



AGROMETEOROLOGICAL BULLETIN

*May 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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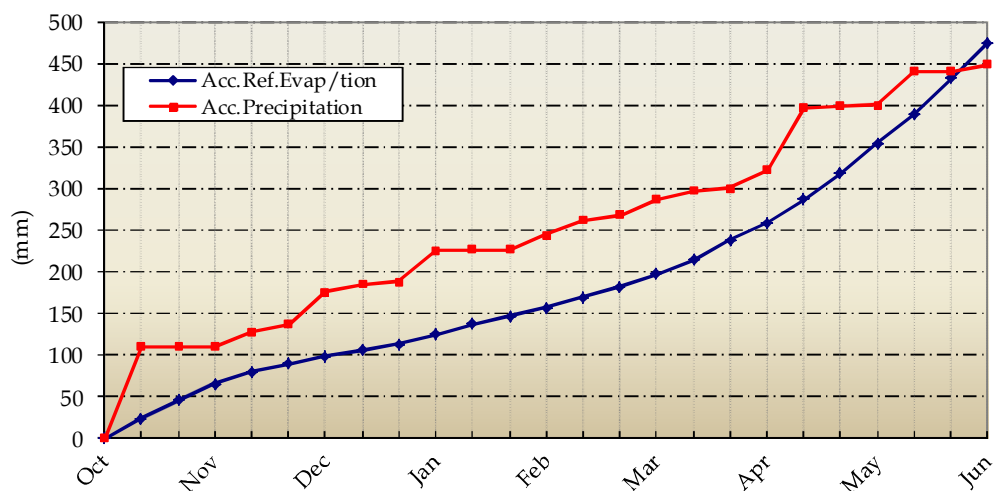
Web addresses of HNMS
www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr

Alexandroupoli

3rd 10-day period (21-31/05/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	22.6	23.4	21.0	22.8	21.4	20.0	19.8	20.0	21.4	23.0	21.8	25.9	24.2
	Min	15.6	12.8	9.6	14.6	8.2	12.8	14.0	10.0	8.6	16.0	10.8	12.1	14.4	12.7
Relative Humidity	Max	79	65	65	68	93	80	79	85	85	79	83	78	93	-
	Min	56	28	27	49	45	49	48	57	56	49	63	48	48	-
Soil Temperature at 10 cm	06 UTC	19.0	16.6	15.6	15.0	17.6	16.4	14.6	14.6	14.6	14.8	16.4	15.9	20.5	19.3
	12 UTC	21.2	19.2	18.8	20.4	20.6	17.4	16.8	17.8	18.0	20.6	20.4	19.2	24.3	23.6
Sunshine Duration		5.8	10.6	10.9	12.7	7.0	6.7	1.5	3.1	7.8	12.6	9.8	8.0	10.9	8.3
Precipitation						3.4	2.3	0.3	1.5	0.3			7.8	22.8	12.4
Evaporation		5.6	6.8	4.3	6.5	6.4	3.8	3.6	3.9	2.3	5.8	3.5	52.5	66.0	70.1
Growing Degrees	5	14.8	12.7	11.5	12.8	10.5	12.1	12.0	9.9	9.3	13.7	11.9	131.2	166.9	147.7
	10	9.8	7.7	6.5	7.8	5.5	7.1	7.0	4.9	4.3	8.7	6.9	76.2	111.9	92.7

3rd 10-day period (21-31/05/2020)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	43.2	49.8	45.7
Precipitation - Reference Evapotranspiration	-35.4	-27.0	-33.3
Number of Rainy Days	5.0	1.0	2.4
Number of Dry Days	17.0	7.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



