



# AGROMETEOROLOGICAL BULLETIN

*October 2020  
1st 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



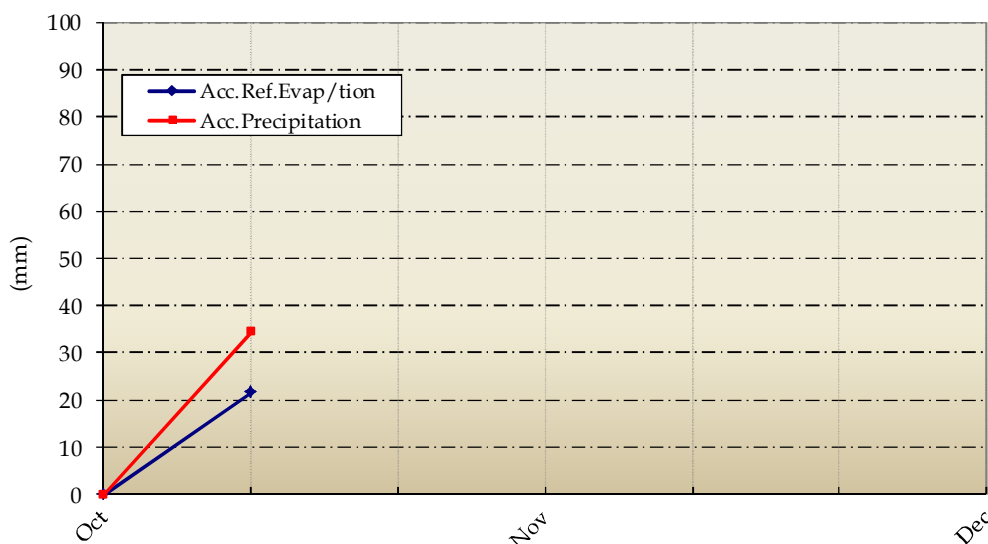
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*Web adresses of HNMS*  
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[www.meteo.gov.gr](http://www.meteo.gov.gr)  
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1st 10-day period (1-10/10/2020)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.8	25.0	25.4	25.6	27.0	27.0	27.0	22.2	20.0	22.8	24.6	23.3	22.8
	Min	9.8	12.0	13.6	14.4	17.8	17.4	20.4	16.0	11.6	13.6	14.7	13.5	11.7
Relative Humidity	Max	85	98	98	91	93	94	94	96	98	93	94	92	-
	Min	46	59	65	58	59	63	56	78	63	61	61	53	-
Soil Temperature at 10 cm	06 UTC	18.2	19.0	20.2	19.6	21.2	21.6	22.0	21.4	18.6	18.2	20.0	18.7	17.4
	12 UTC	23.4	25.0	25.2	24.2	25.0	25.6	26.6	20.6	20.4	21.6	23.8	22.0	20.5
Sunshine Duration		10.0	8.5	8.6	8.3	6.2	8.2	6.9	1.5	2.2	9.5	7.0	6.2	6.7
Precipitation									34.4	0.0		34.4	109.8	17.2
Evaporation		3.2	5.2	2.8	5.6	5.2	1.7	2.0	3.2	3.0	5.1	37.0	29.1	48.1
Growing Degrees	5	11.8	13.5	14.5	15.0	17.4	17.2	18.7	14.1	10.8	13.2	146.2	134.0	122.8
	10	6.8	8.5	9.5	10.0	12.4	12.2	13.7	9.1	5.8	8.2	96.2	84.0	73.0

1st 10-day period (1-10/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	21.6	23.8	27.4
Precipitation - Reference Evapotranspiration	12.8	86.0	-10.2
Number of Rainy Days	1.0	4.0	1.6
Number of Dry Days	9.0	9.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

