



AGROMETEOROLOGICAL BULLETIN

*July 2022
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



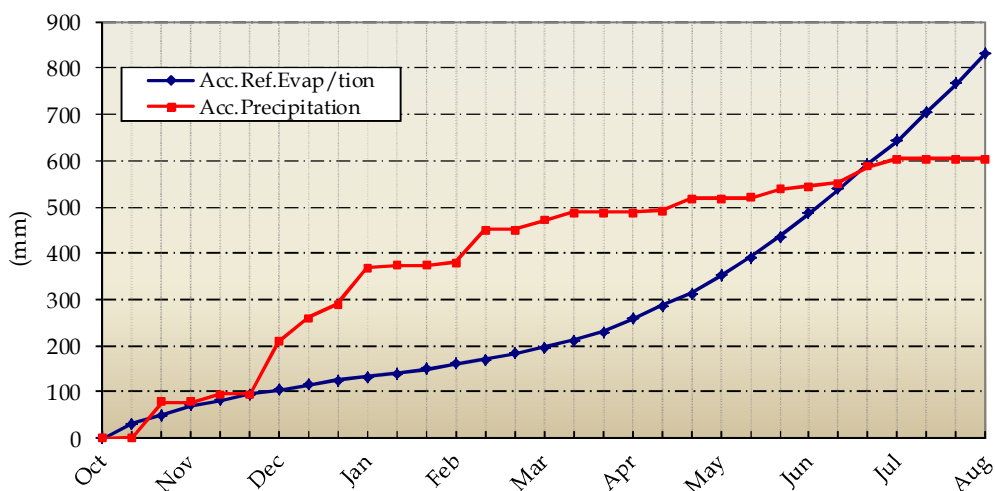
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3rd 10-day period (21-31/07/2022)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.4	31.4	35.4	34.2	32.6	34.4	35.6	36.0	35.0	35.4	34.2	34.1	33.9	32.2
	Min	15.6	18.6	16.8	18.8	22.2	21.2	18.4	23.0	22.6	22.0	21.0	20.0	19.7	19.8
Relative Humidity	Max	79	87	78	81	70	75	79	59	66	74	87	76	69	77
	Min	36	32	29	26	37	30	27	24	29	26	38	30	27	35
Soil Temperature at 10 cm	06 UTC	26.8	27.6	27.4	28.8	29.0	27.6	28.0	28.6	29.4	29.4	30.4	28.5	26.1	26.5
	12 UTC	30.8	31.4	31.2	30.8	30.2	31.6	32.4	32.2	33.0	32.8	33.0	31.8	29.4	30.0
Sunshine Duration		13.2	12.9	13.0	12.9	4.6	13.2	13.1	13.2	13.2	13.1	12.1	12.2	12.4	11.9
Precipitation						0.0							0.0		7.0
Evaporation		10.4	7.9	9.7	10.0	6.8	6.7	11.7	14.3	11.7	7.3	10.7	107.2	114.1	106.0
Growing Degrees	5	18.5	20.0	21.1	21.5	22.4	22.8	22.0	24.5	23.8	23.7	22.6	242.9	240.1	213.2
	10	13.5	15.0	16.1	16.5	17.4	17.8	17.0	19.5	18.8	18.7	17.6	187.9	185.1	162.3

3rd 10-day period (21-31/07/2022)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	66.6	67.0
Precipitation - Reference Evapotranspiration	-66.6	-67.0
Number of Rainy Days	0.0	0.0
Number of Dry Days	35.0	28.0

