



# AGROMETEOROLOGICAL BULLETIN

*July 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



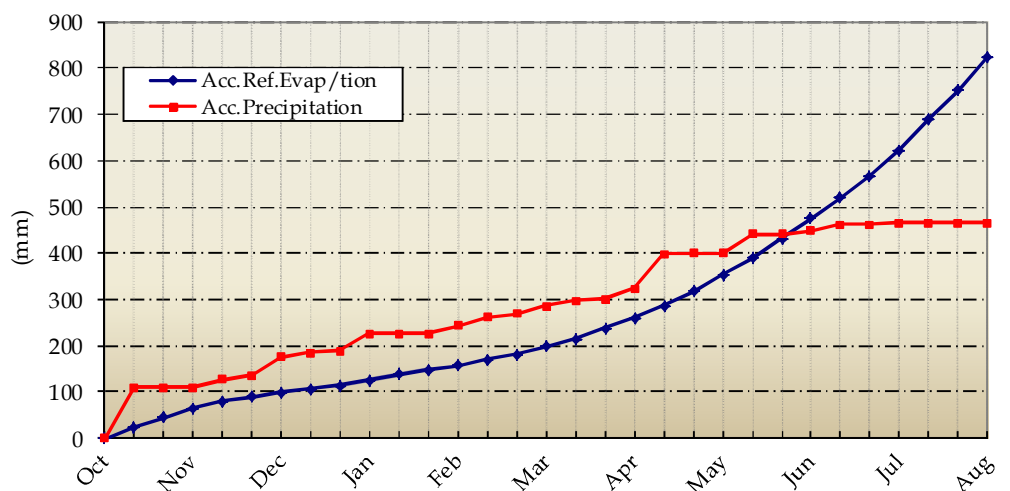
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3rd 10-day period (21-31/07/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.4	34.4	33.6	34.4	33.8	32.4	32.2	32.0	36.8	37.8	35.2	34.1	32.5	30.8
	Min	23.6	21.0	23.2	24.0	21.6	19.4	19.4	22.6	21.0	21.4	21.2	21.7	18.6	18.1
Relative Humidity	Max	68	64	56	68	69	61	74	67	70	65	69	66	87	-
	Min	29	27	29	30	33	34	39	36	26	24	37	31	35	-
Soil Temperature at 10 cm	06 UTC	24.4	24.0	24.6	23.8	24.8	24.6	25.4	25.4	24.2	25.0	25.6	24.7	25.8	24.5
	12 UTC	27.6	27.0	28.4	27.4	28.2	27.0	27.6	28.6	28.6	28.0	29.8	28.0	30.0	28.7
Sunshine Duration		12.7	13.4	13.4	13.3	13.3	13.1	10.9	12.0	12.8	12.8	12.8	12.8	11.5	10.3
Precipitation														3.3	5.5
Evaporation		9.2	11.6	13.0	13.8	11.9	9.0	8.9	8.8	8.0	8.8	8.3	111.3	87.3	104.4
Growing Degrees	5	23.0	22.7	23.4	24.2	22.7	20.9	20.8	22.3	23.9	24.6	23.2	251.7	225.9	213.8
	10	18.0	17.7	18.4	19.2	17.7	15.9	15.8	17.3	18.9	19.6	18.2	196.7	170.9	158.8

3rd 10-day period (21-31/07/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	71.9	60.6	64.5
Precipitation - Reference Evapotranspiration	-71.9	-57.3	-59.0
Number of Rainy Days	0.0	1.0	1.1
Number of Dry Days	40.0	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



