



# AGROMETEOROLOGICAL BULLETIN

*May 2018  
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



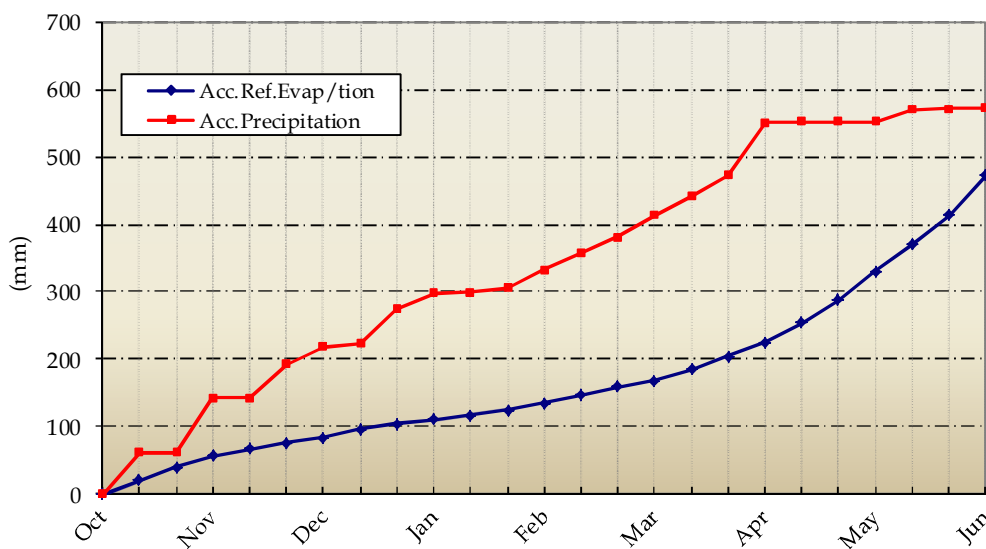
Hellenic National Meteorological Service  
Division of Climatology-Applications  
El. Venizelou Street 14, 16777  
Helliniko, Athens

*Web addresses of HNMS*  
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3rd 10-day period (21-31/05/2018)		21	22	23	24	25	26	27	28	29	30	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.0	27.6	28.0	27.4	28.2	30.6	27.2	28.4	27.4	28.8	29.6	28.3	23.5	24.2
	Min	16.4	16.4	14.4	17.6	14.4	21.2	19.6	16.6	13.4	20.4	11.4	16.5	12.0	12.7
Relative Humidity	Max	78	88	89	80	79	75	88	60	75	58	70	76	92	-
	Min	37	39	39	45	40	33	46	26	30	28	20	35	52	-
Soil Temperature at 10 cm	06 UTC	22.8	22.6	22.8	23.6	22.4	23.2	22.6	22.6	22.6	23.6	21.6	22.8	19.3	19.3
	12 UTC	27.8	26.6	26.8	26.4	24.6	26.8	26.2	26.0	26.4	26.6	26.6	26.4	25.1	23.6
Sunshine Duration		12.0	12.6	12.8	8.2	5.9	8.9	8.8	11.3	8.6	6.9	11.5	9.8	8.2	8.3
Precipitation							1.7						1.7	29.9	12.4
Evaporation		7.0	13.0	8.4	6.2	9.3	5.8	5.2	11.1	10.9	8.8	9.0	94.7	77.1	70.1
Growing Degrees	5	17.2	17.0	16.2	17.5	16.3	20.9	18.4	17.5	15.4	19.6	15.5	191.5	140.4	147.7
	10	12.2	12.0	11.2	12.5	11.3	15.9	13.4	12.5	10.4	14.6	10.5	136.5	85.4	92.7

3rd 10-day period (21-31/05/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	58.8	42.1	45.7
Precipitation - Reference Evapotranspiration	-57.1	-12.2	-33.3
Number of Rainy Days	1.0	5.0	2.4
Number of Dry Days	6.0	5.0	-

