



AGROMETEOROLOGICAL BULLETIN

November 2022
2nd 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



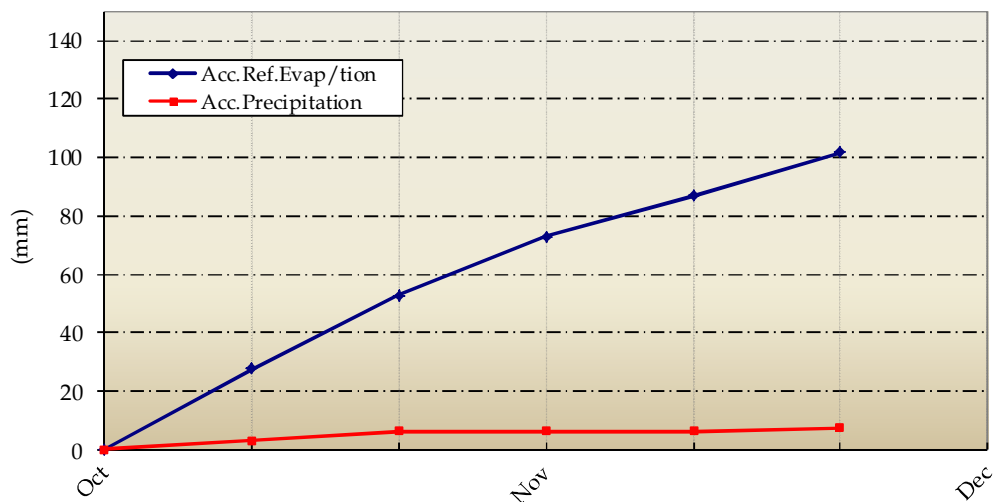
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2nd 10-day period (11-20/11/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.0	16.8	18.4	17.6	16.6	16.8	19.4	20.4	22.0	21.0	18.8	14.1	15.4
	Min	5.6	11.6	12.2	6.0	7.0	3.0	14.0	10.6	16.8	18.0	10.5	6.3	7.0
Relative Humidity	Max	94	78	90	92	91	94	92	97	92	90	91	86	90
	Min	48	55	48	41	47	77	83	85	66	67	62	51	60
Soil Temperature at 10 cm	06 UTC	12.6	14.6	14.2	13.4	13.7	12.6	15.4	14.0	16.4	18.0	14.5	10.6	11.5
	12 UTC	16.4	15.0	16.2	15.6	16.7	14.0	16.4	15.6	17.2	18.6	16.2	12.5	13.0
Sunshine Duration		3.8	0.6	8.6	7.7	8.2	0.4	1.0	2.9	7.1	0.0	4.0	4.3	4.3
Precipitation			0.0				0.4	0.6				1.0		23.1
Evaporation		2.2	1.8	3.7	1.8	1.5	2.9	0.4	0.4	3.3	3.3	21.3	29.7	18.6
Growing Degrees	5	7.3	9.2	10.3	6.8	6.8	4.9	11.7	10.5	14.4	14.5	96.4	51.9	56.5
	10	2.3	4.2	5.3	1.8	1.8	0.0	6.7	5.5	9.4	9.5	46.5	6.1	19.6

2nd 10-day period (11-20/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	15.0	11.9	10.4
Precipitation - Reference Evapotranspiration	-14.0	-11.9	12.7
Number of Rainy Days	2.0	0.0	2.6
Number of Dry Days	31.0	18.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