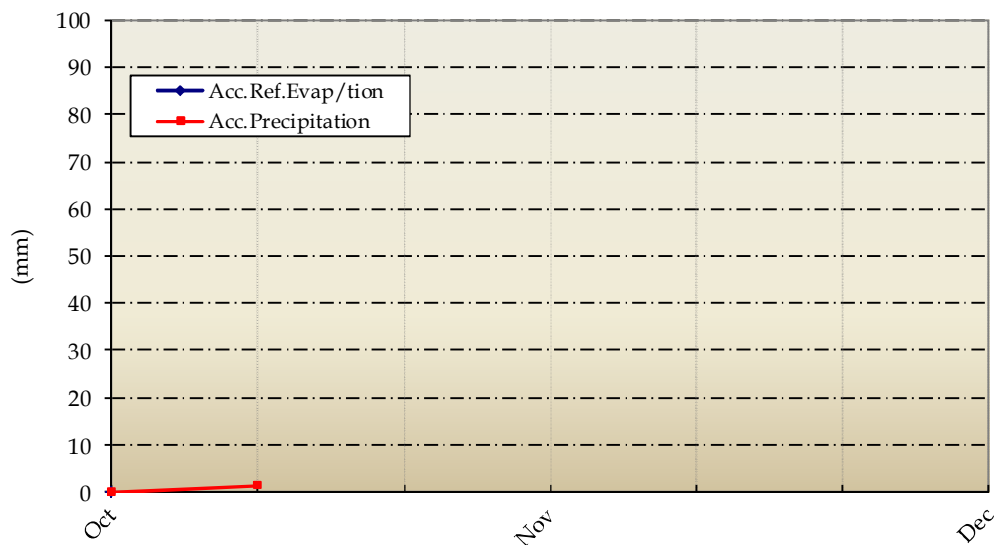


1st 10-day period (1-10/10/2020)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.6	27.5	30.5	34.4	33.1	30.6	27.3	24.5	24.7	25.2	28.3	25.9	25.6
	Min	14.5	16.8	14.5	17.2	19.5	19.7	18.3	18.2	12.3	13.6	16.5	16.4	14.3
Relative Humidity	Max	85	96	98	98	93	96	90	92	96	92	94	98	-
	Min	30	48	41	31	50	45	62	55	38	49	45	47	-
Soil Temperature at 10 cm	06 UTC	21.4	22.0	22.0	22.8	23.4	23.6	23.2	23.4	21.2	21.2	22.4	22.5	20.5
	12 UTC	23.4	23.2	25.2	24.6	25.4	25.6	25.0	24.4	23.0	23.0	24.3	24.0	23.8
Sunshine Duration		8.8	6.2	7.6	6.9	4.8	2.8	5.9	6.6	8.5	8.9	6.7	6.6	7.7
Precipitation								0.0	1.5			1.5	73.0	23.2
Evaporation		8.8	4.1	5.8	5.6	3.0	3.3	5.0	6.0	5.3	2.6	49.5	53.3	42.9
Growing Degrees	5	15.1	17.2	17.5	20.8	21.3	20.2	17.8	16.4	13.5	14.4	174.0	161.6	149.6
	10	10.1	12.2	12.5	15.8	16.3	15.2	12.8	11.4	8.5	9.4	124.0	111.6	99.6

1st 10-day period (1-10/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	26.8
Precipitation - Reference Evapotranspiration	-	-	-3.6
Number of Rainy Days	1.0	6.0	2.2
Number of Dry Days	11.0	8.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