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

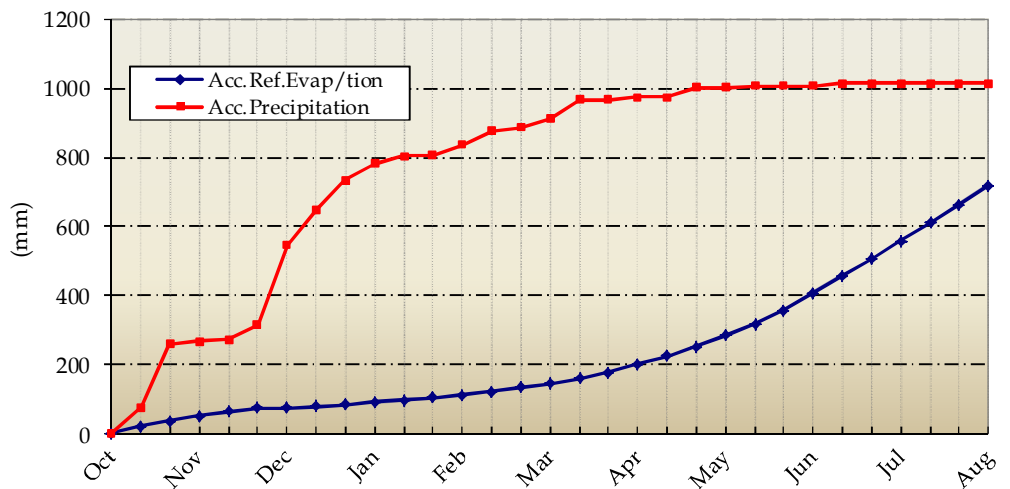


3rd 10-day period (21-31/07/2022)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.0	32.7	33.1	35.5	34.1	35.9	32.9	33.2	36.0	33.7	33.8	34.0	35.2	31.2
	Min	18.2	18.5	19.0	19.0	20.2	20.7	20.0	21.3	18.8	20.2	21.6	19.8	19.6	19.3
Relative Humidity	Max	83	83	85	89	91	93	93	91	94	91	90	89	88	88
	Min	31	38	41	33	38	38	46	44	29	43	43	39	32	38
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	30.3	28.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	33.3	34.0
Sunshine Duration		13.1	13.1	12.9	12.7	12.8	12.7	12.2	13.0	12.9	12.7	13.0	12.8	12.4	12.3
Precipitation															1.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	105.1	90.4
Growing Degrees	5	20.6	20.6	21.1	22.3	22.2	23.3	21.5	22.3	22.4	22.0	22.7	240.7	246.6	184.3
	10	15.6	15.6	16.1	17.3	17.2	18.3	16.5	17.3	17.4	17.0	17.7	185.7	191.6	138.8

3rd 10-day period (21-31/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	57.4	56.0	47.3
Precipitation - Reference Evapotranspiration	-57.4	-56.0	-45.8
Number of Rainy Days	0.0	0.0	0.3
Number of Dry Days	51.0	51.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