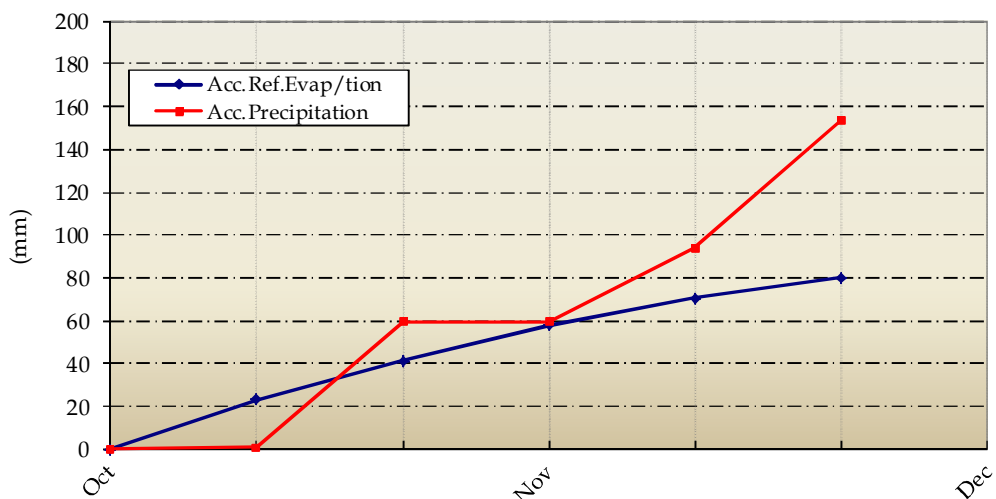


2nd 10-day period (11-20/11/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.9	18.7	20.1	20.6	21.1	20.8	21.8	22.4	22.4	22.9	21.2	19.6	19.4
	Min	8.2	11.2	12.0	11.1	9.4	11.8	15.5	15.8	18.0	17.4	13.0	9.4	10.3
Relative Humidity	Max	98	98	98	99	98	98	99	98	96	88	97	97	92
	Min	56	60	64	67	67	63	72	72	75	63	66	56	52
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	16.3	14.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	16.9	16.5
Sunshine Duration		8.0	0.2	1.9	7.3	4.9	7.5	2.2	5.9	4.6	1.5	4.4	3.4	5.4
Precipitation			8.2	5.6				1.6	34.3		10.3	60.0	43.3	47.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	7.8	55.5
Growing Degrees	5	9.6	10.0	11.1	10.9	10.3	11.3	13.7	14.1	15.2	15.2	121.1	94.8	84.8
	10	4.6	5.0	6.1	5.9	5.3	6.3	8.7	9.1	10.2	10.2	71.1	44.8	41.7

2nd 10-day period (11-20/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	9.6	8.2	7.3
Precipitation - Reference Evapotranspiration	50.4	35.1	40.5
Number of Rainy Days	5.0	6.0	3.4
Number of Dry Days	4.0	10.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



