9	19.5
	Min	6.8	12.0	9.2	5.6	9.0	10.6	11.0	8.0	3.8	8.4	8.4	10.1	8.6
Relative Humidity	Max	94	91	92	91	93	93	95	86	90	92	92	90	86
	Min	69	52	44	55	74	60	50	39	39	61	54	42	45
Soil Temperature at 10 cm	06 UTC	14.2	15.4	15.0	14.4	15.4	16.4	15.7	14.0	12.6	14.4	14.8	14.7	14.3
	12 UTC	16.8	17.6	17.2	16.6	18.4	18.0	16.2	15.8	15.6	17.0	16.9	17.6	17.9
Sunshine Duration		10.8	5.9	9.4	10.1	9.1	4.7	2.2	8.0	10.0	8.8	7.9	10.0	8.6
Precipitation			0.4			0.4	5.1	0.5			1.7	8.1		4.7
Evaporation		3.6	2.6	6.0	3.4	4.3	4.1	1.6	3.0	5.6	3.7	37.9	54.1	45.5
Growing Degrees	5	7.4	10.9	9.3	6.8	9.2	10.1	8.6	7.1	5.2	8.5	83.1	115.1	79.6
	10	2.4	5.9	4.3	1.8	4.2	5.1	3.6	2.1	0.2	3.5	33.1	65.1	35.9

3rd 10-day period (21-30/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	30.0	39.1	34.8
Precipitation - Reference Evapotranspiration	-21.9	-39.1	-30.1
Number of Rainy Days	5.0	0.0	1.8
Number of Dry Days	2.0	12.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

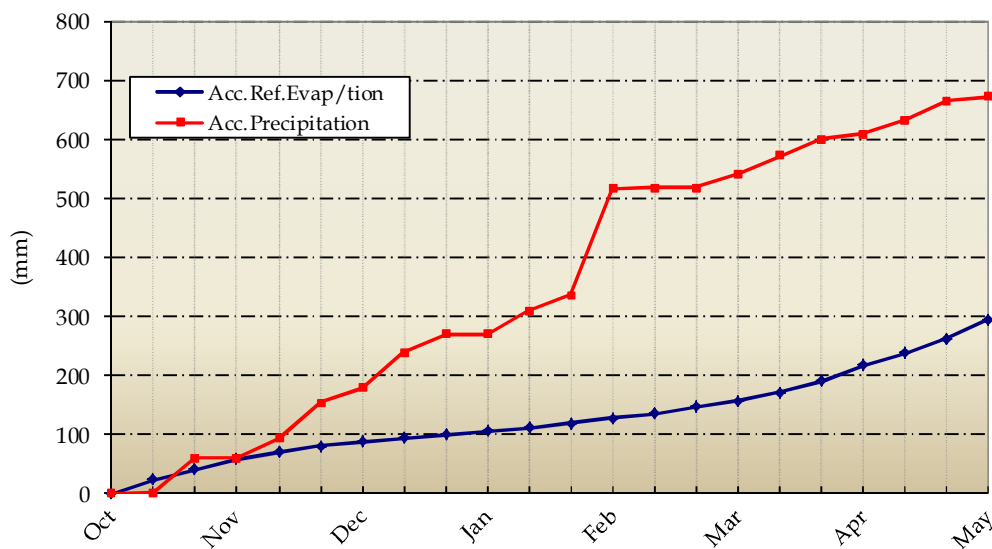


3rd 10-day period (21-30/04/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.4	21.7	20.6	21.9	20.6	19.5	19.2	20.8	21.2	19.9	20.7	22.7	21.3
	Min	7.5	6.3	7.5	10.4	13.5	13.8	8.8	7.2	8.4	12.6	9.6	10.4	10.6
Relative Humidity	Max	99	98	98	96	96	97	96	95	96	96	97	96	92
	Min	44	49	51	55	60	59	45	40	39	62	50	50	45
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	16.4
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	20.5
Sunshine Duration		9.8	11.2	11.2	10.6	6.7	6.7	12.6	12.4	11.8	0.5	9.4	9.2	8.8
Precipitation							7.1				0.1	7.2		6.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	50.8
Growing Degrees	5	9.5	9.0	9.1	11.2	12.1	11.7	9.0	9.0	9.8	11.3	101.4	115.5	91.1
	10	4.5	4.0	4.1	6.2	7.1	6.7	4.0	4.0	4.8	6.3	51.4	65.5	49.4

