



# AGROMETEOROLOGICAL BULLETIN

*July 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



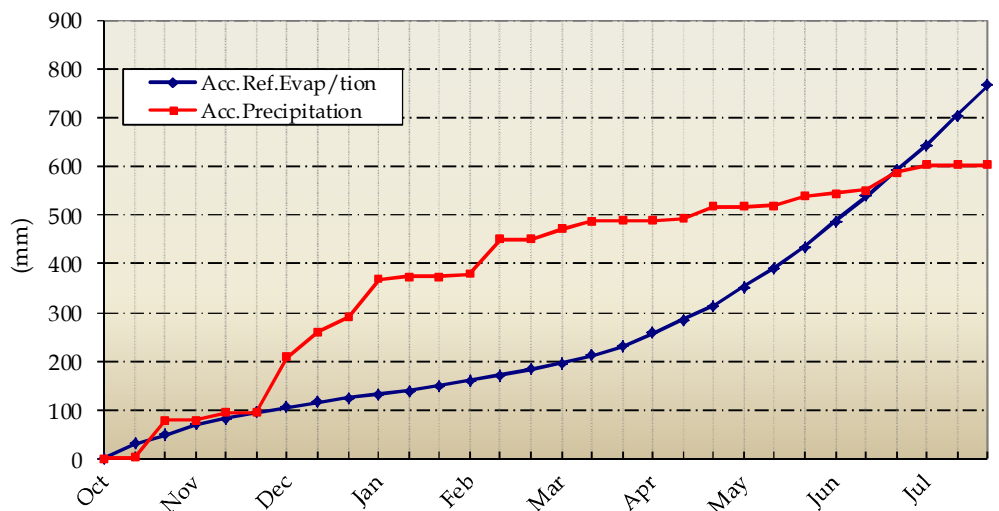
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2nd 10-day period (11-20/07/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.6	29.0	29.6	31.0	34.0	31.2	34.8	30.8	30.6	31.4	31.1	34.0	31.3
	Min	18.4	18.0	15.4	17.6	20.0	18.0	21.0	21.8	15.6	17.6	18.3	20.9	19.0
Relative Humidity	Max	90	71	76	68	78	86	67	70	71	71	75	72	76
	Min	42	30	30	28	26	42	23	34	26	28	31	35	34
Soil Temperature at 10 cm	06 UTC	26.2	26.0	25.8	25.6	26.4	26.6	27.6	28.4	26.6	26.6	26.6	26.9	26.0
	12 UTC	29.0	29.6	29.8	28.4	30.2	31.0	31.6	31.6	29.8	30.0	30.1	30.2	29.5
Sunshine Duration		11.6	10.9	13.0	13.7	13.5	12.7	13.5	11.9	13.5	13.4	12.8	13.0	11.8
Precipitation														4.0
Evaporation		10.3	8.2	10.1	6.9	11.0	9.3	13.7	10.2	12.4	10.6	102.7	98.3	93.2
Growing Degrees	5	18.5	18.5	17.5	19.3	22.0	19.6	22.9	21.3	18.1	19.5	197.2	224.7	185.0
	10	13.5	13.5	12.5	14.3	17.0	14.6	17.9	16.3	13.1	14.5	147.2	174.7	139.2

2nd 10-day period (11-20/07/2022)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	62.2	62.7
Precipitation - Reference Evapotranspiration	-62.2	-62.7
Number of Rainy Days	0.0	0.0
Number of Dry Days	24.0	17.0