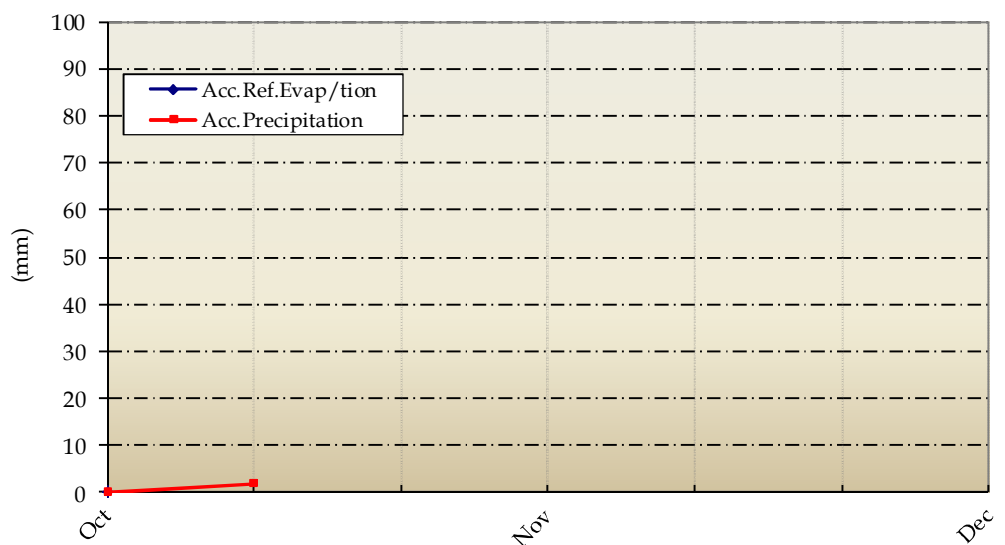
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1st 10-day period (1-10/10/2020)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.0	26.2	30.8	27.8	31.0	30.4	31.8	27.4	23.6	24.8	28.0	27.6	24.6
	Min	17.0	17.2	19.8	19.6	22.6	22.0	21.6	25.0	20.8	16.8	20.2	19.7	17.5
Relative Humidity	Max	88	88	83	87	78	76	79	83	90	90	84	86	-
	Min	56	60	47	43	43	40	30	28	66	58	47	52	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		9.4	10.1	9.4	9.4	8.6	9.3	8.4	5.9	5.5	9.6	8.6	7.8	7.9
Precipitation										1.9		1.9	2.4	6.0
Evaporation		2.8	4.1	3.6	5.1	5.2	3.6	4.9	5.4	2.9	3.5	41.1	39.2	53.7
Growing Degrees	5	16.5	16.7	20.3	18.7	21.8	21.2	21.7	21.2	17.2	15.8	191.1	186.6	160.1
	10	11.5	11.7	15.3	13.7	16.8	16.2	16.7	16.2	12.2	10.8	141.1	136.6	110.1

1st 10-day period (1-10/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	6.0
Number of Rainy Days	1.0	1.0	0.9
Number of Dry Days	18.0	82.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

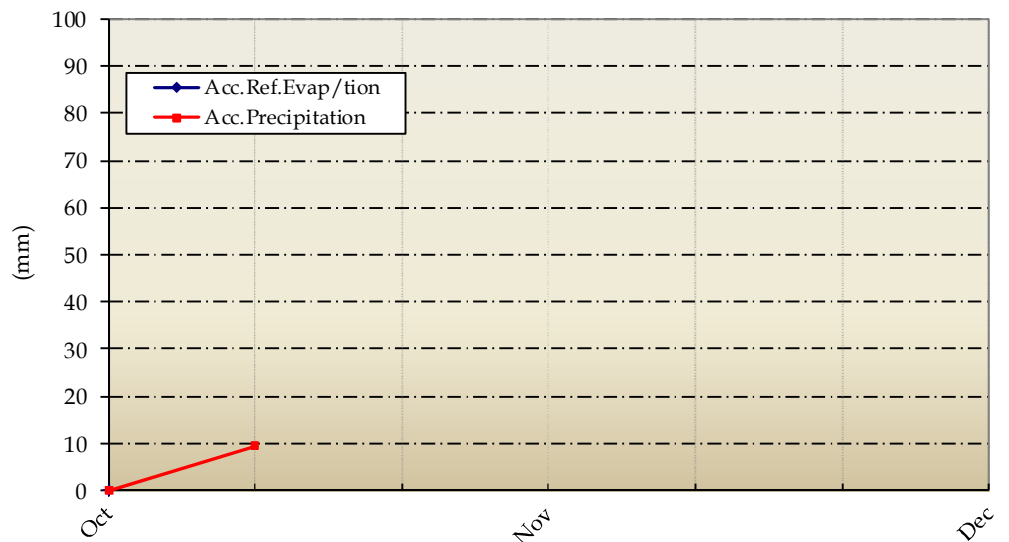


1st 10-day period (1-10/10/2020)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.0	23.2	27.5	28.9	30.0	25.0	23.6	20.5	22.8	23.8	24.7	22.4	22.8
	Min	7.9	7.6	11.7	14.1	16.4	16.2	12.6	12.8	5.4	6.2	11.1	10.4	10.0
Relative Humidity	Max	99	99	94	100	100	91	99	89	94	96	96	97	-
	Min	34	53	42	39	39	54	56	55	42	53	47	56	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	15.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	18.3
Sunshine Duration		5.9	3.5	7.9	1.9	2.8	5.3	2.2	8.7	9.7	7.6	5.6	4.8	5.7
Precipitation					0.0	0.5	2.2	0.3	6.5			9.5	65.5	25.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	32.1
Growing Degrees	5	10.0	10.4	14.6	16.5	18.2	15.6	13.1	11.7	9.1	10.0	129.1	114.2	114.5
	10	5.0	5.4	9.6	11.5	13.2	10.6	8.1	6.7	4.1	5.0	79.1	64.2	64.7