3rd 10-day period (21-30/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	31.8	32.9	18.1
Precipitation - Reference Evapotranspiration	-24.6	-32.9	-11.6
Number of Rainy Days	2.0	0.0	1.4
Number of Dry Days	7.0	11.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



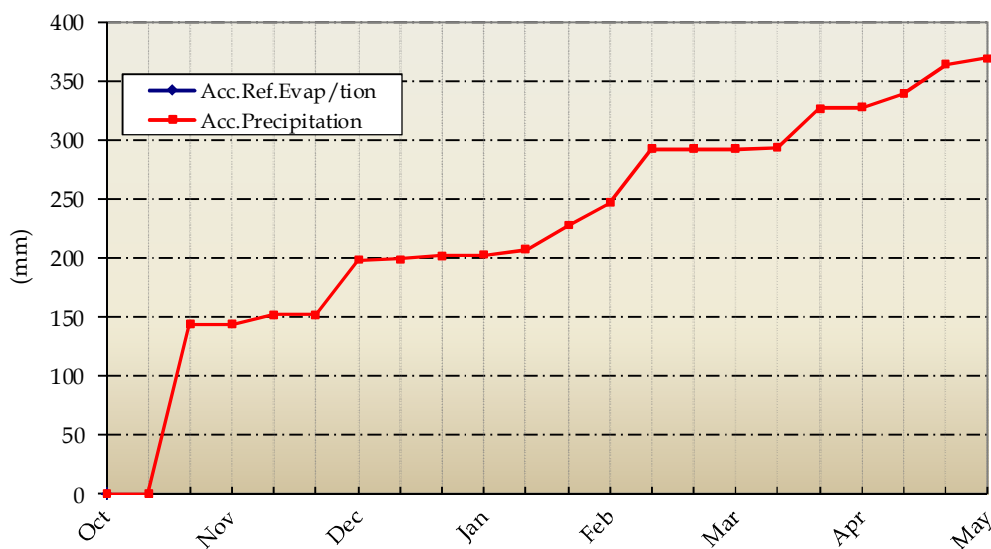
Iraklio

3rd 10-day period (21-30/04/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.2	19.4	20.0	20.8	22.4	23.0	19.0	18.0	18.4	19.6	20.0	21.8	20.7
	Min	11.0	15.6	14.4	10.4	12.2	15.0	14.6	15.0	14.8	10.0	13.3	13.0	12.7
Relative Humidity	Max	94	94	91	92	78	80	89	68	80	91	86	87	84
	Min	69	72	63	48	35	44	52	48	48	62	54	47	51
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		6.9	5.9	9.6	12.0	12.4	6.2	10.7	10.8	11.8	6.8	9.3	10.2	9.4
Precipitation			2.0					3.3				5.3		3.6
Evaporation		3.3	0.2	3.4	6.3	2.9	4.5	8.5	2.6	8.2	0.3	40.2	40.2	45.9
Growing Degrees	5	10.1	12.5	12.2	10.6	12.3	14.0	11.8	11.5	11.6	9.8	116.4	124.1	104.1
	10	5.1	7.5	7.2	5.6	7.3	9.0	6.8	6.5	6.6	4.8	66.4	74.1	59.6

3rd 10-day period (21-30/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	-
Number of Rainy Days	2.0	0.0	1.0
Number of Dry Days	10.0	37.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

