



# AGROMETEOROLOGICAL BULLETIN

*April 2014*  
*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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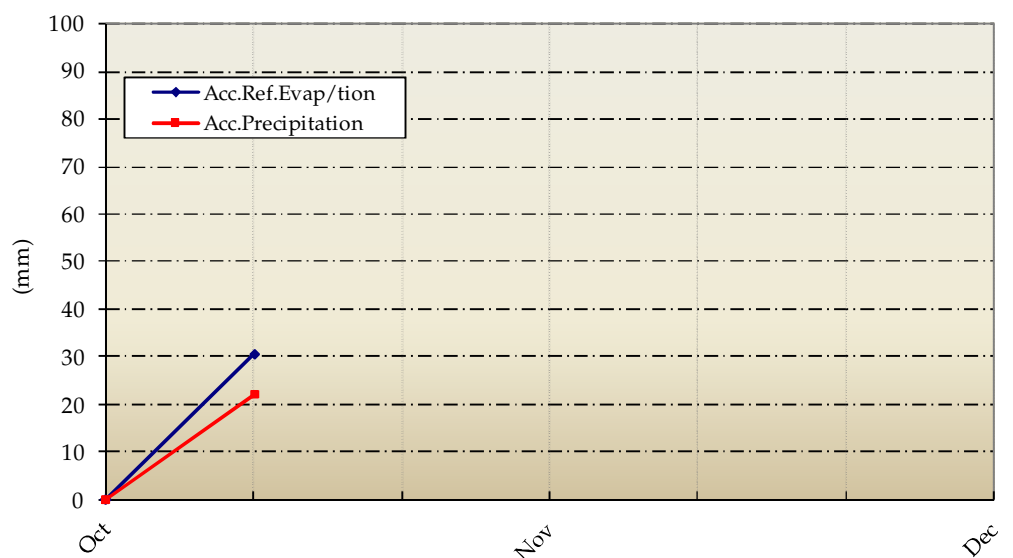
Agrinio

3rd 10-day period (21-30/04/2014)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max													
	Min													
Relative Humidity	Max													
	Min													
Soil Temperature at 10 cm	06 UTC													
	12 UTC													
Sunshine Duration														
Precipitation														
Evaporation														
Growing Degrees	5													
	10													

3rd 10-day period (21-30/04/2014)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration		
Precipitation - Reference Evapotranspiration		
Number of Rainy Days		
Number of Dry Days		

This station is not operated

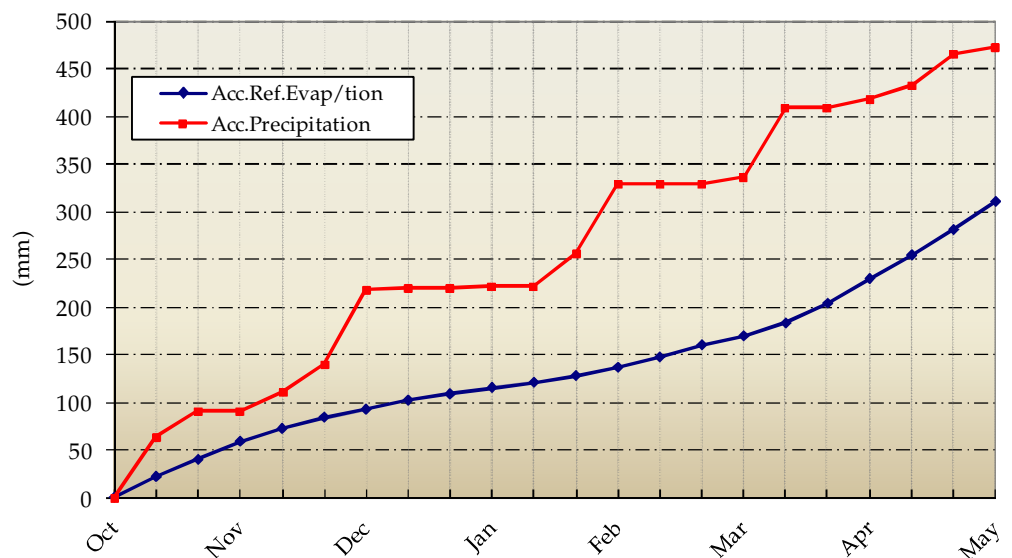
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-30/04/2014)		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	20.4	24.0	25.0	19.4	17.8	18.2	16.8	19.8	19.4	20.0	23.7	18.4
	Min	8.0	10.0	11.2	14.6	13.8	12.2	10.6	12.2	12.6	13.0	11.8	9.6	7.8
Relative Humidity	Max	92	93	95	94	91	88	89	93	93	93	92	87	-
	Min	52	56	53	52	68	56	63	79	60	49	59	40	-
Soil Temperature at 10 cm	06 UTC	13.4	15.4	16.6	18.2	18.0	16.0	15.5	16.0	15.6	16.8	16.2	15.4	12.7
	12 UTC	18.0	19.6	20.2	21.4	19.0	17.8	17.0	17.6	20.0	20.6	19.1	19.6	16.6
Sunshine Duration		10.3	10.5	3.0	9.6	0.0	3.8	7.0	0.0	9.3	10.8	6.4	11.2	7.4
Precipitation		0.1	0.2		2.0	0.2	0.3	0.8	1.9	0.2	1.7	7.4	1.4	11.6
Evaporation		4.6	4.0	6.6	5.5	2.2	2.9	2.4	0.8	6.1	5.9	41.0	51.1	46.0
Growing Degrees	5	8.7	10.2	12.6	14.8	11.6	10.0	9.4	9.5	11.2	11.2	109.2	116.7	80.8
	10	3.7	5.2	7.6	9.8	6.6	5.0	4.4	4.5	6.2	6.2	59.2	66.7	32.3

