



AGROMETEOROLOGICAL BULLETIN

November 2022
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



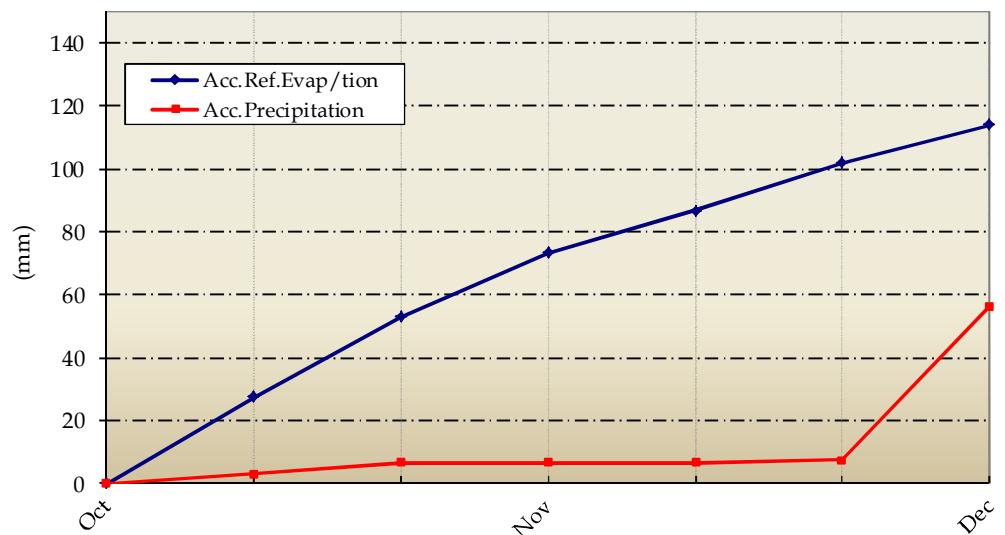
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3rd 10-day period (21-30/11/2022)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.8	17.4	17.6	18.2	14.6	13.8	11.6	9.0	12.0	13.2	14.8	16.1	13.3
	Min	17.0	7.2	12.6	10.0	7.6	2.4	3.4	6.6	6.8	10.0	8.4	7.8	5.5
Relative Humidity	Max	90	91	96	93	89	93	90	88	85	88	90	92	90
	Min	61	49	90	69	49	47	48	68	65	66	61	63	64
Soil Temperature at 10 cm	06 UTC	17.8	14.8	15.6	14.0	13.4	11.0	9.6	9.6	9.6	10.6	12.6	11.6	9.9
	12 UTC	18.2	15.7	16.0	15.6	14.2	12.4	10.4	9.2	10.3	11.4	13.3	12.4	11.3
Sunshine Duration		5.1	5.6	0.0	4.8	5.4	7.7	3.6	0.0	0.0	0.4	3.3	3.5	3.6
Precipitation		18.1		25.1	4.4				0.7	0.6		48.9	114.5	26.5
Evaporation		6.8	2.0	2.8	2.1	2.3	1.1	2.6	2.3	2.0	1.0	25.0	22.5	16.2
Growing Degrees	5	13.9	7.3	10.1	9.1	6.1	3.1	2.5	2.8	4.4	6.6	65.9	69.4	41.0
	10	8.9	2.3	5.1	4.1	1.1	0.0	0.0	0.0	0.0	1.6	23.1	22.5	10.4

3rd 10-day period (21-30/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	12.2	10.6	9.3
Precipitation - Reference Evapotranspiration	36.7	103.9	17.2
Number of Rainy Days	5.0	6.0	2.5
Number of Dry Days	3.0	20.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

