



AGROMETEOROLOGICAL BULLETIN

September 2021
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



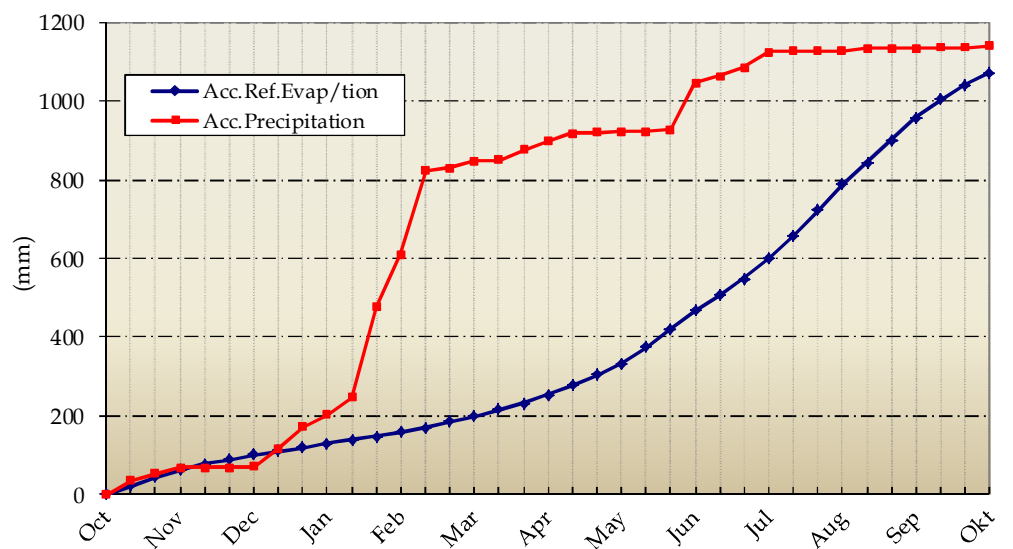
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Division of Climatology-Applications
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Web addresses of HNMS
www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr

3rd 10-day period (21-30/09/2021)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.8	23.4	22.4	22.4	25.6	26.8	28.4	25.6	23.0	23.2	24.6	26.4	24.9
	Min	17.6	14.8	7.0	7.4	11.8	10.8	12.0	16.0	15.0	14.6	12.7	15.4	13.0
Relative Humidity	Max	73	91	91	89	91	81	82	84	68	70	82	90	-
	Min	40	23	34	61	55	36	32	40	43	31	40	52	-
Soil Temperature at 10 cm	06 UTC	24.2	22.6	18.2	17.6	19.0	19.8	20.6	21.6	21.8	20.8	20.6	21.0	19.0
	12 UTC	27.8	25.0	22.0	20.6	24.6	24.8	25.6	25.0	25.2	23.2	24.4	25.1	22.4
Sunshine Duration		5.7	4.1	9.5	8.6	10.7	11.0	10.1	7.6	8.1	8.9	8.4	8.1	7.5
Precipitation			0.0	2.5								2.5	0.7	12.3
Evaporation		8.2	4.0	5.3	2.5	6.1	2.4	9.7	7.3	5.7	5.3	56.5	52.9	59.3
Growing Degrees	5	16.2	14.1	9.7	9.9	13.7	13.8	15.2	15.8	14.0	13.9	136.3	159.3	139.4
	10	11.2	9.1	4.7	4.9	8.7	8.8	10.2	10.8	9.0	8.9	86.3	109.3	89.4

3rd 10-day period (21-30/09/2021)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	32.0	29.4	31.9
Precipitation - Reference Evapotranspiration	-29.5	-28.7	-19.6
Number of Rainy Days	1.0	2.0	1.1
Number of Dry Days	4.0	36.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

