



# AGROMETEOROLOGICAL BULLETIN

*January 2021  
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



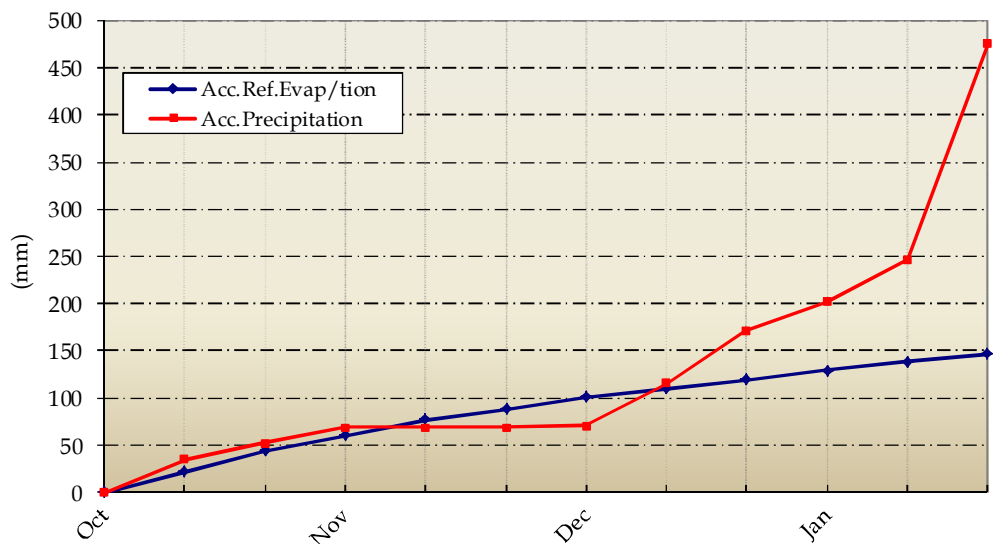
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2nd 10-day period (11-20/01/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.8	15.8	8.2	7.6	6.8	5.2	3.2	3.0	3.6	9.2	7.9	9.9	8.0
	Min	8.4	8.2	4.6	3.4	1.0	-1.0	-2.2	-6.4	-5.6	-5.8	0.5	1.1	0.2
Relative Humidity	Max	95	97	88	75	79	69	87	90	75	91	85	82	-
	Min	77	90	74	46	42	44	47	51	41	53	56	53	-
Soil Temperature at 10 cm	06 UTC	10.0	12.2	9.4	7.6	7.4	6.8	4.2	2.8	2.0	1.6	6.4	5.0	4.2
	12 UTC	11.2	11.6	9.4	8.4	7.8	5.6	5.4	3.6	2.2	3.0	6.8	6.9	5.1
Sunshine Duration		0.0	0.0	0.2	3.5	8.6	0.0	6.4	8.5	5.7	5.8	3.9	3.7	3.1
Precipitation		5.8	222.8									228.6	0.0	11.4
Evaporation		-	-	1.2	2.8	1.2	0.0	0.0	0.0	0.0	0.0	-	6.6	6.6
Growing Degrees	5	7.6	7.0	1.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	16.5	9.9	9.4
	10	2.6	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6	0.0	0.9

2nd 10-day period (11-20/01/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	7.9	9.4	8.8
Precipitation - Reference Evapotranspiration	220.7	-9.4	2.6
Number of Rainy Days	2.0	0.0	2.2
Number of Dry Days	0.0	19.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