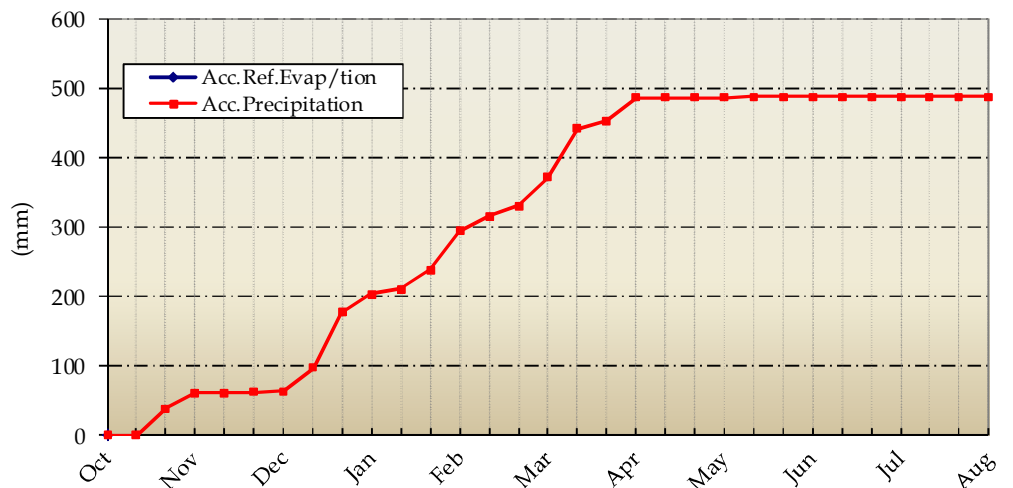


3rd 10-day period (21-31/07/2022)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.0	29.8	30.6	31.0	31.0	29.2	30.2	31.2	29.0	29.8	30.6	30.0	30.0	29.6
	Min	23.0	21.0	24.4	26.0	25.4	25.0	20.6	21.6	21.4	23.2	21.2	23.0	24.6	22.9
Relative Humidity	Max	72	70	68	72	63	84	84	78	80	83	80	76	86	78
	Min	46	46	42	42	48	54	45	47	57	55	54	49	69	52
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.7	12.7	12.9	12.8	12.7	12.8	12.8	12.6	12.9	12.9	12.8	12.8	12.5	12.4
Precipitation															0.2
Evaporation		8.4	8.5	9.9	7.0	9.4	6.1	6.8	9.1	6.9	7.4	5.4	84.9	93.2	82.6
Growing Degrees	5	20.5	20.4	22.5	23.5	23.2	22.1	20.4	21.4	20.2	21.5	20.9	236.6	245.3	216.0
	10	15.5	15.4	17.5	18.5	18.2	17.1	15.4	16.4	15.2	16.5	15.9	181.6	190.3	165.4

3rd 10-day period (21-31/07/2022)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	-
Number of Rainy Days	0.0	0.0
Number of Dry Days	49.0	45.0

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

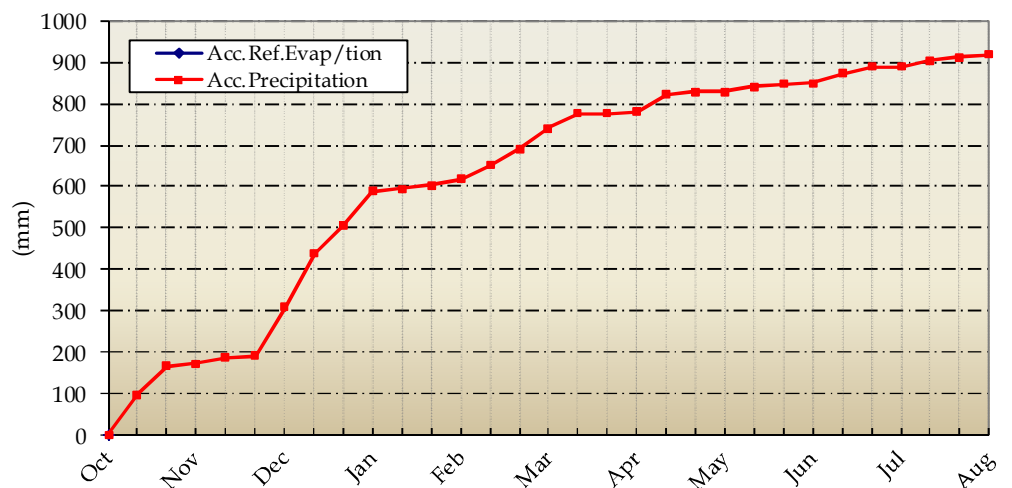


3rd 10-day period (21-31/07/2022)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.6	37.0	37.8	38.2	38.3	36.7	37.2	35.8	36.2	36.6	35.7	36.7	36.3	31.9
	Min	12.5	13.5	15.2	16.4	15.2	17.2	17.6	20.2	15.6	17.1	14.7	15.9	15.7	16.4
Relative Humidity	Max	60	90	87	90	83	85	91	100	100	95	82	88	86	88
	Min	24	20	20	17	17	18	24	27	19	25	26	22	21	32
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	23.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	25.7
Sunshine Duration		12.8	12.1	12.0	12.2	11.7	12.1	9.5	8.4	12.1	12.4	12.3	11.6	11.6	10.8
Precipitation									6.8				6.8	0.0	10.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	
Growing Degrees	5	18.6	20.3	21.5	22.3	21.8	22.0	22.4	23.0	20.9	21.9	20.2	234.7	231.1	175.4
	10	13.6	15.3	16.5	17.3	16.8	17.0	17.4	18.0	15.9	16.9	15.2	179.7	176.1	129.7