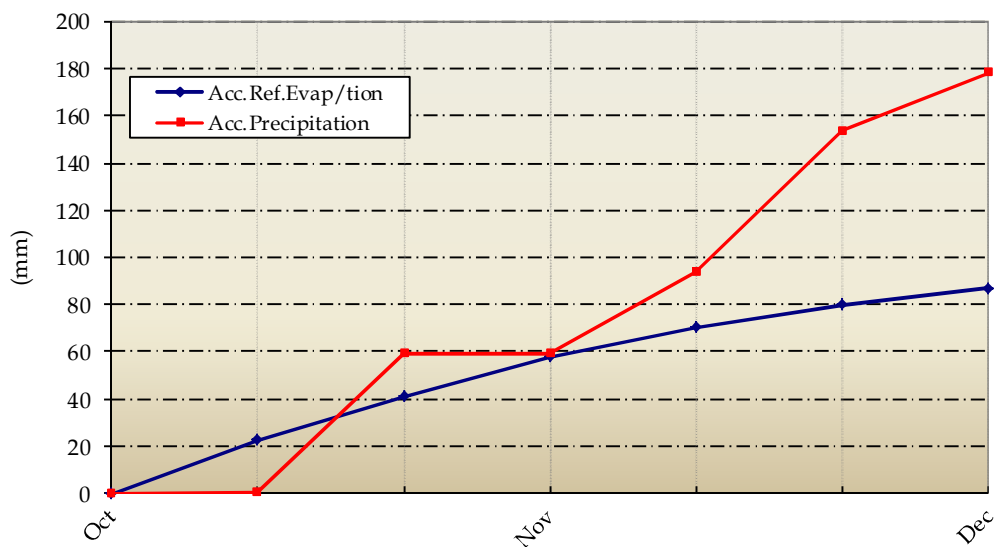


3rd 10-day period (21-30/11/2022)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.0	19.0	18.8	17.7	17.0	16.8	19.2	16.0	17.8	17.8	17.9	18.8	17.8
	Min	13.9	9.9	13.5	9.0	6.6	5.8	6.5	8.0	3.3	9.1	8.6	11.6	8.9
Relative Humidity	Max	96	99	96	98	95	86	92	92	97	96	95	95	92
	Min	57	61	57	58	51	52	38	53	46	61	53	62	55
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	15.1	12.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	16.3	14.7
Sunshine Duration		5.0	2.2	3.4	6.1	6.3	0.7	4.9	6.1	5.5	0.7	4.1	2.8	4.7
Precipitation		4.2	2.5	2.4	2.1				0.8		12.5	24.5	228.5	44.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	3.9	41.5
Growing Degrees	5	11.5	9.5	11.2	8.4	6.8	6.3	7.9	7.0	5.6	8.5	82.4	102.3	71.6
	10	6.5	4.5	6.2	3.4	1.8	1.3	2.9	2.0	0.6	3.5	32.4	52.3	30.1

3rd 10-day period (21-30/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	7.0	7.6	10.4
Precipitation - Reference Evapotranspiration	17.5	220.9	33.9
Number of Rainy Days	6.0	8.0	3.4
Number of Dry Days	0.0	2.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



