



# AGROMETEOROLOGICAL BULLETIN

*April 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



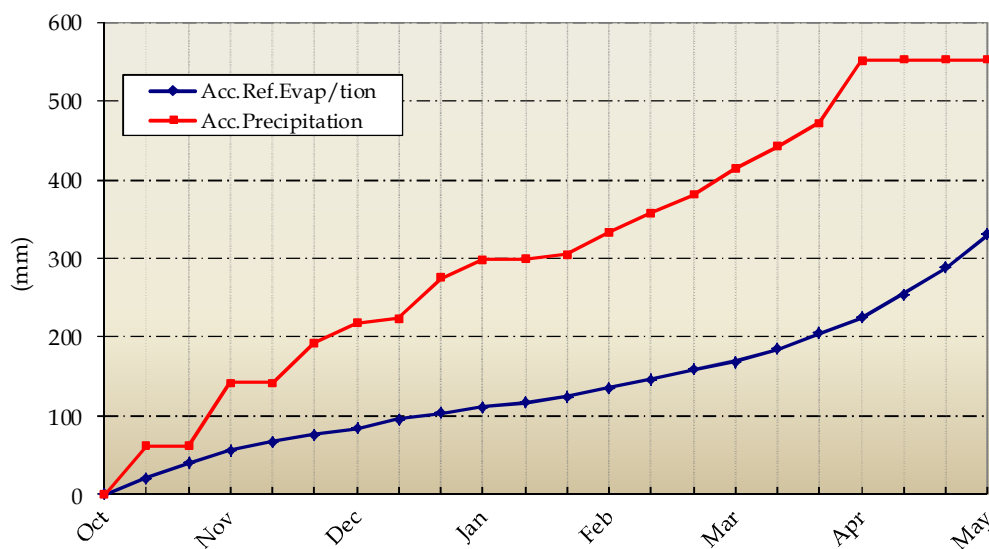
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3rd 10-day period (21-30/04/2018)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.8	21.4	22.2	23.8	25.4	28.2	30.0	28.0	26.2	24.8	25.3	19.9	18.4
	Min	6.4	6.6	7.6	9.8	12.0	11.6	11.6	17.0	11.4	12.4	10.6	6.1	7.8
Relative Humidity	Max	89	80	97	85	95	93	86	90	75	88	88	85	-
	Min	28	48	51	50	38	32	42	39	30	38	40	37	-
Soil Temperature at 10 cm	06 UTC	14.4	14.4	15.4	16.8	18.0	18.6	19.6	20.6	19.6	19.4	17.7	13.9	12.7
	12 UTC	19.8	20.0	21.0	21.6	23.0	24.6	24.6	25.4	24.2	23.6	22.8	20.9	16.6
Sunshine Duration		12.0	12.3	11.1	11.0	10.6	12.3	10.5	10.5	12.5	11.9	11.5	9.7	7.4
Precipitation													2.2	11.6
Evaporation		5.2	1.6	8.1	3.1	6.6	11.6	3.9	13.5	9.3	3.9	66.8	50.3	46.0
Growing Degrees	5	9.6	9.0	9.9	11.8	13.7	14.9	15.8	17.5	13.8	13.6	129.6	79.8	80.8
	10	4.6	4.0	4.9	6.8	8.7	9.9	10.8	12.5	8.8	8.6	79.6	31.6	32.3

3rd 10-day period (21-30/04/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	41.8	33.6	31.2
Precipitation - Reference Evapotranspiration	-41.8	-31.4	-19.6
Number of Rainy Days	0.0	2.0	2.2
Number of Dry Days	23.0	2.0	-