3rd 10-day period (21-31/07/2022)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	49.3
Precipitation - Reference Evapotranspiration	-	-39.1
Number of Rainy Days	1.0	1.5
Number of Dry Days	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



Agrometeorological Data

July 2022

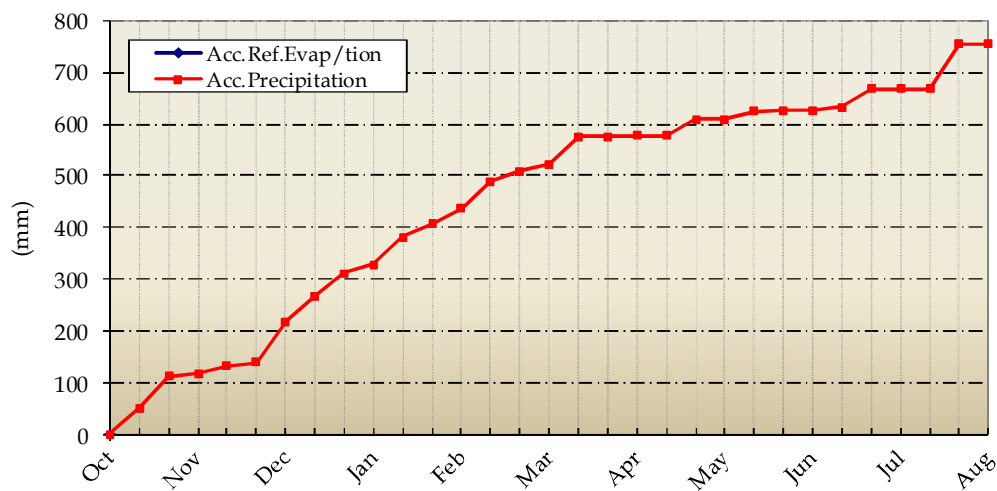
Kalamata

3rd 10-day period (21-31/07/2022)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.3	35.0	36.2	38.0	37.5	32.6	32.2	33.6	32.6	31.8	32.9	34.2	34.3	32.3
	Min	17.0	17.9	19.4	19.9	21.6	18.9	19.1	20.3	18.2	19.2	19.3	19.2	20.5	19.1
Relative Humidity	Max	89	90	80	91	91	90	87	86	94	96	93	90	79	85
	Min	22	26	25	25	34	39	32	34	37	55	33	33	33	34
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	27.8	26.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	32.9	29.3
Sunshine Duration		13.1	13.0	13.0	12.9	12.8	13.0	12.3	12.5	12.8	12.8	12.9	12.8	11.6	12.0
Precipitation															2.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	78.9
Growing Degrees	5	20.7	21.5	22.8	24.0	24.6	20.8	20.7	22.0	20.4	20.5	21.1	238.8	246.7	201.3
	10	15.7	16.5	17.8	19.0	19.6	15.8	15.7	17.0	15.4	15.5	16.1	183.8	191.7	152.5

3rd 10-day period (21-31/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	39.1
Precipitation - Reference Evapotranspiration	-	-	-36.8
Number of Rainy Days	0.0	0.0	0.3
Number of Dry Days	18.0	46.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

