



# AGROMETEOROLOGICAL BULLETIN

*October 2020  
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



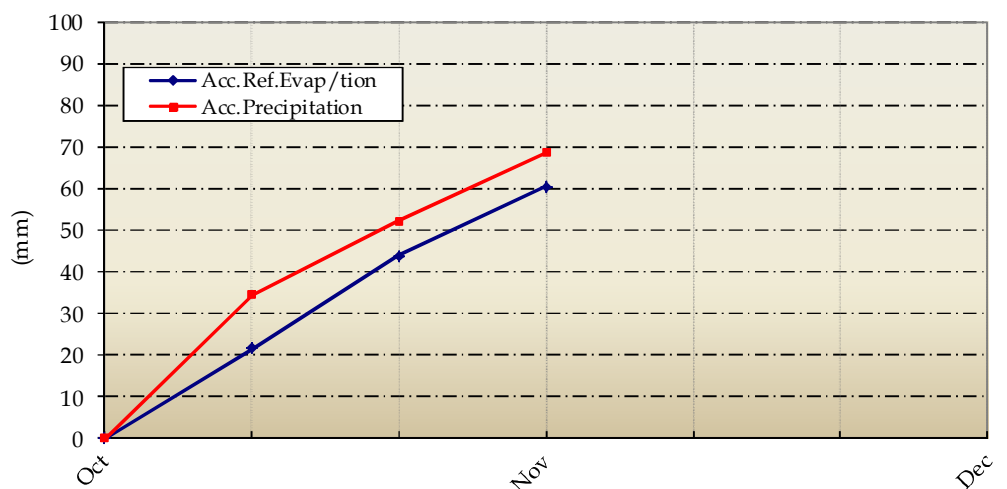
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3rd 10-day period (21-31/10/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.0	23.4	24.0	22.6	23.4	22.4	23.0	21.6	20.6	16.4	18.4	21.5	22.2	17.4
	Min	15.0	11.0	9.6	9.4	14.6	12.0	8.2	8.2	15.8	13.8	5.6	11.2	9.6	8.0
Relative Humidity	Max	68	88	93	95	96	95	94	93	95	98	91	91	94	-
	Min	41	48	48	58	59	51	48	70	60	85	48	56	49	-
Soil Temperature at 10 cm	06 UTC	16.6	16.2	16.4	16.6	16.6	17.0	16.2	17.2	17.6	17.6	13.6	16.5	15.8	12.7
	12 UTC	18.0	19.8	20.0	20.0	19.6	19.6	19.4	19.0	19.0	17.0	16.4	18.9	19.3	15.2
Sunshine Duration		7.7	9.2	9.1	8.9	4.3	8.3	6.4	2.1	3.5	0.3	7.7	6.1	7.4	5.2
Precipitation									2.7		13.7		16.4	0.2	22.3
Evaporation		1.2	3.9	3.8	1.8	1.9	3.1	1.6	3.8	1.4	0.2	6.4	29.1	30.0	41.1
Growing Degrees	5	13.0	12.2	11.8	11.0	14.0	12.2	10.6	9.9	13.2	10.1	7.0	125.0	119.9	85.3
	10	8.0	7.2	6.8	6.0	9.0	7.2	5.6	4.9	8.2	5.1	2.0	70.0	64.9	34.4

3rd 10-day period (21-31/10/2020)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	16.6	19.9
Precipitation - Reference Evapotranspiration	-0.2	-19.7
Number of Rainy Days	2.0	1.0
Number of Dry Days	14.0	22.0