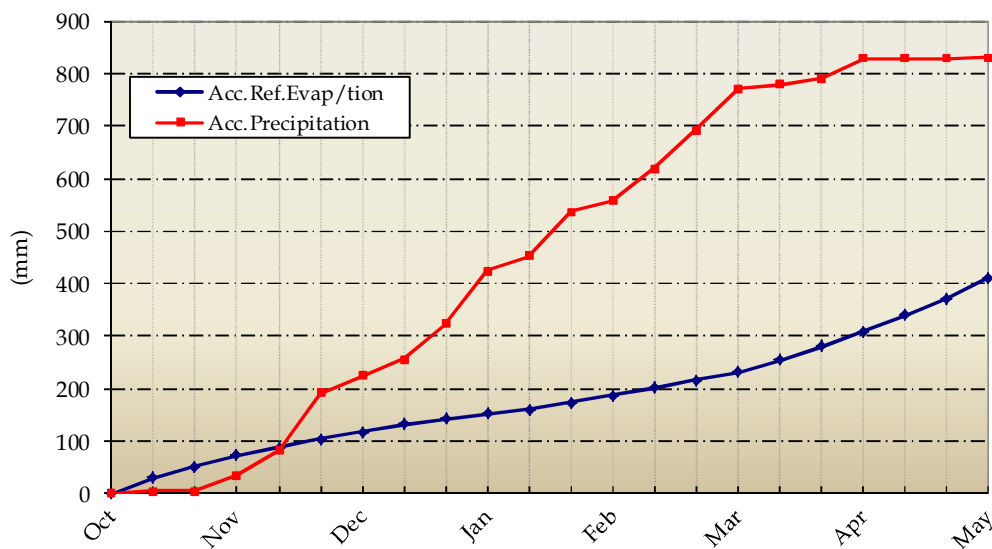
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-30/04/2018)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.9	21.2	20.6	24.6	24.2	24.6	26.6	29.8	32.2	25.9	25.4	21.3	20.2
	Min	13.6	8.7	10.9	11.9	11.6	11.4	11.9	10.4	16.5	16.5	12.3	8.6	9.8
Relative Humidity	Max	88	87	90	98	94	90	92	83	84	91	90	86	-
	Min	25	49	60	50	39	37	41	27	21	46	40	35	-
Soil Temperature at 10 cm	06 UTC	19.0	18.0	18.0	18.2	18.8	19.0	19.3	19.0	21.0	21.4	19.2	16.6	15.0
	12 UTC	21.0	21.0	22.5	23.0	24.0	24.0	21.9	22.0	22.0	21.5	22.3	20.8	18.4
Sunshine Duration		12.5	11.9	11.0	9.8	9.8	11.3	10.8	11.6	11.5	1.8	10.2	9.3	8.8
Precipitation											1.2	1.2	8.8	8.8
Evaporation		7.0	5.0	5.0	6.0	4.0	6.0	6.0	7.0	3.6	1.6	51.2	42.8	43.9
Growing Degrees	5	13.8	10.0	10.8	13.3	12.9	13.0	14.3	15.1	19.4	16.2	138.5	99.7	100.1
	10	8.8	5.0	5.8	8.3	7.9	8.0	9.3	10.1	14.4	11.2	88.5	49.7	50.1

3rd 10-day period (21-30/04/2018)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	39.6	34.4	33.2
Precipitation - Reference Evapotranspiration	-38.4	-25.6	-24.4
Number of Rainy Days	1.0	1.0	1.8
Number of Dry Days	32.0	4.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