Agrometeorological Data

May 2020

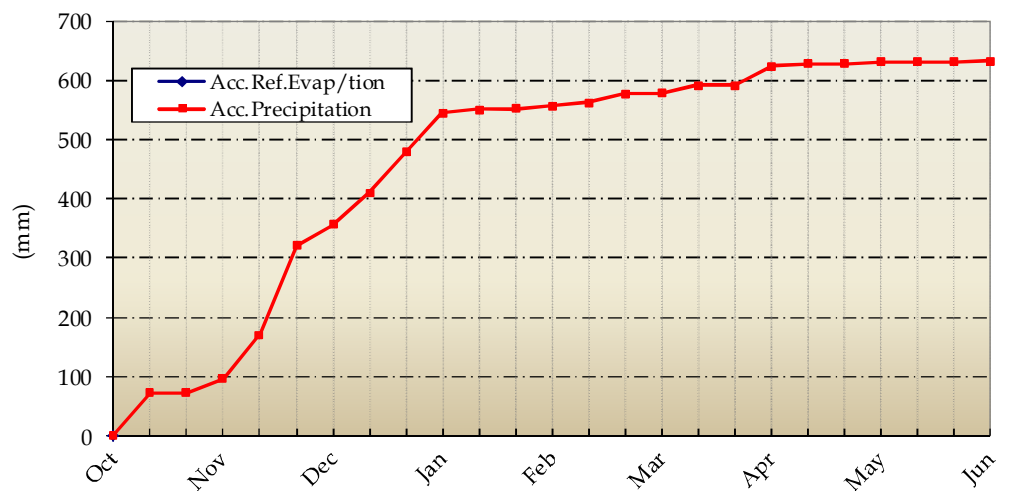
Andravida

3rd 10-day period (21-31/05/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.6	26.2	26.3	26.6	25.8	25.2	24.6	23.4	24.0	24.4	21.7	25.0	24.5	25.4
	Min	15.6	13.8	14.5	14.7	14.3	13.4	12.4	11.3	12.3	11.5	13.3	13.4	13.1	14.0
Relative Humidity	Max	94	96	93	92	92	90	89	88	90	89	94	92	97	-
	Min	53	36	40	51	52	38	34	37	34	30	45	41	43	-
Soil Temperature at 10 cm	06 UTC	24.4	23.2	23.4	23.8	23.8	23.0	23.0	21.8	22.4	22.6	22.8	23.1	19.7	21.4
	12 UTC	25.0	25.2	25.0	26.8	26.6	26.6	24.6	25.2	25.6	25.6	23.8	25.5	22.3	25.8
Sunshine Duration		8.7	12.2	12.3	13.1	12.9	11.5	9.2	12.8	12.2	13.2	3.4	11.0	9.6	10.2
Precipitation		1.0											1.0	4.9	6.8
Evaporation		5.2	7.4	8.0	6.4	6.0	6.4	8.0	5.1	10.0	7.0	5.4	74.9	86.2	63.7
Growing Degrees	5	16.1	15.0	15.4	15.7	15.1	14.3	13.5	12.4	13.2	13.0	12.5	156.0	152.0	161.7
	10	11.1	10.0	10.4	10.7	10.1	9.3	8.5	7.4	8.2	8.0	7.5	101.0	97.0	106.7

3rd 10-day period (21-31/05/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	46.0	48.0
Precipitation - Reference Evapotranspiration	-	-41.1	-41.2
Number of Rainy Days	1.0	2.0	1.0
Number of Dry Days	27.0	4.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