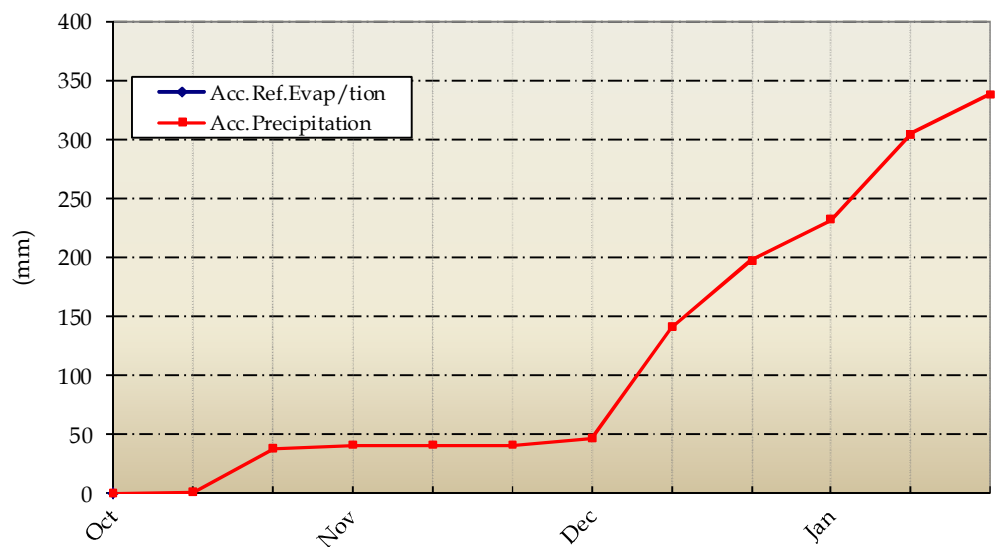


2nd 10-day period (11-20/01/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.2	19.4	15.0	13.6	14.9	10.2	8.1	9.9	10.2	14.3	13.8	15.8	13.6
	Min	19.2	13.3	9.5	6.8	7.4	4.5	0.9	1.9	2.6	-0.2	6.6	2.5	4.8
Relative Humidity	Max	71	95	95	87	98	98	84	95	90	87	90	93	-
	Min	48	54	54	43	63	70	45	47	40	43	51	47	-
Soil Temperature at 10 cm	06 UTC	15.6	15.2	15.2	11.6	12.2	11.4	9.4	9.2	8.8	7.8	11.6	8.1	8.3
	12 UTC	15.8	16.0	13.8	13.6	12.4	11.2	10.4	9.6	9.4	8.6	12.1	9.8	9.8
Sunshine Duration		0.0	5.4	2.4	7.1	3.6	1.5	6.6	3.8	7.0	5.8	4.3	4.7	4.4
Precipitation			3.8	3.7	4.0	0.4	20.2		2.0			34.1	1.8	33.0
Evaporation		1.8	0.3	0.6	1.0	0.8	1.5	0.4	0.6	0.4	0.6	8.0	13.5	18.1
Growing Degrees	5	15.7	11.4	7.3	5.2	6.2	2.4	0.0	0.9	1.4	2.1	52.4	41.1	42.4
	10	10.7	6.4	2.3	0.2	1.2	0.0	0.0	0.0	0.0	0.0	20.7	2.3	7.2

2nd 10-day period (11-20/01/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	9.4
Precipitation - Reference Evapotranspiration	-	-	23.6
Number of Rainy Days	6.0	1.0	3.7
Number of Dry Days	1.0	7.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