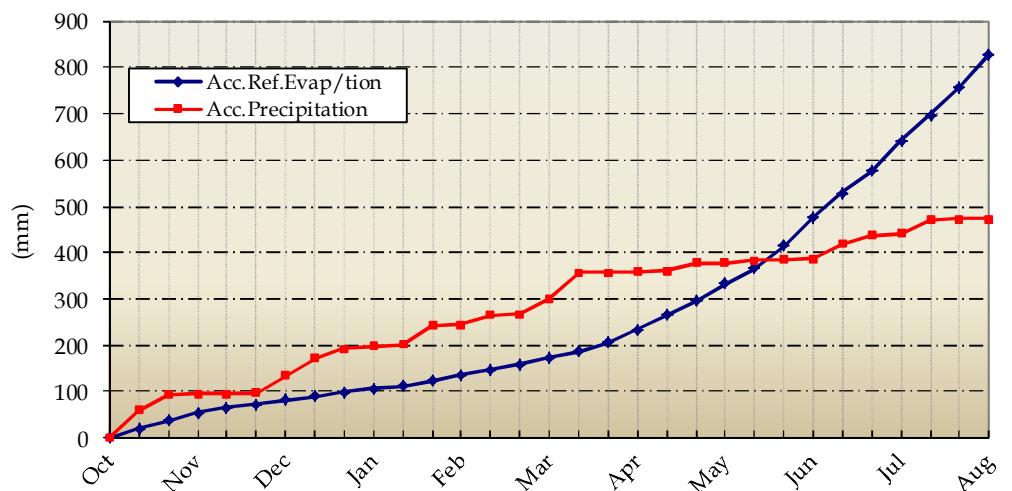


3rd 10-day period (21-31/07/2022)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	35.0	37.4	38.2	38.2	36.8	35.2	36.6	35.8	34.5	35.0	35.2	36.2	35.4	33.9
	Min	15.2	18.0	19.8	18.2	21.8	20.4	21.2	20.6	21.6	19.6	20.0	19.7	19.8	19.2
Relative Humidity	Max	80	80	79	81	72	82	71	79	74	73	73	77	79	78
	Min	21	21	23	24	25	34	27	26	28	27	29	26	27	27
Soil Temperature at 10 cm	06 UTC	26.0	26.8	27.6	28.0	28.4	28.6	28.6	28.8	28.4	28.6	28.8	28.1	-	27.9
	12 UTC	27.8	28.2	29.0	30.8	29.6	30.0	30.0	30.2	30.4	30.0	30.2	29.7	-	29.6
Sunshine Duration		11.0	11.0	11.2	11.0	10.6	10.3	11.0	10.7	10.6	10.8	10.6	10.8	10.9	11.1
Precipitation															6.7
Evaporation		10.4	10.6	11.0	12.8	10.2	14.0	13.8	12.4	14.5	14.5	13.6	137.8	124.7	116.5
Growing Degrees	5	20.1	22.7	24.0	23.2	24.3	22.8	23.9	23.2	23.1	22.3	22.6	252.2	248.8	213.7
	10	15.1	17.7	19.0	18.2	19.3	17.8	18.9	18.2	18.1	17.3	17.6	197.2	193.8	164.2

3rd 10-day period (21-31/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	70.9	69.5	78.3
Precipitation - Reference Evapotranspiration	-70.9	-69.5	-71.6
Number of Rainy Days	0.0	0.0	1.1
Number of Dry Days	18.0	11.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