# Agrometeorological Data

July 2020

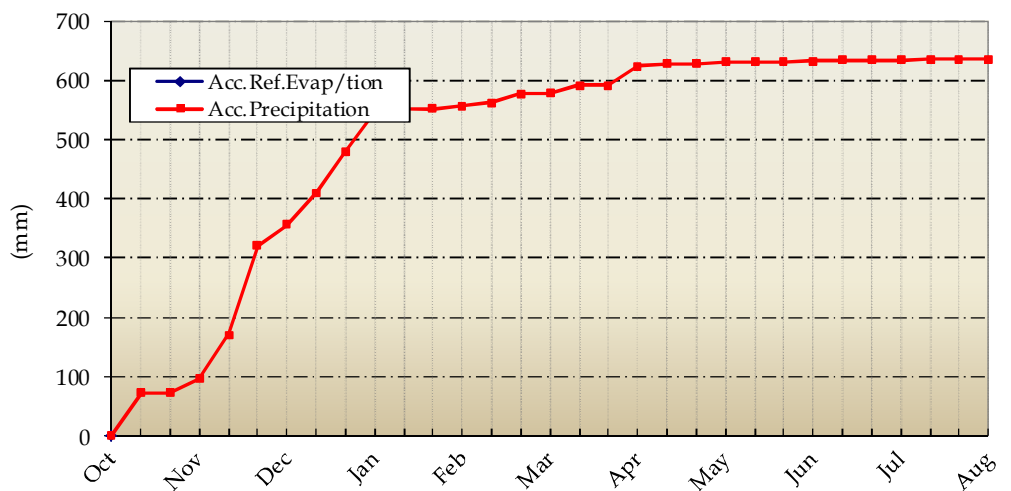
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3rd 10-day period (21-31/07/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.2	32.7	33.3	34.1	33.2	31.4	32.4	34.0	33.2	35.9	35.4	33.3	32.6	30.6
	Min	17.5	17.7	18.1	18.0	18.7	19.1	18.9	19.4	17.9	19.3	20.2	18.6	20.2	18.5
Relative Humidity	Max	91	93	86	84	89	90	94	89	89	84	94	89	93	-
	Min	45	34	37	29	36	49	47	33	37	33	33	38	35	-
Soil Temperature at 10 cm	06 UTC	28.0	28.4	28.2	27.6	29.0	29.2	28.8	28.6	29.0	28.4	29.8	28.6	28.6	27.4
	12 UTC	30.6	30.6	30.8	31.2	31.8	31.4	31.0	31.6	32.0	32.2	32.6	31.4	31.2	31.9
Sunshine Duration		11.8	13.2	13.3	13.0	12.7	13.6	12.5	12.8	12.6	12.7	12.6	12.8	12.8	11.8
Precipitation															2.9
Evaporation		9.1	9.7	12.4	10.6	9.4	10.0	10.7	14.0	10.8	11.0	11.4	119.1	106.2	81.3
Growing Degrees	5	18.9	20.2	20.7	21.1	21.0	20.3	20.7	21.7	20.6	22.6	22.8	230.3	235.7	215.1
	10	13.9	15.2	15.7	16.1	16.0	15.3	15.7	16.7	15.6	17.6	17.8	175.3	180.7	160.1

3rd 10-day period (21-31/07/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	64.0	59.5
Precipitation - Reference Evapotranspiration	-	-64.0	-56.6
Number of Rainy Days	0.0	0.0	0.3
Number of Dry Days	25.0	15.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