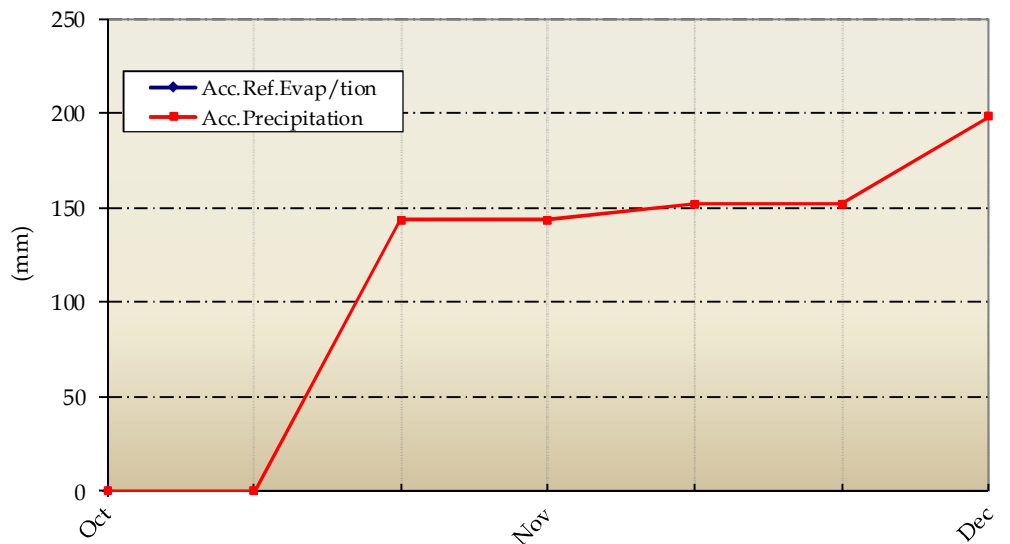
Iraklio

3rd 10-day period (21-30/11/2022)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	21.2	20.4	19.8	18.2	16.8	17.1	17.0	18.2	18.8	19.2	21.8	19.2
	Min	19.6	14.0	16.4	12.6	15.0	14.8	11.0	11.6	13.6	12.6	14.1	15.8	12.9
Relative Humidity	Max	80	80	95	88	77	81	88	95	93	91	87	83	85
	Min	44	60	64	59	55	55	64	77	69	68	62	51	59
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		6.5	8.4	1.4	8.4	5.0	2.8	6.1	0.2	2.1	0.1	4.1	4.4	4.4
Precipitation		0.1		8.8	1.0				2.9	33.5	0.2	46.5	1.6	23.2
Evaporation		2.3	2.1	0.0	1.9	4.1	1.0	2.8	9.0	1.1	8.0	32.3	31.8	26.6
Growing Degrees	5	16.8	12.6	13.4	11.2	11.6	10.8	9.1	9.3	10.9	10.7	116.4	137.9	105.2
	10	11.8	7.6	8.4	6.2	6.6	5.8	4.1	4.3	5.9	5.7	66.4	87.9	57.7

3rd 10-day period (21-30/11/2022)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	-
Number of Rainy Days	6.0	4.0
Number of Dry Days	13.0	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

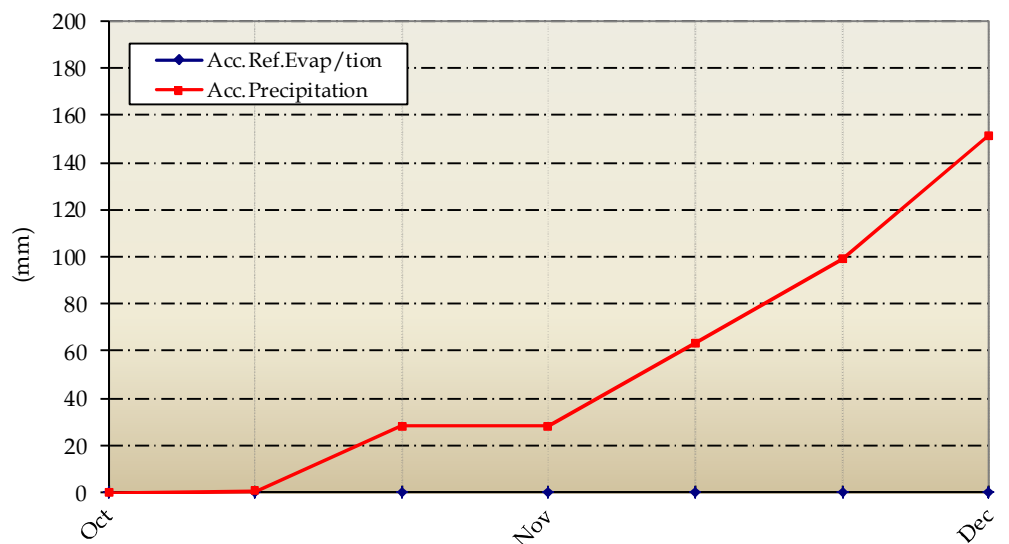


3rd 10-day period (21-30/11/2022)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.0	13.1	10.3	13.3	13.8	12.5	11.6	12.8	13.2	12.9	12.6	13.7	12.6
	Min	10.1	0.9	7.4	5.4	-0.3	-1.8	2.9	1.4	-3.0	4.1	2.7	5.9	3.2
Relative Humidity	Max	100	100	100	100	100	100	100	100	100	95	100	98	98
	Min	66	65	67	63	39	41	48	42	44	55	53	68	67
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	7.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	7.9
Sunshine Duration		1.2	0.0	0.6	4.4	8.1	2.0	0.0	6.6	5.2	0.0	2.8	1.5	2.7
Precipitation		16.5	11.8	22.4	0.2			0.0	0.6		1.0	52.5	116.3	46.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	
Growing Degrees	5	6.6	2.0	3.9	4.4	1.8	0.4	2.3	2.1	0.1	3.5	26.8	48.2	27.4
	10	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	4.6	3.7