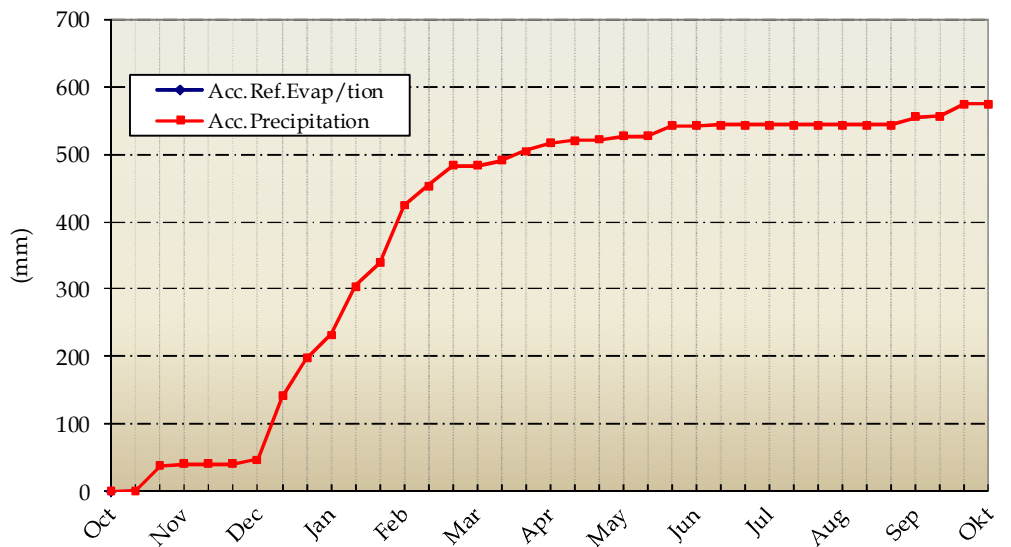


3rd 10-day period (21-30/09/2021)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.5	28.5	26.0	26.0	27.7	28.6	28.1	31.1	28.3	28.6	28.3	27.8	27.0
	Min	20.5	18.3	16.9	11.2	12.0	13.8	14.6	17.4	16.5	15.8	15.7	16.9	15.6
Relative Humidity	Max	97	89	83	87	88	88	93	93	95	96	91	94	-
	Min	42	44	38	29	40	32	48	37	45	34	39	48	-
Soil Temperature at 10 cm	06 UTC	26.8	26.2	26.0	23.0	22.8	23.0	23.0	23.2	24.6	24.8	24.3	23.1	22.0
	12 UTC	28.6	27.8	27.4	27.6	25.2	28.0	27.8	28.4	26.6	27.6	27.5	24.8	25.5
Sunshine Duration		9.0	7.7	10.6	10.9	10.8	10.8	10.0	6.9	10.2	9.8	9.7	8.0	8.1
Precipitation													17.2	16.0
Evaporation		6.3	6.0	5.0	6.2	6.6	5.4	6.0	6.3	6.8	5.5	60.1	67.8	48.4
Growing Degrees	5	20.5	18.4	16.5	13.6	14.9	16.2	16.4	19.3	17.4	17.2	170.2	173.5	162.7
	10	15.5	13.4	11.5	8.6	9.9	11.2	11.4	14.3	12.4	12.2	120.2	123.5	112.7

3rd 10-day period (21-30/09/2021)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	27.7	- 30.8
Precipitation - Reference Evapotranspiration	-27.7	- -14.8
Number of Rainy Days	0.0	2.0 1.5
Number of Dry Days	17.0	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