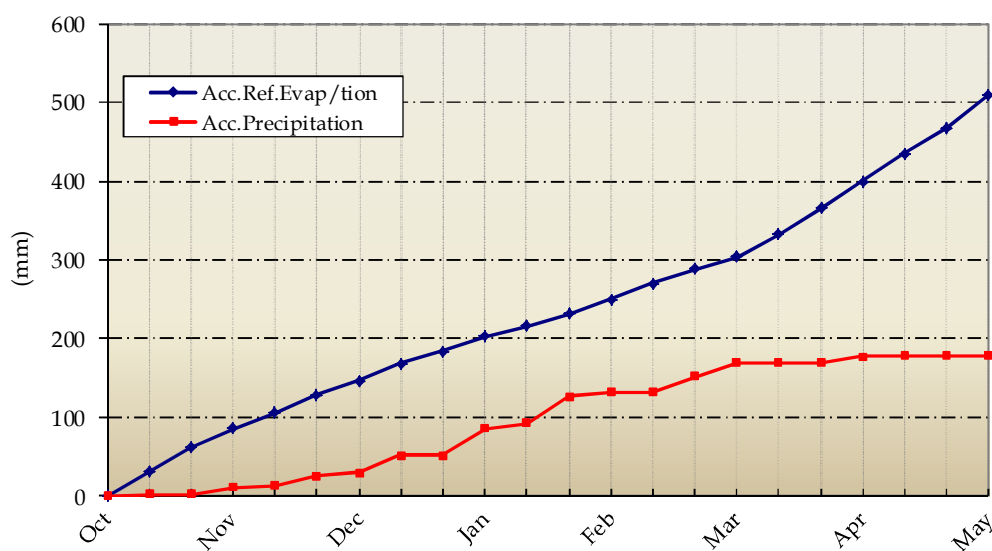


Iraklio

3rd 10-day period (21-30/04/2018)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.0	20.0	21.4	20.6	25.4	22.8	24.2	25.0	26.4	23.2	22.8	20.2	20.6
	Min	16.2	16.4	11.6	13.0	13.4	12.8	14.0	15.4	17.0	16.6	14.6	12.2	12.6
Relative Humidity	Max	79	75	91	93	94	90	89	94	92	95	89	88	-
	Min	49	54	41	49	34	73	58	60	45	81	54	57	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		9.8	10.7	10.9	10.4	11.9	11.5	11.6	10.9	7.8	9.2	10.5	9.6	8.9
Precipitation													10.4	5.6
Evaporation		5.4	4.8	0.5	5.0	1.8	4.5	3.8	4.1	3.0	1.7	34.6	37.5	52.8
Growing Degrees	5	12.6	13.2	11.5	11.8	14.4	12.8	14.1	15.2	16.7	14.9	137.2	111.9	115.8
	10	7.6	8.2	6.5	6.8	9.4	7.8	9.1	10.2	11.7	9.9	87.2	61.9	65.8

3rd 10-day period (21-30/04/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	41.7	37.3	-
Precipitation - Reference Evapotranspiration	-41.7	-26.9	5.6
Number of Rainy Days	0.0	1.0	1.3
Number of Dry Days	23.0	9.0	-

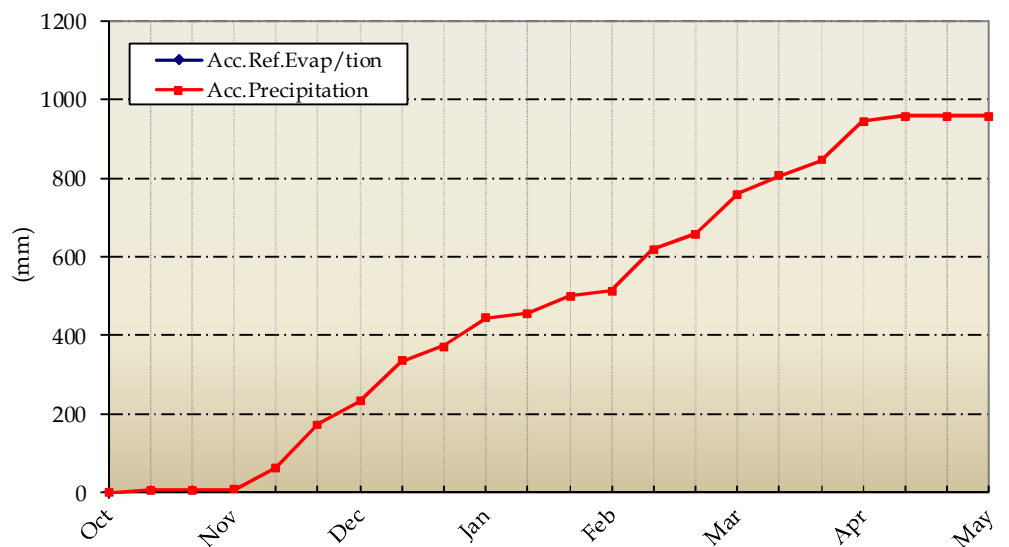
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-30/04/2018)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	24.6	28.2	28.2	28.4	28.2	-	28.6	29.2	27.6	27.4	21.2	18.6
	Min	15.8	6.0	7.4	9.0	8.4	9.5	10.4	10.4	14.6	13.0	10.4	3.1	6.5
Relative Humidity	Max	72	100	100	100	100	98	97	87	100	94	95	96	-
	Min	32	35	26	32	26	38	28	30	30	30	31	29	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	11.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	14.9
Sunshine Duration		10.7	10.1	8.5	9.6	10.5	7.4	10.5	10.9	7.2	2.9	8.8	10.5	6.6
Precipitation													0.2	15.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	36.5
Growing Degrees	5	14.9	10.3	12.8	13.6	13.4	13.9	-	14.5	16.9	15.3	-	-	75.1
	10	9.9	5.3	7.8	8.6	8.4	8.9	-	9.5	11.9	10.3	-	-	27.7