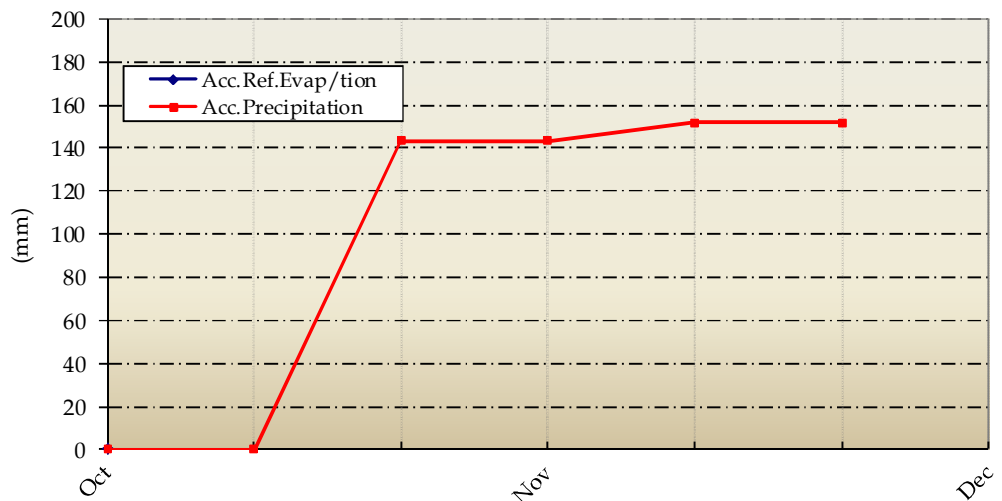
Iraklio

2nd 10-day period (11-20/11/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.8	19.4	20.0	19.0	18.4	22.0	24.0	24.8	25.0	24.4	21.7	19.0	20.6
	Min	14.4	15.0	11.4	13.6	16.4	12.0	14.8	17.8	18.6	19.6	15.4	15.0	14.0
Relative Humidity	Max	89	91	93	91	88	88	83	83	84	73	86	86	86
	Min	63	70	72	68	61	58	46	58	54	37	59	65	61
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.2	6.5	8.6	6.7	7.1	4.9	8.6	5.8	8.4	2.2	6.7	2.8	5.1
Precipitation													1.2	23.1
Evaporation		2.4	1.1	1.9	2.6	0.9	3.5	2.8	2.1	4.2	4.1	25.6	29.0	29.1
Growing Degrees	5	12.1	12.2	10.7	11.3	12.4	12.0	14.4	16.3	16.8	17.0	135.2	120.0	118.0
	10	7.1	7.2	5.7	6.3	7.4	7.0	9.4	11.3	11.8	12.0	85.2	70.0	69.5

2nd 10-day period (11-20/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	-
Number of Rainy Days	0.0	2.0	2.7
Number of Dry Days	13.0	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



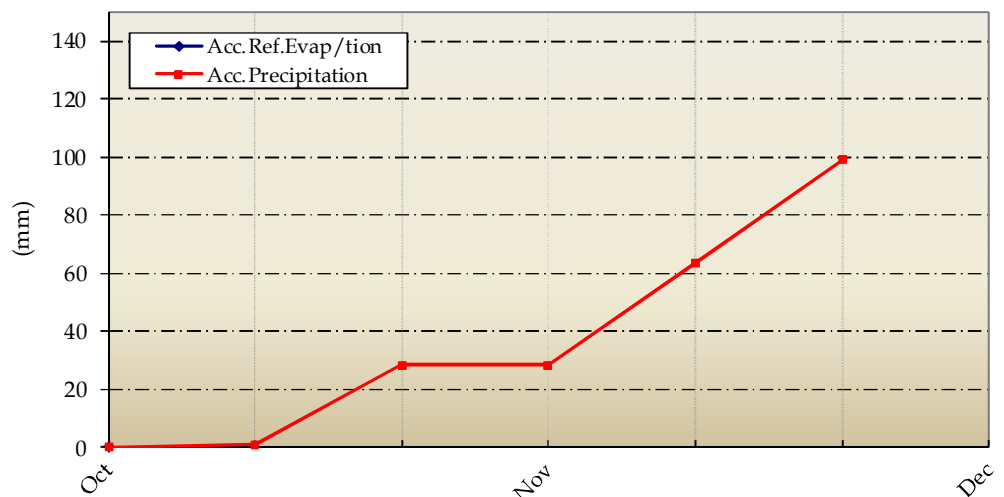
Ioannina

2nd 10-day period (11-20/11/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.9	14.7	16.9	19.4	17.0	15.6	14.8	17.6	19.4	16.5	17.2	16.5	14.8
	Min	4.2	8.9	9.0	3.3	5.3	8.5	11.9	10.6	13.2	14.5	8.9	4.4	4.6
Relative Humidity	Max	100	100	100	100	100	100	100	100	100	99	100	98	97
	Min	47	45	58	62	75	73	92	71	74	67	66	54	61
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	9.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	9.6
Sunshine Duration		4.6	0.0	1.8	6.2	3.0	2.3	1.5	1.7	1.9	0.0	2.3	3.9	3.3
Precipitation				2.1			0.5	19.8		5.0	8.3	35.7	5.1	45.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	
Growing Degrees	5	7.1	6.8	8.0	6.4	6.2	7.1	8.4	9.1	11.3	10.5	80.6	54.7	38.4
	10	2.1	1.8	3.0	1.4	1.2	2.1	3.4	4.1	6.3	5.5	30.6	8.5	7.0