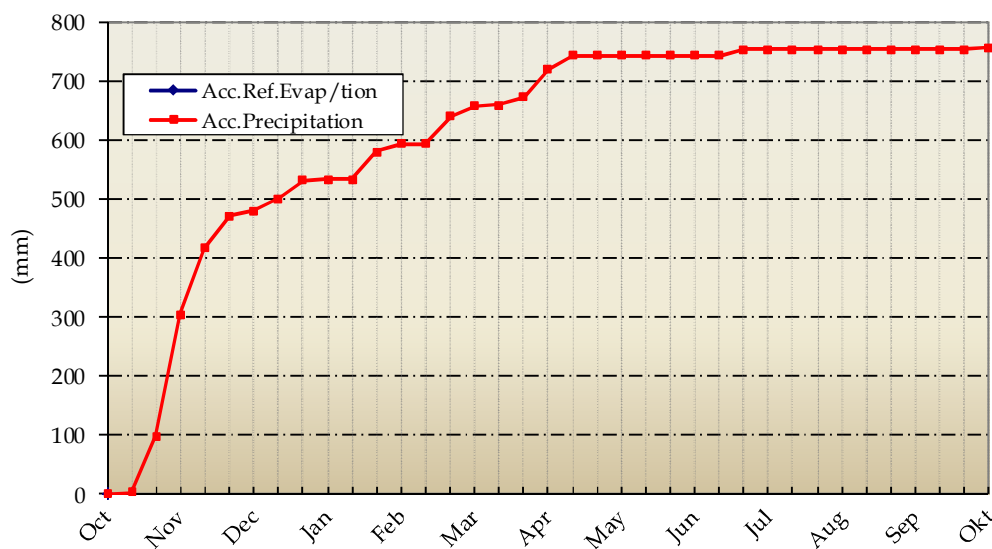


3rd 10-day period (21-30/09/2021)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.4	27.8	23.6	22.8	26.0	25.8	27.0	27.4	24.8	24.0	25.9	28.5	25.7
	Min	22.6	20.0	21.0	19.2	15.4	16.8	18.0	20.0	21.0	21.4	19.5	21.5	18.8
Relative Humidity	Max	95	98	91	90	92	91	90	98	90	83	92	83	-
	Min	68	82	73	70	74	71	68	70	82	69	73	54	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		10.2	10.3	2.1	10.8	10.8	10.9	10.7	8.3	9.5	8.6	9.2	8.4	8.3
Precipitation				3.1							0.0	3.1	0.0	4.1
Evaporation		3.2	4.8	4.2	6.2	3.1	3.3	7.1	3.9	3.6	8.2	47.6	50.2	61.7
Growing Degrees	5	21.0	18.9	17.3	16.0	15.7	16.3	17.5	18.7	17.9	17.7	177.0	200.2	172.5
	10	16.0	13.9	12.3	11.0	10.7	11.3	12.5	13.7	12.9	12.7	127.0	150.2	122.5

3rd 10-day period (21-30/09/2021)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	4.1
Number of Rainy Days	1.0	0.6
Number of Dry Days	13.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

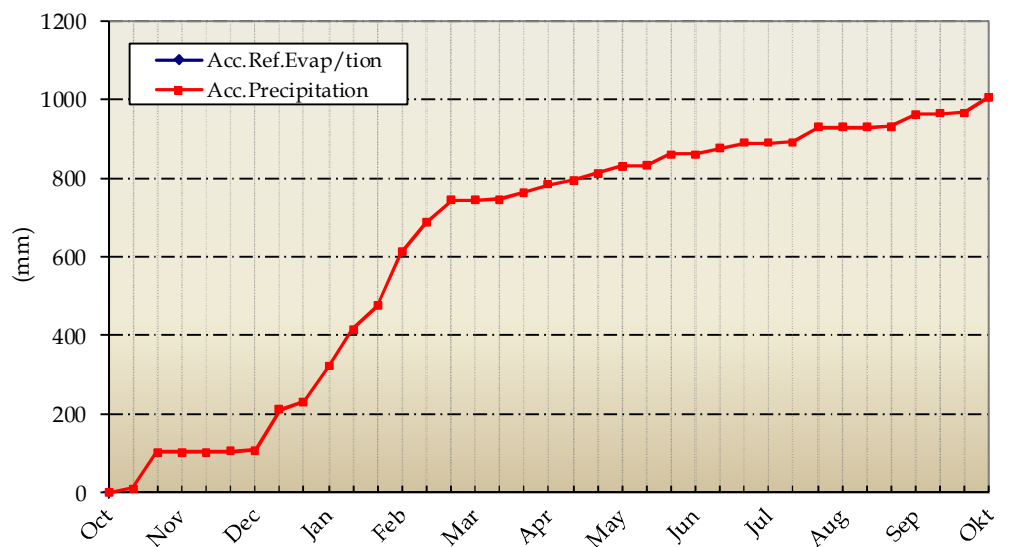


3rd 10-day period (21-30/09/2021)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.7	26.4	22.6	25.5	29.6	30.2	32.0	27.6	26.5	23.7	27.2	24.2	24.8
	Min	13.0	10.3	7.9	3.4	4.5	6.0	6.7	13.8	12.5	16.0	9.4	12.6	11.3
Relative Humidity	Max	99	99	90	100	98	97	91	90	99	98	96	98	-
	Min	37	32	23	27	18	13	14	35	35	48	28	47	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	16.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	19.5
Sunshine Duration		6.9	10.0	10.4	9.4	10.5	10.4	9.8	0.7	3.8	2.4	7.4	5.2	6.4
Precipitation		0.4							0.1	24.1	16.2	40.8	98.1	24.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	40.6
Growing Degrees	5	15.4	13.4	10.3	9.5	12.1	13.1	14.4	15.7	14.5	14.9	133.0	134.3	130.3
	10	10.4	8.4	5.3	4.5	7.1	8.1	9.4	10.7	9.5	9.9	83.0	84.3	80.3