3rd 10-day period (21-30/04/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	29.4
Precipitation - Reference Evapotranspiration	-	-	-14.2
Number of Rainy Days	0.0	1.0	3.6
Number of Dry Days	24.0	11.0	-

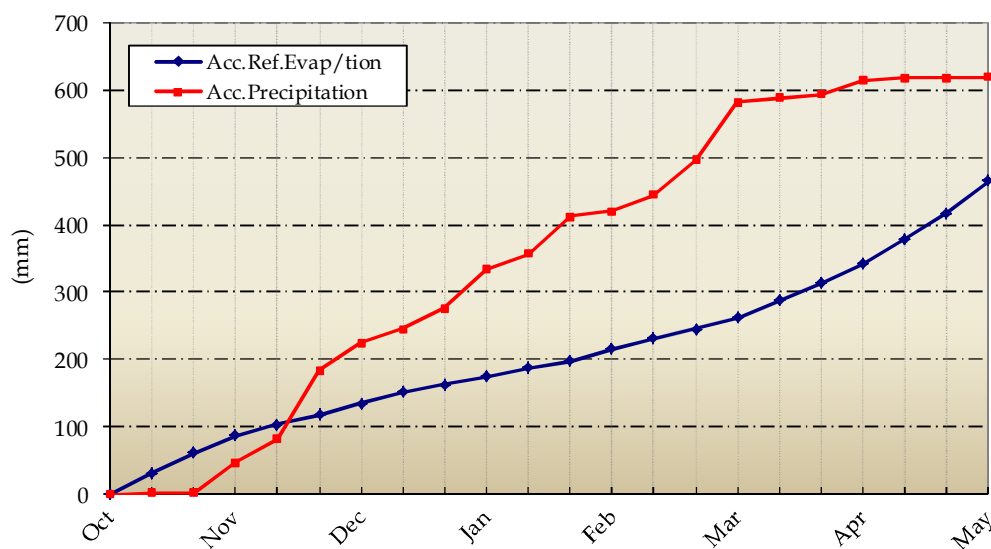
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-30/04/2018)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.0	23.2	23.9	22.4	30.9	25.8	25.2	29.2	30.7	26.2	26.2	21.0	20.8
	Min	15.9	7.7	11.4	9.8	9.5	10.1	11.7	12.8	13.4	15.8	11.8	7.3	9.1
Relative Humidity	Max	83	89	90	92	81	83	83	77	76	84	84	89	-
	Min	20	29	40	53	15	35	36	20	24	41	31	33	-
Soil Temperature at 10 cm	06 UTC	20.2	19.2	19.8	20.0	20.0	20.4	20.4	21.0	21.6	22.2	20.5	-	15.1
	12 UTC	22.0	19.6	22.2	22.4	22.4	23.2	23.8	24.0	24.4	24.4	22.8	-	18.5
Sunshine Duration		12.0	12.0	11.2	11.8	11.9	11.6	11.7	10.6	8.1	9.3	11.0	8.6	8.3
Precipitation		0.7								0.0	0.5	1.2	4.4	12.2
Evaporation		7.8	5.6	5.0	6.0	7.5	1.7	10.0	7.0	3.9	5.6	60.1	42.8	46.5
Growing Degrees	5	15.5	10.5	12.7	11.1	15.2	13.0	13.5	16.0	17.1	16.0	140.3	91.5	99.4
	10	10.5	5.5	7.7	6.1	10.2	8.0	8.5	11.0	12.1	11.0	90.3	41.5	49.4

3rd 10-day period (21-30/04/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	48.4	37.2	34.1
Precipitation - Reference Evapotranspiration	-47.2	-32.8	-21.9
Number of Rainy Days	2.0	1.0	2.6
Number of Dry Days	13.0	4.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