3rd 10-day period (21-30/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	3.9
Precipitation - Reference Evapotranspiration	-	-	42.4
Number of Rainy Days	6.0	7.0	3.4
Number of Dry Days	0.0	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

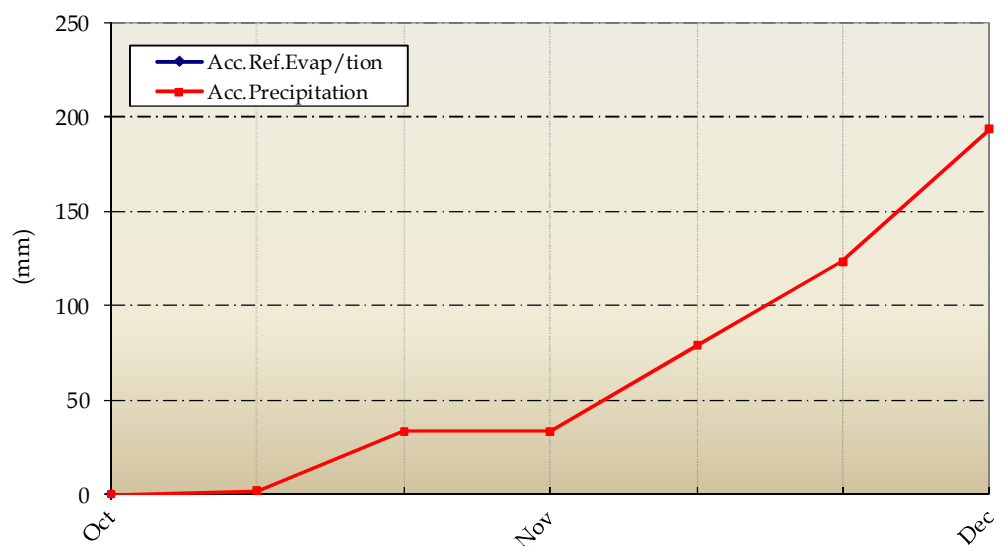


3rd 10-day period (21-30/11/2022)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.4	19.1	19.2	18.6	18.4	16.9	18.9	14.1	18.5	15.1	18.8	19.4	18.6
	Min	12.8	7.2	10.0	7.4	6.5	5.5	7.6	9.6	5.9	9.2	8.2	10.4	8.5
Relative Humidity	Max	98	98	98	98	97	88	80	92	96	98	94	95	92
	Min	57	52	55	45	32	56	32	60	38	87	51	63	54
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	15.0	13.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	15.3	14.8
Sunshine Duration		4.9	4.2	2.5	8.2	8.9	0.9	5.6	0.1	8.1	0.1	4.4	3.6	5.0
Precipitation		13.9	7.4	12.7	3.9				1.1		31.0	70.0	79.3	42.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	20.5
Growing Degrees	5	16.1	8.2	9.6	8.0	7.5	6.2	8.3	6.9	7.2	7.2	85.0	99.0	78.4
	10	11.1	3.2	4.6	3.0	2.5	1.2	3.3	1.9	2.2	2.2	35.0	49.0	34.4

3rd 10-day period (21-30/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	11.6
Precipitation - Reference Evapotranspiration	-	-	31.0
Number of Rainy Days	6.0	7.0	3.8
Number of Dry Days	0.0	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



