



AGROMETEOROLOGICAL BULLETIN

November 2020
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



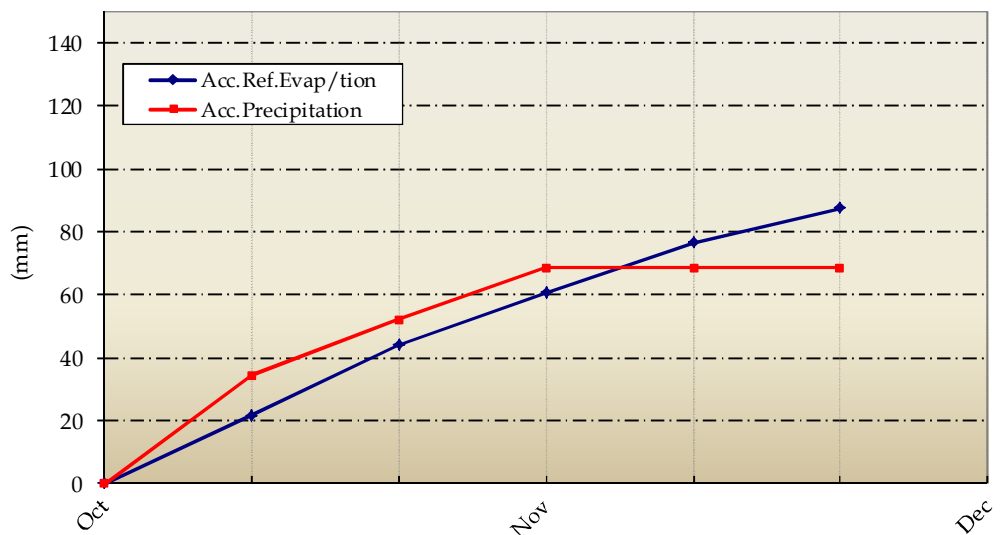
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2nd 10-day period (11-20/11/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.2	17.0	18.4	17.0	17.4	17.4	18.0	14.0	13.6	15.0	16.4	19.5	14.4
	Min	11.6	12.2	9.8	7.0	4.2	3.0	2.6	7.0	10.4	9.6	7.7	11.9	6.2
Relative Humidity	Max	88	87	88	91	93	93	97	94	92	90	91	94	-
	Min	54	63	69	74	70	69	71	82	67	41	66	70	-
Soil Temperature at 10 cm	06 UTC	13.8	13.0	13.6	12.6	11.6	11.6	11.0	12.2	12.4	11.4	12.3	15.0	9.7
	12 UTC	14.6	14.4	15.2	13.6	13.6	13.6	13.4	12.7	12.6	12.4	13.6	16.7	11.5
Sunshine Duration		1.1	0.4	4.9	3.6	7.4	8.8	8.4	0.0	4.4	4.4	4.3	3.0	3.9
Precipitation									0.1			0.1	9.3	29.1
Evaporation		3.9	2.6	2.6	2.4	1.5	2.0	3.4	2.3	3.2	5.1	29.0	8.0	18.6
Growing Degrees	5	8.9	9.6	9.1	7.0	5.8	5.2	5.3	5.5	7.0	7.3	70.7	107.3	54.2
	10	3.9	4.6	4.1	2.0	0.8	0.2	0.3	0.5	2.0	2.3	20.7	57.3	17.6

2nd 10-day period (11-20/11/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	11.1	9.4	11.3
Precipitation - Reference Evapotranspiration	-11.0	-0.1	17.8
Number of Rainy Days	1.0	3.0	2.9
Number of Dry Days	18.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