2nd 10-day period (11-20/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	7.4
Precipitation - Reference Evapotranspiration	-	-	38.3
Number of Rainy Days	5.0	2.0	3.5
Number of Dry Days	6.0	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

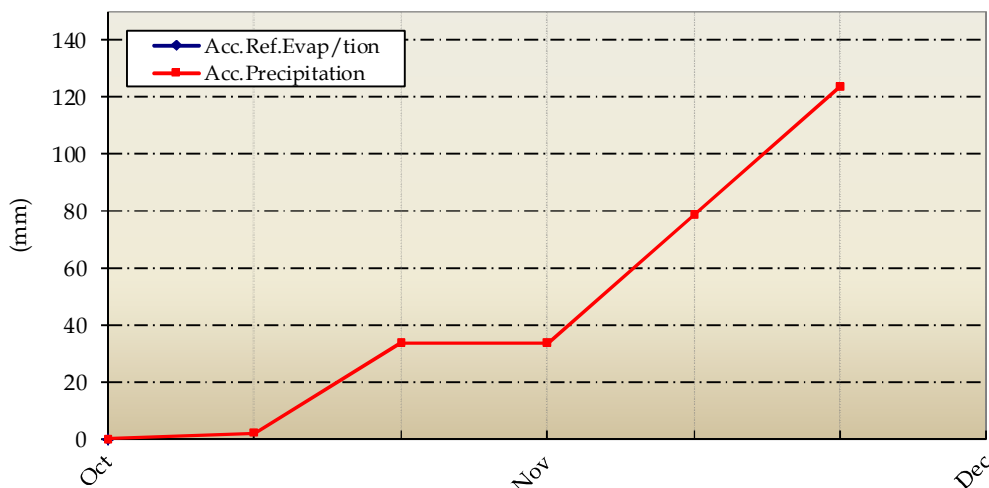


2nd 10-day period (11-20/11/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.5	16.4	22.8	23.2	22.1	23.3	24.2	22.0	23.9	23.0	22.3	20.7	20.2
	Min	10.0	11.5	12.4	9.8	10.0	10.2	11.0	13.0	17.1	18.3	12.3	10.7	9.8
Relative Humidity	Max	96	95	92	97	97	99	99	99	96	96	97	89	92
	Min	55	74	50	61	59	51	56	69	66	62	60	56	52
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	16.2	15.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	17.1	16.3
Sunshine Duration		8.8	0.0	8.5	8.8	8.8	8.4	6.1	2.0	5.2	0.3	5.7	4.7	5.6
Precipitation			3.6	0.1			0.7	0.1	37.2	1.4	1.7	44.8	6.9	43.4
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	26.9
Growing Degrees	5	11.3	9.0	12.6	11.5	11.1	11.8	12.6	12.5	15.5	15.7	123.4	107.3	91.1
	10	6.3	4.0	7.6	6.5	6.1	6.8	7.6	7.5	10.5	10.7	73.4	57.3	45.3

2nd 10-day period (11-20/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	17.3
Precipitation - Reference Evapotranspiration	-	-	26.1
Number of Rainy Days	7.0	4.0	3.4
Number of Dry Days	5.0	12.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