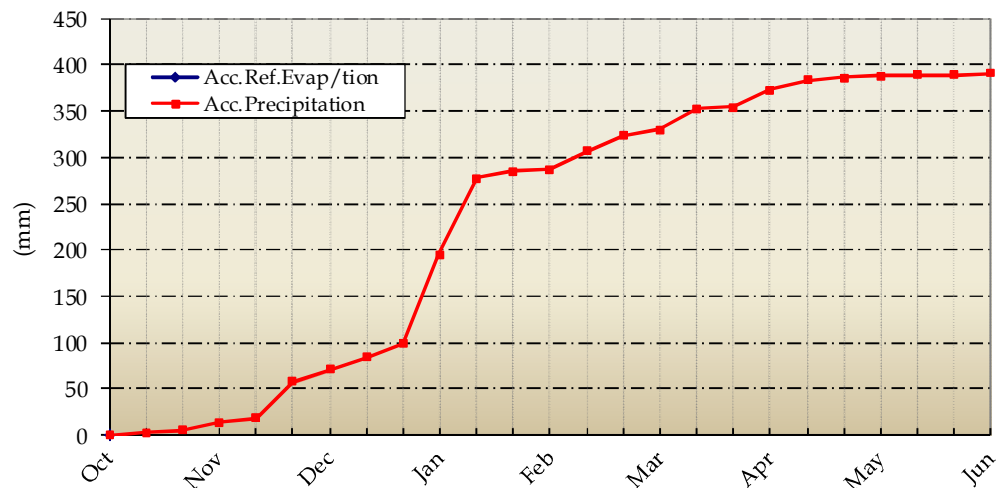


3rd 10-day period (21-31/05/2020)		21	22	23	24	25	26	27	28	29	30	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	21.8	22.0	22.6	23.2	22.6	22.0	20.4	22.8	22.8	23.6	22.5	26.0	24.9
	Min	19.6	17.4	17.4	18.0	15.6	15.2	16.0	17.4	13.0	13.4	15.4	16.2	17.2	16.6
Relative Humidity	Max	87	78	68	64	87	89	88	75	87	82	84	81	88	-
	Min	62	48	43	35	52	63	54	48	48	46	48	50	52	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.1	5.4	12.7	12.8	12.8	8.2	9.3	10.1	10.3	10.6	6.8	10.0	8.0	10.1
Precipitation								1.7				0.0	1.7		4.4
Evaporation		5.3	5.7	5.5	6.6	3.6	13.9	3.8	5.8	4.7	3.3	4.9	63.1	54.3	74.4
Growing Degrees	5	16.8	14.6	14.7	15.3	14.4	13.9	14.0	13.9	12.9	13.1	14.5	158.1	182.6	173.1
	10	11.8	9.6	9.7	10.3	9.4	8.9	9.0	8.9	7.9	8.1	9.5	103.1	127.6	118.1

3rd 10-day period (21-31/05/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	47.4	-
Precipitation - Reference Evapotranspiration	-	-47.4	4.4
Number of Rainy Days	1.0	0.0	0.7
Number of Dry Days	22.0	16.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

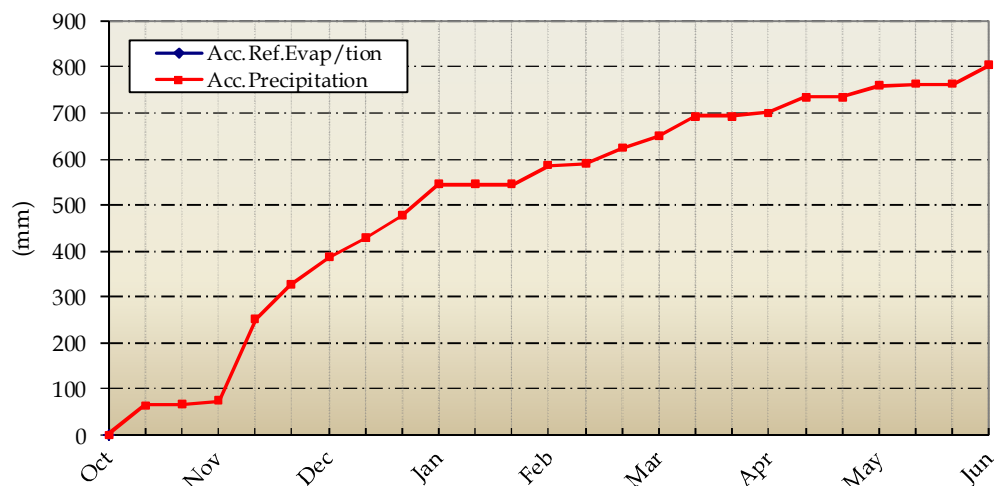


3rd 10-day period (21-31/05/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.5	23.5	26.0	26.5	25.4	21.0	19.4	20.2	21.0	21.6	18.0	22.1	24.2	24.6
	Min	14.0	11.5	8.5	9.3	10.5	9.4	8.0	5.2	6.2	5.8	6.4	8.6	11.3	10.6
Relative Humidity	Max	98	100	98	100	98	100	100	95	90	90	99	97	96	-
	Min	60	39	30	38	32	37	41	41	42	39	75	43	43	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	17.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	21.4
Sunshine Duration		2.4	10.8	-	12.3	9.2	5.3	3.9	8.0	7.4	7.9	1.9	6.9	8.4	8.1
Precipitation		24.4	0.3				10.4	1.1	0.4	3.6		1.8	42.0	13.4	20.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	55.4
Growing Degrees	5	12.3	12.5	12.3	12.9	13.0	10.2	8.7	7.7	8.6	8.7	7.2	114.0	140.1	138.9
	10	7.3	7.5	7.3	7.9	8.0	5.2	3.7	2.7	3.6	3.7	2.2	59.0	85.1	83.9