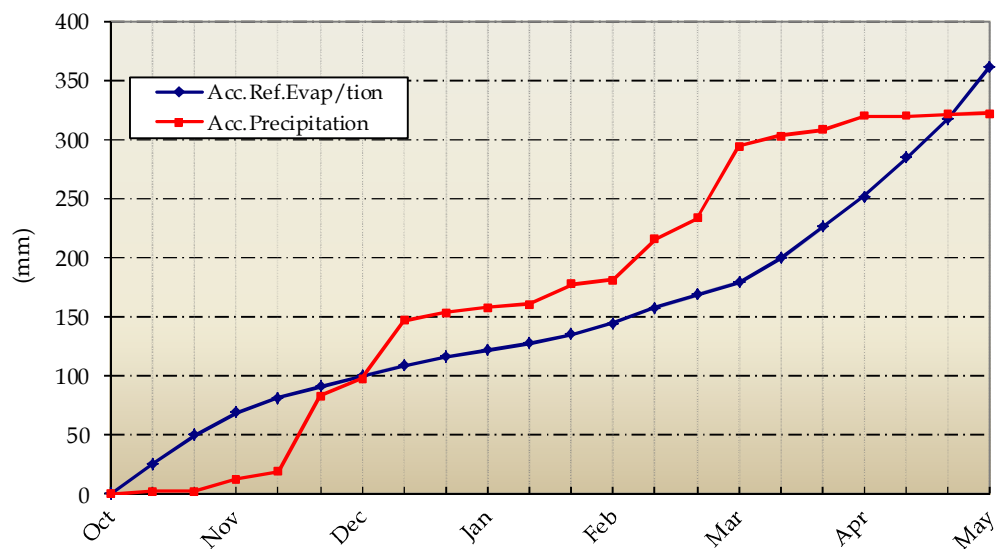


Larisa

3rd 10-day period (21-30/04/2018)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.4	27.5	28.6	30.4	29.8	29.6	30.2	28.4	26.4	25.6	27.9	22.5	21.1
	Min	7.2	4.6	7.0	7.0	9.2	9.6	10.4	10.4	9.6	15.2	9.0	7.2	7.3
Relative Humidity	Max	96	91	88	89	86	86	88	90	88	96	90	94	-
	Min	28	23	29	17	24	24	25	40	27	61	30	29	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	14.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	16.2
Sunshine Duration		11.4	11.7	11.5	11.2	11.6	11.3	11.0	10.7	5.1	0.9	9.6	9.4	7.9
Precipitation		0.4									1.0	1.4		10.7
Evaporation		7.5	5.8	11.3	0.9	8.8	5.2	11.1	8.8	8.0	2.0	69.4	57.0	43.9
Growing Degrees	5	9.8	11.1	12.8	13.7	14.5	14.6	15.3	14.4	13.0	15.4	134.6	98.3	91.9
	10	4.8	6.1	7.8	8.7	9.5	9.6	10.3	9.4	8.0	10.4	84.6	48.3	42.7

3rd 10-day period (21-30/04/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	43.8	39.3	34.0
Precipitation - Reference Evapotranspiration	-42.4	-39.3	-23.3
Number of Rainy Days	2.0	0.0	2.7
Number of Dry Days	4.0	12.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