3rd 10-day period (21-30/09/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	25.1
Precipitation - Reference Evapotranspiration	-	-	-0.6
Number of Rainy Days	4.0	6.0	2.5
Number of Dry Days	1.0	3.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

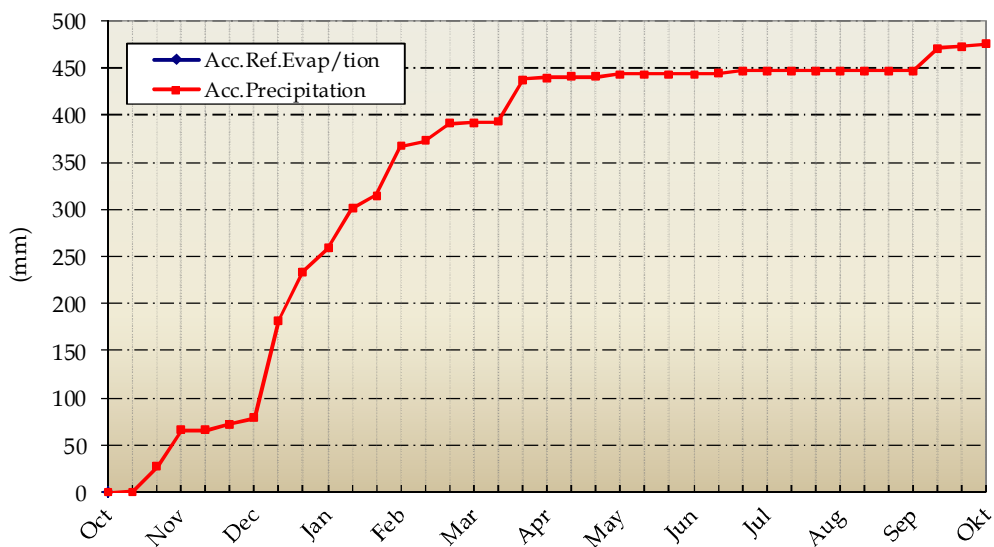


3rd 10-day period (21-30/09/2021)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	35.1	31.7	26.4	25.9	28.7	29.2	30.0	29.2	29.3	27.4	29.3	28.3	27.6
	Min	19.5	19.4	18.6	14.8	13.0	11.8	13.0	15.0	16.7	18.0	16.0	16.1	15.0
Relative Humidity	Max	92	78	65	79	81	79	87	90	94	82	83	96	-
	Min	19	28	40	36	23	28	31	40	43	41	33	42	-
Soil Temperature at 10 cm	06 UTC	25.5	25.0	24.4	23.5	22.5	22.0	22.4	23.0	23.4	23.2	23.5	22.4	21.4
	12 UTC	28.4	28.5	27.6	26.5	30.4	26.0	26.0	26.2	27.0	27.4	27.4	25.1	24.4
Sunshine Duration		9.1	9.8	7.2	8.6	10.5	10.7	9.3	8.1	8.8	6.1	8.8	8.2	7.7
Precipitation										2.7		2.7	9.7	12.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	43.5	51.4
Growing Degrees	5	22.3	20.6	17.5	15.4	15.9	15.5	16.5	17.1	18.0	17.7	176.4	172.0	162.8
	10	17.3	15.6	12.5	10.4	10.9	10.5	11.5	12.1	13.0	12.7	126.4	122.0	112.8

3rd 10-day period (21-30/09/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	32.9
Precipitation - Reference Evapotranspiration	-	-	-20.6
Number of Rainy Days	1.0	2.0	1.7
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