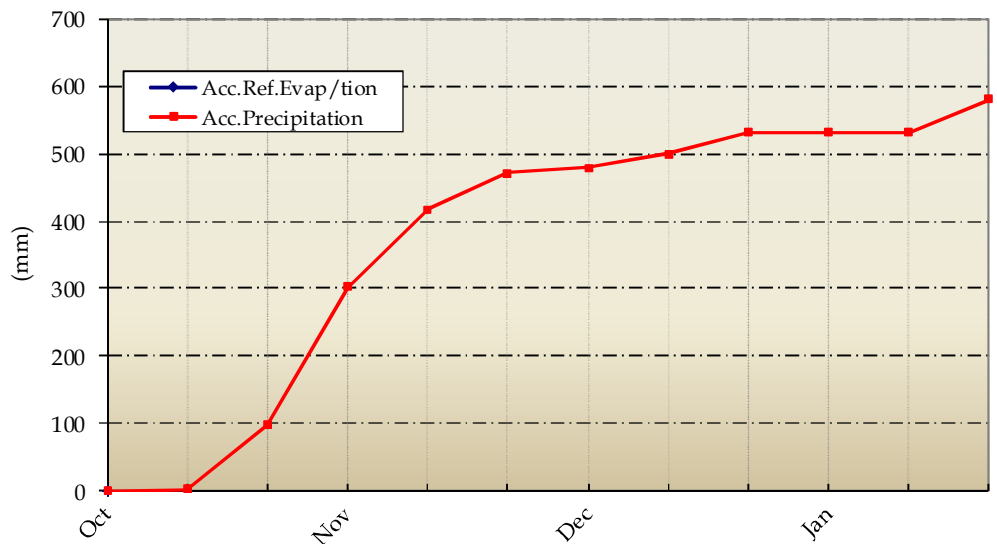
Iraklio

2nd 10-day period (11-20/01/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.2	20.2	16.4	14.6	15.6	16.2	9.8	8.4	9.8	12.8	14.9	14.1	14.7
	Min	20.0	17.4	12.2	11.0	7.8	10.0	7.4	4.6	6.2	7.4	10.4	10.1	9.1
Relative Humidity	Max	74	84	74	85	95	95	94	91	89	80	86	88	-
	Min	33	60	60	50	65	74	70	74	56	54	60	64	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		0.8	0.0	7.2	6.6	0.3	5.0	2.2	0.0	0.5	8.2	3.1	2.4	3.7
Precipitation					0.7	5.0	1.6	22.4	16.5	1.7	0.3	48.2	7.5	28.7
Evaporation		4.6	1.6	2.2	2.5	0.7	0.4	1.6	0.0	1.2	2.2	17.0	15.1	24.1
Growing Degrees	5	17.6	13.8	9.3	7.8	6.7	8.1	3.6	1.5	3.0	5.1	76.5	71.0	68.9
	10	12.6	8.8	4.3	2.8	1.7	3.1	0.0	0.0	0.0	0.1	33.4	21.0	21.0

2nd 10-day period (11-20/01/2021)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	28.7
Number of Rainy Days	7.0	6.0
Number of Dry Days	9.0	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



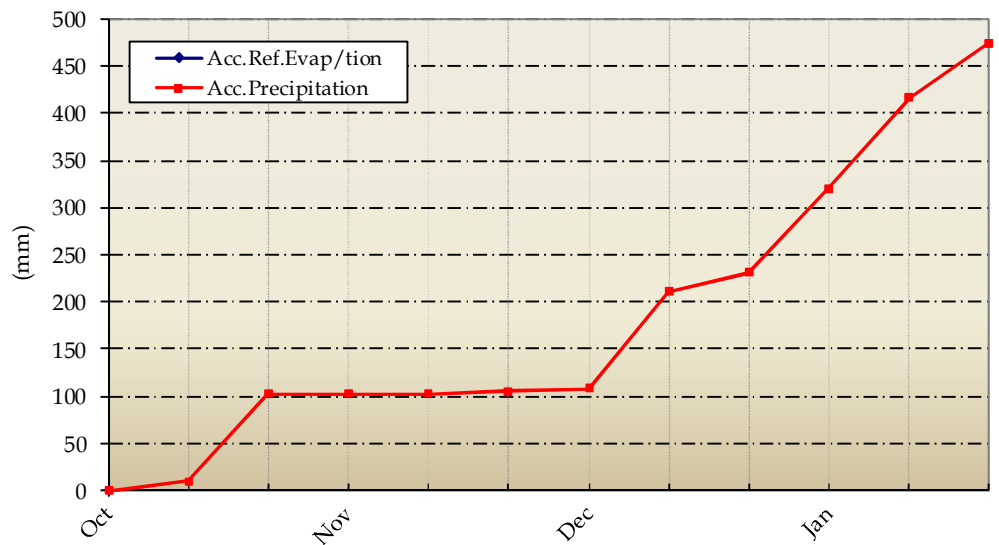
Ioannina

2nd 10-day period (11-20/01/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.4	12.8	8.0	7.2	9.9	5.4	3.3	5.4	7.2	6.5	8.3	11.5	8.7
	Min	12.1	7.0	0.7	1.2	0.5	-0.7	-7.0	-2.8	-8.8	-7.3	-0.5	-3.8	-0.4
Relative Humidity	Max	100	100	100	97	97	99	84	100	100	100	98	95	-
	Min	83	67	79	39	50	52	30	32	39	53	52	51	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	3.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	3.8
Sunshine Duration		0.0	4.4	0.1	4.9	5.2	2.2	5.9	8.1	7.2	3.3	4.1	4.4	3.0
Precipitation		17.9	32.5	0.0	2.1	2.7	2.8					58.0	0.0	26.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	4.4
Growing Degrees	5	9.8	4.9	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	14.9	0.6	9.3
	10	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.3