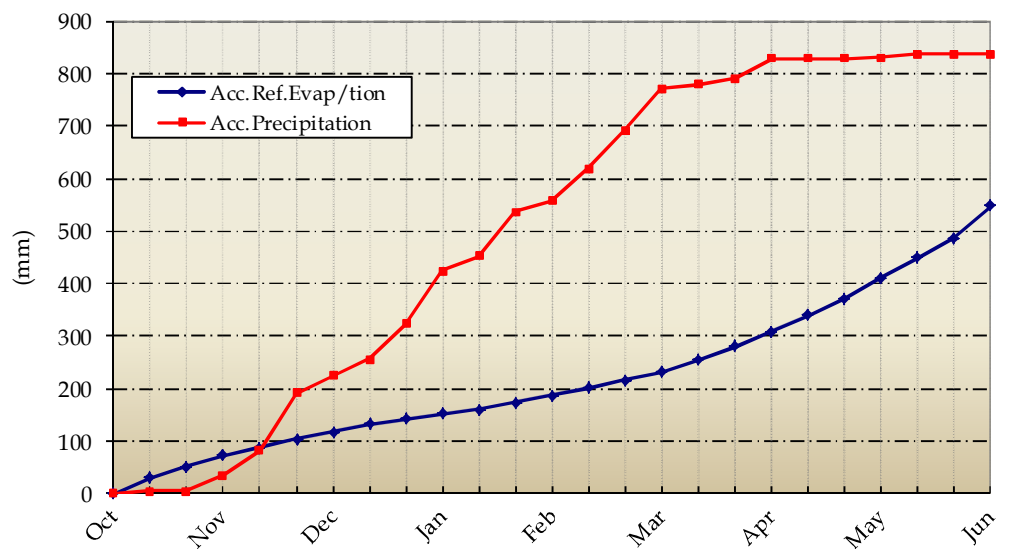
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-31/05/2018)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.7	30.6	30.1	25.2	26.9	29.8	32.0	29.0	29.5	29.6	29.0	29.4	25.1	25.4
	Min	15.0	13.8	16.2	19.5	15.0	15.2	15.2	16.0	17.7	17.4	17.1	16.2	14.8	14.0
Relative Humidity	Max	89	90	91	91	93	93	89	84	92	100	94	91	86	-
	Min	27	31	37	46	49	29	29	17	31	31	36	33	37	-
Soil Temperature at 10 cm	06 UTC	21.4	23.0	23.8	24.3	24.0	24.4	24.2	25.1	25.4	26.0	26.2	24.3	22.8	21.4
	12 UTC	28.0	24.8	28.2	25.5	26.0	26.6	25.0	27.3	29.0	25.5	28.7	26.8	25.2	25.8
Sunshine Duration		11.3	12.0	9.0	11.4	12.5	12.5	12.6	13.2	12.5	12.7	11.3	11.9	11.2	10.2
Precipitation															6.8
Evaporation		4.0	6.0	6.0	7.0	7.0	8.0	7.0	7.4	8.0	8.0	7.0	75.4	68.0	63.7
Growing Degrees	5	18.4	17.2	18.2	17.4	16.0	17.5	18.6	17.5	18.6	18.5	18.1	195.8	164.5	161.7
	10	13.4	12.2	13.2	12.4	11.0	12.5	13.6	12.5	13.6	13.5	13.1	140.8	109.5	106.7

3rd 10-day period (21-31/05/2018)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	60.4	55.5
Precipitation - Reference Evapotranspiration	-60.4	-55.5
Number of Rainy Days	0.0	1.0
Number of Dry Days	14.0	-