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

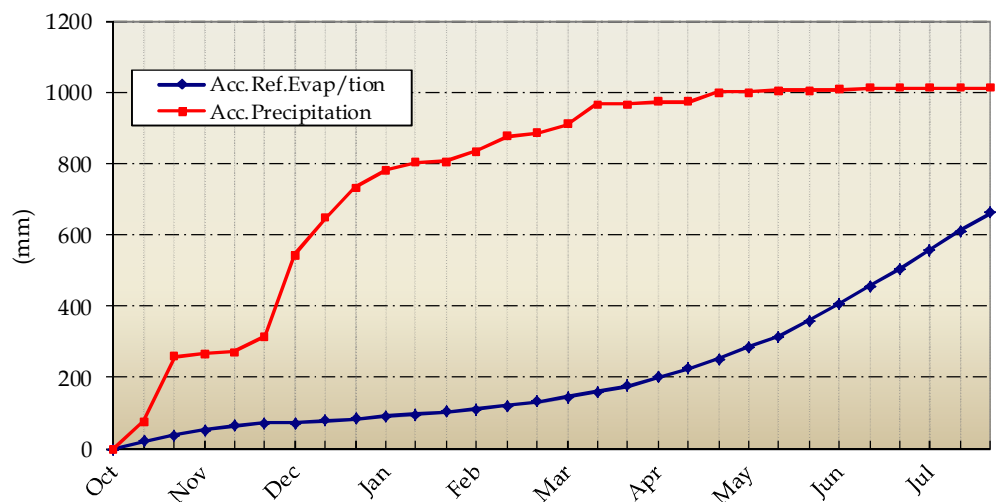


2nd 10-day period (11-20/07/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.5	30.6	29.2	30.4	32.0	33.0	33.8	36.3	32.9	31.6	32.1	32.3	30.5
	Min	19.4	20.0	19.4	16.0	17.2	17.4	18.7	20.9	21.4	18.4	18.9	20.7	18.8
Relative Humidity	Max	86	85	87	90	82	86	86	85	65	64	82	92	88
	Min	36	45	45	30	32	31	39	27	28	28	34	39	39
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	30.5	28.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	32.9	33.5
Sunshine Duration		13.2	13.3	10.0	13.2	13.4	13.3	13.1	12.5	13.3	13.1	12.8	12.8	12.4
Precipitation														0.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	93.0	90.7
Growing Degrees	5	20.5	20.3	19.3	18.2	19.6	20.2	21.3	23.6	22.2	20.0	205.1	215.3	163.5
	10	15.5	15.3	14.3	13.2	14.6	15.2	16.3	18.6	17.2	15.0	155.1	165.3	122.0

2nd 10-day period (11-20/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	51.0	52.8	52.8
Precipitation - Reference Evapotranspiration	-51.0	-52.8	-52.2
Number of Rainy Days	0.0	0.0	0.1
Number of Dry Days	40.0	40.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