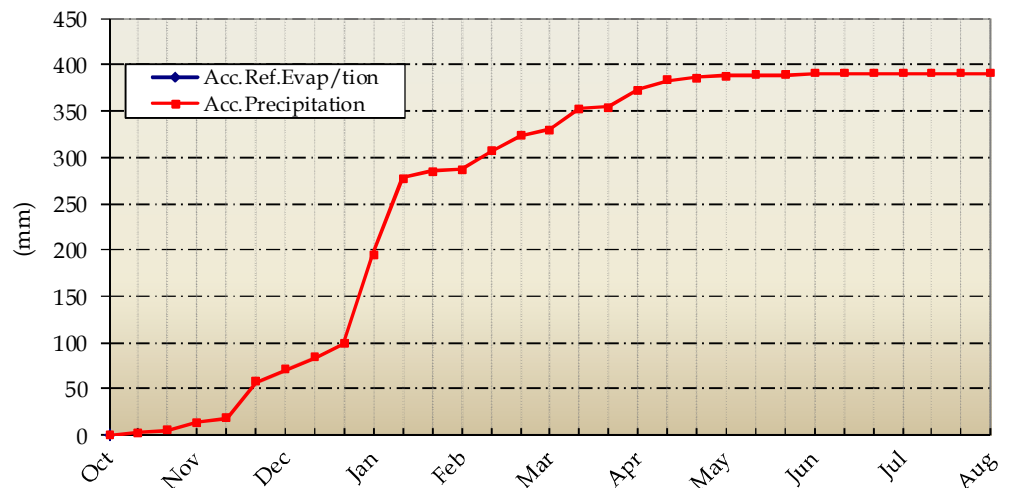


3rd 10-day period (21-31/07/2020)		21	22	23	24	25	26	27	28	29	30	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.2	28.8	27.8	28.2	29.0	29.4	29.4	30.2	29.4	29.8	30.2	29.2	29.3	28.6
	Min	21.6	24.0	25.4	22.2	21.8	21.8	21.6	24.2	26.0	22.0	22.4	23.0	23.2	22.4
Relative Humidity	Max	76	68	79	76	78	77	69	70	74	74	81	75	72	-
	Min	58	53	56	54	51	51	54	48	57	54	46	53	50	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.6	12.8	12.5	12.6	12.8	12.6	12.9	12.7	12.6	12.8	12.9	12.7	12.8	11.6
Precipitation															0.4
Evaporation		8.2	8.4	7.8	3.2	10.0	6.0	4.6	7.0	8.2	7.5	7.5	78.4	92.8	102.1
Growing Degrees	5	20.4	21.4	21.6	20.2	20.4	20.6	20.5	22.2	22.7	20.9	21.3	232.2	233.9	225.3
	10	15.4	16.4	16.6	15.2	15.4	15.6	15.5	17.2	17.7	15.9	16.3	177.2	178.9	170.3

3rd 10-day period (21-31/07/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	71.2	-
Precipitation - Reference Evapotranspiration	-	-71.2	0.4
Number of Rainy Days	0.0	0.0	0.1
Number of Dry Days	59.0	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

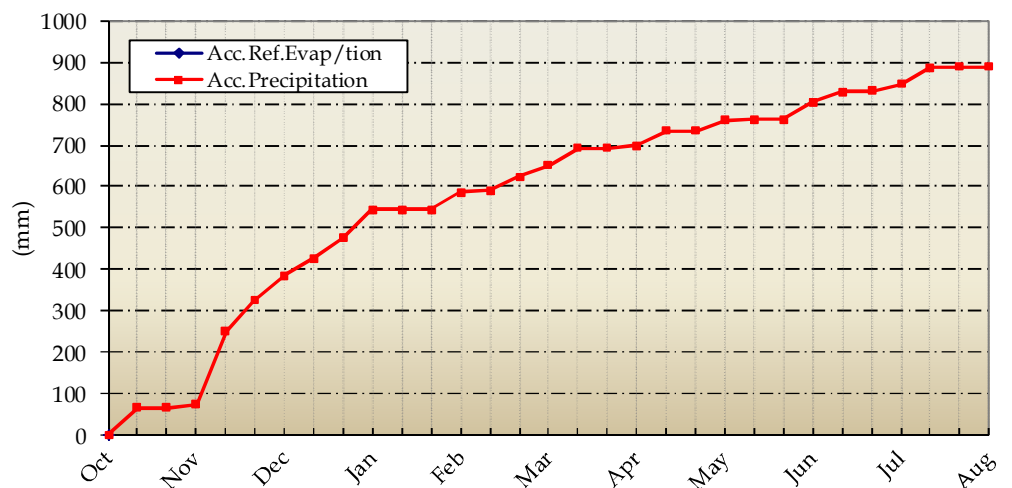


3rd 10-day period (21-31/07/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.4	32.8	33.0	27.4	33.8	34.6	35.0	35.1	36.6	37.0	37.0	34.2	32.3	31.1
	Min	12.6	15.0	15.5	15.0	14.8	16.6	16.2	16.4	14.2	15.2	16.4	15.3	17.9	15.7
Relative Humidity	Max	73	57	89	100	98	100	100	90	100	100	66	88	86	-
	Min	34	34	34	32	30	29	32	27	29	26	26	30	30	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	23.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	27.8
Sunshine Duration		12.5	13.0	11.6	12.4	12.5	12.5	12.2	12.5	12.5	12.5	12.4	12.4	11.4	10.1
Precipitation														4.4	10.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	85.3
Growing Degrees	5	18.0	18.9	19.3	16.2	19.3	20.6	20.6	20.8	20.4	21.1	21.7	216.8	221.3	197.9
	10	13.0	13.9	14.3	11.2	14.3	15.6	15.6	15.8	15.4	16.1	16.7	161.8	166.3	144.4