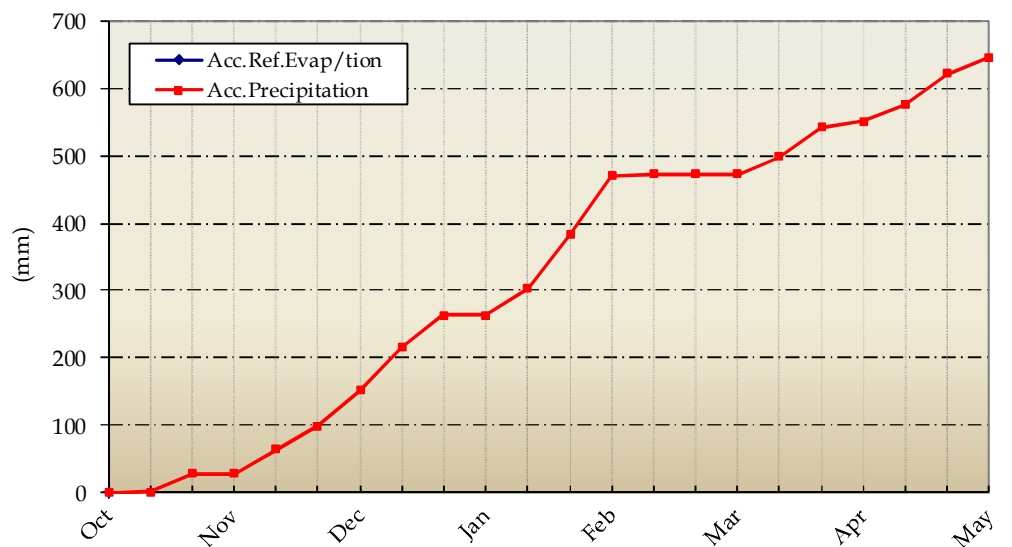


3rd 10-day period (21-30/04/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.9	19.1	21.8	20.1	19.0	16.3	18.6	19.5	21.8	21.4	20.0	23.5	19.7
	Min	4.2	4.9	2.4	3.1	10.2	8.0	2.8	2.0	3.9	10.0	5.2	6.4	7.2
Relative Humidity	Max	100	100	100	100	100	100	96	96	98	100	99	91	93
	Min	24	34	30	37	48	51	34	27	31	43	36	31	43
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	12.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	13.8
Sunshine Duration		8.5	6.6	11.1	5.9	5.2	4.5	12.1	12.1	9.0	4.5	8.0	8.1	6.7
Precipitation			0.1		0.9	0.0	14.3				8.6	23.9	0.0	11.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	
Growing Degrees	5	8.1	7.0	7.1	6.6	9.6	7.2	5.7	5.8	7.9	10.7	75.5	99.3	68.0
	10	3.1	2.0	2.1	1.6	4.6	2.2	0.7	0.8	2.9	5.7	25.5	49.3	28.2

3rd 10-day period (21-30/04/2023)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	40.6
Precipitation - Reference Evapotranspiration	-	-28.9
Number of Rainy Days	4.0	2.9
Number of Dry Days	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