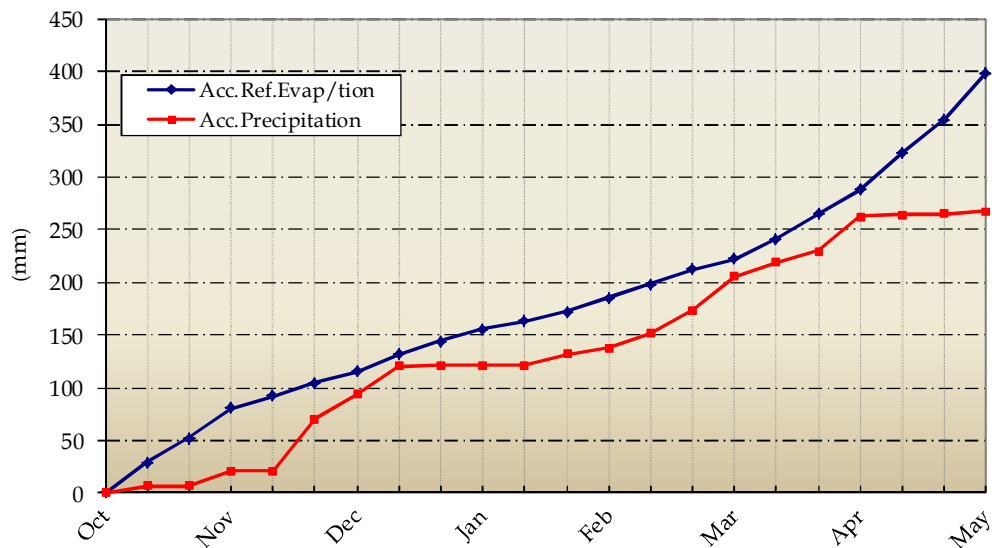


Mikra

3rd 10-day period (21-30/04/2018)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	25.6	26.6	27.8	28.1	28.2	30.7	28.0	28.0	24.8	27.2	20.7	20.2
	Min	8.8	7.9	9.4	10.8	11.5	12.6	12.9	15.4	13.5	15.6	11.8	8.2	8.4
Relative Humidity	Max	90	74	78	75	73	70	70	74	77	77	76	75	-
	Min	28	26	26	20	21	18	20	33	23	39	25	31	-
Soil Temperature at 10 cm	06 UTC	15.8	15.6	15.5	17.8	18.2	18.8	19.8	20.2	20.3	20.4	18.2	16.1	14.2
	12 UTC	20.5	20.0	21.8	21.8	23.8	24.0	24.2	25.0	24.8	22.0	22.8	19.8	18.8
Sunshine Duration		12.3	12.5	12.1	11.5	11.3	10.5	11.3	12.0	11.8	2.9	10.8	9.4	7.6
Precipitation		2.1									0.4	2.5	2.7	11.2
Evaporation		8.1	4.4	7.9	6.7	6.8	7.0	5.3	10.6	4.5	4.8	66.1	57.4	45.8
Growing Degrees	5	11.4	11.8	13.0	14.3	14.8	15.4	16.8	16.7	15.8	15.2	145.1	94.4	93.3
	10	6.4	6.8	8.0	9.3	9.8	10.4	11.8	11.7	10.8	10.2	95.1	44.7	43.8

3rd 10-day period (21-30/04/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	44.6	40.1	33.7
Precipitation - Reference Evapotranspiration	-42.1	-37.4	-22.5
Number of Rainy Days	2.0	1.0	3.0
Number of Dry Days	3.0	12.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



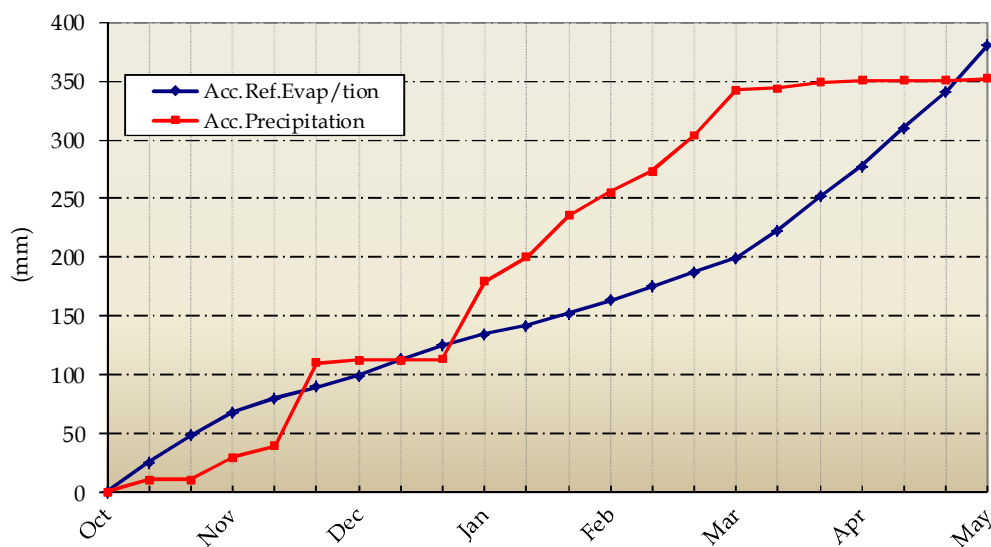


Tanagra

3rd 10-day period (21-30/04/2018)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.4	25.4	25.4	29.5	29.2	28.8	29.0	28.2	26.9	24.2	26.6	21.6	20.7
	Min	10.0	6.4	8.4	8.6	12.7	11.2	12.0	13.4	13.5	15.1	11.1	8.1	7.9
Relative Humidity	Max	76	80	95	79	73	78	78	68	73	91	79	80	-
	Min	29	19	21	14	23	22	21	25	26	41	24	29	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.2	12.2	11.8	12.0	12.0	12.1	11.7	11.5	6.2	0.7	10.2	9.9	
Precipitation		0.1									1.0	1.1		7.9
Evaporation		4.7	5.4	6.2	6.5	7.5	6.0	6.8	5.6	5.9	2.7	57.3	-	
Growing Degrees	5	9.7	10.9	11.9	14.1	16.0	15.0	15.5	15.8	15.2	14.7	138.7	98.5	
	10	4.7	5.9	6.9	9.1	11.0	10.0	10.5	10.8	10.2	9.7	88.7	48.5	