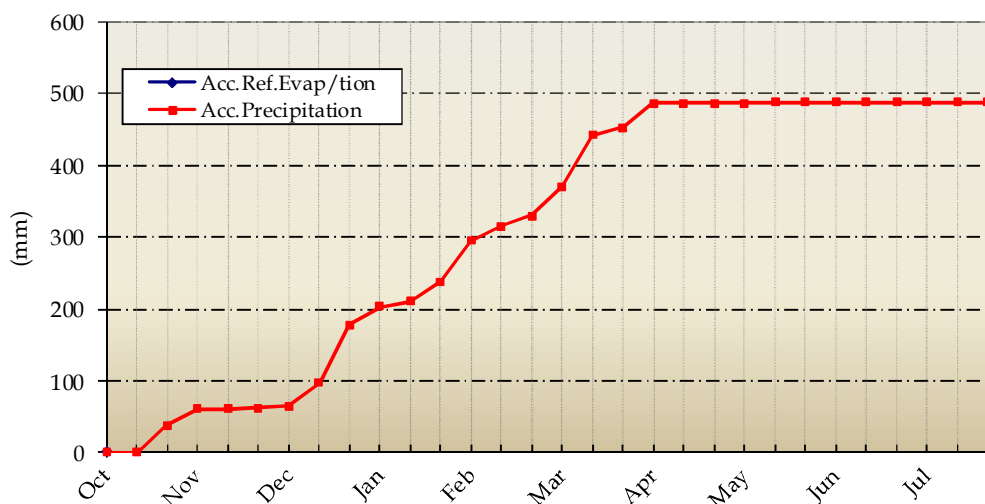


2nd 10-day period (11-20/07/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.8	28.2	27.6	27.0	28.2	30.0	30.2	29.0	27.0	26.4	28.1	30.4	29.3
	Min	23.4	20.2	24.0	23.6	24.0	24.8	25.6	25.6	23.6	23.0	23.8	23.6	22.7
Relative Humidity	Max	77	83	74	66	71	61	68	65	69	73	71	84	77
	Min	54	52	47	43	49	44	41	50	54	61	50	60	52
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.8	12.8	12.8	12.3	12.6	12.8	12.8	12.7	12.5	12.1	12.6	12.6	12.4
Precipitation														0.2
Evaporation		14.2	7.5	10.5	8.6	9.0	10.8	7.8	5.8	12.4	8.2	94.8	78.8	73.7
Growing Degrees	5	20.6	19.2	20.8	20.3	21.1	22.4	22.9	22.3	20.3	19.7	209.6	219.9	197.5
	10	15.6	14.2	15.8	15.3	16.1	17.4	17.9	17.3	15.3	14.7	159.6	169.9	150.5

2nd 10-day period (11-20/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	
Precipitation - Reference Evapotranspiration	-	-	
Number of Rainy Days	0.0	0.0	0.1
Number of Dry Days	38.0	34.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

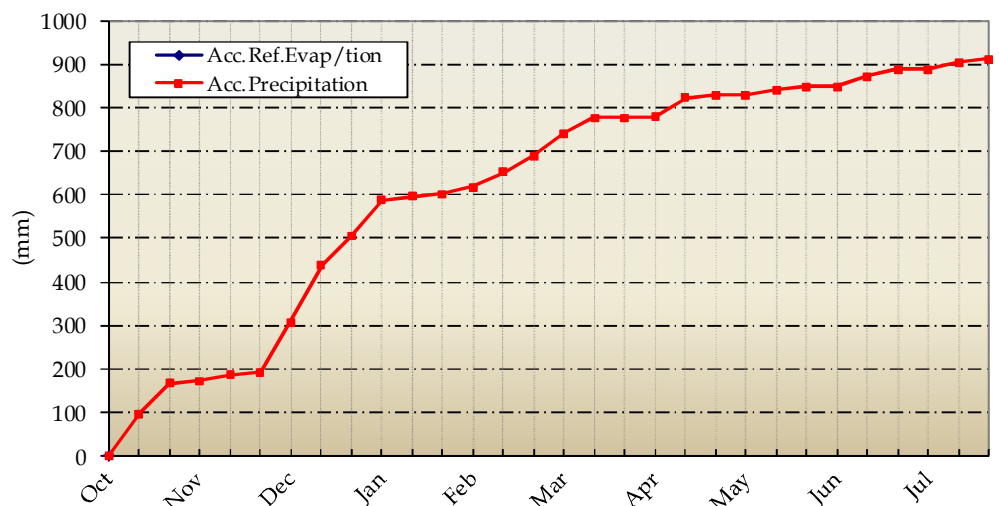


2nd 10-day period (11-20/07/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.6	30.3	28.8	31.0	33.8	35.6	36.5	33.2	30.1	30.7	32.0	33.4	31.2
	Min	12.6	11.7	12.0	12.2	15.9	13.6	15.2	22.5	21.8	21.2	15.9	15.5	15.5
Relative Humidity	Max	62	64	53	44	79	80	85	50	52	70	64	94	88
	Min	33	26	29	27	24	27	24	30	32	27	28	33	35
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	22.4
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.0
Sunshine Duration		11.5	13.0	8.5	12.9	12.9	12.3	10.0	10.5	12.8	12.8	11.7	10.2	11.0
Precipitation								7.7				7.7	37.8	8.4
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	16.1	16.0	15.4	16.6	19.9	19.6	20.9	22.9	21.0	21.0	189.2	194.6	150.6
	10	11.1	11.0	10.4	11.6	14.9	14.6	15.9	17.9	16.0	16.0	139.2	144.6	109.8