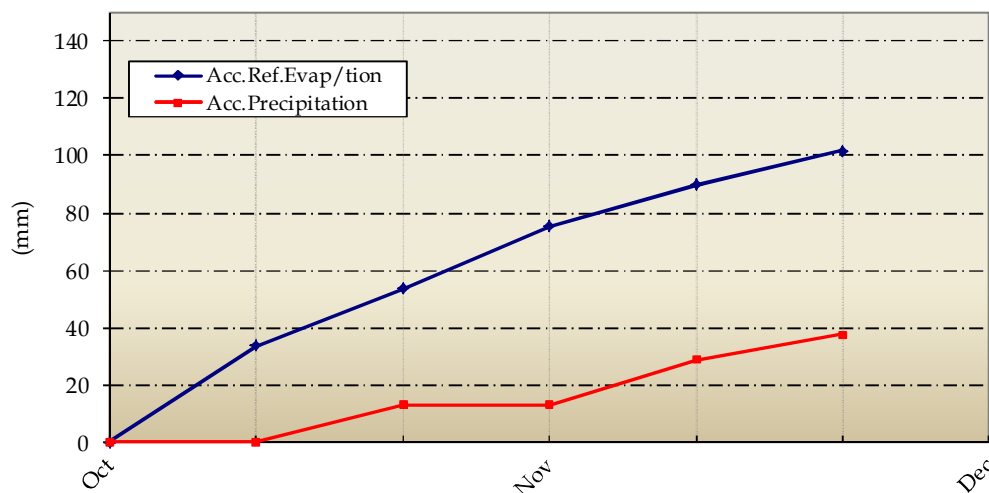


Larisa

2nd 10-day period (11-20/11/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.4	16.0	13.8	17.6	17.8	20.0	21.3	23.6	25.2	24.2	20.0	14.6	16.1
	Min	7.2	11.8	11.0	11.2	8.0	5.8	9.8	10.2	11.8	15.0	10.2	6.3	6.5
Relative Humidity	Max	100	100	100	100	100	100	100	100	97	100	100	96	96
	Min	49	50	99	70	63	51	55	40	41	45	56	60	59
Soil Temperature at 10 cm	06 UTC	15.4	15.2	15.0	15.4	14.4	14.6	14.8	14.0	15.6	16.2	15.1	12.1	12.1
	12 UTC	16.0	15.8	15.4	16.0	16.0	15.0	16.0	16.2	16.4	16.2	15.9	13.5	12.8
Sunshine Duration		6.8	0.3	0.0	2.6	4.1	5.6	2.5	6.3	5.5	1.3	3.5	2.9	3.5
Precipitation			0.5	5.9				0.3			2.2	8.9	2.4	16.4
Evaporation		2.5	1.3	0.8	0.5	1.3	1.1	2.2	2.7	3.1	0.6	16.1	12.4	14.2
Growing Degrees	5	8.8	8.9	7.4	9.4	7.9	7.9	10.6	11.9	13.5	14.6	100.9	55.0	58.3
	10	3.8	3.9	2.4	4.4	2.9	2.9	5.6	6.9	8.5	9.6	50.9	11.0	17.5

2nd 10-day period (11-20/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	11.6	7.9	10.3
Precipitation - Reference Evapotranspiration	-2.7	-5.5	6.1
Number of Rainy Days	4.0	2.0	3.2
Number of Dry Days	4.0	12.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