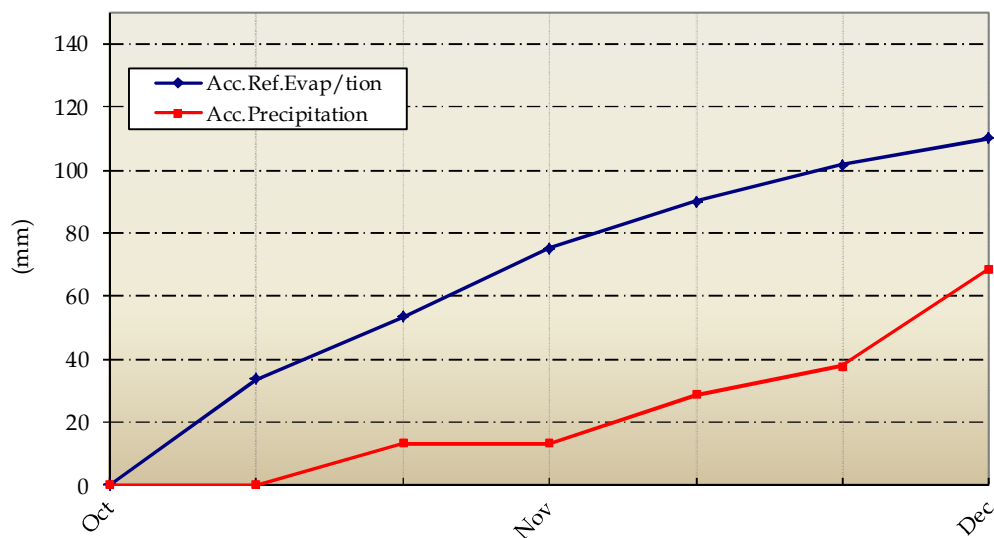
Larisa

3rd 10-day period (21-30/11/2022)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.6	14.9	18.6	18.8	16.8	15.3	10.8	10.0	11.2	8.8	14.4	16.3	14.0
	Min	10.6	3.5	7.4	3.8	6.2	0.0	7.6	6.0	5.6	6.8	5.8	7.0	4.8
Relative Humidity	Max	92	100	100	100	95	100	100	100	97	100	98	96	97
	Min	49	54	41	36	32	37	65	62	61	99	54	63	61
Soil Temperature at 10 cm	06 UTC	15.2	13.2	13.4	12.6	12.0	10.8	10.6	11.2	10.8	11.2	12.1	11.9	10.6
	12 UTC	16.0	16.0	16.0	13.2	13.6	13.8	13.6	11.2	12.2	11.2	13.7	12.7	11.2
Sunshine Duration		3.0	1.6	4.7	7.5	8.0	8.0	0.0	0.9	0.0	0.0	3.4	3.4	3.5
Precipitation		4.4	0.3	10.5				1.1	3.4		11.3	31.0	36.6	14.5
Evaporation		4.6	0.2	1.0	2.6	2.5	0.3	0.0	1.7	0.3	0.0	13.2	12.1	13.2
Growing Degrees	5	9.6	4.2	8.0	6.3	6.5	2.7	4.2	3.0	3.4	2.8	50.7	66.2	43.5
	10	4.6	0.0	3.0	1.3	1.5	0.0	0.0	0.0	0.0	0.0	10.4	18.0	9.8

3rd 10-day period (21-30/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	8.6	9.6	9.2
Precipitation - Reference Evapotranspiration	22.4	27.0	5.3
Number of Rainy Days	6.0	6.0	3.3
Number of Dry Days	0.0	3.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