3rd 10-day period (21-31/05/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	42.6
Precipitation - Reference Evapotranspiration	-	-	-21.7
Number of Rainy Days	7.0	3.0	3.4
Number of Dry Days	13.0	6.0	-

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

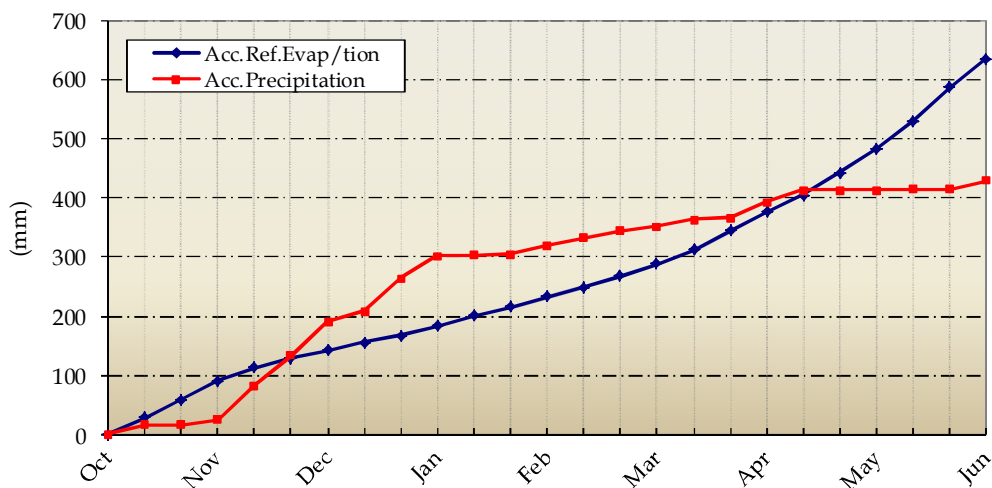
May 2020

Kalamata

3rd 10-day period (21-31/05/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.4	24.4	26.5	26.7	25.6	23.4	23.0	23.2	25.0	25.0	21.1	24.6	27.3	26.1
	Min	14.6	14.0	14.9	13.2	14.2	15.5	11.2	9.3	11.2	9.6	11.5	12.7	13.4	13.4
Relative Humidity	Max	97	100	100	96	100	95	100	100	100	96	94	98	86	-
	Min	44	50	38	42	39	46	40	37	28	33	46	40	30	-
Soil Temperature at 10 cm	06 UTC	24.4	23.0	22.5	22.0	22.0	22.5	20.8	19.4	20.0	20.2	21.0	21.6	20.1	20.5
	12 UTC	26.0	26.4	25.5	25.5	26.0	26.0	22.6	23.0	24.0	25.0	21.5	24.7	22.9	24.4
Sunshine Duration		7.4	7.0	8.4	12.5	12.4	9.5	8.4	10.4	10.6	12.3	1.4	9.1	9.3	9.6
Precipitation			10.6	0.2			4.1		0.2			0.1	15.2	1.3	3.4
Evaporation		4.9	3.2	3.8	8.0	10.2	5.1	4.6	4.5	9.3	2.6	2.5	58.7	78.0	68.8
Growing Degrees	5	15.5	14.2	15.7	15.0	14.9	14.5	12.1	11.3	13.1	12.3	11.3	149.8	168.8	162.7
	10	10.5	9.2	10.7	10.0	9.9	9.5	7.1	6.3	8.1	7.3	6.3	94.8	113.8	107.7

3rd 10-day period (21-31/05/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	48.1	58.9	49.3
Precipitation - Reference Evapotranspiration	-32.9	-57.6	-45.9
Number of Rainy Days	5.0	1.0	1.1
Number of Dry Days	14.0	9.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