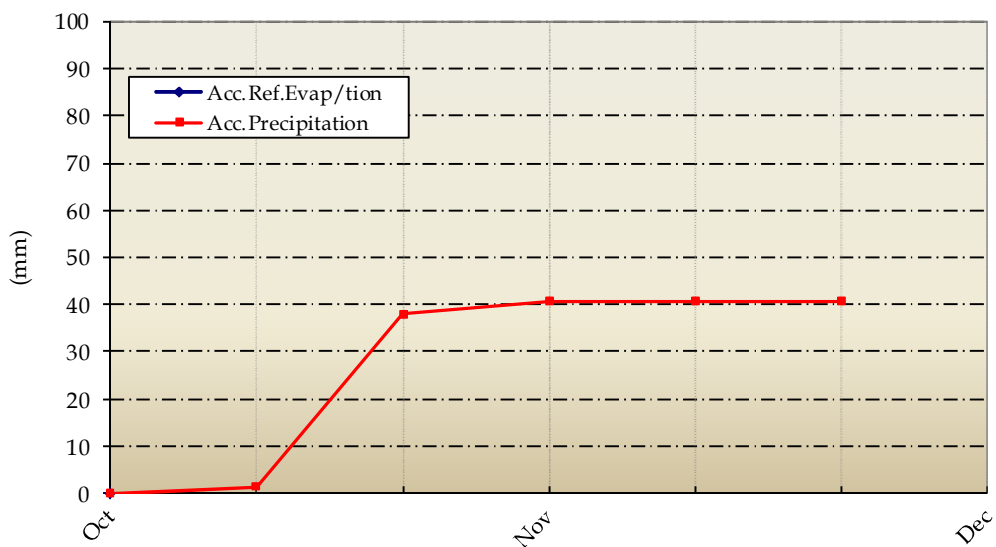


2nd 10-day period (11-20/11/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.1	21.8	20.6	20.0	20.8	21.4	21.0	19.5	19.8	18.8	20.7	22.4	18.6
	Min	6.7	5.9	7.6	9.8	6.0	10.2	12.5	11.8	7.4	6.2	8.4	12.3	9.7
Relative Humidity	Max	96	96	98	95	97	91	87	94	84	76	91	96	-
	Min	40	43	53	63	54	59	63	49	40	35	50	46	-
Soil Temperature at 10 cm	06 UTC	13.8	15.2	15.4	14.8	15.0	15.4	15.6	16.0	15.2	16.4	15.3	17.0	13.2
	12 UTC	18.0	16.2	16.0	16.0	17.4	16.4	17.0	17.6	18.0	18.4	17.1	18.4	15.2
Sunshine Duration		8.6	5.2	6.5	7.4	6.9	6.6	2.1	0.4	6.6	6.8	5.7	4.0	4.9
Precipitation								0.0				0.0	150.8	50.9
Evaporation		2.8	1.6	0.8	2.0	2.4	1.0	0.8	1.1	1.3	1.2	15.0	24.0	21.4
Growing Degrees	5	9.9	8.9	9.1	9.9	8.4	10.8	11.8	10.7	8.6	7.5	95.5	123.8	91.7
	10	4.9	3.9	4.1	4.9	3.4	5.8	6.8	5.7	3.6	2.5	45.5	73.8	42.4

2nd 10-day period (11-20/11/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	11.8
Precipitation - Reference Evapotranspiration	-	-	39.1
Number of Rainy Days	0.0	7.0	4.2
Number of Dry Days	23.0	0.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