1st 10-day period (1-10/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	21.0
Precipitation - Reference Evapotranspiration	-	-	4.8
Number of Rainy Days	4.0	6.0	2.6
Number of Dry Days	5.0	8.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

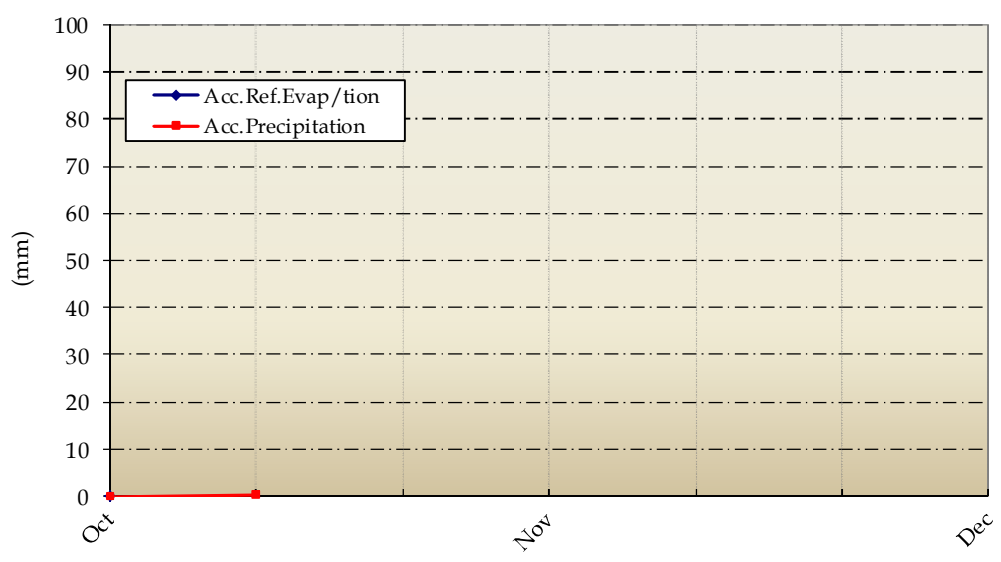


1st 10-day period (1-10/10/2020)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.6	25.8	28.2	30.6	32.1	32.8	32.4	26.4	26.3	26.0	28.8	26.1	26.1
	Min	12.5	14.5	16.6	17.6	17.5	16.9	16.3	19.0	12.1	12.2	15.5	16.5	13.8
Relative Humidity	Max	79	95	100	97	98	93	83	85	89	91	91	90	-
	Min	25	54	48	37	32	32	29	31	30	41	36	49	-
Soil Temperature at 10 cm	06 UTC	20.4	21.4	22.0	22.8	23.2	23.0	23.0	23.4	21.2	21.0	22.1	22.2	20.0
	12 UTC	24.0	25.0	25.5	26.0	25.2	26.0	25.6	25.0	24.2	24.4	25.1	25.2	22.6
Sunshine Duration		9.7	9.4	9.3	8.6	7.4	3.9	5.7	8.5	11.0	9.9	8.3	6.2	7.4
Precipitation								0.0	0.4			0.4	16.6	17.8
Evaporation		5.6	4.2	2.5	5.8	1.2	3.4	4.0	5.4	3.0	7.0	42.1	32.2	46.9
Growing Degrees	5	15.1	15.2	17.4	19.1	19.8	19.9	19.4	17.7	14.2	14.1	171.7	163.0	149.4
	10	10.1	10.2	12.4	14.1	14.8	14.9	14.4	12.7	9.2	9.1	121.7	113.0	99.4

1st 10-day period (1-10/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	28.8	28.3
Precipitation - Reference Evapotranspiration	-	-12.2	-10.5
Number of Rainy Days	1.0	4.0	2.3
Number of Dry Days	9.0	9.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