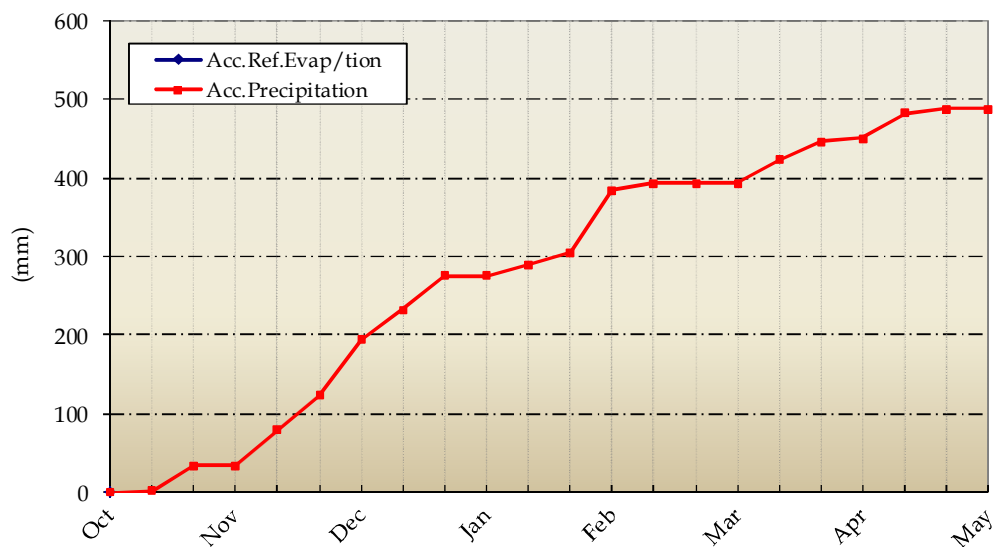
Kalamata

3rd 10-day period (21-30/04/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.9	21.6	21.2	22.8	22.5	22.7	22.6	22.3	20.4	20.0	21.8	23.5	21.7
	Min	7.5	9.3	7.8	9.1	7.0	10.0	7.0	8.2	6.9	9.3	8.2	10.1	9.7
Relative Humidity	Max	97	97	96	97	95	95	95	95	95	97	96	89	91
	Min	44	47	51	41	43	52	32	31	45	50	44	40	41
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	16.7	16.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	19.2	18.6
Sunshine Duration		10.3	10.1	10.9	12.0	11.4	6.4	12.2	11.8	12.1	0.1	9.7	9.8	8.7
Precipitation			0.0				0.1				0.1	0.2	0.0	10.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	44.3
Growing Degrees	5	9.7	10.5	9.5	11.0	9.8	11.4	9.8	10.3	8.7	9.7	100.1	117.9	93.4
	10	4.7	5.5	4.5	6.0	4.8	6.4	4.8	5.3	3.7	4.7	50.1	67.9	49.7

3rd 10-day period (21-30/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	31.7
Precipitation - Reference Evapotranspiration	-	-	-20.9
Number of Rainy Days	2.0	0.0	1.8
Number of Dry Days	6.0	11.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