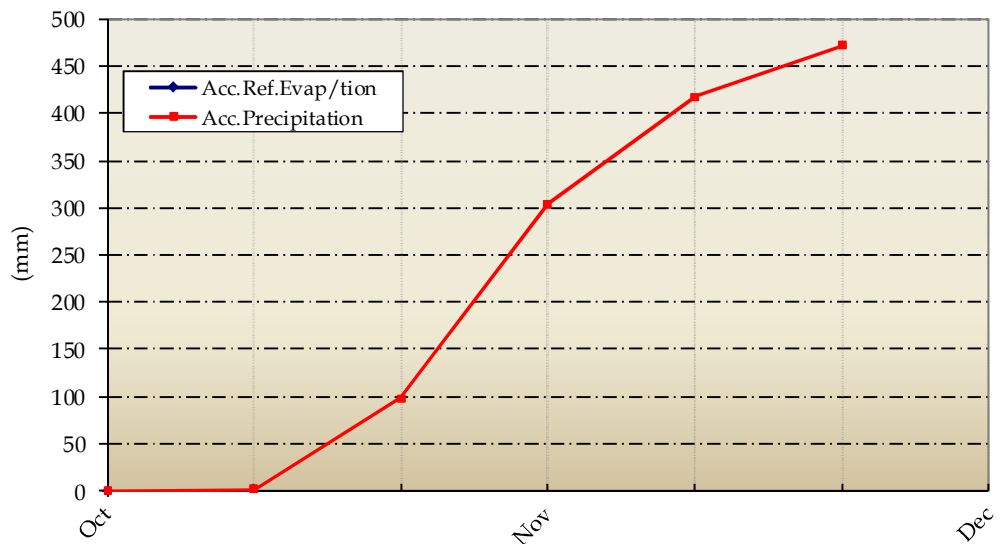


2nd 10-day period (11-20/11/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.8	19.2	20.2	18.6	18.8	19.0	19.4	18.4	16.6	15.6	18.6	23.2	19.7
	Min	16.0	18.4	14.6	14.0	15.2	14.2	13.0	12.2	15.6	13.0	14.6	16.4	13.2
Relative Humidity	Max	96	85	89	93	70	91	95	95	89	91	89	88	-
	Min	71	70	71	64	59	66	51	68	66	71	66	55	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		3.6	1.9	8.2	1.4	6.9	5.8	11.2	5.6	3.7	0.0	4.8	6.2	4.9
Precipitation		6.2			16.2				0.3	5.5	26.3	54.5	38.8	22.2
Evaporation		3.8	0.9	0.4	3.0	3.6	4.9	1.0	2.2	-	1.5	-	22.8	33.6
Growing Degrees	5	12.9	13.8	12.4	11.3	12.0	11.6	11.2	10.3	11.1	9.3	115.9	148.1	114.3
	10	7.9	8.8	7.4	6.3	7.0	6.6	6.2	5.3	6.1	4.3	65.9	98.1	64.3

2nd 10-day period (11-20/11/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	22.2
Number of Rainy Days	5.0	3.0	2.7
Number of Dry Days	0.0	10.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

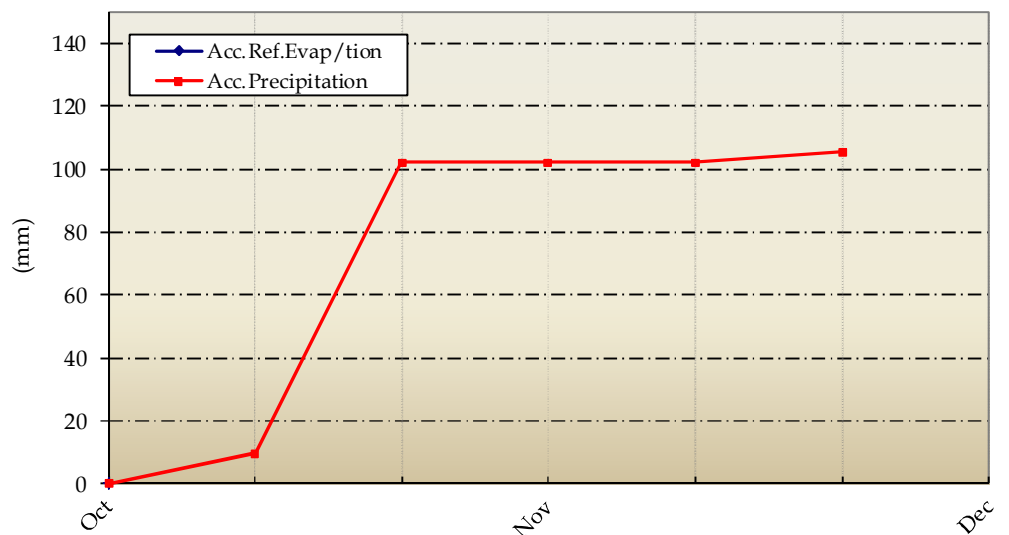


2nd 10-day period (11-20/11/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.3	17.8	17.4	16.2	16.6	17.6	14.0	15.2	15.5	16.5	16.6	16.8	13.9
	Min	7.0	0.2	-0.4	2.2	0.8	1.6	2.6	9.4	7.6	-1.4	3.0	7.6	4.6
Relative Humidity	Max	100	100	100	100	100	100	100	99	100	95	99	100	-
	Min	40	52	55	61	50	57	73	51	36	37	51	65	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	8.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	10.1
Sunshine Duration		7.0	6.2	6.4	4.2	3.8	5.9	0.0	0.0	8.3	8.1	5.0	2.3	3.0
Precipitation								0.0	3.2			3.2	76.8	63.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	13.4
Growing Degrees	5	8.2	4.0	3.5	4.2	3.7	4.6	3.3	7.3	6.6	2.6	47.9	-	44.8
	10	3.2	0.0	0.0	0.0	0.0	0.0	0.0	2.3	1.6	0.0	7.0	-	8.8