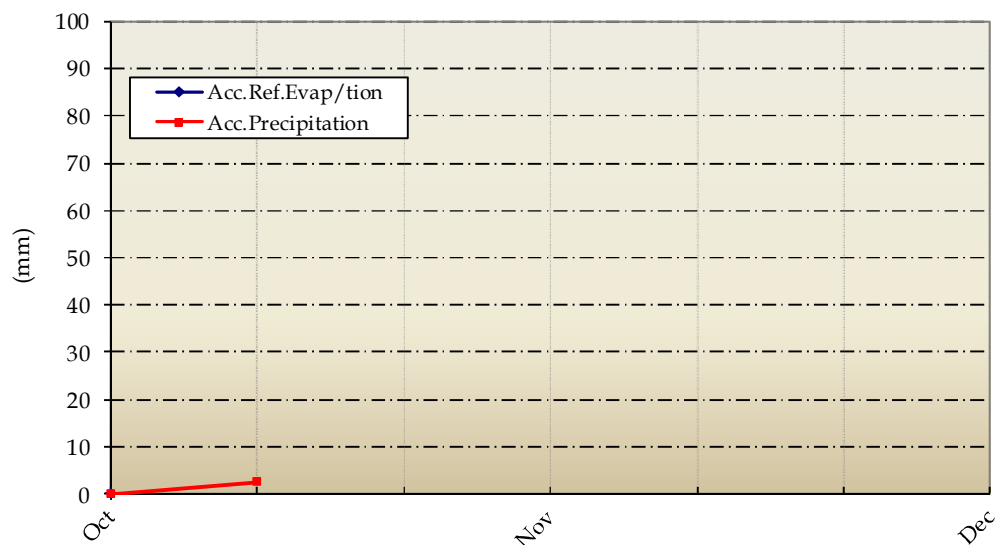
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1st 10-day period (1-10/10/2020)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.0	27.6	28.5	28.6	28.8	30.6	28.2	25.4	25.1	26.8	27.6	24.3	25.0
	Min	8.6	9.6	12.2	14.6	17.2	17.6	14.6	14.8	8.8	9.6	12.8	13.3	11.6
Relative Humidity	Max	94	94	95	98	97	96	89	94	90	92	94	94	-
	Min	27	35	45	58	57	34	33	34	35	37	40	49	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	19.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	20.9
Sunshine Duration		-	-	-	-	-	-	-	-	-	-	-	4.1	6.2
Precipitation									2.6			2.6	23.7	10.5
Evaporation		9.5	1.0	2.8	3.7	2.7	1.7	4.6	4.8	3.8	5.2	39.8	41.0	41.2
Growing Degrees	5	12.3	13.6	15.4	16.6	18.0	19.1	16.4	15.1	12.0	13.2	151.6	137.9	133.0
	10	7.3	8.6	10.4	11.6	13.0	14.1	11.4	10.1	7.0	8.2	101.6	87.9	83.0

1st 10-day period (1-10/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	22.0	26.4
Precipitation - Reference Evapotranspiration	-	1.7	-15.9
Number of Rainy Days	1.0	3.0	2.1
Number of Dry Days	9.0	9.0	-

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Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