3rd 10-day period (21-30/04/2014)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	29.6	37.7	31.2
Precipitation - Reference Evapotranspiration	-22.2	-36.3	-19.6
Number of Rainy Days	9.0	1.0	2.2
Number of Dry Days	0.0	5.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

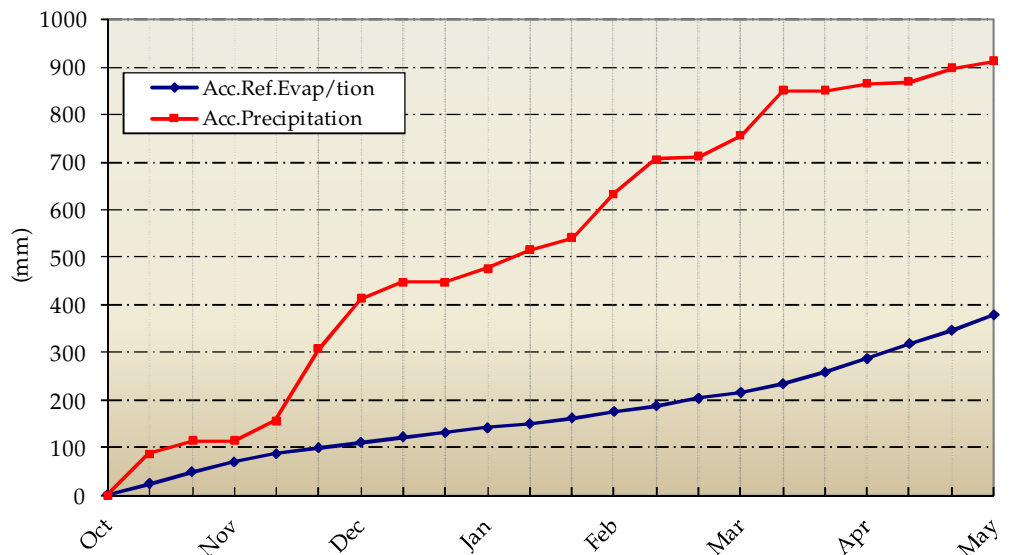


Andravida

3rd 10-day period (21-30/04/2014)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.2	23.7	27.0	18.7	21.0	20.5	18.4	18.6	19.3	19.2	21.0	24.8	20.2
	Min	12.9	12.8	10.8	15.0	11.7	11.5	11.6	13.0	12.7	11.7	12.4	10.9	9.8
Relative Humidity	Max	85	91	90	88	91	91	92	89	84	89	89	86	-
	Min	33	59	26	69	58	59	51	58	49	56	52	31	-
Soil Temperature at 10 cm	06 UTC	15.8	16.0	16.2	16.0	16.4	17.0	16.4	17.0	17.2	16.6	16.5	17.7	15.0
	12 UTC	18.2	18.0	18.4	18.2	18.4	18.4	19.4	18.2	19.4	20.4	18.7	22.8	18.4
Sunshine Duration		1.8	7.8	3.3	0.6	9.4	7.5	8.2	7.3	9.5	11.3	6.7	11.1	8.8
Precipitation		0.4			0.7			8.0	5.7			14.8		8.8
Evaporation		2.8	4.5	4.1	1.1	4.3	0.4	0.2	8.1	14.5	2.0	42.0	64.6	43.9
Growing Degrees	5	13.1	13.3	13.9	11.9	11.4	11.0	10.0	10.8	11.0	10.5	116.7	128.7	100.1
	10	8.1	8.3	8.9	6.9	6.4	6.0	5.0	5.8	6.0	5.5	66.7	78.7	50.1