2nd 10-day period (11-20/01/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	6.6
Precipitation - Reference Evapotranspiration	-	-	20.3
Number of Rainy Days	5.0	0.0	2.9
Number of Dry Days	0.0	15.0	-

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Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

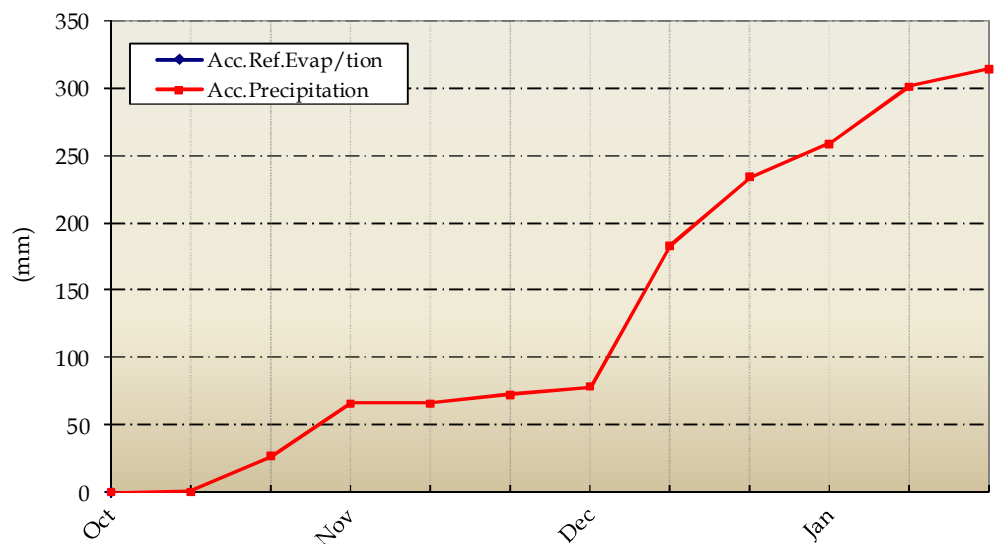


2nd 10-day period (11-20/01/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.6	20.3	15.7	13.9	18.0	14.1	10.4	10.2	12.7	15.2	15.1	16.4	14.6
	Min	12.1	11.7	6.0	6.4	8.2	6.5	0.4	0.7	2.5	-1.0	5.4	4.3	4.9
Relative Humidity	Max	97	87	100	100	98	100	89	92	78	90	93	86	-
	Min	60	55	51	37	45	64	33	54	38	40	48	42	-
Soil Temperature at 10 cm	06 UTC	14.0	15.0	12.6	10.4	11.2	12.0	8.0	8.2	7.6	6.5	10.6	9.2	9.0
	12 UTC	14.5	15.8	13.0	11.4	12.4	12.0	9.4	8.6	8.6	7.5	11.3	10.8	10.1
Sunshine Duration		0.0	3.4	6.0	8.5	5.7	2.4	8.2	1.8	8.6	8.5	5.3	6.2	4.2
Precipitation			0.1	2.7	0.1	0.0	8.1		2.1			13.1	2.0	33.9
Evaporation		3.4	0.9	1.2	1.4	1.5	0.2	2.8	1.1	0.0	0.0	12.5	-	23.4
Growing Degrees	5	11.4	11.0	5.9	5.2	8.1	5.3	0.4	0.5	2.6	2.1	52.3	53.6	47.5
	10	6.4	6.0	0.9	0.2	3.1	0.3	0.0	0.0	0.0	0.0	16.8	5.9	8.1

2nd 10-day period (11-20/01/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	14.6	11.1
Precipitation - Reference Evapotranspiration	-	-12.6	22.8
Number of Rainy Days	5.0	1.0	3.8
Number of Dry Days	1.0	6.0	-