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

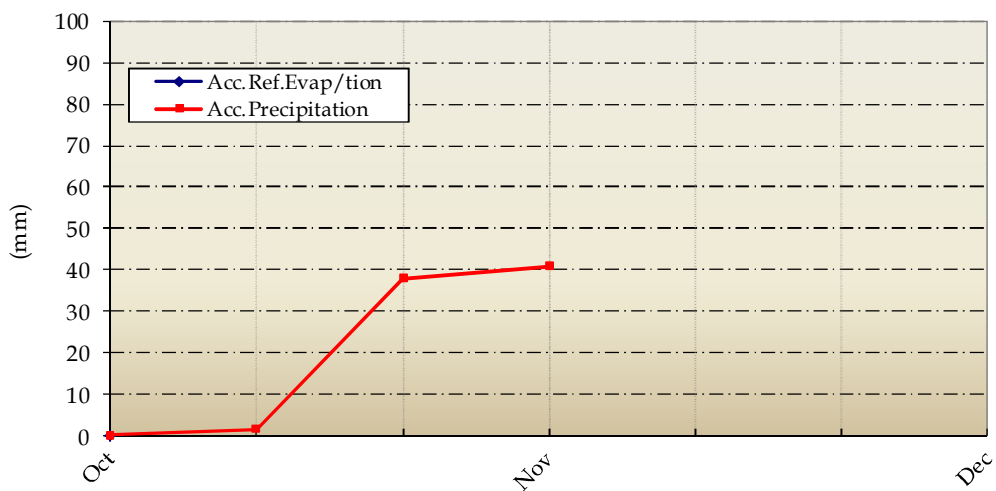


3rd 10-day period (21-31/10/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.2	23.5	24.0	23.1	23.4	22.3	23.4	23.4	22.8	22.3	23.1	23.1	25.4	21.5
	Min	8.6	10.4	9.3	11.6	13.1	12.9	12.2	12.7	10.6	14.6	9.4	11.4	10.5	11.4
Relative Humidity	Max	93	96	97	98	97	91	90	93	95	96	98	95	94	-
	Min	44	41	49	60	59	59	51	42	45	59	32	49	42	-
Soil Temperature at 10 cm	06 UTC	18.2	18.4	17.8	18.2	18.6	19.0	18.4	18.8	17.4	18.6	17.8	18.3	18.8	16.1
	12 UTC	19.6	21.0	19.6	20.0	20.0	20.6	20.0	20.0	19.2	19.8	20.6	20.0	21.4	18.7
Sunshine Duration		8.6	8.8	8.4	8.4	6.7	7.8	8.1	1.5	8.3	6.0	7.5	7.3	7.8	6.3
Precipitation									2.9	0.0			2.9	23.2	50.1
Evaporation		4.0	3.8	1.6	1.3	1.2	1.4	2.6	2.8	3.1	2.8	5.6	30.2	30.7	31.6
Growing Degrees	5	10.9	12.0	11.7	12.4	13.3	12.6	12.8	13.1	11.7	13.5	11.3	135.0	142.9	126.2
	10	5.9	7.0	6.7	7.4	8.3	7.6	7.8	8.1	6.7	8.5	6.3	80.0	87.9	71.3

3rd 10-day period (21-31/10/2020)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	18.7
Precipitation - Reference Evapotranspiration	-	31.4
Number of Rainy Days	1.0	3.7
Number of Dry Days	13.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