3rd 10-day period (21-30/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	32.1	39.8	33.2
Precipitation - Reference Evapotranspiration	-17.3	-39.8	-24.4
Number of Rainy Days	4.0	0.0	1.8
Number of Dry Days	1.0	22.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

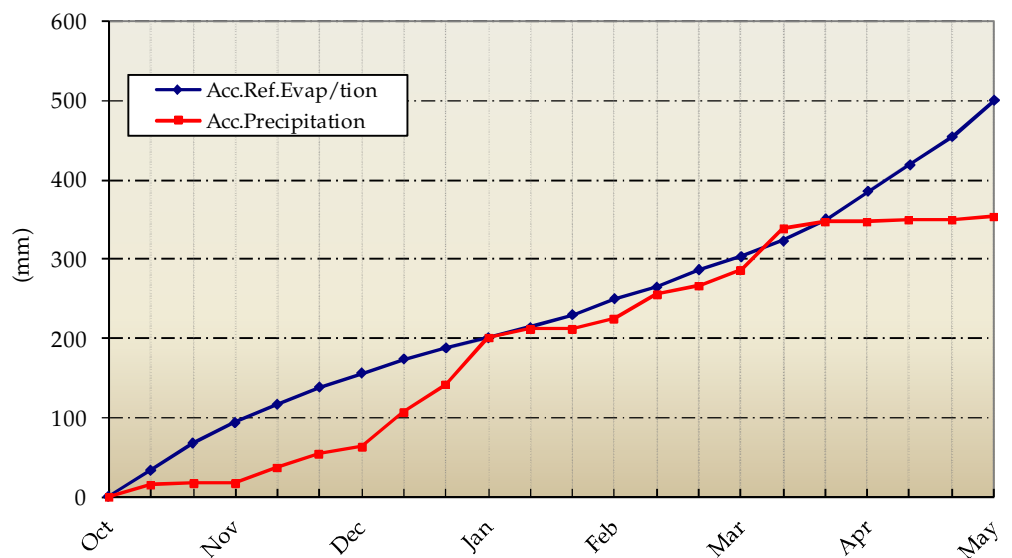


Iraklio

3rd 10-day period (21-30/04/2014)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.0	34.0	30.6	21.4	22.0	21.5	23.6	22.2	21.0	22.2	24.6	21.6	20.6
	Min	13.5	22.0	19.6	18.0	12.8	14.4	13.0	13.4	13.0	13.2	15.3	12.4	12.6
Relative Humidity	Max	66	77	51	87	86	89	87	87	80	84	79	81	-
	Min	25	23	17	29	62	63	44	53	48	51	42	56	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.3	6.2	4.1	5.4	11.9	11.3	8.4	11.3	11.5	9.4	8.8	11.1	8.9
Precipitation								5.1				5.1	0.2	5.6
Evaporation		9.5	5.1	7.0	4.3	2.4	5.4	1.7	7.0	4.1	5.8	52.3	34.3	52.8
Growing Degrees	5	15.3	23.0	20.1	14.7	12.4	13.0	13.3	12.8	12.0	12.7	149.2	120.2	115.8
	10	10.3	18.0	15.1	9.7	7.4	8.0	8.3	7.8	7.0	7.7	99.2	70.2	65.8

3rd 10-day period (21-30/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	45.7	40.8	-
Precipitation - Reference Evapotranspiration	-40.6	-40.6	5.6
Number of Rainy Days	1.0	1.0	1.3
Number of Dry Days	12.0	0.0	-