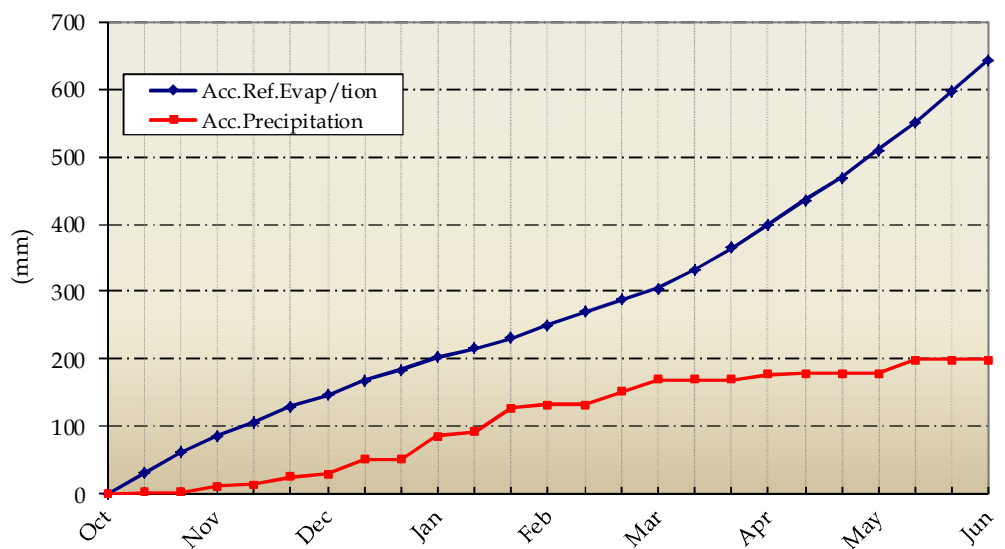
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-31/05/2018)		21	22	23	24	25	26	27	28	29	30	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.2	24.0	25.0	25.0	25.0	23.8	24.0	23.0	24.0	24.6	24.6	24.4	23.0	24.9
	Min	18.6	20.8	17.2	21.2	18.0	21.0	21.6	21.2	20.8	21.2	21.6	20.3	15.4	16.6
Relative Humidity	Max	94	96	91	92	90	89	89	89	82	82	83	89	88	-
	Min	85	83	79	73	67	75	73	76	67	60	52	72	61	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		6.0	5.0	7.6	8.5	11.3	5.0	6.7	3.6	11.7	12.5	12.0	8.2	9.7	10.1
Precipitation							0.0						0.0	25.7	4.4
Evaporation		4.0	2.5	3.7	7.3	5.8	5.7	2.9	6.9	6.3	6.8	9.8	61.7	38.2	74.4
Growing Degrees	5	16.9	17.4	16.1	18.1	16.5	17.4	17.8	17.1	17.4	17.9	18.1	190.7	156.0	173.1
	10	11.9	12.4	11.1	13.1	11.5	12.4	12.8	12.1	12.4	12.9	13.1	135.7	101.0	118.1

3rd 10-day period (21-31/05/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	46.4	47.0	-
Precipitation - Reference Evapotranspiration	-46.4	-21.3	4.4
Number of Rainy Days	0.0	6.0	0.7
Number of Dry Days	23.0	3.0	-