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Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



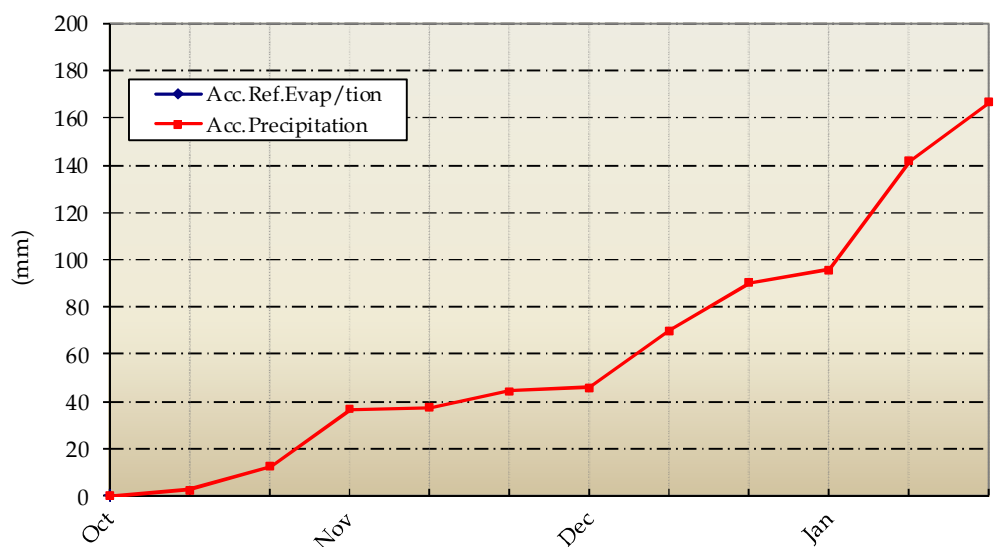
Larisa

2nd 10-day period (11-20/01/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.6	16.1	12.2	9.6	8.0	4.2	2.1	5.4	5.8	10.5	8.8	10.0	9.3
	Min	8.9	8.0	1.2	2.0	1.2	0.0	-4.8	-1.4	-6.0	-6.2	0.3	-0.3	0.0
Relative Humidity	Max	99	98	99	82	84	99	87	92	95	94	93	93	-
	Min	95	75	62	47	39	50	47	41	41	47	54	57	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	5.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	5.5
Sunshine Duration		-	-	-	-	-	-	-	-	-	-	-	-	2.9
Precipitation		13.0	7.6				4.3					24.9	0.0	8.6
Evaporation		0.6	0.2	1.3	2.3	0.0	0.0	0.0	0.0	0.0	0.0	4.4	2.7	5.9
Growing Degrees	5	6.3	7.1	1.7	0.8	0.0	0.0	0.0	0.0	0.0	0.0	15.8	6.2	9.7
	10	1.3	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.4

2nd 10-day period (11-20/01/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	6.8	6.4
Precipitation - Reference Evapotranspiration	-	-6.8	2.2
Number of Rainy Days	3.0	0.0	2.6
Number of Dry Days	0.0	28.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