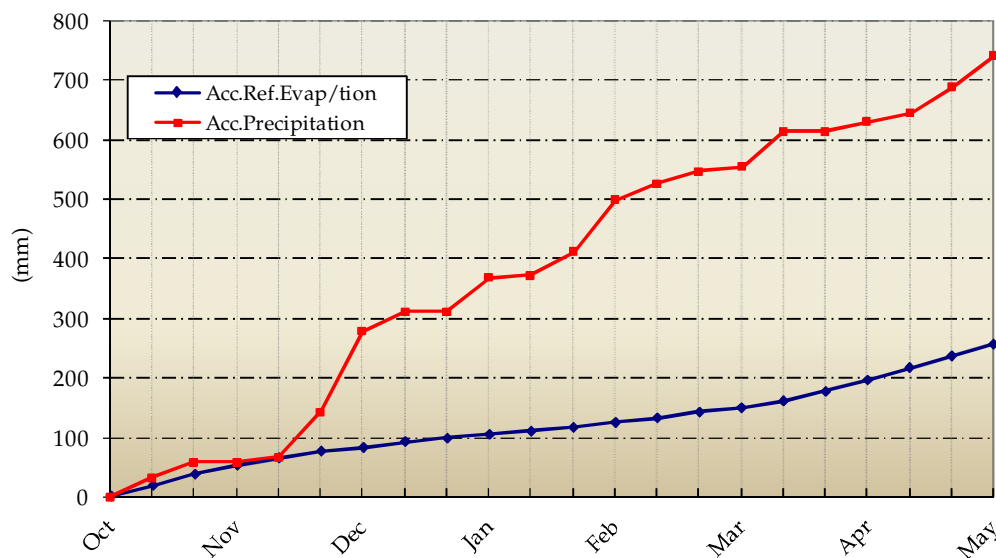
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-30/04/2014)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.0	23.7	23.6	21.0	19.0	15.5	18.0	13.0	15.0	14.0	18.5	25.6	18.6
	Min	8.0	6.4	13.5	13.4	12.6	13.6	5.2	7.7	7.6	7.1	9.5	8.8	6.5
Relative Humidity	Max	79	74	90	96	95	97	99	99	98	98	92	81	-
	Min	32	34	30	80	61	73	49	75	63	62	56	28	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	11.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	14.9
Sunshine Duration		2.6	4.4	0.9	0.0	5.4	0.1	5.2	1.4	0.0	2.6	2.3	7.6	6.6
Precipitation			0.0		9.7	1.4	11.6	4.3	18.4	5.5	2.3	53.2	0.8	15.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	36.5
Growing Degrees	5	10.0	10.1	13.6	12.2	10.8	9.6	6.6	5.4	6.3	5.6	90.0	122.1	75.1
	10	5.0	5.1	8.6	7.2	5.8	4.6	1.6	0.4	1.3	0.6	40.0	72.1	27.7

3rd 10-day period (21-30/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	20.0	34.8	29.4
Precipitation - Reference Evapotranspiration	33.2	-34.0	-14.2
Number of Rainy Days	7.0	1.0	3.6
Number of Dry Days	3.0	13.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