2nd 10-day period (11-20/11/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	7.9
Precipitation - Reference Evapotranspiration	-	-	55.7
Number of Rainy Days	1.0	6.0	4.4
Number of Dry Days	32.0	1.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

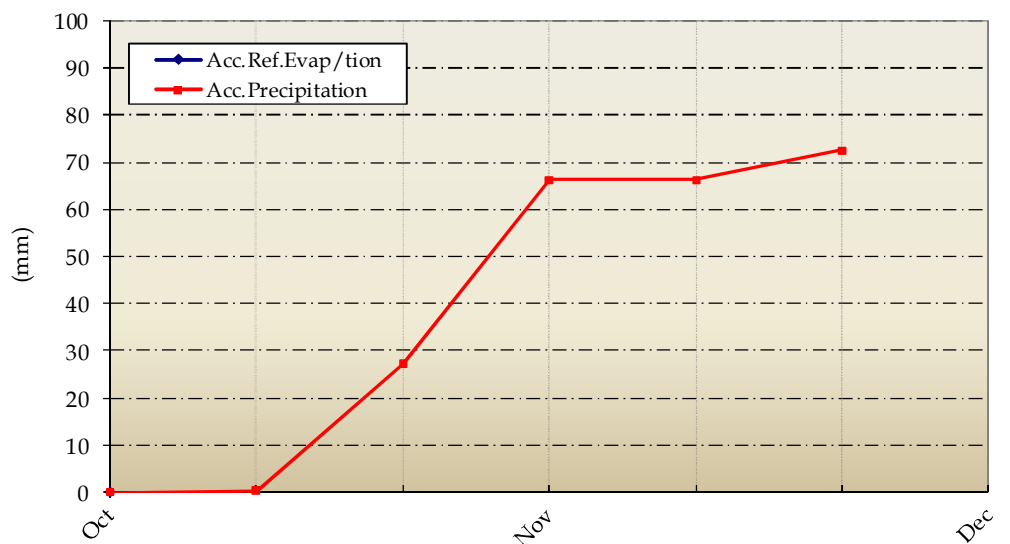


2nd 10-day period (11-20/11/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.3	20.2	20.2	22.6	22.5	22.9	21.0	22.4	20.0	19.4	21.6	21.9	19.5
	Min	12.0	13.2	11.0	7.9	8.2	8.2	8.3	12.0	11.6	8.2	10.1	8.9	9.3
Relative Humidity	Max	78	96	98	94	93	94	100	100	62	81	90	92	-
	Min	34	50	62	40	43	45	53	41	35	31	43	54	-
Soil Temperature at 10 cm	06 UTC	16.0	16.4	16.5	15.0	15.0	14.8	14.6	15.4	15.0	13.0	15.2	16.5	14.0
	12 UTC	18.4	18.0	18.0	17.6	17.6	17.6	17.2	17.4	16.5	15.2	17.4	17.3	15.4
Sunshine Duration		8.4	0.6	6.4	8.8	8.5	8.6	6.2	2.8	7.6	8.7	6.7	2.8	4.6
Precipitation								5.4	0.9	0.0		6.3	51.3	55.3
Evaporation		3.6	0.0	3.0	1.8	3.4	1.8	0.0	1.1	6.4	0.8	21.9	20.6	22.8
Growing Degrees	5	13.2	11.7	10.6	10.3	10.4	10.6	9.7	12.2	10.8	8.8	108.1	104.0	93.9
	10	8.2	6.7	5.6	5.3	5.4	5.6	4.7	7.2	5.8	3.8	58.1	54.0	44.2

2nd 10-day period (11-20/11/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	16.7	13.4
Precipitation - Reference Evapotranspiration	-	34.6	41.9
Number of Rainy Days	2.0	6.0	3.8
Number of Dry Days	18.0	0.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