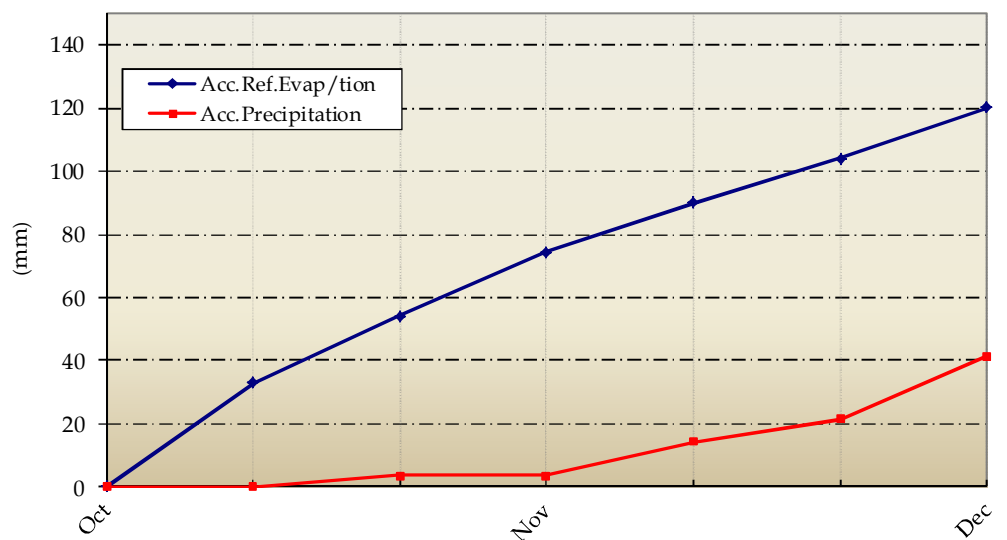
Mikra

3rd 10-day period (21-30/11/2022)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.4	17.0	19.6	17.7	15.4	15.0	12.7	10.0	12.2	13.0	15.3	15.6	13.8
	Min	15.0	6.2	9.9	5.5	11.4	1.4	8.0	6.6	6.0	8.0	7.8	9.0	6.4
Relative Humidity	Max	73	100	100	99	74	90	86	97	92	91	90	93	91
	Min	44	47	43	47	45	40	44	66	58	75	51	62	59
Soil Temperature at 10 cm	06 UTC	16.2	14.0	14.0	13.0	12.4	11.2	11.4	10.0	10.8	11.4	12.4	12.9	10.1
	12 UTC	17.6	14.4	15.0	14.0	13.4	12.2	12.2	11.5	11.4	12.0	13.4	13.3	11.9
Sunshine Duration		4.3	1.6	5.7	8.4	7.3	8.2	0.9	0.4	0.0	0.0	3.7	2.7	3.9
Precipitation		14.3		1.5					1.3		2.8	19.9	10.0	12.0
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	18.2
Growing Degrees	5	12.7	6.6	9.8	6.6	8.4	3.2	5.4	3.3	4.1	5.5	65.5	73.1	47.8
	10	7.7	1.6	4.8	1.6	3.4	0.0	0.4	0.0	0.0	0.5	19.9	23.1	13.1

3rd 10-day period (21-30/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	16.1	12.9	6.9
Precipitation - Reference Evapotranspiration	3.8	-2.9	5.1
Number of Rainy Days	4.0	6.0	2.7
Number of Dry Days	0.0	12.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