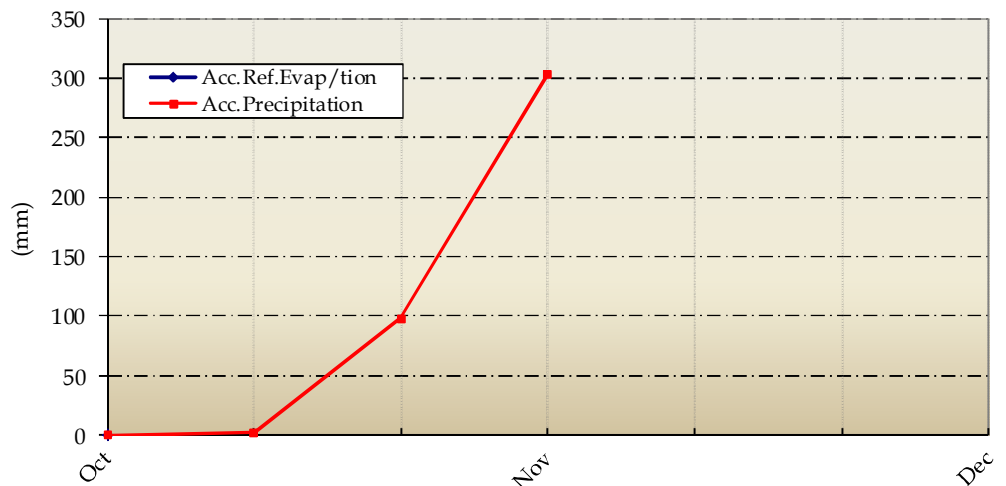
Iraklio

3rd 10-day period (21-31/10/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.2	22.2	22.2	23.6	24.0	23.0	23.2	23.0	22.8	23.0	21.6	22.4	23.5	21.6
	Min	15.0	15.0	14.6	17.0	16.0	17.6	14.6	16.4	19.0	16.4	16.2	16.2	17.3	15.6
Relative Humidity	Max	96	95	96	92	90	92	89	96	88	88	82	91	89	-
	Min	79	62	76	70	72	63	63	60	64	65	60	67	63	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		0.1	4.8	6.1	9.0	9.3	6.0	7.9	4.3	6.5	8.0	7.4	6.3	7.7	5.7
Precipitation		164.3	14.0	14.0	0.9				12.3	0.2			205.7	8.3	29.2
Evaporation		-	2.8	0.7	1.6	3.8	3.9	0.2	5.3	2.2	3.6	2.1	-	30.0	48.8
Growing Degrees	5	11.6	13.6	13.4	15.3	15.0	15.3	13.9	14.7	15.9	14.7	13.9	157.3	169.3	149.6
	10	6.6	8.6	8.4	10.3	10.0	10.3	8.9	9.7	10.9	9.7	8.9	102.3	114.3	94.6

3rd 10-day period (21-31/10/2020)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	29.2
Number of Rainy Days	6.0	1.0
Number of Dry Days	0.0	11.0

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Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

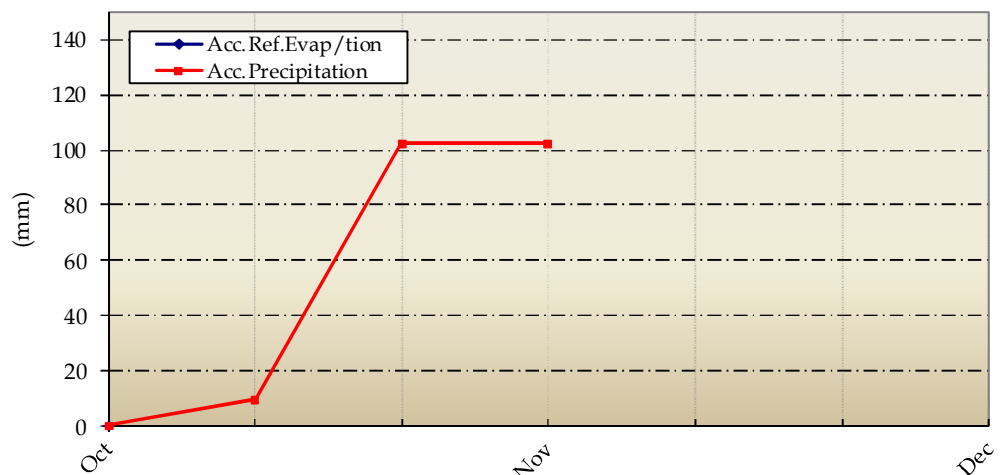


3rd 10-day period (21-31/10/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.8	22.7	24.3	22.8	19.4	19.6	19.8	18.2	21.2	19.8	20.7	20.8	24.1	17.6
	Min	5.8	1.7	2.0	2.6	8.1	3.5	4.4	3.8	6.8	4.6	2.8	4.2	3.8	7.0
Relative Humidity	Max	98	99	100	100	100	100	100	99	100	100	100	100	98	-
	Min	33	37	42	27	52	51	51	52	45	52	47	44	37	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	11.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	13.8
Sunshine Duration		8.8	6.8	6.9	5.1	3.7	6.7	3.8	0.6	9.0	6.2	9.0	6.1	6.0	4.6
Precipitation						0.0	0.0						0.0	7.2	37.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	18.9
Growing Degrees	5	8.3	7.2	8.2	7.7	8.8	6.6	7.1	6.0	9.0	7.2	6.8	82.7	98.7	81.3
	10	3.3	2.2	3.2	2.7	3.8	1.6	2.1	1.0	4.0	2.2	1.8	27.7	43.7	30.0