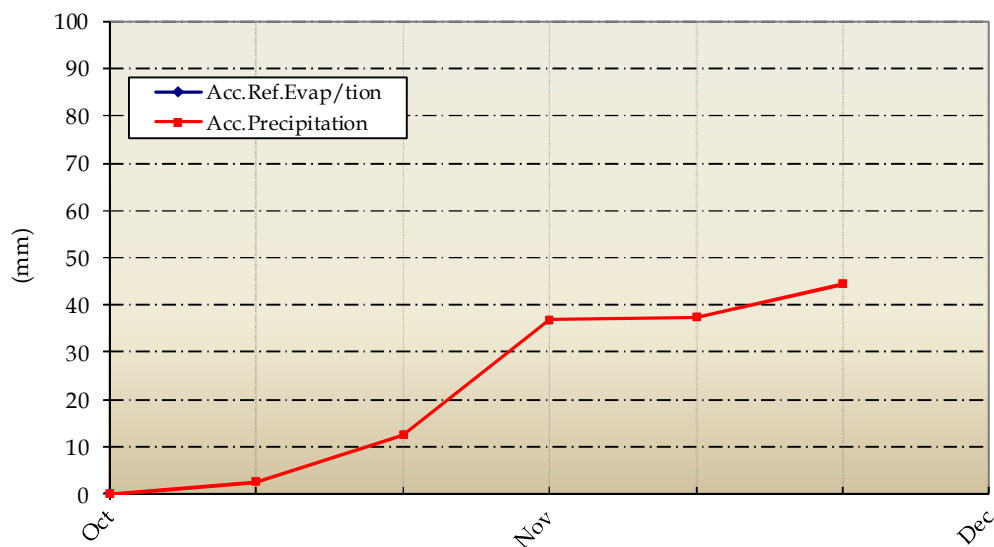
Larisa

2nd 10-day period (11-20/11/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.0	18.0	18.5	18.8	18.2	17.7	16.8	14.4	15.2	13.4	16.8	19.6	15.3
	Min	13.5	8.2	6.1	5.0	3.3	3.4	4.4	11.2	9.6	6.0	7.1	9.9	5.5
Relative Humidity	Max	80	93	98	98	96	97	96	97	93	95	94	98	-
	Min	56	56	54	48	47	53	46	82	57	59	56	64	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	10.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	11.6
Sunshine Duration		-	-	-	-	-	-	-	-	-	-	-	2.7	3.5
Precipitation		-	-	-	-	-	-	-	3.6	3.3	-	6.9	18.9	21.2
Evaporation		2.6	2.7	0.3	2.4	3.2	1.6	1.7	0.0	0.7	1.1	16.3	31.4	13.7
Growing Degrees	5	10.3	8.1	7.3	6.9	5.8	5.6	5.6	7.8	7.4	4.7	69.4	97.4	54.7
	10	5.3	3.1	2.3	1.9	0.8	0.6	0.6	2.8	2.4	0.0	19.7	47.4	14.5

2nd 10-day period (11-20/11/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	10.0	8.8
Precipitation - Reference Evapotranspiration	-	8.9	12.4
Number of Rainy Days	2.0	5.0	3.4
Number of Dry Days	14.0	1.0	-

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Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