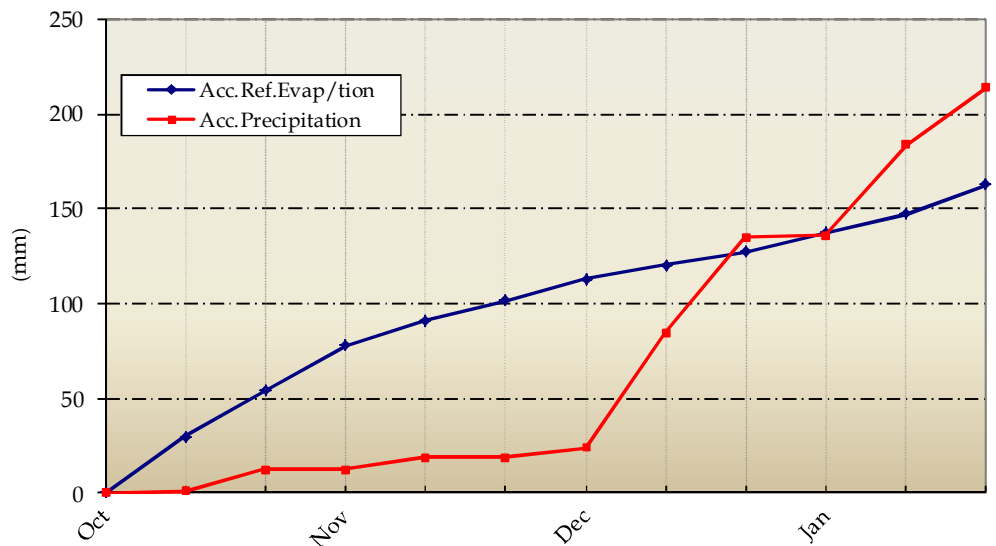
Mikra

2nd 10-day period (11-20/01/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.4	13.0	10.7	8.4	7.8	2.8	3.3	3.6	6.6	8.5	8.2	10.9	8.8
	Min	10.0	9.0	7.2	3.4	1.6	0.5	-1.1	-4.9	-0.6	-3.4	2.2	2.3	1.1
Relative Humidity	Max	99	98	65	89	81	96	76	85	89	88	87	87	-
	Min	70	56	53	34	39	54	42	38	35	47	47	57	-
Soil Temperature at 10 cm	06 UTC	11.4	12.0	9.2	7.4	6.2	5.8	3.2	2.6	2.8	2.8	6.3	6.5	4.3
	12 UTC	11.8	12.0	9.8	9.8	6.8	5.0	4.0	3.4	4.6	4.6	7.2	8.0	5.7
Sunshine Duration		0.0	5.4	5.1	5.4	8.3	0.0	8.2	8.4	7.7	8.6	5.7	3.9	3.6
Precipitation		6.3	16.9			3.0	3.6					29.8	0.1	6.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	10.5
Growing Degrees	5	8.7	6.0	4.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	19.6	16.9	11.4
	10	3.7	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.9

2nd 10-day period (11-20/01/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	15.1	8.3	8.8
Precipitation - Reference Evapotranspiration	14.7	-8.2	-2.2
Number of Rainy Days	4.0	1.0	2.2
Number of Dry Days	0.0	19.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