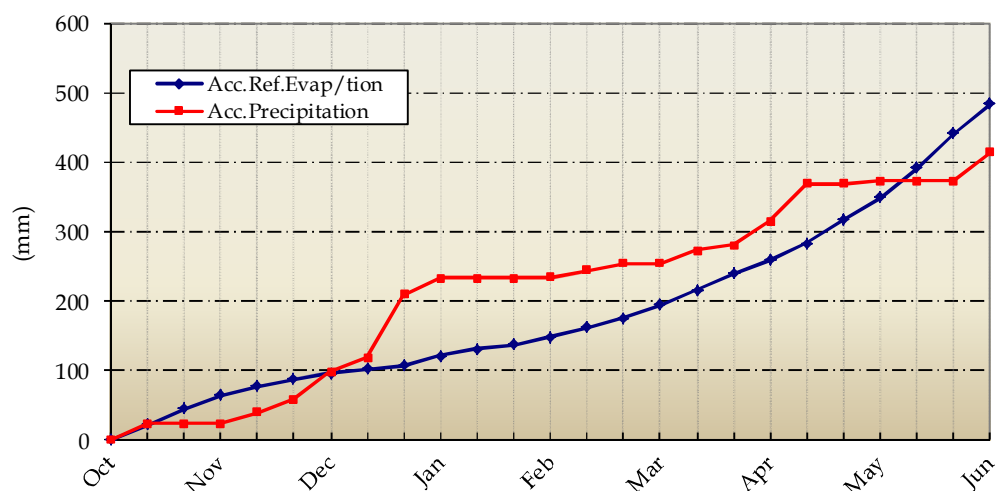


3rd 10-day period (21-31/05/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.6	21.2	25.6	28.0	22.8	21.0	21.2	24.6	24.0	26.0	25.6	24.3	28.6	27.7
	Min	12.6	15.0	9.2	10.0	15.0	12.2	10.0	8.3	10.0	9.6	9.4	11.0	12.8	12.6
Relative Humidity	Max	88	89	95	91	95	97	99	98	97	97	97	95	86	-
	Min	41	51	34	34	39	45	40	34	32	33	26	37	31	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	20.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	22.3
Sunshine Duration		4.8	5.1	9.4	11.2	0.9	3.9	4.8	11.0	8.0	7.8	8.7	6.9	8.7	8.8
Precipitation		7.7	0.0			0.2	5.7	11.8	1.0	0.4	6.9	6.7	40.4	5.0	17.2
Evaporation		8.3	4.5	5.0	11.4	7.8	0.9	0.5	5.5	5.0	8.0	4.4	61.3	92.1	67.8
Growing Degrees	5	15.1	13.1	12.4	14.0	13.9	11.6	10.6	11.5	12.0	12.8	12.5	139.5	172.7	166.2
	10	10.1	8.1	7.4	9.0	8.9	6.6	5.6	6.5	7.0	7.8	7.5	84.5	117.7	111.2

3rd 10-day period (21-31/05/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	42.6	53.8	50.4
Precipitation - Reference Evapotranspiration	-2.2	-48.8	-33.2
Number of Rainy Days	8.0	3.0	3.0
Number of Dry Days	16.0	5.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