3rd 10-day period (21-31/07/2020)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	55.8
Precipitation - Reference Evapotranspiration	-	-45.5
Number of Rainy Days	0.0	1.5
Number of Dry Days	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



# Agrometeorological Data

## July 2020

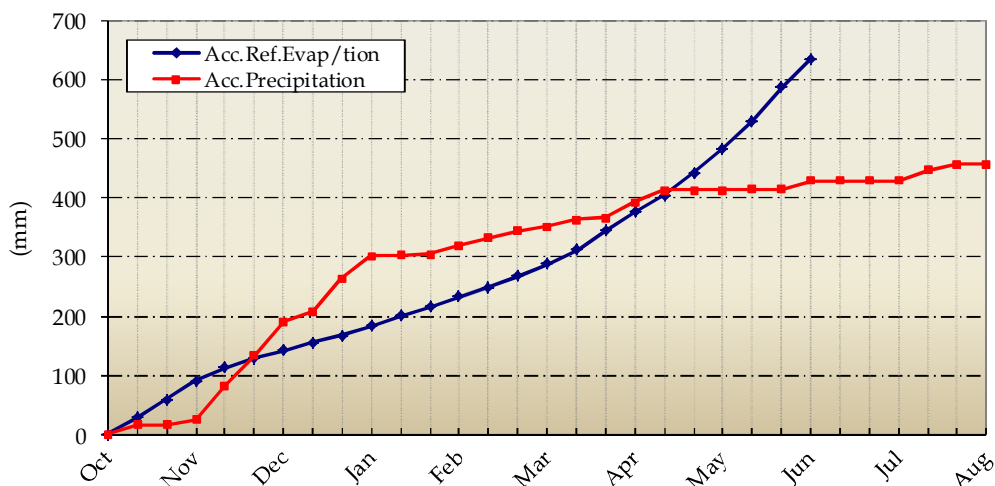
Kalamata

3rd 10-day period (21-31/07/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.5	32.4	35.2	33.9	32.1	36.4	31.6	35.6	34.8	35.3	38.6	34.3	33.6	31.5
	Min	18.8	19.0	20.6	17.2	18.5	19.8	20.4	20.6	19.6	19.6	20.0	19.5	20.1	18.2
Relative Humidity	Max	73	75	90	90	90	80	77	79	59	79	79	79	80	-
	Min	34	27	18	23	20	21	34	25	25	25	21	25	28	-
Soil Temperature at 10 cm	06 UTC	27.4	27.6	28.0	28.0	28.0	28.4	29.0	28.8	28.4	28.8	29.0	28.3	27.9	26.0
	12 UTC	32.0	31.8	33.0	32.0	33.0	32.0	32.0	34.0	32.6	33.0	33.0	32.6	32.2	30.3
Sunshine Duration		12.6	12.5	12.2	11.9	12.1	12.7	12.4	12.4	12.5	12.5	11.2	12.3	11.5	11.2
Precipitation															0.9
Evaporation		7.4	10.6	12.0	10.0	5.0	15.0	5.9	9.6	9.9	6.0	10.0	101.4	95.6	90.1
Growing Degrees	5	20.2	20.7	22.9	20.6	20.3	23.1	21.0	23.1	22.2	22.5	24.3	240.8	240.6	218.3
	10	15.2	15.7	17.9	15.6	15.3	18.1	16.0	18.1	17.2	17.5	19.3	185.8	185.6	163.3

3rd 10-day period (21-31/07/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	73.8	62.2
Precipitation - Reference Evapotranspiration	-	-73.8	-61.3
Number of Rainy Days	0.0	0.0	0.4
Number of Dry Days	17.0	15.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