3rd 10-day period (21-31/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	14.7
Precipitation - Reference Evapotranspiration	-	-	22.9
Number of Rainy Days	0.0	2.0	3.8
Number of Dry Days	15.0	18.0	-

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Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



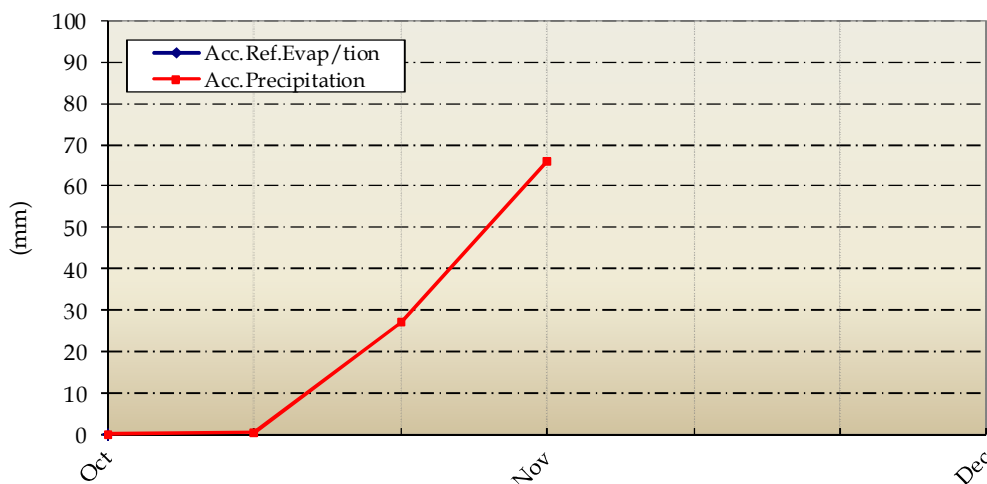
Kalamata

3rd 10-day period (21-31/10/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.4	24.6	25.0	25.9	25.6	24.7	23.6	18.6	24.4	23.8	24.5	24.0	26.7	22.3
	Min	13.4	11.2	11.6	11.6	8.9	10.8	10.1	12.4	11.2	11.6	11.7	11.3	11.7	11.5
Relative Humidity	Max	93	90	85	89	93	94	90	94	95	95	91	92	83	-
	Min	45	36	34	40	45	39	38	62	46	46	47	43	32	-
Soil Temperature at 10 cm	06 UTC	18.0	17.5	18.0	18.0	17.6	17.6	17.5	17.6	17.0	17.0	17.0	17.5	20.6	16.7
	12 UTC	20.0	24.2	20.2	24.0	20.0	19.6	19.0	17.0	18.0	18.4	18.2	19.9	22.2	18.5
Sunshine Duration		5.6	9.6	9.6	9.7	8.2	9.3	7.4	1.2	9.2	8.3	9.2	7.9	9.1	5.9
Precipitation		0.2							32.6	6.3			39.1	8.6	43.6
Evaporation		0.8	4.6	5.4	0.4	4.8	2.8	10.9	1.0	4.6	2.2	4.0	41.5	42.8	36.3
Growing Degrees	5	13.4	12.9	13.3	13.8	12.3	12.8	11.9	10.5	12.8	12.7	13.1	139.3	156.2	130.7
	10	8.4	7.9	8.3	8.8	7.3	7.8	6.9	5.5	7.8	7.7	8.1	84.3	101.2	75.7

3rd 10-day period (21-31/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	32.3	21.6
Precipitation - Reference Evapotranspiration	-	-23.7	22.0
Number of Rainy Days	3.0	1.0	3.7
Number of Dry Days	0.0	20.0	-

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Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