2nd 10-day period (11-20/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	41.8
Precipitation - Reference Evapotranspiration	-	-	-33.4
Number of Rainy Days	1.0	5.0	1.2
Number of Dry Days	8.0	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

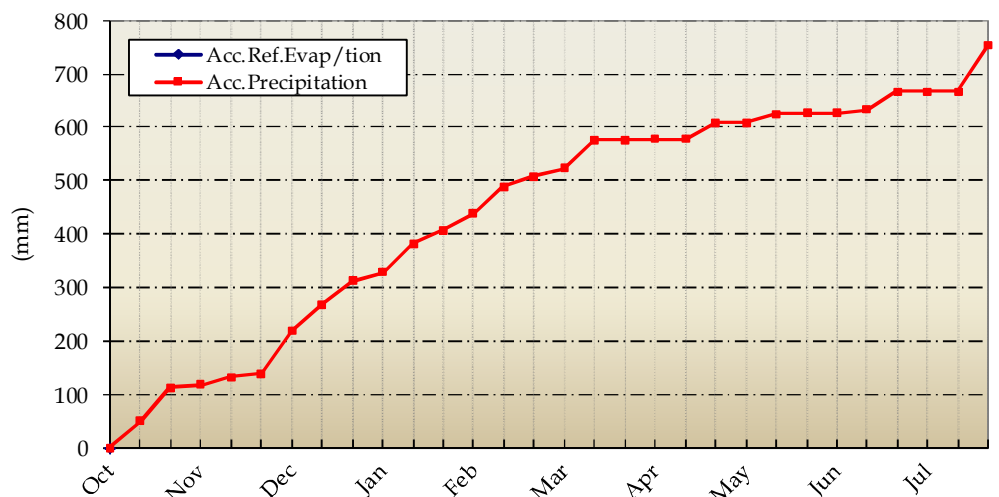


2nd 10-day period (11-20/07/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.8	29.7	28.9	32.5	32.0	34.1	38.5	35.6	34.0	30.7	32.7	32.7	31.7
	Min	17.5	18.2	16.6	15.3	16.1	17.2	20.8	23.6	23.5	17.0	18.6	20.5	18.7
Relative Humidity	Max	90	90	99	93	95	90	80	69	70	77	85	87	85
	Min	40	44	48	29	25	26	23	28	25	31	32	39	34
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	28.7	25.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	33.0	29.0
Sunshine Duration		12.5	13.3	5.3	13.2	13.2	13.2	12.0	12.7	13.1	13.2	12.2	12.1	11.8
Precipitation				88.0								88.0		4.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	76.4
Growing Degrees	5	19.2	19.0	17.8	18.9	19.1	20.7	24.7	24.6	23.8	18.9	206.3	216.3	184.9
	10	14.2	14.0	12.8	13.9	14.1	15.7	19.7	19.6	18.8	13.9	156.3	166.3	139.2

2nd 10-day period (11-20/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	53.0
Precipitation - Reference Evapotranspiration	-	-	-48.8
Number of Rainy Days	1.0	0.0	0.5
Number of Dry Days	22.0	35.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