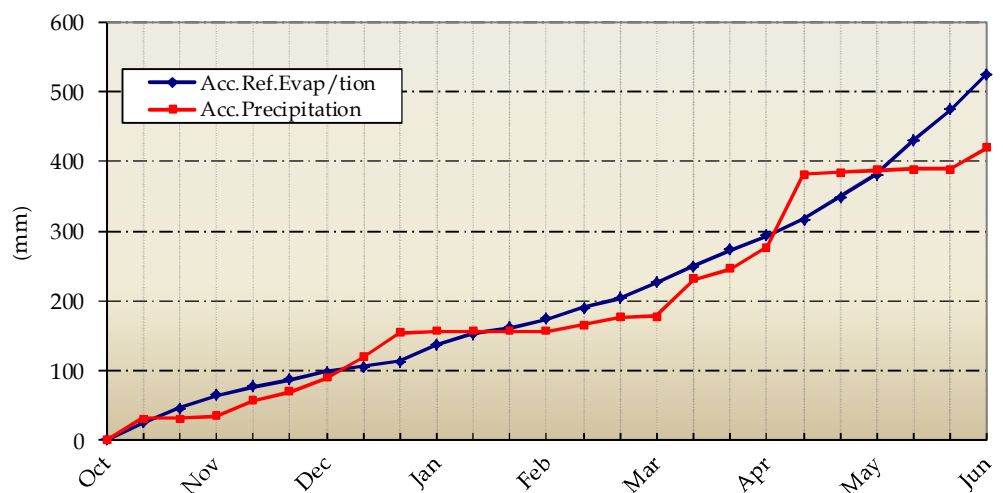


3rd 10-day period (21-31/05/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.6	22.2	24.3	24.2	25.0	21.5	20.2	22.8	23.9	24.8	24.2	23.4	27.1	26.2
	Min	16.2	15.0	10.6	12.0	16.3	12.4	14.0	13.0	16.0	10.8	13.3	13.6	15.4	13.9
Relative Humidity	Max	95	93	93	87	91	90	87	71	80	89	88	88	80	-
	Min	56	42	32	40	30	45	45	39	35	32	37	39	34	-
Soil Temperature at 10 cm	06 UTC	22.6	19.0	19.0	18.6	19.2	19.2	18.0	17.5	12.0	19.2	18.6	18.4	21.0	20.7
	12 UTC	21.2	22.0	20.2	22.0	22.4	21.8	19.6	20.2	20.0	23.4	23.0	21.4	24.7	25.4
Sunshine Duration		3.3	10.2	10.8	11.9	7.6	7.9	4.3	9.8	11.0	12.2	8.2	8.8	9.9	8.3
Precipitation		26.6	1.1		0.6		2.3	0.6				0.0	31.2	11.5	16.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	70.6
Growing Degrees	5	15.4	13.6	12.5	13.1	15.7	12.0	12.1	12.9	15.0	12.8	13.8	148.7	179.2	165.0
	10	10.4	8.6	7.5	8.1	10.7	7.0	7.1	7.9	10.0	7.8	8.8	93.7	124.2	110.0

3rd 10-day period (21-31/05/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	50.7	56.9	48.7
Precipitation - Reference Evapotranspiration	-19.5	-45.4	-32.5
Number of Rainy Days	5.0	3.0	2.9
Number of Dry Days	13.0	9.0	-