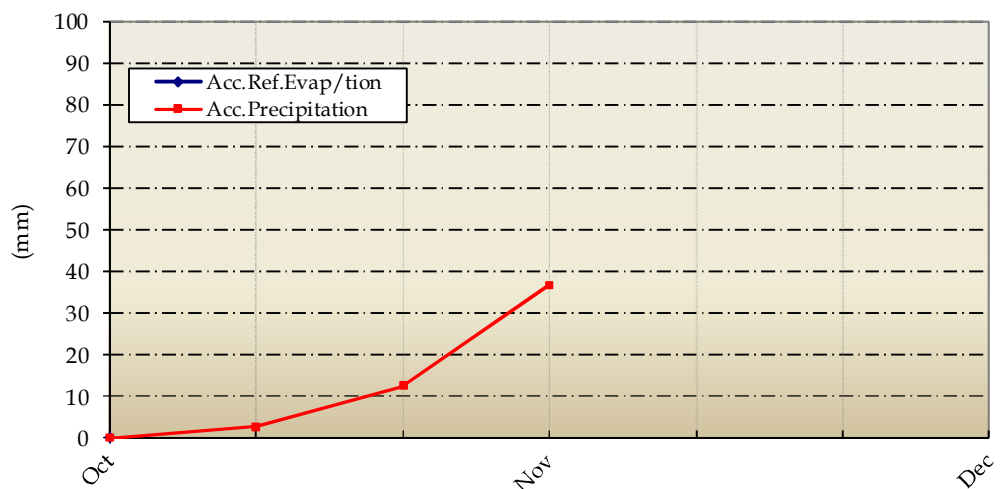
Larisa

3rd 10-day period (21-31/10/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.6	23.5	25.7	25.7	23.4	23.2	22.9	16.2	22.0	21.3	21.4	22.4	24.8	18.9
	Min	10.9	4.8	6.4	5.6	8.8	6.7	4.8	7.8	13.5	9.6	5.1	7.6	8.1	8.3
Relative Humidity	Max	85	93	93	91	88	88	91	98	98	98	94	92	91	-
	Min	38	36	32	35	43	31	37	80	51	39	39	42	38	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	14.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	15.6
Sunshine Duration		-	-	-	-	-	-	-	-	-	-	-	-	5.6	4.4
Precipitation									24.4				24.4	0.0	23.9
Evaporation		2.8	1.1	4.9	3.0	7.8	1.7	3.7	2.0	3.1	2.5	2.2	34.8	38.0	24.8
Growing Degrees	5	11.3	9.2	11.1	10.7	11.1	10.0	8.9	7.0	12.8	10.5	8.3	110.5	125.9	94.1
	10	6.3	4.2	6.1	5.7	6.1	5.0	3.9	2.0	7.8	5.5	3.3	55.5	70.9	41.5

3rd 10-day period (21-31/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	19.1	16.4
Precipitation - Reference Evapotranspiration	-	-19.1	7.5
Number of Rainy Days	1.0	0.0	3.5
Number of Dry Days	14.0	23.0	-

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Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