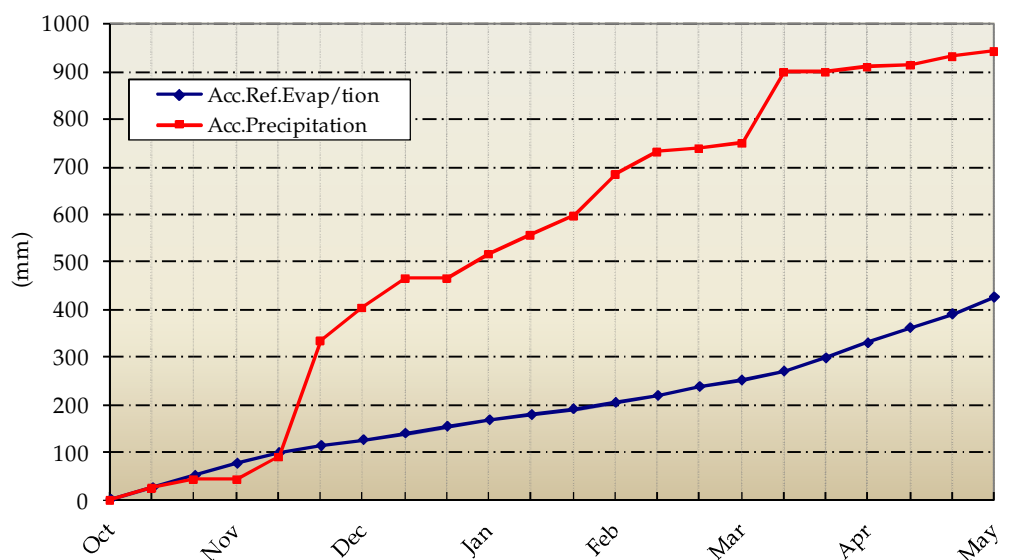


Kalamata

3rd 10-day period (21-30/04/2014)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.3	23.1	27.3	22.1	24.2	22.3	19.4	21.1	22.6	21.1	22.4	24.2	20.8
	Min	10.5	11.3	12.0	13.9	13.7	11.1	14.4	10.2	10.5	10.4	11.8	9.2	9.1
Relative Humidity	Max	90	92	90	92	91	93	91	93	93	94	92	89	-
	Min	49	56	31	53	43	50	49	40	30	41	44	34	-
Soil Temperature at 10 cm	06 UTC	15.4	14.2	16.2	16.8	17.0	16.4	18.2	17.0	17.0	17.0	16.5	16.4	15.1
	12 UTC	17.0	17.4	17.4	17.0	19.0	19.0	18.4	18.0	18.6	18.0	18.0	20.0	18.5
Sunshine Duration		0.0	8.4	3.4	3.8	10.3	11.7	5.0	7.5	10.5	10.9	7.2	11.1	8.3
Precipitation			0.6					5.5	1.7		3.9	11.7		12.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	61.2	46.5
Growing Degrees	5	10.9	12.2	14.7	13.0	14.0	11.7	11.9	10.7	11.6	10.8	121.3	117.1	99.4
	10	5.9	7.2	9.7	8.0	9.0	6.7	6.9	5.7	6.6	5.8	71.3	67.1	49.4

3rd 10-day period (21-30/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	35.4	43.1	34.1
Precipitation - Reference Evapotranspiration	-23.7	-43.1	-21.9
Number of Rainy Days	4.0	0.0	2.6
Number of Dry Days	2.0	11.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