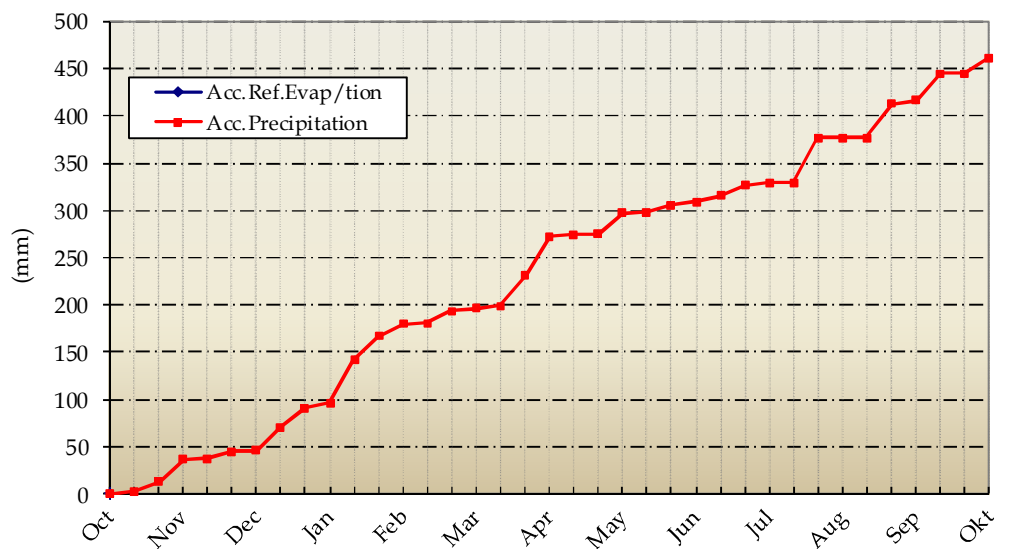
Larisa

3rd 10-day period (21-30/09/2021)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.6	25.8	22.0	26.8	30.8	31.2	32.0	26.6	21.2	20.6	26.8	26.7	27.3
	Min	17.0	16.8	14.4	6.4	7.4	10.2	11.4	18.0	17.2	16.8	13.6	13.8	13.0
Relative Humidity	Max	80	97	82	89	83	90	94	95	98	94	90	94	-
	Min	33	44	30	21	17	21	24	50	71	57	37	43	-
Soil Temperature at 10 cm	06 UTC	24.8	24.0	20.4	18.2	18.8	20.0	20.8	22.0	22.0	20.6	21.2	-	20.9
	12 UTC	28.4	28.4	28.2	24.6	25.4	25.6	26.4	25.6	28.6	20.8	26.2	-	22.7
Sunshine Duration		8.7	9.7	9.6	11.1	11.1	11.2	10.5	5.5	0.0	0.3	7.8		7.0
Precipitation		0.0	4.8	0.4					2.0	9.0		16.2	14.4	7.0
Evaporation		5.4	8.8	5.2	5.2	6.6	6.0	5.5	0.0	0.4	0.0	43.1	58.8	51.2
Growing Degrees	5	18.8	16.3	13.2	11.6	14.1	15.7	16.7	17.3	14.2	13.7	151.6	152.9	151.5
	10	13.8	11.3	8.2	6.6	9.1	10.7	11.7	12.3	9.2	8.7	101.6	102.9	101.5

3rd 10-day period (21-30/09/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	33.1	-	31.7
Precipitation - Reference Evapotranspiration	-16.9	-	-24.7
Number of Rainy Days	4.0	3.0	1.7
Number of Dry Days	12.0	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