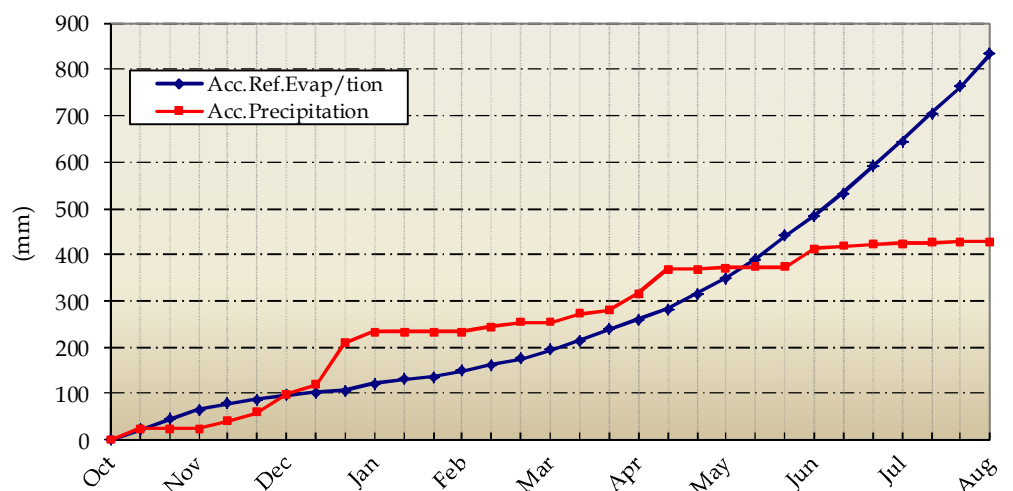
Larisa

3rd 10-day period (21-31/07/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.2	32.9	33.4	34.0	34.8	33.0	35.4	35.4	36.8	37.6	39.5	35.1	34.3	33.2
	Min	20.7	18.2	18.2	17.2	19.0	18.4	21.0	21.6	20.0	20.0	20.6	19.5	20.1	18.1
Relative Humidity	Max	68	73	76	66	67	80	71	67	63	65	71	70	79	-
	Min	29	32	25	21	29	30	31	24	27	26	24	27	32	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	26.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	29.2
Sunshine Duration		11.7	11.8	11.8	11.7	11.4	11.2	11.1	11.4	10.9	10.9	11.3	11.4	10.5	10.7
Precipitation															4.4
Evaporation		11.2	10.8	14.2	14.3	12.5	11.0	13.0	11.7	11.1	14.2	13.2	137.2	119.6	104.1
Growing Degrees	5	22.0	20.6	20.8	20.6	21.9	20.7	23.2	23.5	23.4	23.8	25.1	245.5	244.4	227.1
	10	17.0	15.6	15.8	15.6	16.9	15.7	18.2	18.5	18.4	18.8	20.1	190.5	189.4	172.1

3rd 10-day period (21-31/07/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	71.9	66.2	66.2
Precipitation - Reference Evapotranspiration	-71.9	-66.2	-61.8
Number of Rainy Days	0.0	0.0	1.1
Number of Dry Days	14.0	14.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