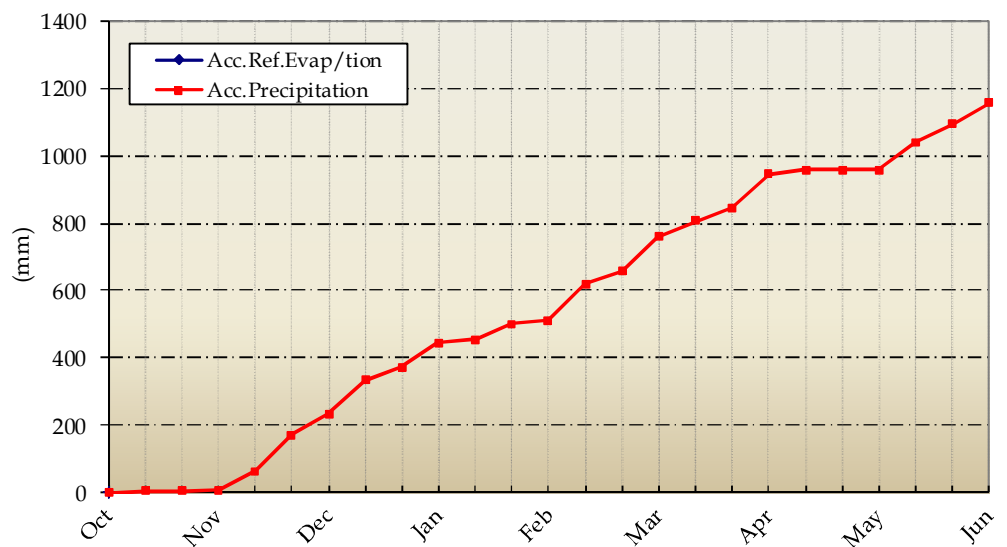
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-31/05/2018)		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	27.6	23.0	24.4	26.4	27.0	28.0	28.0	25.8	28.0	27.4	26.7	22.6	24.6
	Min	15.0	11.5	14.8	12.8	12.0	12.8	12.0	13.6	12.0	13.4	12.2	12.9	11.4	10.6
Relative Humidity	Max	100	91	100	100	96	100	95	100	100	98	92	97	97	-
	Min	37	49	59	57	56	48	49	47	57	47	48	50	48	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	17.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	21.4
Sunshine Duration		8.0	12.0	3.3	5.7	8.2	11.4	11.2	8.0	7.2	8.7	7.1	8.3	6.1	8.1
Precipitation		5.9	0.0	1.0	17.2	2.4	0.0		13.8	10.4	2.4	6.6	59.7	50.6	20.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	55.4
Growing Degrees	5	16.3	14.6	13.9	13.6	14.2	14.9	15.0	15.8	13.9	15.7	14.8	162.7	131.8	138.9
	10	11.3	9.6	8.9	8.6	9.2	9.9	10.0	10.8	8.9	10.7	9.8	107.7	76.8	83.9

3rd 10-day period (21-31/05/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	42.6
Precipitation - Reference Evapotranspiration	-	-	-21.7
Number of Rainy Days	8.0	8.0	3.4
Number of Dry Days	4.0	3.0	-

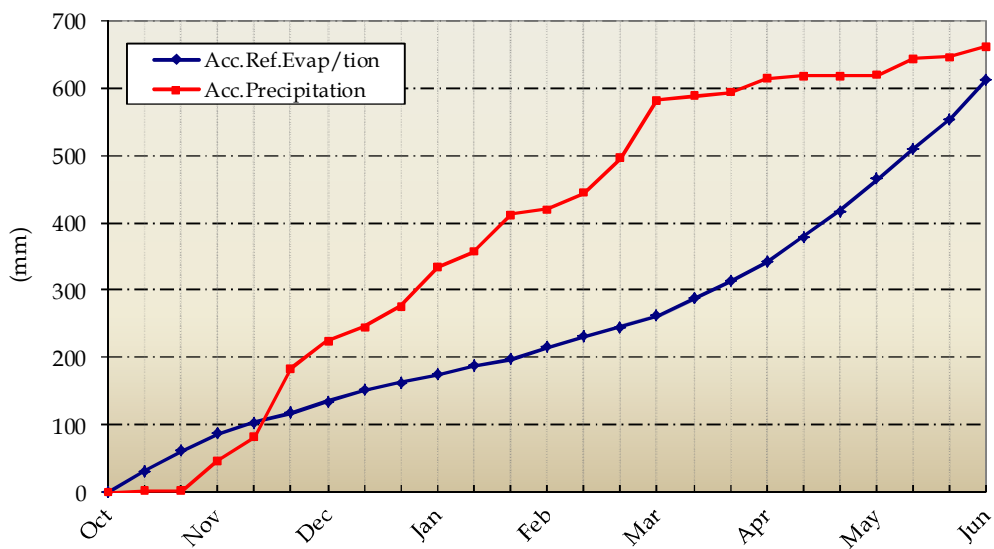
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-31/05/2018)		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	29.0	30.4	28.0	26.8	31.0	32.2	29.9	27.4	28.6	27.8	29.3	25.1	26.1
	Min	17.0	15.2	15.2	16.0	15.8	15.4	15.5	15.1	15.3	14.6	15.2	15.5	13.0	13.4
Relative Humidity	Max	87	87	91	91	92	88	90	91	92	90	90	90	90	-
	Min	28	36	30	38	38	22	25	36	50	41	39	35	40	-
Soil Temperature at 10 cm	06 UTC	21.8	23.0	23.4	23.4	23.0	22.4	22.6	22.8	24.0	24.4	24.6	23.2	-	20.5
	12 UTC	26.8	24.0	25.4	25.4	26.4	25.2	25.8	25.8	26.0	27.4	27.4	26.0	-	24.4
Sunshine Duration		9.6	12.0	9.3	10.2	9.4	11.1	10.9	10.1	12.3	10.9	11.6	10.7	9.8	9.6
Precipitation						11.9		0.0				3.6	15.5	15.5	3.4
Evaporation		7.1	6.7	6.2	5.0	7.1	7.8	6.4	6.6	5.0	10.0	0.0	67.9	59.9	68.8
Growing Degrees	5	19.2	17.1	17.8	17.0	16.3	18.2	18.9	17.5	16.4	16.6	16.5	191.4	154.4	162.7
	10	14.2	12.1	12.8	12.0	11.3	13.2	13.9	12.5	11.4	11.6	11.5	136.4	99.4	107.7