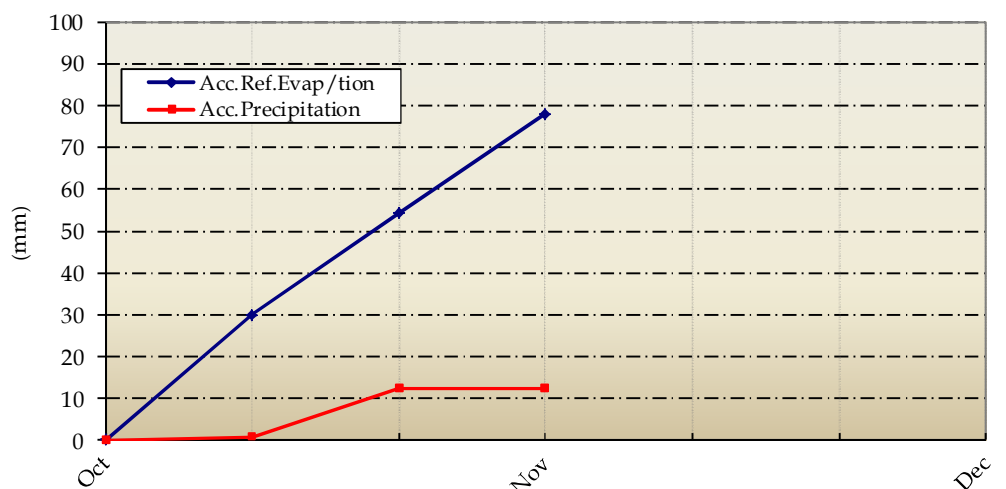
Mikra

3rd 10-day period (21-31/10/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.8	23.1	24.0	23.5	20.4	22.5	20.7	21.7	23.1	20.6	22.2	22.1	23.3	18.1
	Min	8.0	7.6	8.5	8.3	11.4	7.9	8.6	10.6	12.5	12.2	13.5	9.9	11.5	9.2
Relative Humidity	Max	89	84	86	84	90	94	89	93	94	89	64	87	91	-
	Min	39	40	34	38	60	40	63	51	43	36	45	44	51	-
Soil Temperature at 10 cm	06 UTC	17.0	16.6	16.2	16.2	15.5	16.0	16.2	16.6	27.2	17.4	16.5	17.4	18.0	13.8
	12 UTC	18.9	20.6	20.8	18.8	18.0	18.0	18.4	19.0	20.2	18.8	18.2	19.1	20.7	16.0
Sunshine Duration		9.0	9.4	9.3	7.8	3.6	8.7	8.6	3.4	7.8	6.3	9.3	7.6	7.2	4.6
Precipitation										0.1			0.1	4.1	21.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	29.7
Growing Degrees	5	9.9	10.4	11.3	10.9	10.9	10.2	9.7	11.2	12.8	11.4	12.9	121.4	136.4	95.5
	10	4.9	5.4	6.3	5.9	5.9	5.2	4.7	6.2	7.8	6.4	7.9	66.4	81.4	42.9

3rd 10-day period (21-31/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	23.8	18.0	17.3
Precipitation - Reference Evapotranspiration	-23.7	-13.9	3.8
Number of Rainy Days	1.0	1.0	3.2
Number of Dry Days	12.0	22.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