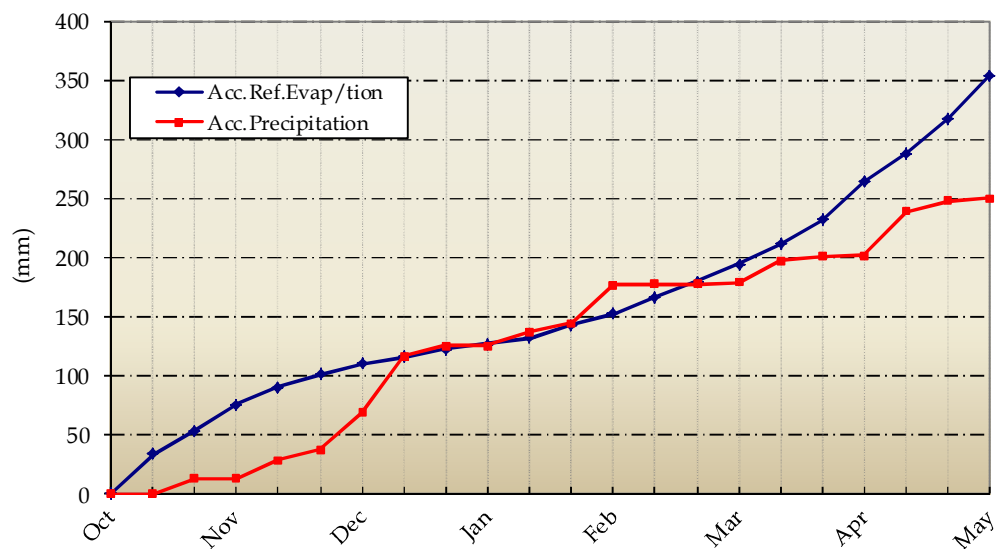
Larisa

3rd 10-day period (21-30/04/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.0	19.0	21.0	24.8	24.0	19.2	20.8	20.8	22.0	24.6	21.9	24.3	22.0
	Min	7.0	10.0	3.8	5.8	8.2	5.0	3.2	5.4	4.2	10.4	6.3	8.9	8.5
Relative Humidity	Max	100	100	100	100	89	100	100	100	100	100	99	92	92
	Min	37	54	43	30	31	26	29	24	35	36	34	38	38
Soil Temperature at 10 cm	06 UTC	16.2	17.8	16.4	17.0	18.0	17.8	16.4	15.8	17.4	18.2	17.1	15.8	15.0
	12 UTC	17.4	18.0	18.0	18.0	18.6	17.6	18.0	17.6	18.0	19.2	18.0	17.7	16.5
Sunshine Duration		8.8	3.2	10.3	8.1	8.4	4.3	11.4	10.8	7.8	9.5	8.3	7.8	8.1
Precipitation			0.0				2.1					2.1		8.4
Evaporation		7.0	2.4	5.3	5.4	8.7	1.2	4.8	9.4	6.7	5.8	56.7	54.5	56.2
Growing Degrees	5	10.0	9.5	7.4	10.3	11.1	7.1	7.0	8.1	8.1	12.5	91.1	116.1	95.6
	10	5.0	4.5	2.4	5.3	6.1	2.1	2.0	3.1	3.1	7.5	41.1	66.1	48.9

3rd 10-day period (21-30/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	36.4	37.3	54.6
Precipitation - Reference Evapotranspiration	-34.3	-37.3	-46.2
Number of Rainy Days	1.0	0.0	2.6
Number of Dry Days	7.0	11.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