3rd 10-day period (21-31/05/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	59.8	51.3	49.3
Precipitation - Reference Evapotranspiration	-44.3	-35.8	-45.9
Number of Rainy Days	2.0	4.0	1.1
Number of Dry Days	6.0	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

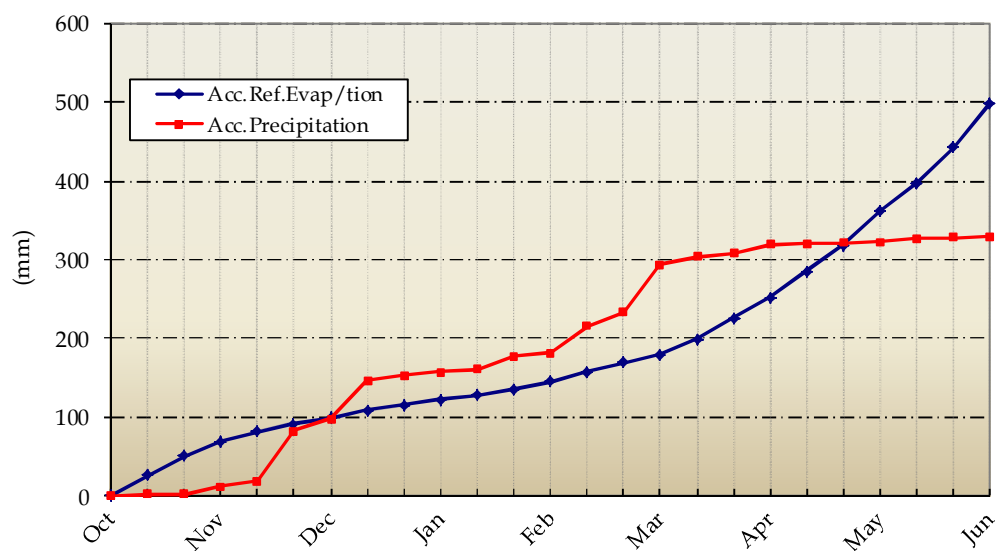


Larisa

3rd 10-day period (21-31/05/2018)		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	28.4	26.9	26.8	30.0	31.0	30.8	28.2	28.8	30.6	30.8	29.0	26.1	27.7
	Min	16.6	12.2	13.0	15.7	15.4	15.2	16.4	18.9	17.2	14.2	14.8	15.4	12.6	12.6
Relative Humidity	Max	96	91	91	88	89	80	82	83	86	79	79	86	100	-
	Min	35	37	45	43	25	19	24	40	32	31	29	33	32	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	20.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	22.3
Sunshine Duration		7.1	10.8	5.8	7.8	9.6	11.7	10.8	7.6	10.3	8.6	10.3	9.1	7.4	8.8
Precipitation		0.6		0.1	0.0								0.7	35.6	17.2
Evaporation		3.5	7.2	8.9	6.2	10.9	9.9	9.8	6.3	9.4	7.9	9.7	89.7	56.4	67.8
Growing Degrees	5	16.5	15.3	15.0	16.3	17.7	18.1	18.6	18.6	18.0	17.4	17.8	189.2	157.8	166.2
	10	11.5	10.3	10.0	11.3	12.7	13.1	13.6	13.6	13.0	12.4	12.8	134.2	102.8	111.2