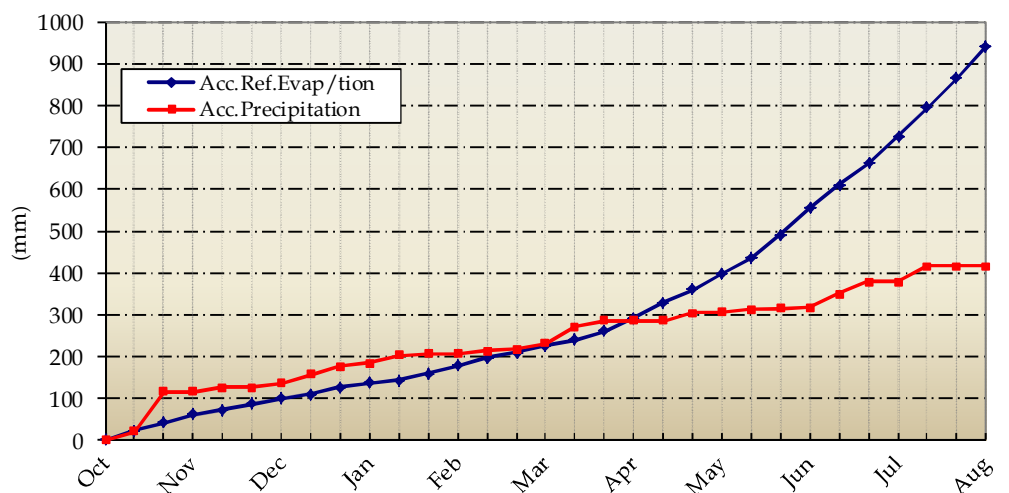


3rd 10-day period (21-31/07/2022)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.3	35.7	35.8	35.2	35.0	33.4	35.4	35.5	34.0	33.4	34.5	34.7	34.4	32.6
	Min	18.5	21.6	21.5	21.3	27.2	21.7	21.1	25.2	24.6	22.6	20.9	22.4	22.1	21.3
Relative Humidity	Max	70	88	84	70	75	78	76	74	73	80	92	78	76	74
	Min	29	31	31	35	35	43	29	31	32	42	37	34	32	32
Soil Temperature at 10 cm	06 UTC	26.2	25.2	27.8	28.0	28.8	27.4	28.2	28.4	29.4	28.8	29.0	27.9	29.5	28.5
	12 UTC	29.8	31.0	30.8	31.2	31.6	32.0	31.0	31.0	31.2	31.2	31.2	31.1	32.4	33.6
Sunshine Duration		13.2	13.0	12.6	12.5	11.7	12.6	13.0	11.0	12.6	13.0	13.4	12.6	11.4	11.5
Precipitation												0.0	0.0	1.4	5.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	106.4
Growing Degrees	5	20.9	23.7	23.7	23.3	26.1	22.6	23.3	25.4	24.3	23.0	22.7	258.7	255.8	217.8
	10	15.9	18.7	18.7	18.3	21.1	17.6	18.3	20.4	19.3	18.0	17.7	203.7	200.8	168.1

3rd 10-day period (21-31/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	75.7	76.5	58.4
Precipitation - Reference Evapotranspiration	-75.7	-75.1	-52.7
Number of Rainy Days	0.0	1.0	1.3
Number of Dry Days	22.0	20.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

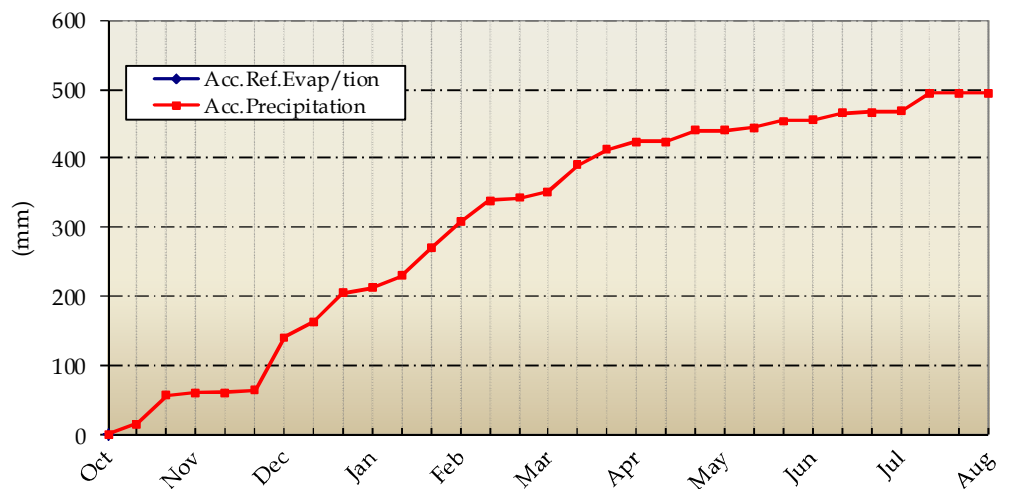


3rd 10-day period (21-31/07/2022)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.1	35.4	35.2	37.3	35.2	34.4	34.7	33.9	32.3	34.0	34.3	34.4	34.1	32.7
	Min	19.8	18.2	18.8	19.8	20.6	21.2	19.0	21.6	22.6	22.7	18.4	20.2	21.0	20.0
Relative Humidity	Max	57	57	63	54	60	63	68	55	63	53	60	59	56	68
	Min	20	16	16	18	25	22	20	16	23	16	26	20	19	25
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		13.4	13.1	13.1	13.2	11.5	13.0	13.3	13.5	13.4	13.2	12.7	13.0	12.3	12.3
Precipitation															4.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	103.7
Growing Degrees	5	21.0	21.8	22.0	23.6	22.9	22.8	21.9	22.8	22.5	23.4	21.4	245.8	247.9	201.8
	10	16.0	16.8	17.0	18.6	17.9	17.8	16.9	17.8	17.5	18.4	16.4	190.8	192.9	154.6