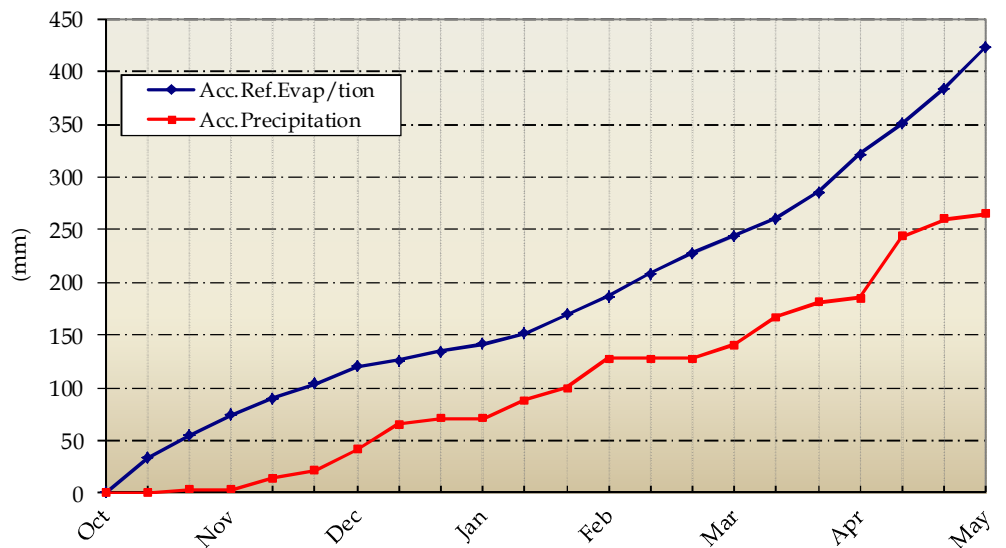
Mikra

3rd 10-day period (21-30/04/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.6	19.6	19.8	20.7	23.2	18.1	19.2	20.2	19.0	21.9	20.4	22.8	20.9
	Min	7.0	11.0	7.9	8.2	10.0	9.8	11.9	8.8	7.5	9.4	9.2	10.2	9.9
Relative Humidity	Max	100	100	100	100	100	100	72	84	99	100	96	98	85
	Min	34	46	53	56	34	55	30	26	52	47	43	45	40
Soil Temperature at 10 cm	06 UTC	14.6	15.4	14.6	15.0	15.6	16.2	14.4	14.0	14.9	15.8	15.0	15.4	15.4
	12 UTC	19.1	16.2	16.4	17.2	17.8	17.8	15.8	16.0	17.0	17.8	17.1	16.9	20.0
Sunshine Duration		12.2	3.1	12.5	11.2	10.5	6.2	12.2	12.2	8.8	12.3	10.1	8.3	8.3
Precipitation			3.9			0.0	1.4	0.0			0.0	5.3	2.2	8.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	50.1
Growing Degrees	5	9.8	10.3	8.9	9.5	11.6	9.0	10.6	9.5	8.3	10.7	97.9	115.2	91.9
	10	4.8	5.3	3.9	4.5	6.6	4.0	5.6	4.5	3.3	5.7	47.9	65.5	47.6

3rd 10-day period (21-30/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	40.0	36.5	28.7
Precipitation - Reference Evapotranspiration	-34.7	-34.3	-20.6
Number of Rainy Days	2.0	2.0	2.5
Number of Dry Days	2.0	2.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

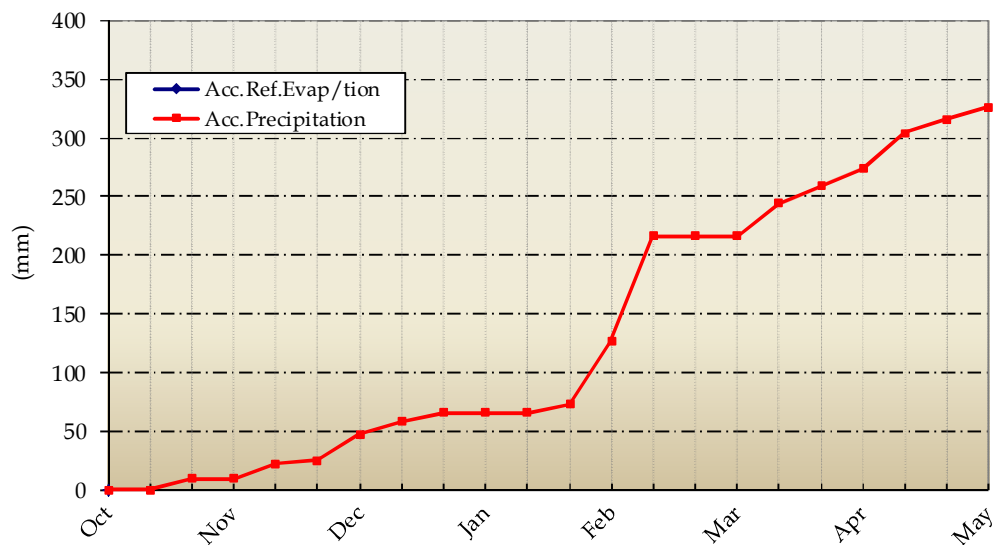


3rd 10-day period (21-30/04/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.0	19.4	20.0	23.8	22.9	23.5	17.4	17.8	19.8	21.1	20.7	24.1	20.8
	Min	8.2	9.6	8.5	5.9	13.6	11.4	10.2	5.8	5.2	10.4	8.9	10.1	8.8
Relative Humidity	Max	94	99	99	98	68	94	94	95	95	94	93	85	86
	Min	40	49	46	23	31	30	37	31	33	45	36	31	35
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		10.7	5.2	10.6	11.1	8.3	9.5	10.9	11.4	11.3	8.1	9.7	10.0	8.6
Precipitation			8.7				1.5	0.3			0.0	10.5		5.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	44.6
Growing Degrees	5	9.6	9.5	9.3	9.9	13.3	12.5	8.8	6.8	7.5	10.8	97.8	120.7	84.7
	10	4.6	4.5	4.3	4.9	8.3	7.5	3.8	1.8	2.5	5.8	47.8	70.7	41.4