3rd 10-day period (21-31/05/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	56.5	44.9	50.4
Precipitation - Reference Evapotranspiration	-55.8	-9.3	-33.2
Number of Rainy Days	2.0	8.0	3.0
Number of Dry Days	1.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

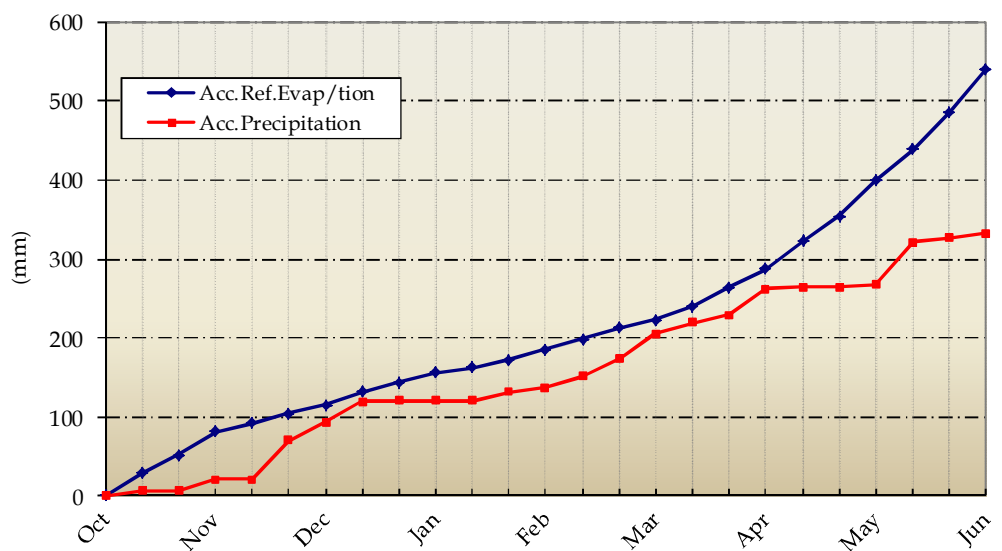


Mikra

3rd 10-day period (21-31/05/2018)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.8	26.7	24.8	27.4	28.5	29.9	30.0	30.0	27.8	29.7	29.2	28.0	24.9	26.2
	Min	18.6	15.2	16.3	16.4	17.8	15.8	16.4	19.1	17.4	17.7	16.4	17.0	13.9	13.9
Relative Humidity	Max	80	87	92	92	89	80	82	90	87	67	74	84	90	-
	Min	53	42	50	38	42	23	30	46	36	32	35	39	42	-
Soil Temperature at 10 cm	06 UTC	23.0	21.4	22.4	22.0	22.4	22.0	23.0	23.8	22.6	23.2	23.6	22.7	20.8	20.7
	12 UTC	24.0	26.0	24.4	25.0	25.6	26.0	26.7	26.8	26.5	27.0	23.0	25.5	24.4	25.4
Sunshine Duration		3.3	12.5	5.9	7.7	9.4	10.2	10.5	9.0	11.1	11.3	12.4	9.4	7.0	8.3
Precipitation		0.7		1.7	1.2	0.2	0.4		1.7	0.3			6.2	40.8	16.2
Evaporation		3.1	5.9	5.9	5.4	8.6	8.4	9.0	6.1	6.3	8.8	11.5	79.0	61.6	70.6
Growing Degrees	5	16.2	16.0	15.6	16.9	18.2	17.9	18.2	19.6	17.6	18.7	17.8	192.5	158.1	165.0
	10	11.2	11.0	10.6	11.9	13.2	12.9	13.2	14.6	12.6	13.7	12.8	137.5	103.1	110.0