3rd 10-day period (21-31/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	-
Number of Rainy Days	0.0	0.0	0.4
Number of Dry Days	21.0	46.0	-

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 2022

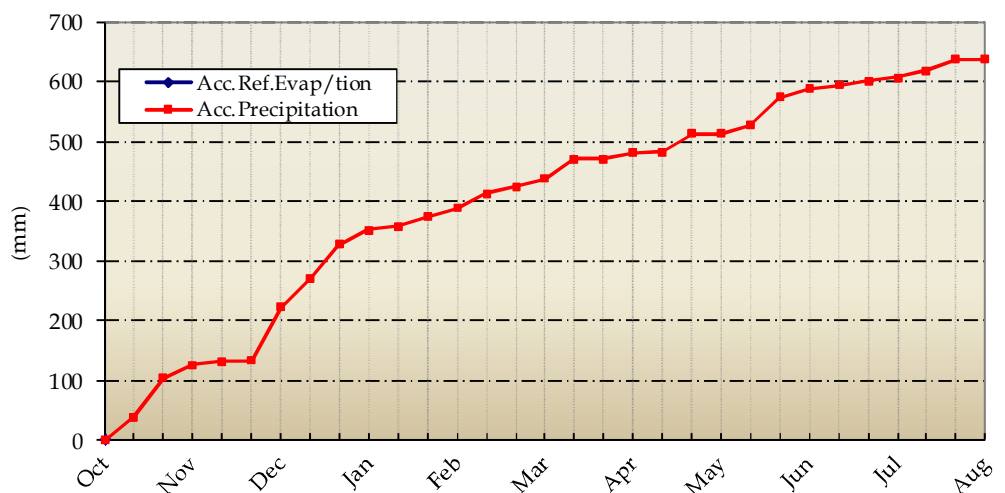
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3rd 10-day period (21-31/07/2022)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.5	34.0	33.8	36.8	34.5	34.5	34.2	34.4	34.5	35.7	34.7	34.3	33.6	31.6
	Min	19.3	14.9	14.0	15.2	15.1	15.6	16.7	14.2	13.1	14.6	15.2	15.3	18.2	14.9
Relative Humidity	Max	45	73	84	62	79	87	81	86	81	85	88	77	66	80
	Min	18	18	13	11	17	22	20	15	13	19	20	17	18	24
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	26.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	30.4
Sunshine Duration		13.0	12.9	13.0	13.0	10.5	10.6	8.9	12.9	12.8	9.7	8.1	11.4	10.9	11.4
Precipitation														0.0	6.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	77.8
Growing Degrees	5	19.9	19.5	18.9	21.0	19.8	20.1	20.5	19.3	18.8	20.2	20.0	217.8	229.7	158.1
	10	14.9	14.5	13.9	16.0	14.8	15.1	15.5	14.3	13.8	15.2	15.0	162.8	174.7	114.6

3rd 10-day period (21-31/07/2022)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	60.8	66.1	36.1
Precipitation - Reference Evapotranspiration	-60.8	-66.1	-29.4
Number of Rainy Days	0.0	0.0	1.0
Number of Dry Days	18.0	41.0	-

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)

UTC (Universal Time coordinates) in Greece

- ◆ Winter : Time(UTC) = Local time - 2
- ◆ Summer : Time(UTC) = Local time - 3

Mesurements Units

- ◆ Temperature : °C
- ◆ Relative Humidity : %
- ◆ Soil Temperature : °C
- ◆ Sunshine Duration : Hours
- ◆ Precipitation : mm
- ◆ Evaporation (Pan) : mm
- ◆ Growing Degrees : °C

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Division of Climatology-Applications

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