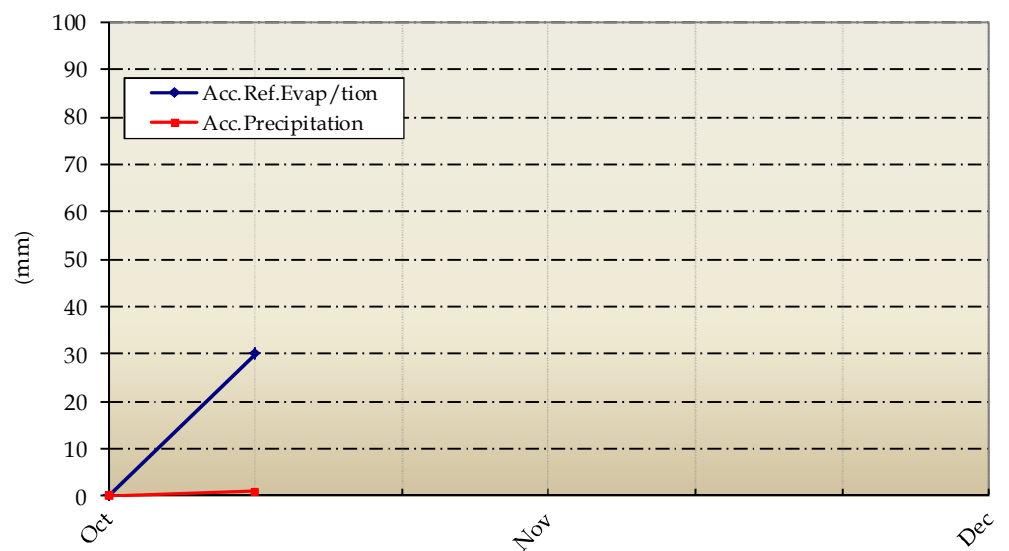


1st 10-day period (1-10/10/2020)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.4	26.4	26.8	25.8	25.2	28.8	26.2	23.6	23.4	25.1	25.7	23.8	23.5
	Min	10.8	13.1	13.9	16.9	17.9	19.1	16.3	17.6	18.0	11.5	15.5	15.3	12.8
Relative Humidity	Max	77	91	92	92	96	95	90	93	69	83	88	91	-
	Min	30	30	58	64	66	51	57	46	43	40	48	53	-
Soil Temperature at 10 cm	06 UTC	19.6	20.0	20.6	21.8	22.4	22.8	22.2	22.2	20.2	20.0	21.2	20.0	18.4
	12 UTC	21.8	22.0	23.0	23.3	23.2	24.2	23.8	21.8	21.2	21.8	22.6	21.7	21.9
Sunshine Duration		10.1	9.7	9.7	4.6	3.5	1.2	4.2	8.9	9.4	9.4	7.1	6.2	6.2
Precipitation						0.0			0.9			0.9	31.3	9.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	40.2
Growing Degrees	5	13.1	14.8	15.4	16.4	16.6	19.0	16.3	15.6	15.7	13.3	155.9	145.4	131.6
	10	8.1	9.8	10.4	11.4	11.6	14.0	11.3	10.6	10.7	8.3	105.9	95.4	81.6

1st 10-day period (1-10/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	30.0	25.5	25.5
Precipitation - Reference Evapotranspiration	-29.1	5.8	-15.8
Number of Rainy Days	1.0	3.0	1.7
Number of Dry Days	9.0	9.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





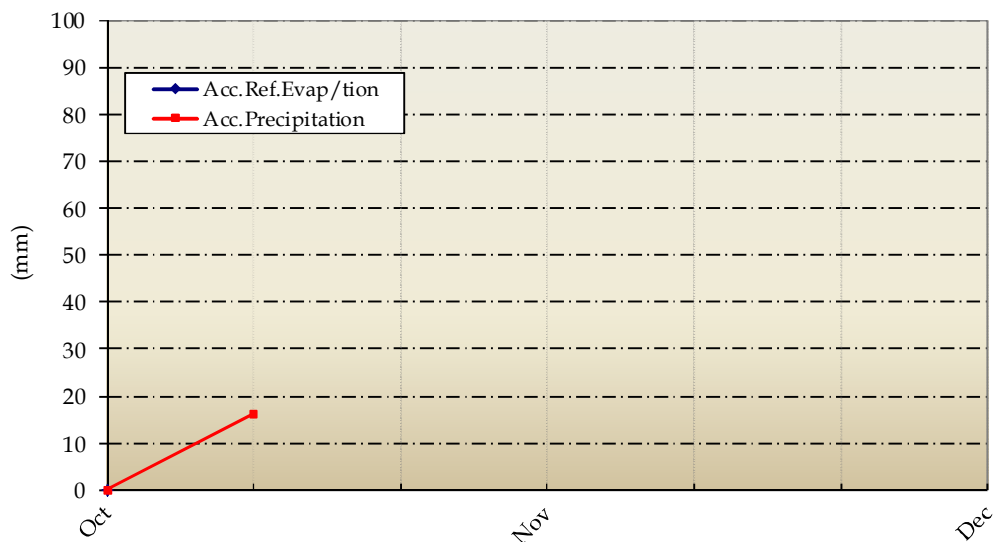
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1st 10-day period (1-10/10/2020)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.6	26.2	28.0	29.4	29.1	31.6	33.6	25.2	24.2	24.8	27.9	25.9	24.7
	Min	12.4	12.7	14.4	15.6	17.4	17.4	15.6	22.0	12.8	12.6	15.3	14.8	12.9
Relative Humidity	Max	76	91	96	97	99	98	71	100	95	97	92	93	-
	Min	22	36	42	43	50	26	22	32	32	39	34	41	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		10.4	7.9	9.3	6.8	4.7	5.2	7.1	3.0	9.7	9.6	7.4	6.3	
Precipitation									1.1	15.1		16.2	10.3	9.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	14.5	14.5	16.2	17.5	18.3	19.5	19.6	18.6	13.5	13.7	165.8	153.6	
	10	9.5	9.5	11.2	12.5	13.3	14.5	14.6	13.6	8.5	8.7	115.8	103.6	