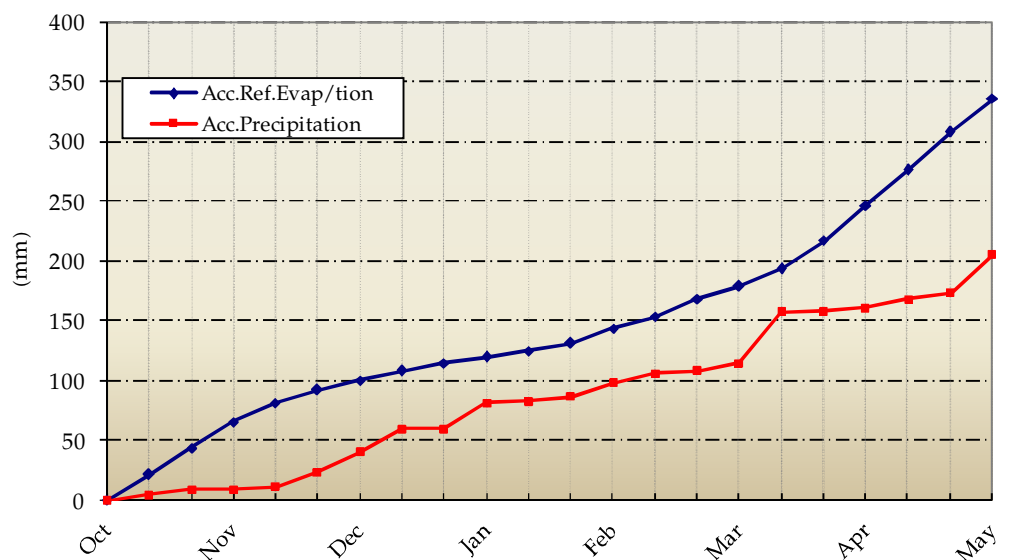


Larisa

3rd 10-day period (21-30/04/2014)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.1	23.4	20.2	24.6	23.2	18.2	17.0	16.8	21.0	22.7	20.8	27.7	21.1
	Min	8.0	7.4	14.2	8.9	12.6	14.1	12.2	10.0	7.4	7.8	10.3	9.2	7.3
Relative Humidity	Max	100	100	95	100	100	100	100	100	100	99	99	87	-
	Min	53	45	60	44	47	74	70	73	40	34	54	26	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	14.6	14.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	16.4	16.2
Sunshine Duration		5.2	5.9	0.6	5.5	4.2	1.1	2.6	1.3	6.7	7.3	4.0	10.6	7.9
Precipitation		0.6		0.0	0.9	7.2	3.3	10.9	8.8	0.0		31.7		10.7
Evaporation		1.4	5.5	2.9	3.8	1.6	0.2	2.2	0.7	2.4	6.7	27.4	64.2	43.9
Growing Degrees	5	9.6	10.4	12.2	11.8	12.9	11.2	9.6	8.4	9.2	10.3	105.4	134.6	91.9
	10	4.6	5.4	7.2	6.8	7.9	6.2	4.6	3.4	4.2	5.3	55.4	84.6	42.7

3rd 10-day period (21-30/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	27.8	45.7	34.0
Precipitation - Reference Evapotranspiration	3.9	-45.7	-23.3
Number of Rainy Days	6.0	0.0	2.7
Number of Dry Days	3.0	21.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



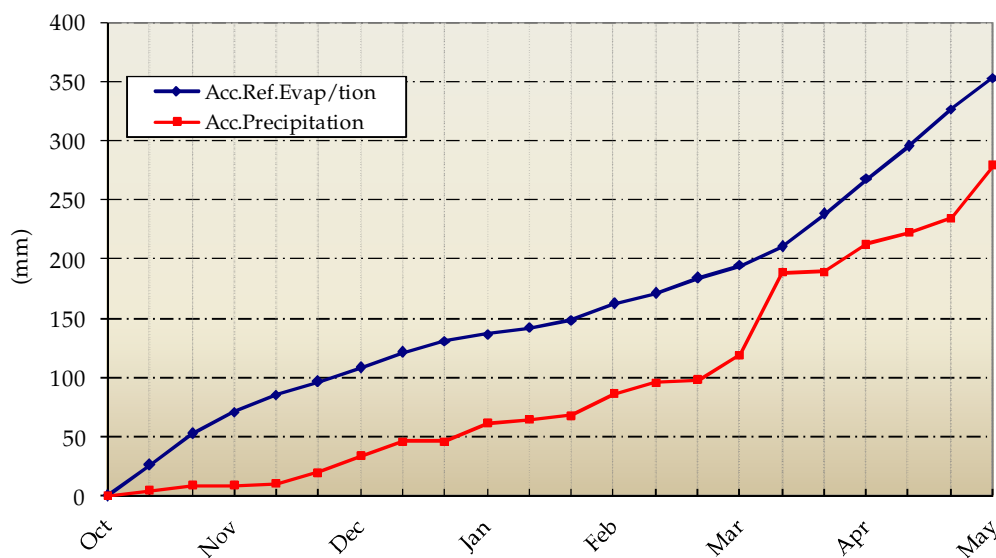


Mikra

3rd 10-day period (21-30/04/2014)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.4	20.2	19.3	23.3	21.6	18.7	17.7	17.4	20.0	20.0	19.7	26.2	20.2
	Min	8.8	9.9	13.6	11.6	15.2	14.3	12.8	12.5	9.6	11.0	11.9	10.0	8.4
Relative Humidity	Max	90	91	91	92	91	92	92	92	93	92	92	83	-
	Min	62	61	60	48	62	65	67	65	45	54	59	29	-
Soil Temperature at 10 cm	06 UTC	14.8	14.8	16.5	16.2	17.2	18.1	16.2	16.2	15.2	15.8	16.1	18.3	14.2
	12 UTC	16.8	17.8	18.0	18.4	19.6	19.0	19.2	18.4	20.4	20.0	18.8	24.9	18.8
Sunshine Duration		5.2	6.9	0.9	7.2	5.1	0.0	0.7	1.3	4.9	6.7	3.9	11.4	7.6
Precipitation		0.2		0.0		13.5	5.4	4.3	12.0	0.0	8.9	44.3		11.2
Evaporation		2.5	5.8	0.8	0.6	5.4	0.6	0.7	10.2	7.3	1.3	35.2	66.3	45.8
Growing Degrees	5	8.6	10.1	11.5	12.5	13.4	11.5	10.3	10.0	9.8	10.5	108.0	130.6	93.3
	10	3.6	5.1	6.5	7.5	8.4	6.5	5.3	5.0	4.8	5.5	58.0	80.6	43.8