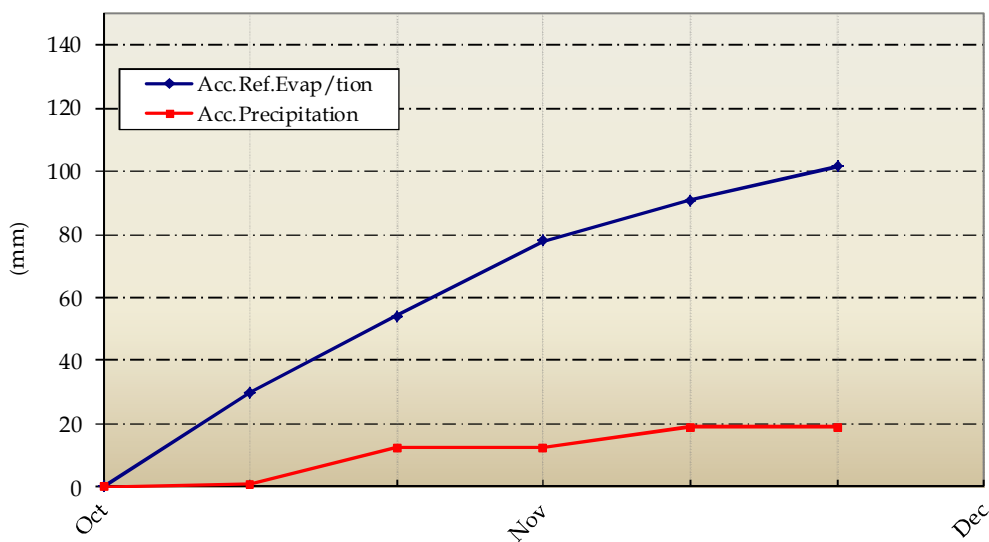
Mikra

2nd 10-day period (11-20/11/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.5	17.4	17.6	19.1	17.5	16.8	17.3	16.6	17.6	14.3	17.3	19.8	14.7
	Min	13.9	11.0	6.9	6.0	7.0	6.0	10.3	12.2	8.2	7.0	8.8	12.0	6.8
Relative Humidity	Max	74	83	93	95	95	93	92	94	93	77	89	96	-
	Min	47	53	52	43	59	68	69	61	41	51	54	68	-
Soil Temperature at 10 cm	06 UTC	15.2	15.0	14.2	13.0	13.6	13.0	14.2	15.2	14.2	13.4	14.1	15.9	10.3
	12 UTC	16.4	16.2	16.2	15.8	16.2	16.2	15.8	15.8	15.0	14.6	15.8	17.1	12.2
Sunshine Duration		3.4	0.5	8.2	8.7	9.7	8.3	2.8	0.4	6.3	5.5	5.4	3.7	3.5
Precipitation									0.1			0.1	13.3	21.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	18.7
Growing Degrees	5	11.2	9.2	7.3	7.6	7.3	6.4	8.8	9.4	7.9	5.7	80.6	108.9	57.6
	10	6.2	4.2	2.3	2.6	2.3	1.4	3.8	4.4	2.9	0.7	30.6	58.9	17.1

2nd 10-day period (11-20/11/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	10.7	10.6	11.2
Precipitation - Reference Evapotranspiration	-10.6	2.7	9.9
Number of Rainy Days	1.0	5.0	3.0
Number of Dry Days	12.0	1.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