3rd 10-day period (21-31/05/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	54.7	44.4	48.7
Precipitation - Reference Evapotranspiration	-48.5	-3.6	-32.5
Number of Rainy Days	7.0	7.0	2.9
Number of Dry Days	1.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



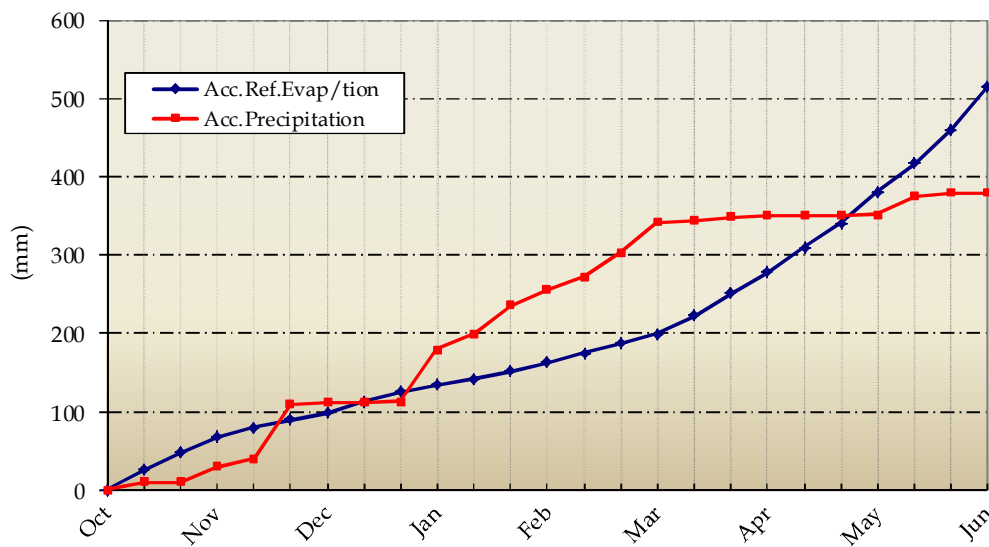


Tanagra

3rd 10-day period (21-31/05/2018)		21	22	23	24	25	26	27	28	29	20	31	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.4	27.5	25.3	25.8	27.1	27.4	26.1	27.7	26.9	27.4	28.2	27.0	24.3	26.9
	Min	15.0	15.1	12.8	13.6	17.4	18.4	20.0	18.0	15.7	15.4	16.0	16.1	13.9	12.8
Relative Humidity	Max	100	80	98	99	80	62	68	74	66	68	59	78	92	-
	Min	31	34	45	41	32	32	39	26	27	27	22	32	40	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.2	11.9	6.9	7.4	11.2	6.0	11.8	11.8	13.3	10.7	13.1	10.5	8.1	
Precipitation				0.1									0.1	71.2	6.0
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	16.2	16.3	14.1	14.7	17.3	17.9	18.1	17.9	16.3	16.4	17.1	182.1	154.8	
	10	11.2	11.3	9.1	9.7	12.3	12.9	13.1	12.9	11.3	11.4	12.1	127.1	99.8	