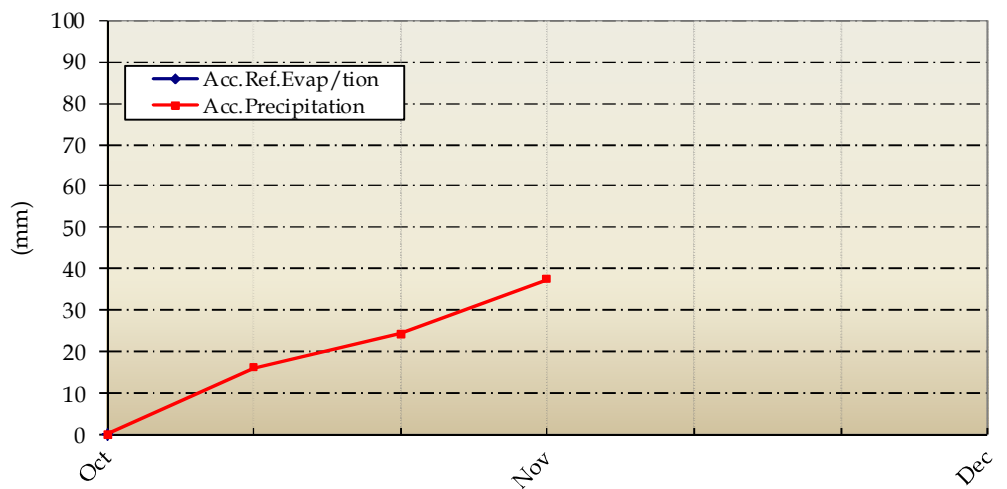


3rd 10-day period (21-31/10/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.9	21.9	25.0	26.6	26.7	22.9	22.2	19.0	20.8	21.2	20.6	22.2	24.1	19.8
	Min	11.8	14.6	10.1	10.2	11.2	10.6	8.2	9.4	14.2	9.7	10.3	10.9	11.4	10.1
Relative Humidity	Max	95	81	93	85	94	82	98	100	99	100	78	91	91	-
	Min	60	43	32	26	28	29	44	63	56	50	35	42	36	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		0.1	8.6	9.1	8.8	6.5	8.4	7.3	0.0	4.0	7.4	8.6	6.3	7.6	
Precipitation		4.0	0.0						7.5	1.8			13.3	0.9	27.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	
Growing Degrees	5	9.4	13.3	12.6	13.4	14.0	11.8	10.2	9.2	12.5	10.5	10.5	127.1	140.4	
	10	4.4	8.3	7.6	8.4	9.0	6.8	5.2	4.2	7.5	5.5	5.5	72.1	85.4	

3rd 10-day period (21-31/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	
Precipitation - Reference Evapotranspiration	-	-	27.5
Number of Rainy Days	3.0	1.0	3.7
Number of Dry Days	3.0	22.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

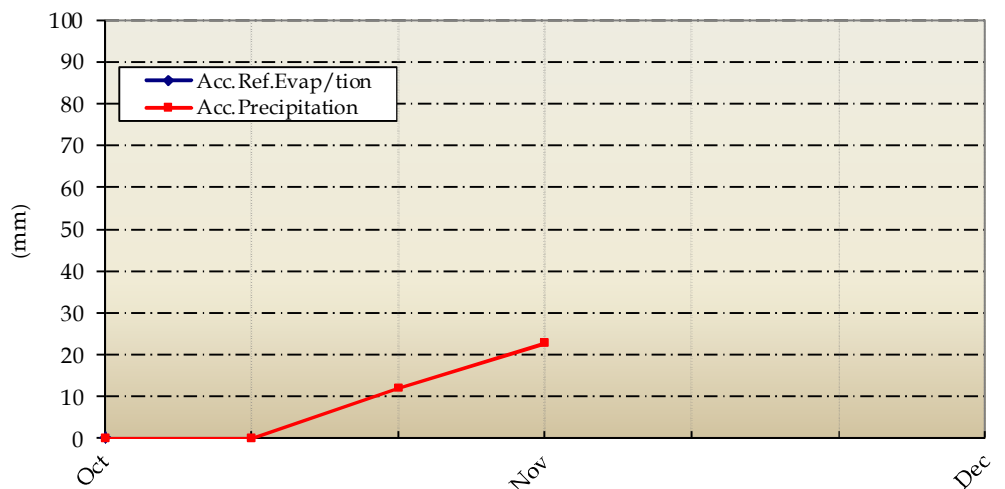


3rd 10-day period (21-31/10/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.2	21.6	24.0	25.4	23.6	21.3	19.6	14.4	19.8	20.2	19.4	20.6	24.2	17.6
	Min	7.5	4.5	3.6	3.1	2.8	4.2	3.1	4.4	7.9	5.0	4.8	4.6	4.4	6.5
Relative Humidity	Max	95	97	97	98	96	96	99	97	98	99	99	97	93	-
	Min	52	39	26	14	27	35	36	73	48	39	43	39	23	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	13.5	12.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	17.6	14.2
Sunshine Duration		2.5	9.1	8.5	8.6	8.4	8.5	7.9	0.5	5.1	7.2	7.0	6.7	8.5	5.3
Precipitation					0.0				10.7			0.0	10.7	0.8	39.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	23.9
Growing Degrees	5	7.4	8.1	8.8	9.3	8.2	7.8	6.4	4.4	8.9	7.6	7.1	83.7	102.5	77.8
	10	2.4	3.1	3.8	4.3	3.2	2.8	1.4	0.0	3.9	2.6	2.1	29.3	47.5	27.7

3rd 10-day period (21-31/10/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	22.5	18.0
Precipitation - Reference Evapotranspiration	-	-21.7	21.1
Number of Rainy Days	1.0	1.0	3.8
Number of Dry Days	7.0	11.0	-

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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Division of Climatology-Applications

Issue Editors :

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The present bulletin was designed and implemented under the support of Water Resources Management Division of Agriculture University of Athens