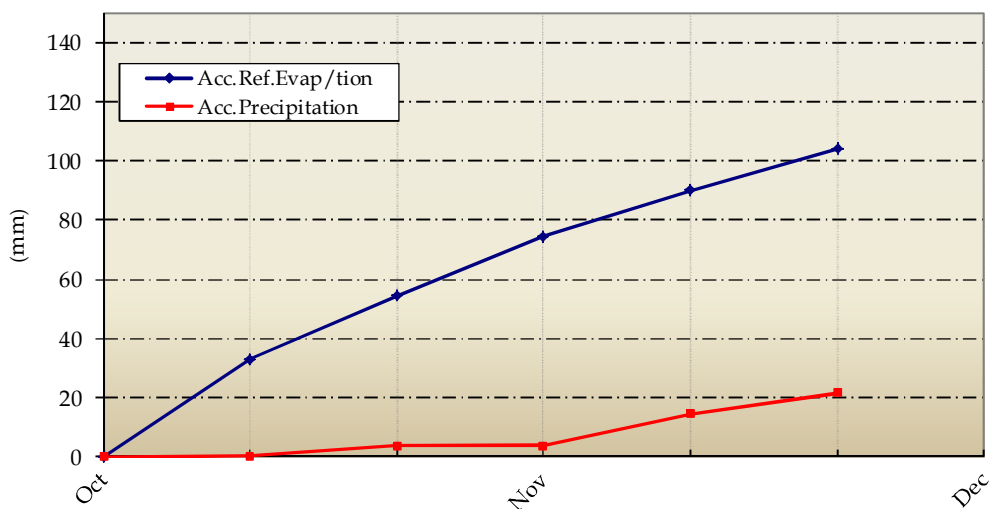
Mikra

2nd 10-day period (11-20/11/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.4	16.7	17.3	18.1	15.7	17.2	21.8	21.8	25.0	22.4	19.5	15.2	15.8
	Min	7.6	9.0	12.1	7.7	9.7	12.0	13.9	10.0	18.0	17.5	11.8	8.6	8.4
Relative Humidity	Max	100	100	100	100	100	100	100	100	89	100	99	85	89
	Min	54	51	67	60	81	67	50	54	43	61	59	53	57
Soil Temperature at 10 cm	06 UTC	13.8	14.6	14.8	13.4	14.2	15.2	15.7	15.0	16.8	17.0	15.0	13.2	12.0
	12 UTC	16.0	15.6	15.8	15.0	15.2	15.8	17.8	16.2	17.8	17.8	16.3	13.8	13.9
Sunshine Duration		7.2	3.6	7.0	8.6	0.0	6.0	5.5	9.2	8.6	0.6	5.6	4.2	4.3
Precipitation			3.0					0.8			3.3	7.1		12.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	17.5
Growing Degrees	5	8.5	7.9	9.7	7.9	7.7	9.6	12.9	10.9	16.5	15.0	106.5	69.3	66.1
	10	3.5	2.9	4.7	2.9	2.7	4.6	7.9	5.9	11.5	10.0	56.5	20.1	24.2

2nd 10-day period (11-20/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	14.2	13.3	8.1
Precipitation - Reference Evapotranspiration	-7.1	-13.3	4.6
Number of Rainy Days	3.0	0.0	2.6
Number of Dry Days	5.0	10.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