3rd 10-day period (21-31/05/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	55.9	44.4	
Precipitation - Reference Evapotranspiration	-55.8	26.8	6.0
Number of Rainy Days	1.0	8.0	2.3
Number of Dry Days	2.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



# Agrometeorological Data

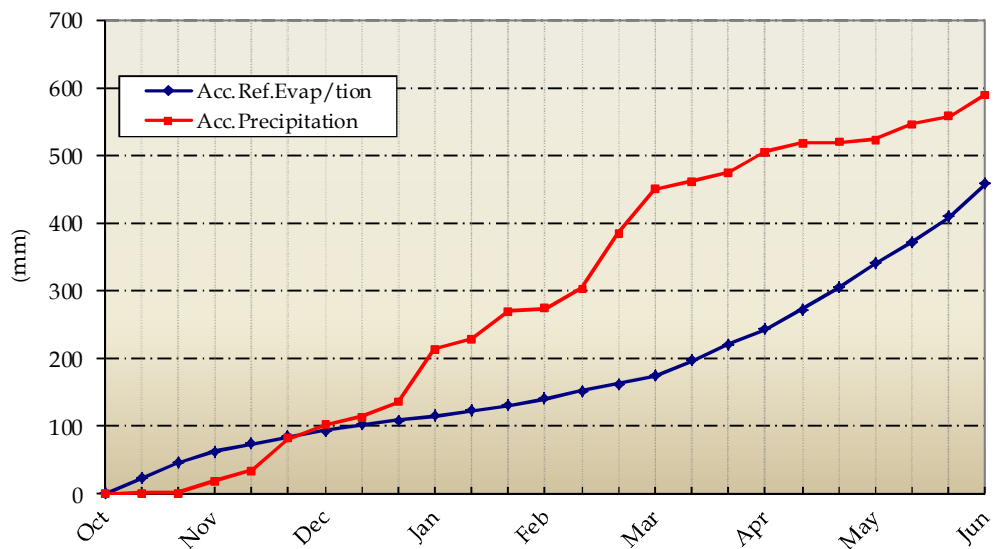
May 2018

Tripoli

3rd 10-day period (21-31/05/2018)		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	27.1	23.7	22.9	25.0	24.6	25.9	26.5	26.4	26.7	27.1	25.5	22.7	24.8
	Min	11.3	10.2	10.5	9.8	9.4	10.4	12.4	10.3	14.0	11.1	9.8	10.8	9.2	9.2
Relative Humidity	Max	100	98	98	100	100	99	87	93	72	92	100	94	97	-
	Min	40	30	37	45	36	33	30	29	29	30	32	34	35	-
Soil Temperature at 10 cm	06 UTC	19.0	20.6	21.4	20.4	18.4	19.0	19.8	21.0	22.2	22.2	21.8	20.5	17.1	18.5
	12 UTC	25.8	-	25.8	23.8	24.8	-	-	-	28.4	28.8	27.8	26.5	22.9	21.5
Sunshine Duration		11.0	12.4	10.8	2.1	9.3	10.8	12.6	11.3	12.3	8.7	8.1	9.9	8.2	8.9
Precipitation				0.1	4.7							27.4	32.2	50.0	11.3
Evaporation		5.3	5.3	4.2	1.3	5.0	5.8	7.5	7.9	7.7	5.1	11.2	66.3	53.3	48.7
Growing Degrees	5	13.0	13.7	12.1	11.4	12.2	12.5	14.2	13.4	15.2	13.9	13.5	144.9	120.7	132.1
	10	8.0	8.7	7.1	6.4	7.2	7.5	9.2	8.4	10.2	8.9	8.5	89.9	65.7	77.1

3rd 10-day period (21-31/05/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	48.6	43.0	47.0
Precipitation - Reference Evapotranspiration	-16.4	7.0	-35.7
Number of Rainy Days	3.0	6.0	2.6
Number of Dry Days	5.0	4.0	-

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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Issue Editors :

Papakrivou Anastasia

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