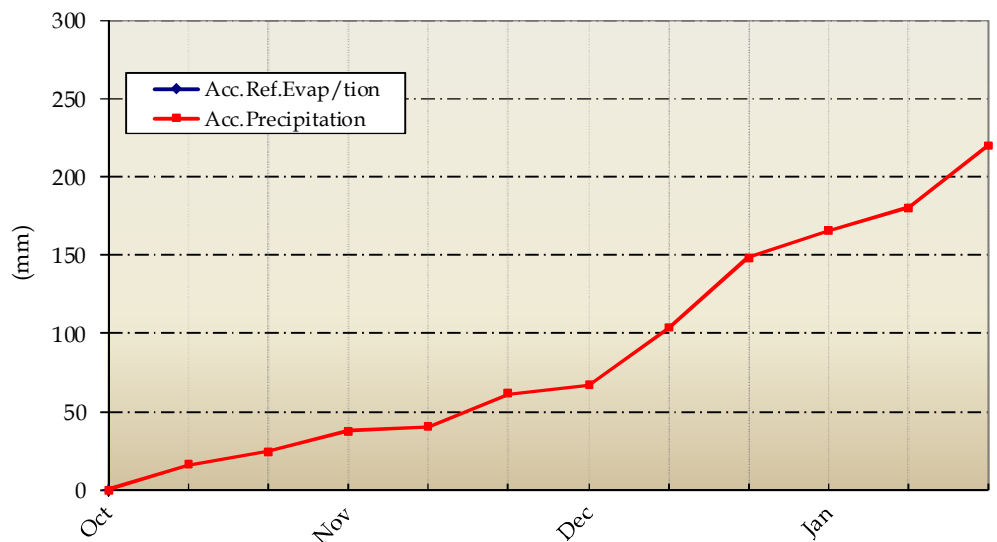


2nd 10-day period (11-20/01/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	20.8	13.8	12.2	6.4	2.2	3.8	3.0	7.1	12.6	10.6	11.2	11.4
	Min	12.2	12.8	4.1	3.0	4.6	0.7	-1.9	-3.5	-2.3	-6.0	2.4	4.2	3.0
Relative Humidity	Max	80	97	100	100	94	100	79	97	85	84	92	91	-
	Min	38	50	41	31	56	66	36	70	42	37	47	57	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		3.9	2.5	6.3	6.6	0.0	0.0	7.7	7.3	7.3	8.1	5.0	2.6	
Precipitation			6.1		1.1	2.8	29.8	0.2	0.3			40.3	5.1	26.0
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	13.1	11.8	4.0	2.6	0.5	0.0	0.0	0.0	0.0	0.0	32.0	27.1	
	10	8.1	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.9	0.1	

2nd 10-day period (11-20/01/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	
Precipitation - Reference Evapotranspiration	-	-	26.0
Number of Rainy Days	6.0	4.0	4.7
Number of Dry Days	7.0	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



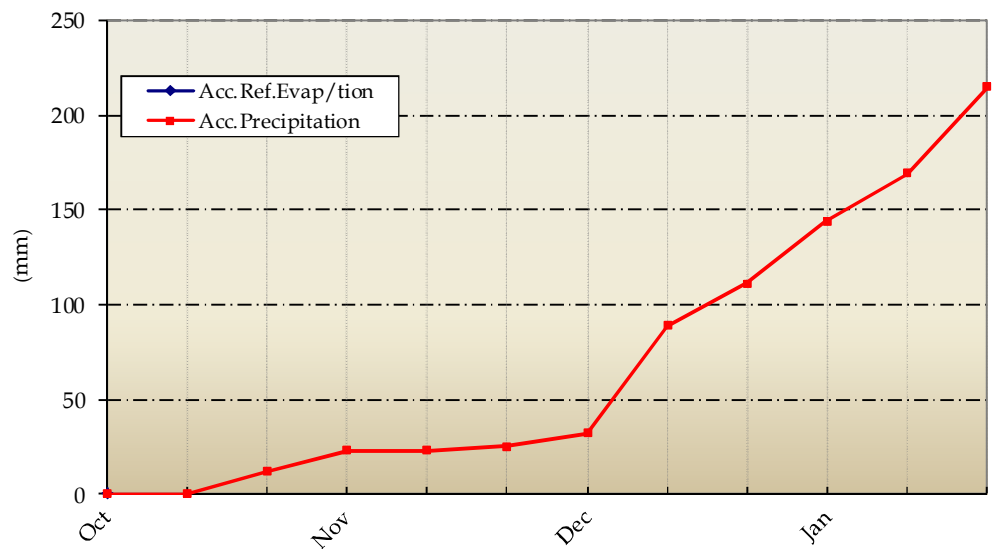
Tripoli

2nd 10-day period (11-20/01/2021)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.7	14.8	10.6	9.7	9.2	2.8	4.6	2.1	6.1	9.7	8.8	10.7	9.4
	Min	14.1	13.0	2.2	0.0	3.8	0.0	-4.3	-3.0	-5.6	-7.6	1.3	-2.5	0.1
Relative Humidity	Max	58	93	94	96	97	100	100	100	99	99	94	98	-
	Min	44	50	45	27	72	95	32	65	46	40	52	48	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	3.2	4.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	5.5	5.0
Sunshine Duration		0.5	2.7	4.7	7.4	-	0.0	6.2	0.3	6.3	6.2	3.8	5.2	4.1
Precipitation			7.6	0.0	0.0	2.1	30.6	0.0	5.1			45.4	0.0	31.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	5.6
Growing Degrees	5	11.4	8.9	1.4	0.0	1.5	0.0	0.0	0.0	0.0	0.0	23.2	1.3	10.8
	10	6.4	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.3	0.0	0.5

2nd 10-day period (11-20/01/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	7.2	-	8.5
Precipitation - Reference Evapotranspiration	38.2	-	23.1
Number of Rainy Days	4.0	0.0	3.7
Number of Dry Days	1.0	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





◆ **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<sub>n</sub> 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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