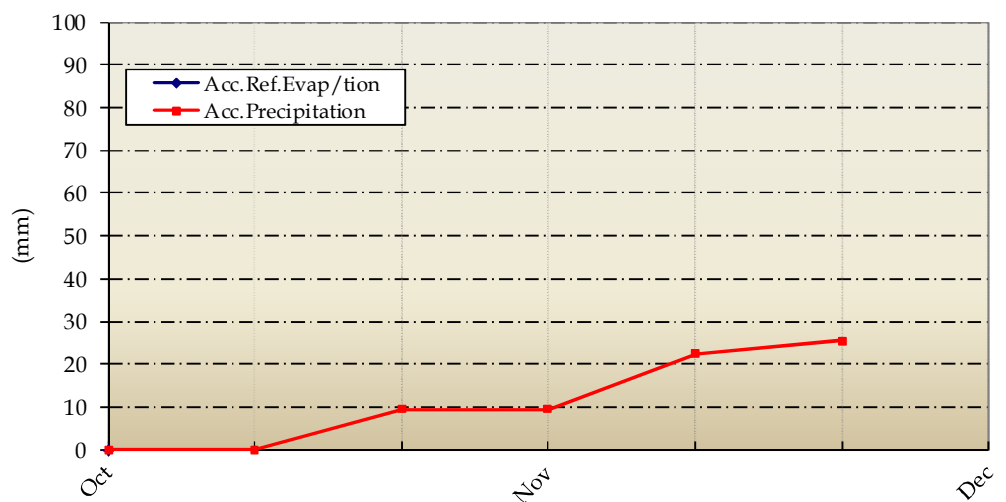


2nd 10-day period (11-20/11/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.1	14.2	18.4	17.8	16.8	21.6	22.0	24.0	26.5	22.2	20.2	15.2	17.4
	Min	9.7	10.6	8.3	9.3	9.0	6.8	12.9	11.9	16.3	18.6	11.3	9.5	8.8
Relative Humidity	Max	97	95	97	97	97	98	78	83	69	72	88	91	95
	Min	54	72	57	60	58	33	40	38	35	50	50	57	57
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		3.4	0.0	8.1	5.3	4.0	7.8	3.5	8.2	7.6	1.7	5.0	2.6	4.2
Precipitation			3.0									3.0	3.4	19.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	20.4
Growing Degrees	5	8.9	7.4	8.4	8.6	7.9	9.2	12.5	13.0	16.4	15.4	107.5	73.5	70.3
	10	3.9	2.4	3.4	3.6	2.9	4.2	7.5	8.0	11.4	10.4	57.5	23.5	28.7

2nd 10-day period (11-20/11/2022)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	-
Number of Rainy Days	1.0	2.8
Number of Dry Days	4.0	16.0

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

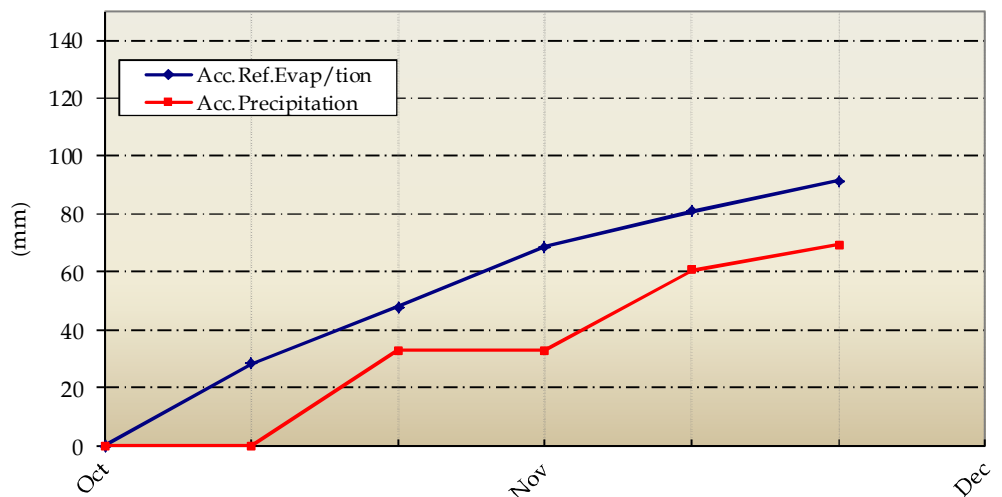


2nd 10-day period (11-20/11/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.6	12.3	17.4	18.8	18.8	18.2	19.0	18.8	19.8	18.8	18.0	14.9	15.6
	Min	3.1	6.3	8.8	1.9	4.1	4.1	10.0	10.6	14.3	11.1	7.4	5.5	4.4
Relative Humidity	Max	100	97	98	100	100	100	93	98	98	94	98	98	95
	Min	48	63	59	41	44	31	55	65	61	59	53	56	52
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	10.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	11.8
Sunshine Duration		5.8	0.0	5.5	7.0	5.4	8.1	4.4	5.2	2.4	1.3	4.5	3.7	4.9
Precipitation			3.8	0.2				0.9	2.9	0.8	0.0	8.6	1.0	36.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	40.1
Growing Degrees	5	5.4	4.3	8.1	5.4	6.5	6.2	9.5	9.7	12.1	10.0	76.9	52.2	41.9
	10	0.4	0.0	3.1	0.4	1.5	1.2	4.5	4.7	7.1	5.0	27.6	7.2	8.0

2nd 10-day period (11-20/11/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	10.6	9.5	8.1
Precipitation - Reference Evapotranspiration	-2.0	-8.5	28.1
Number of Rainy Days	5.0	2.0	3.1
Number of Dry Days	5.0	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 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)

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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