3rd 10-day period (21-30/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	25.8	46.8	33.7
Precipitation - Reference Evapotranspiration	18.5	-46.8	-22.5
Number of Rainy Days	6.0	0.0	3.0
Number of Dry Days	1.0	12.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

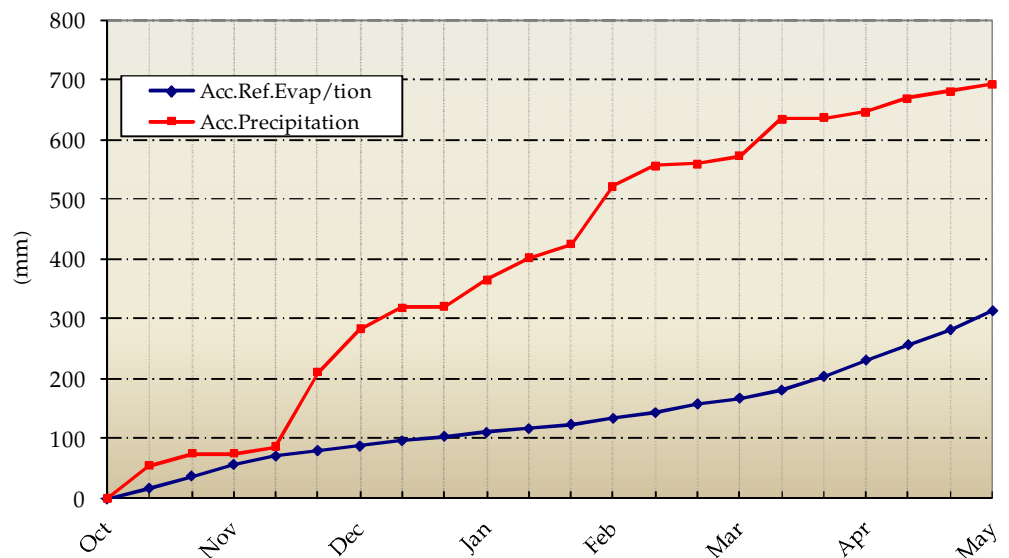


Tripoli

3rd 10-day period (21-30/04/2014)		21	22	23	24	25	26	27	28	29	30	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.1	25.4	24.4	17.6	15.6	20.1	16.3	14.9	16.2	15.3	18.5	23.9	18.7
	Min	6.9	11.2	7.5	12.1	9.5	5.2	10.3	7.2	9.9	8.0	8.8	4.1	5.4
Relative Humidity	Max	92	72	94	91	98	99	97	96	84	87	91	79	-
	Min	35	34	27	53	35	44	45	46	37	49	40	22	-
Soil Temperature at 10 cm	06 UTC	12.4	12.6	14.4	15.0	15.0	14.0	15.2	13.6	13.4	13.8	13.9	14.8	12.1
	12 UTC	-	21.0	-	19.8	-	-	-	16.4	-	-	19.1	22.5	14.3
Sunshine Duration		0.0	11.3	4.8	6.2	8.7	9.9	4.5	6.3	11.0	7.2	7.0	11.4	8.0
Precipitation		0.3		0.0	0.0		0.9	2.4	8.2	0.1	0.0	11.9		14.5
Evaporation		1.5	4.9	3.6	4.3	3.4	3.0	1.6	3.2	5.0	2.8	33.3	53.0	35.0
Growing Degrees	5	8.0	13.3	11.0	9.9	7.6	7.7	8.3	6.1	8.1	6.7	86.4	89.9	70.7
	10	3.0	8.3	6.0	4.9	2.6	2.7	3.3	1.1	3.1	1.7	36.4	39.9	24.2

3rd 10-day period (21-30/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	31.6	39.7	32.9
Precipitation - Reference Evapotranspiration	-19.7	-39.7	-18.4
Number of Rainy Days	5.0	0.0	2.7
Number of Dry Days	0.0	15.0	-

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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ΕΘΝΙΚΗ  
ΜΕΤΕΩΡΟΛΟΓΙΚΗ  
ΥΠΗΡΕΣΙΑ

HELLENIC NATIONAL METEOROLOGICAL SERVICE

Division of Climatology-Applications

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