3rd 10-day period (21-30/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	-
Number of Rainy Days	3.0	0.0	1.5
Number of Dry Days	2.0	11.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



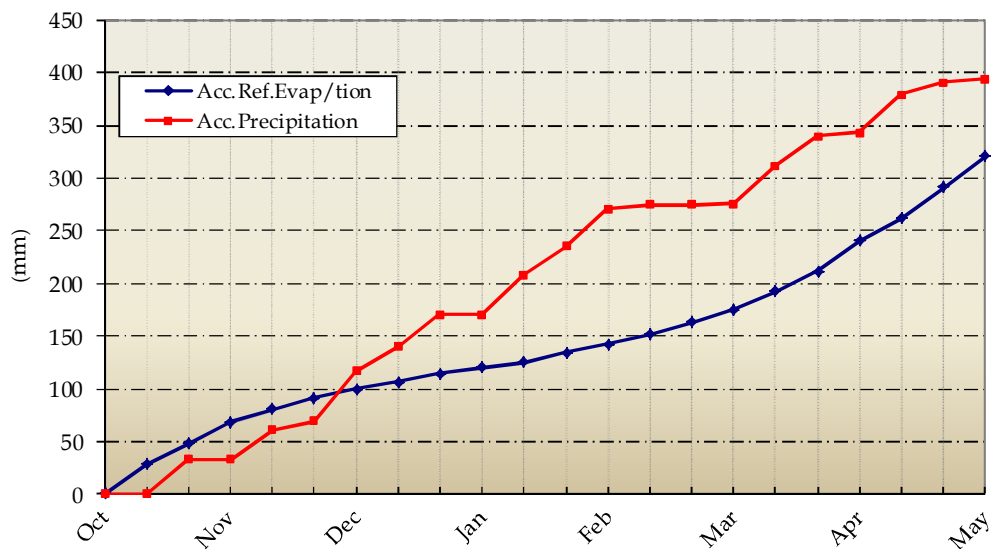
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3rd 10-day period (21-30/04/2023)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.0	17.4	18.4	20.8	18.9	17.2	18.6	18.4	19.1	17.9	18.7	22.6	19.5
	Min	2.6	3.8	1.8	4.7	6.4	9.2	1.2	2.6	4.2	5.3	4.2	5.1	5.5
Relative Humidity	Max	99	80	99	99	90	94	98	98	98	88	94	92	89
	Min	31	44	39	25	30	45	26	25	31	48	34	24	35
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	13.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	17.0
Sunshine Duration		8.3	7.8	8.1	9.4	11.6	6.0	8.6	8.1	8.1	0.3	7.6	9.5	8.3
Precipitation			0.8	0.0			2.2				0.4	3.4	0.5	10.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	43.5
Growing Degrees	5	6.3	5.6	5.1	7.8	7.7	8.2	4.9	5.5	6.7	6.6	64.3	88.6	64.6
	10	1.3	0.6	0.1	2.8	2.7	3.2	0.0	0.5	1.7	1.6	14.4	38.6	23.3

3rd 10-day period (21-30/04/2023)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	29.5	35.6	27.6
Precipitation - Reference Evapotranspiration	-26.1	-35.1	-17.3
Number of Rainy Days	3.0	1.0	2.5
Number of Dry Days	2.0	10.0	-

The missing info in the tables 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.

Past Years Mean Values 1991-2020 (Evaporation, Reference Evapotranspiration, Max and Min Relative Humidity 2005-2020)

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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