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

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



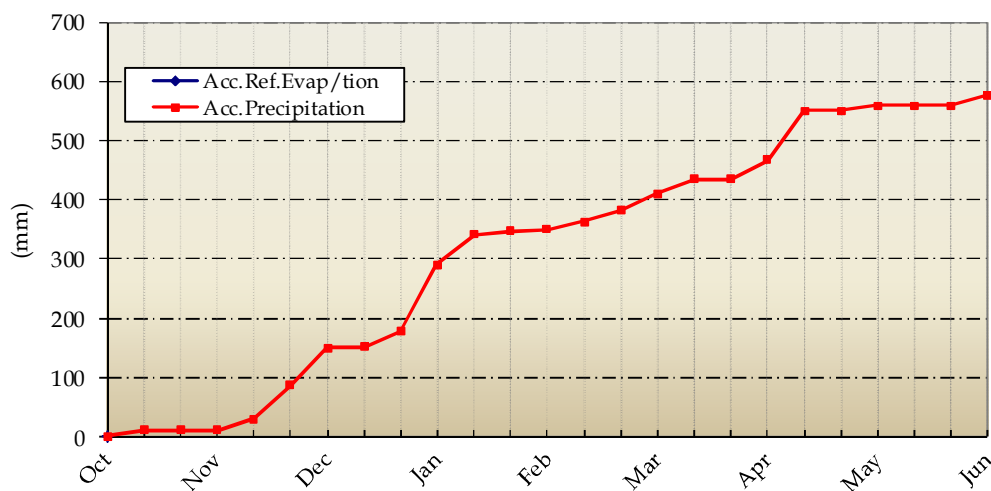
Tanagra

3rd 10-day period (21-31/05/2020)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.4	20.3	24.0	25.8	21.8	19.4	17.7	22.2	23.1	23.5	24.0	22.7	27.9	26.9
	Min	16.0	15.5	8.5	8.0	14.1	12.4	10.2	9.4	10.0	9.8	12.4	11.5	13.4	12.8
Relative Humidity	Max	96	83	91	77	99	100	95	96	99	100	93	94	80	-
	Min	26	36	25	31	47	50	52	30	33	34	28	36	26	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		9.9	8.1	11.5	12.3	6.0	2.3	3.5	9.2	6.4	11.6	7.8	8.1	10.0	
Precipitation			0.0			0.2	7.9	1.9	0.0	7.3			17.3		6.0
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	17.2	12.9	11.3	11.9	13.0	10.9	9.0	10.8	11.6	11.7	13.2	133.3	172.0	
	10	12.2	7.9	6.3	6.9	8.0	5.9	4.0	5.8	6.6	6.7	8.2	78.3	117.0	

3rd 10-day period (21-31/05/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	51.2	
Precipitation - Reference Evapotranspiration	-	-51.2	6.0
Number of Rainy Days	4.0	0.0	2.3
Number of Dry Days	20.0	24.0	-

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

May 2020

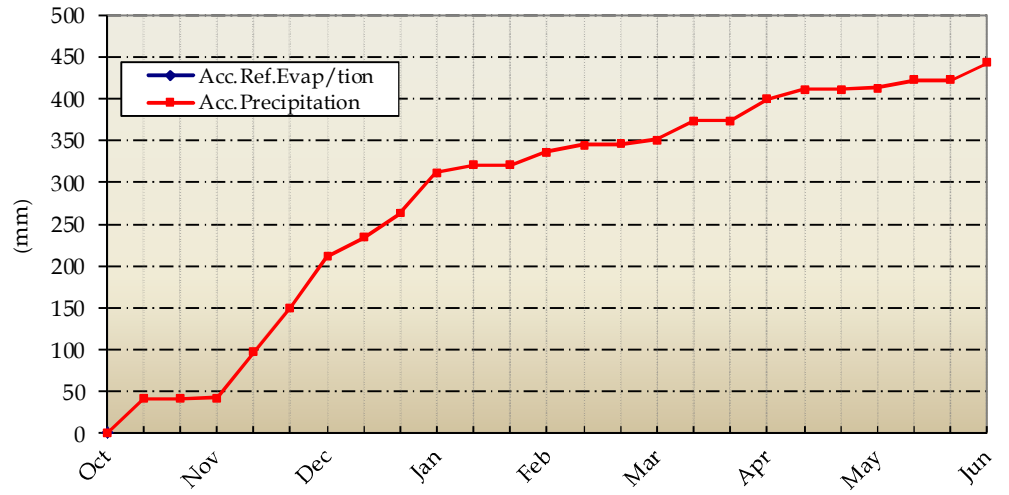
Tripoli

3rd 10-day period (21-31/05/2020)		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	20.0	23.3	23.6	23.9	19.0	16.1	16.8	17.9	20.4	18.4	20.1	24.7	24.8
	Min	11.4	10.6	8.6	7.8	8.9	12.1	5.1	7.1	11.0	4.0	7.1	8.5	8.1	9.2
Relative Humidity	Max	93	94	100	97	97	97	100	96	88	97	95	96	92	-
	Min	43	55	32	36	39	39	49	46	43	32	44	42	26	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	18.1	18.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.2	21.5
Sunshine Duration		10.8	0.8	6.4	9.3	8.0	2.7	4.6	4.2	7.3	9.6	3.3	6.1	10.1	8.9
Precipitation		0.0	2.4	1.0			4.7		7.1	5.3		0.0	20.5	1.1	11.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	48.7
Growing Degrees	5	11.6	10.3	11.0	10.7	11.4	10.6	5.6	7.0	9.5	7.2	7.8	102.5	125.7	132.1
	10	6.6	5.3	6.0	5.7	6.4	5.6	0.6	2.0	4.5	2.2	2.8	47.5	70.7	77.1

3rd 10-day period (21-31/05/2020)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	35.0	48.1	47.0
Precipitation - Reference Evapotranspiration	-14.5	-47.0	-35.7
Number of Rainy Days	5.0	1.0	2.6
Number of Dry Days	14.0	9.0	-

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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