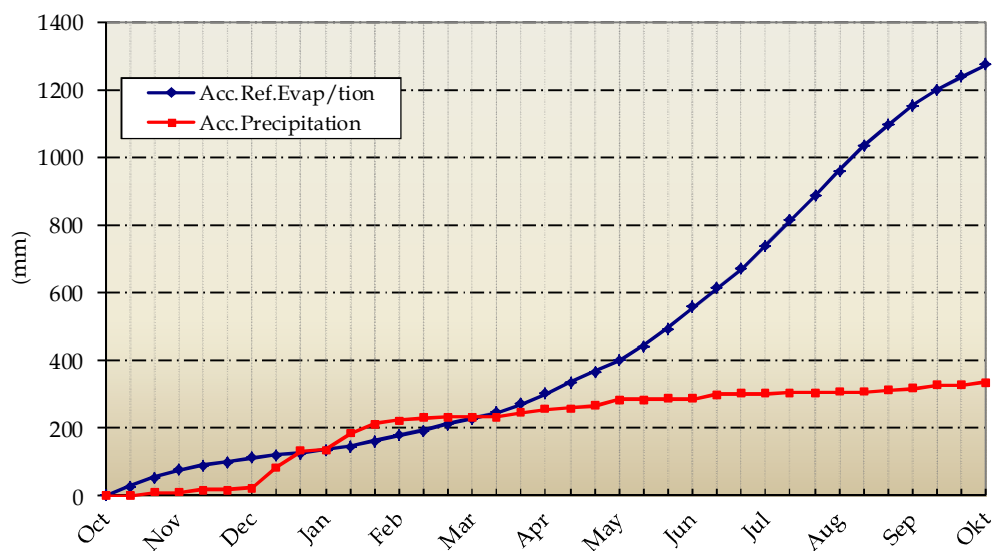
Mikra

3rd 10-day period (21-30/09/2021)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.2	24.6	22.8	24.8	29.9	28.8	28.6	26.2	21.6	20.2	25.7	26.8	25.8
	Min	20.6	18.6	13.0	9.6	10.8	12.9	14.2	18.5	17.8	18.7	15.5	16.1	14.1
Relative Humidity	Max	78	76	61	74	75	84	90	95	97	84	81	82	-
	Min	37	47	29	29	27	32	32	51	65	55	40	40	-
Soil Temperature at 10 cm	06 UTC	24.6	24.6	21.2	20.8	20.8	22.2	22.4	23.6	23.0	21.8	22.5	22.8	19.9
	12 UTC	25.0	25.0	26.6	22.6	23.6	23.6	24.4	25.0	23.4	21.6	24.1	24.6	23.6
Sunshine Duration		6.2	1.7	11.1	12.0	10.5	11.0	10.0	5.2	0.1	0.0	6.8	8.6	6.9
Precipitation			0.1						0.1	7.7	0.0	7.9	13.0	10.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	49.1
Growing Degrees	5	19.9	16.6	12.9	12.2	15.4	15.9	16.4	17.4	14.7	14.5	155.7	164.6	149.6
	10	14.9	11.6	7.9	7.2	10.4	10.9	11.4	12.4	9.7	9.5	105.7	114.6	99.6

3rd 10-day period (21-30/09/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	35.0	38.5	29.8
Precipitation - Reference Evapotranspiration	-27.1	-25.5	-19.1
Number of Rainy Days	3.0	2.0	1.5
Number of Dry Days	2.0	30.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