1st 10-day period (1-10/10/2020)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	9.2
Number of Rainy Days	2.0	3.0
Number of Dry Days	13.0	9.0

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



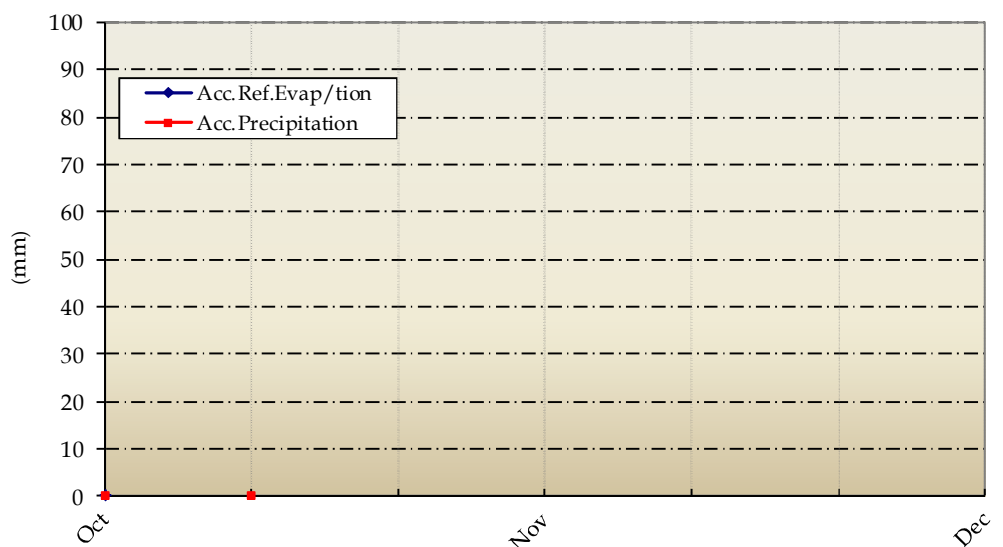
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1st 10-day period (1-10/10/2020)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.6	25.1	28.6	32.1	33.7	30.8	28.0	22.0	22.7	24.0	27.1	23.1	23.3
	Min	5.7	8.5	10.0	10.6	13.9	12.1	11.2	15.4	5.7	6.6	10.0	11.6	9.0
Relative Humidity	Max	91	93	93	98	89	89	84	87	92	95	91	92	-
	Min	31	32	33	23	14	21	33	33	32	33	28	44	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	19.7	17.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	25.5	19.3
Sunshine Duration		9.7	9.0	9.1	0.0	7.0	4.8	7.5	2.0	8.9	9.1	6.7	5.9	7.4
Precipitation			0.0		0.0			0.0	0.0	0.0	0.0	0.0	41.9	9.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	32.6
Growing Degrees	5	9.7	11.8	14.3	16.4	18.8	16.5	14.6	13.7	9.2	10.3	135.2	-	111.8
	10	4.7	6.8	9.3	11.4	13.8	11.5	9.6	8.7	4.2	5.3	85.2	-	62.0

1st 10-day period (1-10/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	25.4
Precipitation - Reference Evapotranspiration	-	-	-15.7
Number of Rainy Days	0.0	4.0	2.0
Number of Dry Days	12.0	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





◆ **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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