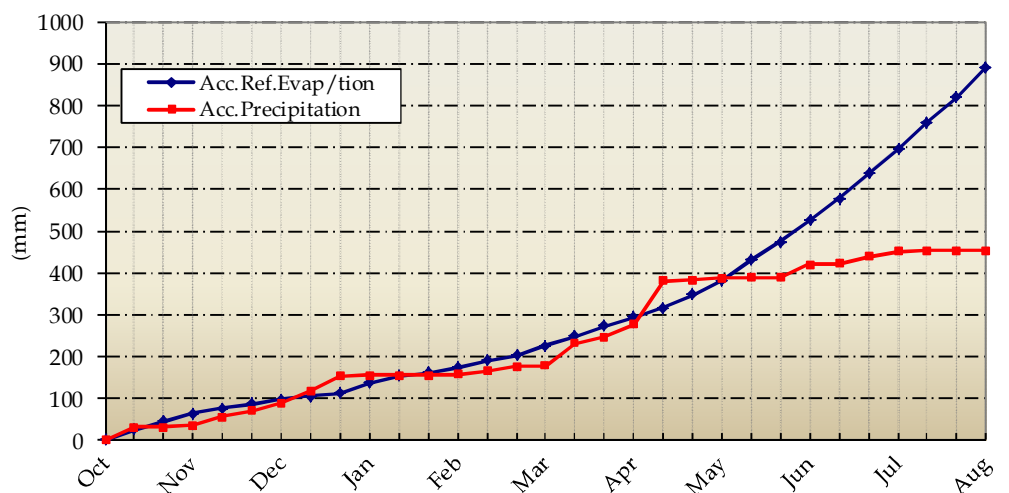


3rd 10-day period (21-31/07/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.0	33.1	33.3	33.0	32.1	31.6	33.0	33.4	35.5	37.1	37.2	33.7	32.9	31.8
	Min	22.5	20.0	20.9	20.3	21.0	21.0	21.9	25.7	22.3	22.6	23.2	21.9	21.6	19.4
Relative Humidity	Max	74	78	74	69	92	94	61	66	76	70	65	74	79	-
	Min	40	36	31	28	42	43	26	36	31	29	30	34	38	-
Soil Temperature at 10 cm	06 UTC	26.4	28.2	28.2	29.0	29.0	28.8	29.0	29.4	29.8	29.2	32.0	29.0	27.5	26.8
	12 UTC	31.2	31.6	32.0	31.8	32.0	32.0	31.6	32.4	32.6	33.0	33.2	32.1	30.8	31.6
Sunshine Duration		13.5	12.0	12.7	12.4	11.1	13.0	12.8	12.7	12.4	12.3	12.3	12.5	11.8	10.5
Precipitation						0.0							0.0	0.5	9.4
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	101.0
Growing Degrees	5	21.8	21.6	22.1	21.7	21.6	21.3	22.5	24.6	23.9	24.9	25.2	250.9	244.6	226.2
	10	16.8	16.6	17.1	16.7	16.6	16.3	17.5	19.6	18.9	19.9	20.2	195.9	189.6	171.2

3rd 10-day period (21-31/07/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	71.7	68.7	65.4
Precipitation - Reference Evapotranspiration	-71.7	-68.2	-56.0
Number of Rainy Days	0.0	1.0	1.5
Number of Dry Days	12.0	6.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