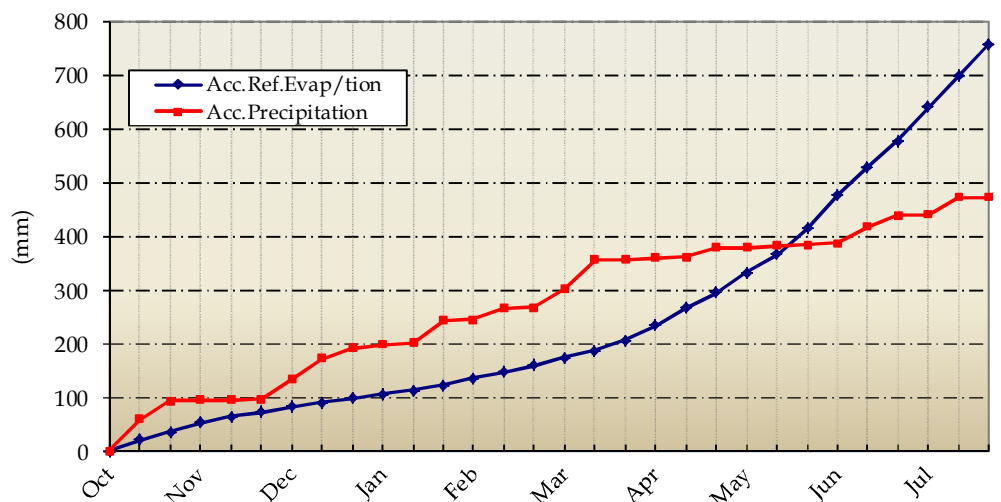
Larisa

2nd 10-day period (11-20/07/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.8	29.8	29.8	31.2	32.6	35.8	34.8	30.6	29.6	31.2	31.6	35.0	33.3
	Min	21.6	21.2	20.6	16.0	16.6	17.2	18.0	20.6	18.0	15.4	18.5	20.0	18.9
Relative Humidity	Max	66	64	73	77	81	80	81	75	81	81	76	78	76
	Min	27	31	24	25	26	22	29	33	29	25	27	29	26
Soil Temperature at 10 cm	06 UTC	24.8	24.6	24.2	25.0	25.4	25.8	26.4	27.0	26.2	26.0	25.5	-	27.3
	12 UTC	26.0	25.8	26.4	26.0	26.8	26.4	27.4	27.0	26.6	27.2	26.6	-	29.5
Sunshine Duration		9.6	10.8	10.9	11.1	10.9	11.0	9.8	9.0	10.2	11.0	10.4	10.7	11.0
Precipitation				0.5								0.5	47.3	4.0
Evaporation		11.6	12.5	9.9	7.1	10.5	11.5	14.3	7.2	14.7	9.6	108.9	110.5	114.7
Growing Degrees	5	21.2	20.5	20.2	18.6	19.6	21.5	21.4	20.6	18.8	18.3	200.7	225.1	190.4
	10	16.2	15.5	15.2	13.6	14.6	16.5	16.4	15.6	13.8	13.3	150.7	175.1	145.6

2nd 10-day period (11-20/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	59.1	66.3	73.4
Precipitation - Reference Evapotranspiration	-58.6	-19.0	-69.4
Number of Rainy Days	1.0	3.0	1.0
Number of Dry Days	2.0	21.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