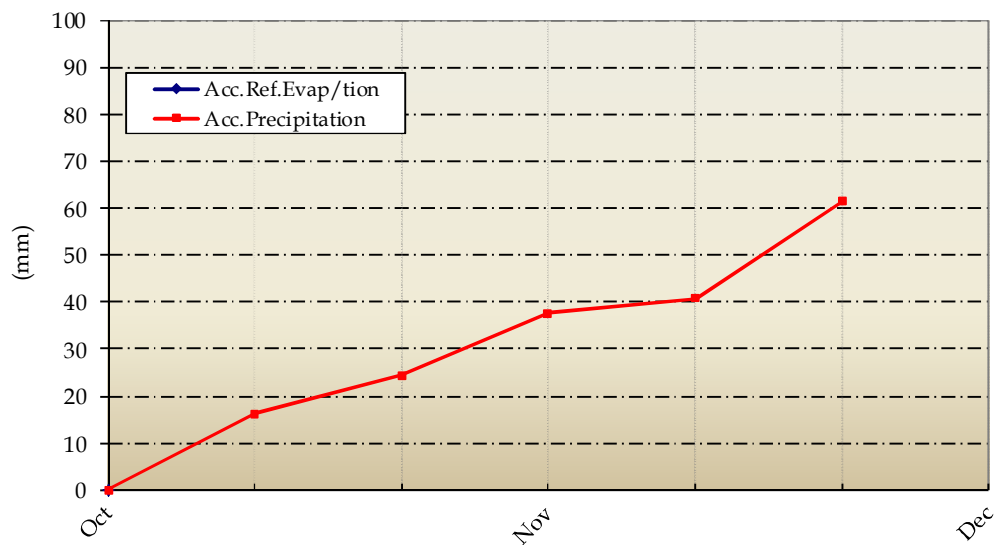


2nd 10-day period (11-20/11/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.1	16.6	19.2	18.0	18.3	19.3	18.3	15.8	14.5	14.1	17.2	20.4	17.8
	Min	13.1	12.4	10.2	7.2	5.9	5.7	6.2	8.2	9.8	10.1	8.9	11.0	8.3
Relative Humidity	Max	72	94	97	99	97	99	100	97	99	69	92	100	-
	Min	47	61	43	47	40	41	53	60	52	51	50	56	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		1.7	1.0	7.1	6.5	8.0	7.6	4.0	0.0	4.6	2.2	4.3	4.5	
Precipitation									1.1	19.4	0.2	20.7	56.5	21.4
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	10.6	9.5	9.7	7.6	7.1	7.5	7.3	7.0	7.2	7.1	80.5	107.1	
	10	5.6	4.5	4.7	2.6	2.1	2.5	2.3	2.0	2.2	2.1	30.5	57.1	

2nd 10-day period (11-20/11/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	
Precipitation - Reference Evapotranspiration	-	-	21.4
Number of Rainy Days	3.0	4.0	3.7
Number of Dry Days	11.0	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

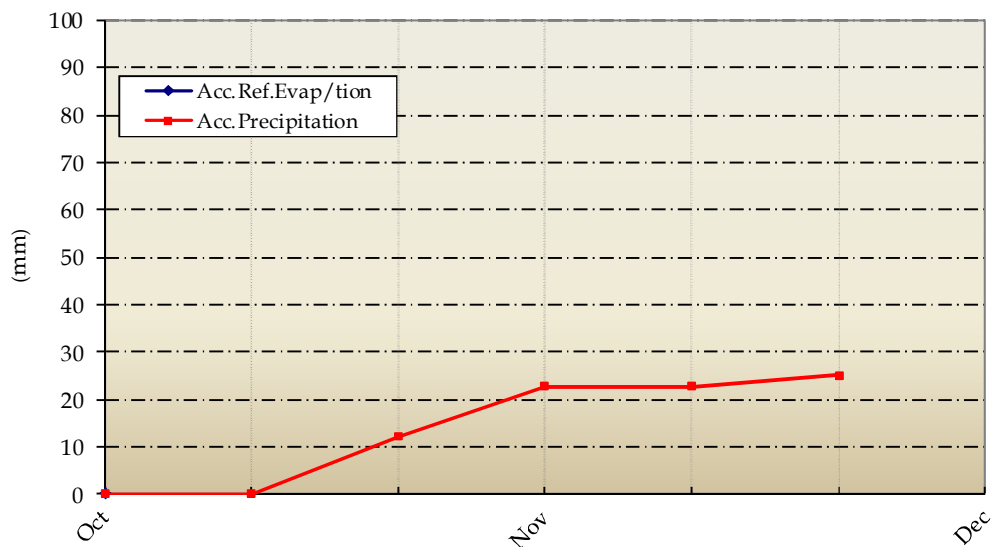


2nd 10-day period (11-20/11/2020)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.6	16.8	17.9	17.8	17.4	18.6	16.9	15.3	12.9	12.9	16.2	16.7	14.9
	Min	8.3	3.5	4.2	2.0	1.7	1.0	2.0	10.4	7.9	5.7	4.7	7.1	4.4
Relative Humidity	Max	77	95	96	100	100	100	100	98	89	71	93	100	-
	Min	56	44	39	37	42	44	56	41	57	37	45	61	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	12.2	9.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	13.8	10.8
Sunshine Duration		3.8	5.9	6.9	4.8	6.1	6.5	3.7	1.5	6.1	6.5	5.2	2.5	4.5
Precipitation		0.0			0.0	0.0	0.0	0.0	2.0	0.3		2.3	51.8	45.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	15.6
Growing Degrees	5	7.0	5.2	6.1	4.9	4.6	4.8	4.5	7.9	5.4	4.3	54.4	69.3	46.8
	10	2.0	0.2	1.1	0.0	0.0	0.0	0.0	2.9	0.4	0.0	6.4	20.3	10.1

2nd 10-day period (11-20/11/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	10.5
Precipitation - Reference Evapotranspiration	-	-	35.2
Number of Rainy Days	2.0	7.0	4.0
Number of Dry Days	20.0	1.0	-

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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