# Agrometeorological Data

July 2020

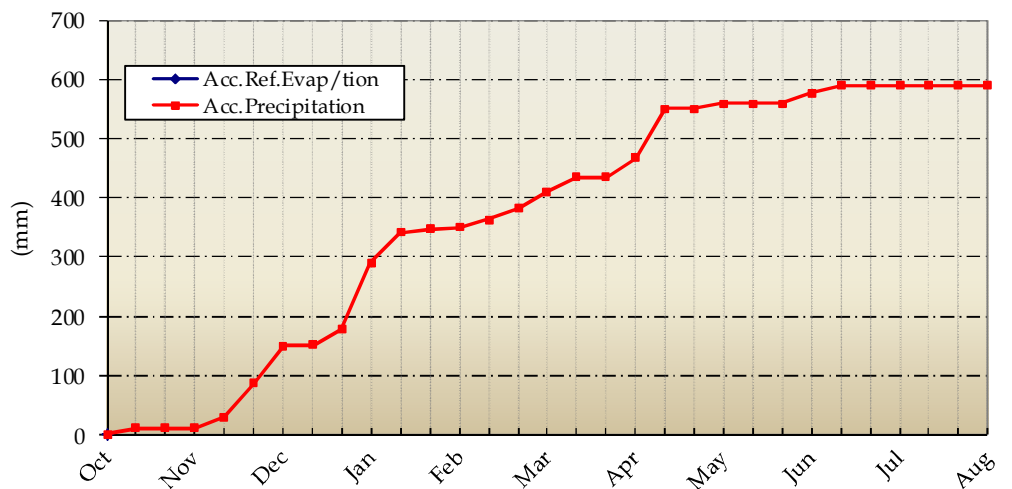
Tanagra

3rd 10-day period (21-31/07/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.1	30.8	31.8	32.0	34.1	32.9	32.8	32.2	34.3	35.0	37.1	33.1	33.0	32.0
	Min	19.2	21.0	22.0	20.1	20.4	19.9	19.8	19.5	19.8	22.6	22.2	20.6	19.7	18.6
Relative Humidity	Max	67	66	54	53	54	62	72	60	65	45	49	59	67	-
	Min	24	30	23	23	21	28	22	26	18	19	18	23	25	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		13.5	13.2	13.6	13.6	12.7	13.2	13.1	13.1	13.2	13.3	12.8	13.2	12.3	
Precipitation															1.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	
Growing Degrees	5	20.2	20.9	21.9	21.1	22.3	21.4	21.3	20.9	22.1	23.8	24.7	240.3	234.6	
	10	15.2	15.9	16.9	16.1	17.3	16.4	16.3	15.9	17.1	18.8	19.7	185.3	179.6	

3rd 10-day period (21-31/07/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	64.6	
Precipitation - Reference Evapotranspiration	-	-64.6	1.3
Number of Rainy Days	0.0	0.0	0.7
Number of Dry Days	39.0	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



# Agrometeorological Data

July 2020

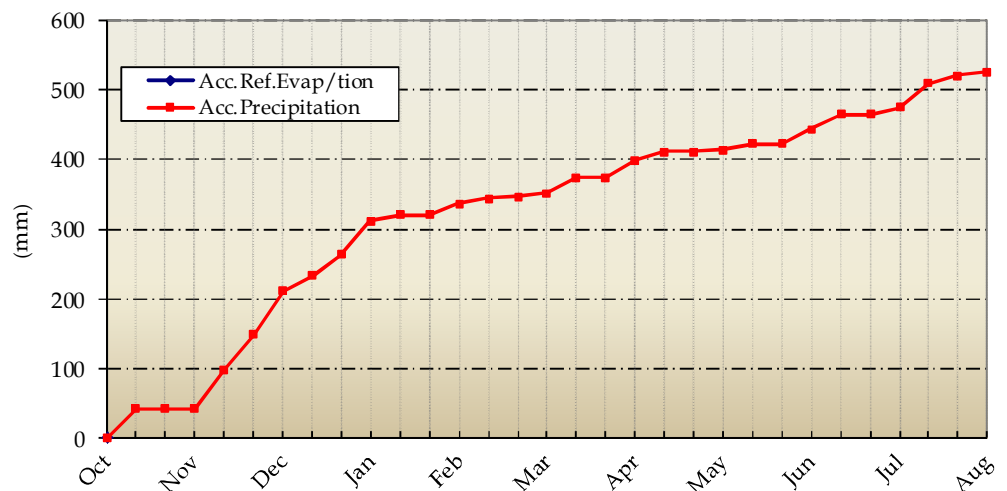
Tripoli

3rd 10-day period (21-31/07/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.3	30.5	31.7	32.4	33.2	32.9	32.4	32.1	32.0	33.7	35.0	32.5	30.7	30.5
	Min	13.8	17.1	15.4	12.4	15.0	14.4	14.7	15.5	15.8	25.3	15.3	15.9	16.0	14.6
Relative Humidity	Max	92	75	72	81	91	96	86	89	89	67	80	83	82	-
	Min	26	28	17	19	24	16	24	24	24	19	19	22	27	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.3	25.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	32.1	28.5
Sunshine Duration		12.4	13.1	13.0	12.2	9.0	13.0	9.2	12.9	12.7	12.8	11.6	12.0	11.3	10.6
Precipitation						4.0							4.0	0.3	4.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	71.9
Growing Degrees	5	17.6	18.8	18.6	17.4	19.1	18.7	18.6	18.8	18.9	24.5	20.2	211.0	201.8	192.7
	10	12.6	13.8	13.6	12.4	14.1	13.7	13.6	13.8	13.9	19.5	15.2	156.0	146.8	137.7

3rd 10-day period (21-31/07/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	62.6	59.5	58.9
Precipitation - Reference Evapotranspiration	-58.6	-59.2	-54.7
Number of Rainy Days	1.0	1.0	1.2
Number of Dry Days	7.0	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





◆ **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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