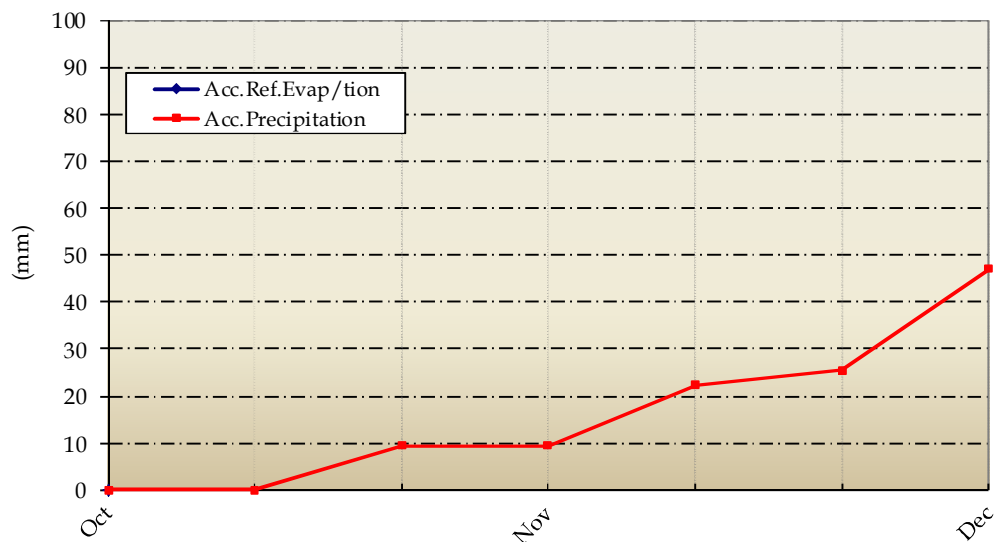
Tanagra

3rd 10-day period (21-30/11/2022)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.2	20.6	18.8	18.3	15.8	14.5	12.6	9.5	9.6	10.2	15.0	16.8	15.6
	Min	17.0	6.3	14.0	5.9	8.7	4.4	5.0	6.5	7.8	8.7	8.4	9.7	7.4
Relative Humidity	Max	73	70	94	88	73	78	81	96	91	99	84	96	93
	Min	36	23	46	34	30	43	49	73	75	81	49	54	53
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		6.5	6.5	1.1	7.7	6.9	3.5	0.2	0.0	0.0	0.0	3.2	3.2	4.1
Precipitation				3.3					8.6	1.5	8.3	21.7	77.3	21.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	23.9
Growing Degrees	5	13.6	8.5	11.4	7.1	7.3	4.5	3.8	3.0	3.7	4.5	67.2	82.7	58.0
	10	8.6	3.5	6.4	2.1	2.3	0.0	0.0	0.0	0.0	0.0	22.8	33.7	19.3

3rd 10-day period (21-30/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	-
Number of Rainy Days	4.0	6.0	2.7
Number of Dry Days	10.0	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

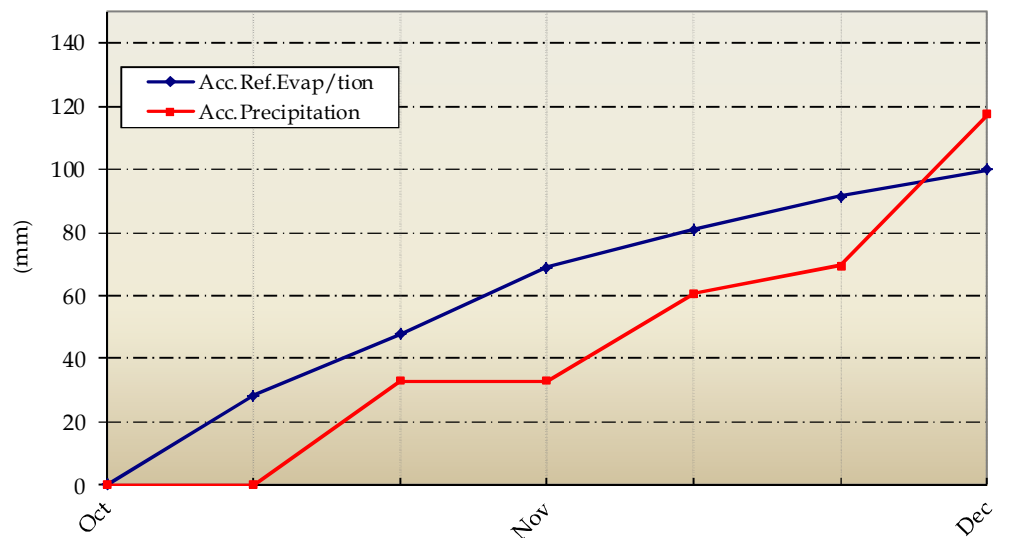


3rd 10-day period (21-30/11/2022)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.5	15.7	13.4	14.3	13.8	10.7	10.3	6.6	11.9	11.7	12.2	13.5	13.2
	Min	10.8	3.5	10.6	2.8	-0.5	-2.5	-1.7	3.2	-2.1	6.7	3.1	6.8	3.1
Relative Humidity	Max	90	93	98	99	98	98	79	100	100	98	95	96	96
	Min	64	43	64	41	28	28	52	75	57	81	53	64	55
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	8.4
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	10.0
Sunshine Duration		3.4	3.5	2.5	7.4	7.5	0.9	3.4	0.0	5.7	0.0	3.4	2.1	4.7
Precipitation		10.8	0.2	14.4				0.0	4.2		18.4	48.0	90.2	29.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	23.8
Growing Degrees	5	7.2	4.6	7.0	3.6	1.7	0.0	0.0	0.0	0.0	4.2	28.2	51.6	31.6
	10	2.2	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	11.2	4.9

3rd 10-day period (21-30/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	8.4	9.0	5.1
Precipitation - Reference Evapotranspiration	39.6	81.2	24.5
Number of Rainy Days	5.0	8.0	3.1
Number of Dry Days	1.0	5.0	-

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 E_{To} (mm):

Calculated by the FAO Penman-Montieth equation

$$E_{T_0} = \frac{0.408 * \Delta * (R_n - G) + \gamma * \frac{900}{T + 273} * u_2 * (e_s - e_a)}{\Delta + \gamma * (1 + 0.34 * u_2)}$$

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)

Mesurements 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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