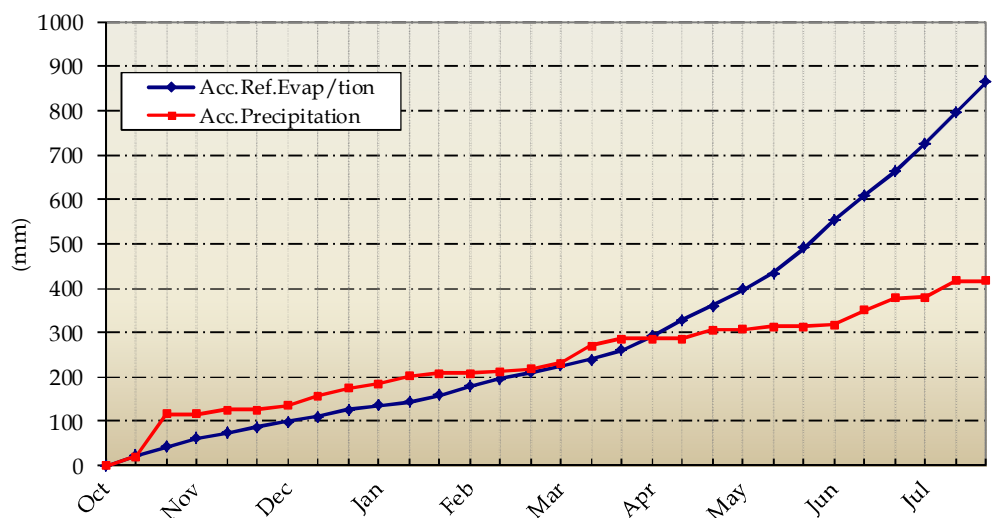
Mikra

2nd 10-day period (11-20/07/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.5	28.8	29.0	30.2	32.4	34.2	35.4	31.0	30.0	31.2	31.2	34.0	32.1
	Min	21.7	21.3	21.4	18.3	18.6	20.0	20.6	24.2	20.6	18.5	20.5	22.4	20.7
Relative Humidity	Max	53	47	61	66	74	71	71	67	76	70	66	78	73
	Min	32	33	31	36	29	26	32	35	39	32	32	37	33
Soil Temperature at 10 cm	06 UTC	23.2	23.5	23.6	24.2	25.0	25.6	26.2	25.6	25.4	26.2	24.8	29.9	27.7
	12 UTC	26.0	25.8	26.8	27.2	27.9	28.0	28.0	27.6	29.4	29.6	27.6	32.7	32.8
Sunshine Duration		13.1	12.8	13.2	13.7	13.3	13.5	13.2	12.2	11.2	13.2	12.9	11.5	11.6
Precipitation													0.0	4.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	105.4
Growing Degrees	5	20.6	20.1	20.2	19.3	20.5	22.1	23.0	22.6	20.3	19.9	208.5	232.2	193.9
	10	15.6	15.1	15.2	14.3	15.5	17.1	18.0	17.6	15.3	14.9	158.5	182.2	148.8

2nd 10-day period (11-20/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	70.5	69.3	51.4
Precipitation - Reference Evapotranspiration	-70.5	-69.3	-46.5
Number of Rainy Days	0.0	0.0	0.9
Number of Dry Days	11.0	17.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