3rd 10-day period (21-30/04/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	39.7	38.2	
Precipitation - Reference Evapotranspiration	-38.6	-38.2	7.9
Number of Rainy Days	2.0	0.0	2.8
Number of Dry Days	23.0	13.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

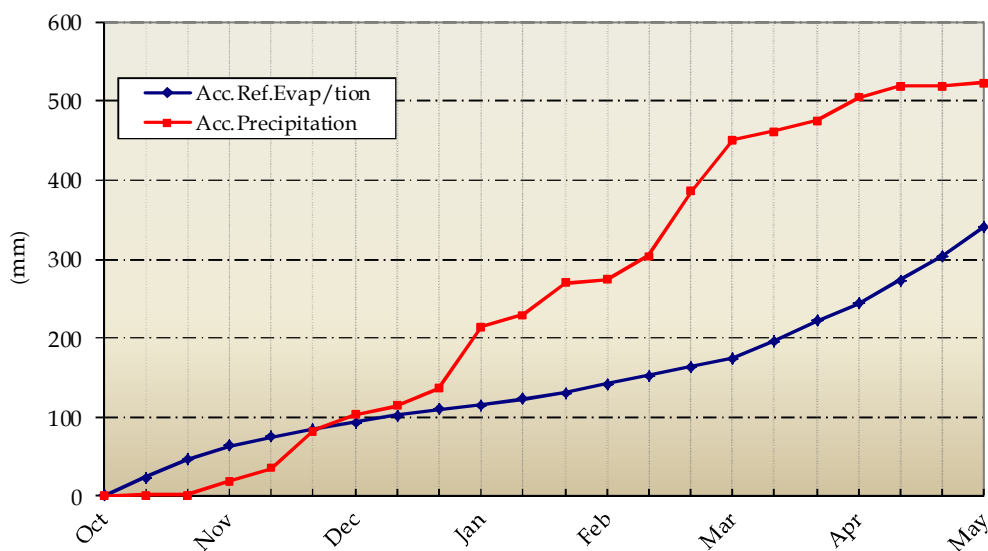


Tripoli

3rd 10-day period (21-30/04/2018)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.9	22.7	23.0	26.8	26.3	26.5	26.3	26.2	23.8	22.9	24.2	20.2	18.7
	Min	9.7	1.3	4.9	3.7	4.1	5.9	5.2	6.8	11.4	12.7	6.6	3.6	5.4
Relative Humidity	Max	84	96	100	95	87	94	99	88	84	93	92	92	-
	Min	29	19	25	17	14	19	22	23	31	35	23	25	-
Soil Temperature at 10 cm	06 UTC	-	-	17.2	17.2	18.0	18.8	18.0	18.6	-	20.8	18.4	12.4	12.1
	12 UTC	-	-	21.8	22.2	23.0	24.4	23.0	-	-	22.2	22.8	20.1	14.3
Sunshine Duration		11.4	12.0	10.9	11.5	11.8	8.5	10.9	12.0	0.0	-	9.9	8.6	8.0
Precipitation		0.6					1.9			0.0	1.4	3.9	3.7	14.5
Evaporation		-	-	5.4	6.3	5.0	4.8	5.9	-	0.0	-	-	-	35.0
Growing Degrees	5	8.8	7.0	9.0	10.3	10.2	11.2	10.8	11.5	12.6	12.8	104.1	68.9	70.7
	10	3.8	2.0	4.0	5.3	5.2	6.2	5.8	6.5	7.6	7.8	54.1	26.0	24.2

3rd 10-day period (21-30/04/2018)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	36.7	33.1	32.9
Precipitation - Reference Evapotranspiration	-32.8	-29.4	-18.4
Number of Rainy Days	3.0	1.0	2.7
Number of Dry Days	4.0	3.0	-

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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