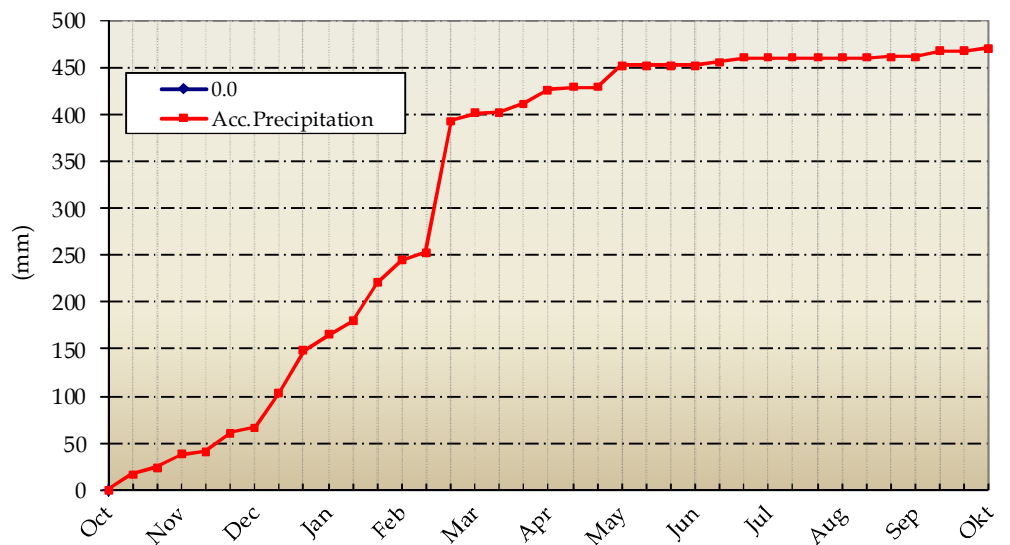
Tanagra

3rd 10-day period (21-30/09/2021)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.2	26.2	18.5	25.9	28.6	29.0	29.8	27.4	24.6	22.7	26.4	28.3	26.5
	Min	19.8	18.2	13.8	9.0	11.6	10.7	14.3	15.6	16.2	15.6	14.5	16.2	13.9
Relative Humidity	Max	86	94	92	79	77	78	65	69	77	69	79	86	-
	Min	26	44	44	19	17	22	26	28	37	35	30	31	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.6	7.2	4.9	11.0	10.7	11.1	10.5	5.2	8.4	9.5	8.7	8.8	
Precipitation				3.3								3.3	0.5	7.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	20.5	17.2	11.2	12.5	15.1	14.9	17.1	16.5	15.4	14.2	154.4	172.1	
	10	15.5	12.2	6.2	7.5	10.1	9.9	12.1	11.5	10.4	9.2	104.4	122.1	

3rd 10-day period (21-30/09/2021)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	7.7
Number of Rainy Days	1.0	1.7
Number of Dry Days	13.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



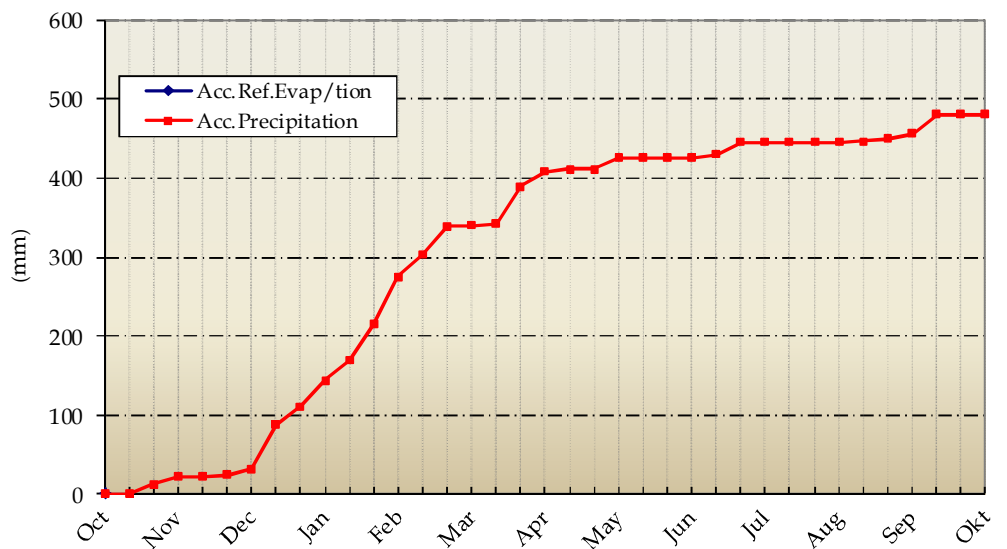
Tripoli

3rd 10-day period (21-30/09/2021)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.3	28.8	19.2	24.6	28.1	28.4	29.6	29.0	22.9	21.8	26.4	25.1	25.0
	Min	13.9	10.7	9.3	5.2	5.2	6.3	7.7	11.2	12.6	10.3	9.2	11.9	10.2
Relative Humidity	Max	91	89	90	95	88	87	85	90	94	94	90	90	-
	Min	15	20	47	23	13	17	17	23	49	40	26	38	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	18.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	21.1
Sunshine Duration		8.9	9.1	5.0	10.3	10.6	10.5	10.4	6.6	2.1	7.4	8.1	8.6	7.8
Precipitation										0.0		0.0	3.4	11.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	36.1
Growing Degrees	5	17.6	14.8	9.3	9.9	11.7	12.4	13.7	15.1	12.8	11.1	128.1	-	126.3
	10	12.6	9.8	4.3	4.9	6.7	7.4	8.7	10.1	7.8	6.1	78.1	-	76.4

3rd 10-day period (21-30/09/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	28.2	-	29.5
Precipitation - Reference Evapotranspiration	-28.2	-	-17.9
Number of Rainy Days	0.0	2.0	1.5
Number of Dry Days	17.0	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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