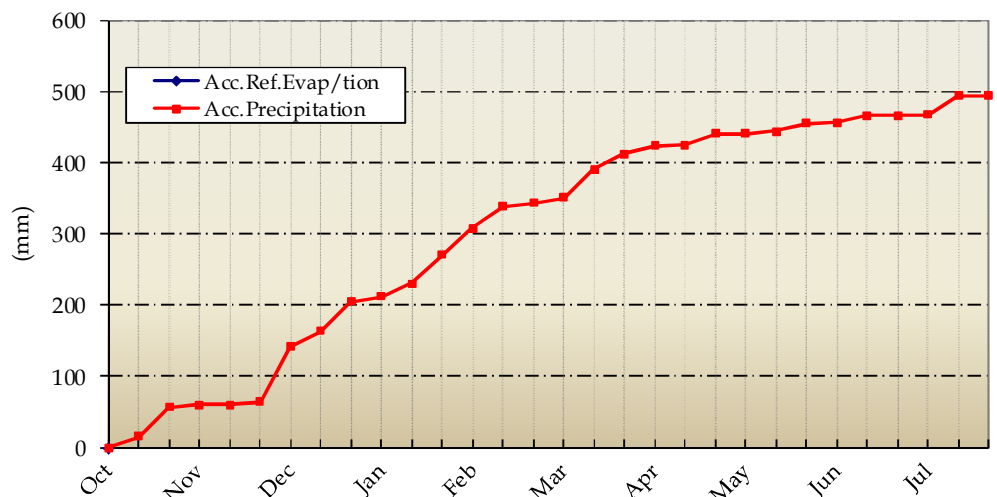
Tanagra

2nd 10-day period (11-20/07/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.9	28.9	27.4	28.6	30.7	34.0	33.9	30.0	27.2	28.2	29.8	34.0	32.1
	Min	17.0	18.5	19.7	16.4	18.4	17.6	20.8	20.1	21.4	21.0	19.1	20.7	19.6
Relative Humidity	Max	78	71	66	63	61	62	57	64	56	56	63	61	70
	Min	24	31	29	27	24	19	23	26	23	22	25	23	27
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		10.8	12.4	9.7	13.5	13.7	13.3	12.8	13.2	13.4	13.6	12.6	12.6	12.1
Precipitation														4.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	93.6
Growing Degrees	5	18.0	18.7	18.6	17.5	19.6	20.8	22.4	20.1	19.3	19.6	194.4	223.4	180.5
	10	13.0	13.7	13.6	12.5	14.6	15.8	17.4	15.1	14.3	14.6	144.4	173.4	137.4

2nd 10-day period (11-20/07/2022)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	-
Number of Rainy Days	0.0	0.3
Number of Dry Days	10.0	35.0

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



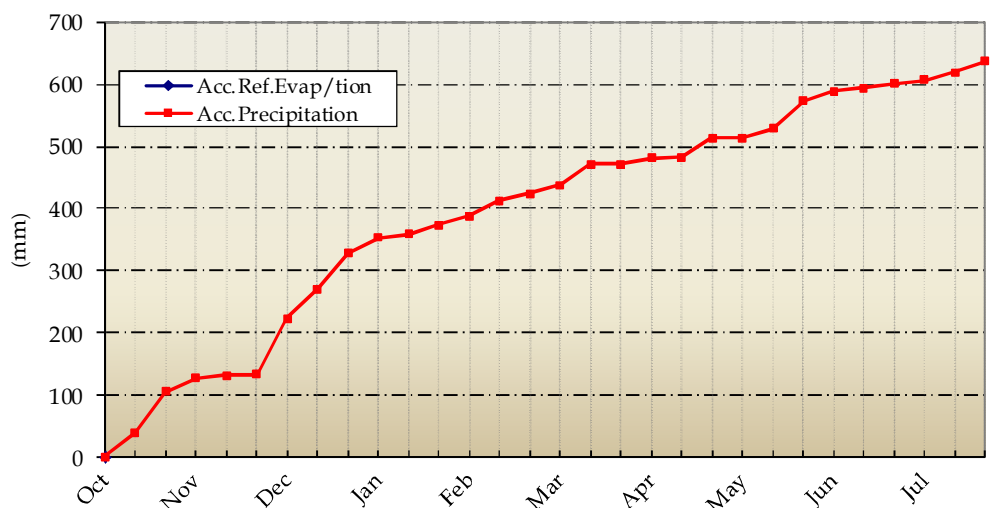
Tripoli

2nd 10-day period (11-20/07/2022)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.4	28.7	25.0	27.2	31.1	32.4	33.6	29.7	27.5	29.0	29.4	32.8	31.0
	Min	12.6	13.0	12.7	11.4	16.6	12.5	15.7	20.9	18.6	17.6	15.2	15.7	14.4
Relative Humidity	Max	98	99	98	95	75	85	73	58	62	52	80	85	83
	Min	29	30	38	23	18	17	18	27	25	22	25	22	27
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	29.8
Sunshine Duration		6.8	9.3	5.4	13.2	13.3	13.3	13.0	13.1	13.0	13.0	11.3	11.9	10.9
Precipitation		8.3		10.0								18.3		5.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	63.7
Growing Degrees	5	16.0	15.9	13.9	14.3	18.9	17.5	19.7	20.3	18.1	18.3	172.6	192.7	144.8
	10	11.0	10.9	8.9	9.3	13.9	12.5	14.7	15.3	13.1	13.3	122.6	142.7	103.8

2nd 10-day period (11-20/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	55.6	54.2	39.4
Precipitation - Reference Evapotranspiration	-37.3	-54.2	-33.8
Number of Rainy Days	2.0	0.0	1.1
Number of Dry Days	1.0	30.0	-

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.

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