



AGROMETEOROLOGICAL BULLETIN

*February 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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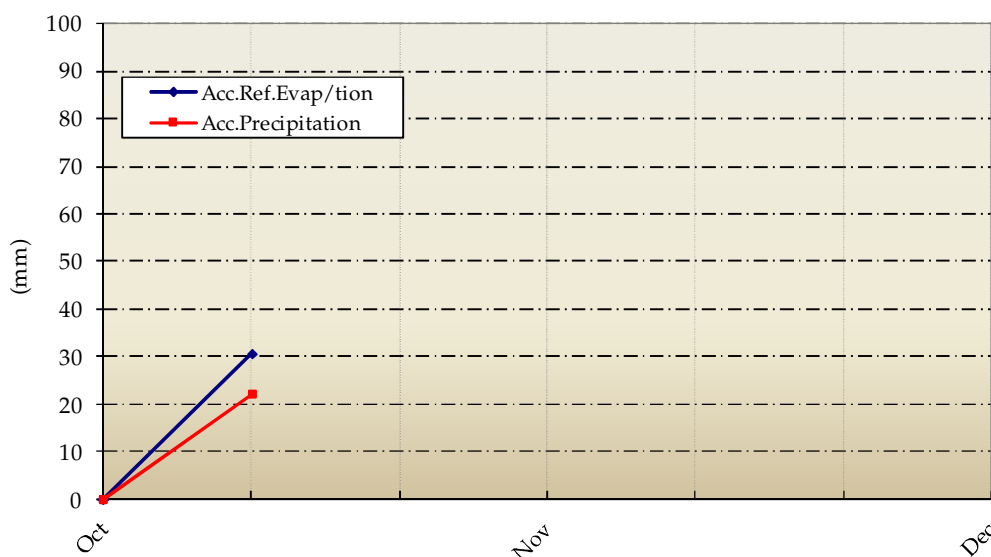
Agrinio

3rd 10-day period (21-28/02/2014)		21	22	23	24	25	26	27	28	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.2	-	-	-	15.4	15.4	13.0	14.0	14.8		14.5
	Min	8.0	-	-	-	6.6	4.8	3.6	5.2	5.6	6.7	3.6
Relative Humidity	Max	84	-	-	91	90	91	91	-	89	90	-
	Min	75	-	-	75	68	75	65	-	72	60	-
Soil Temperature at 10 cm	06 UTC	14.8	-	-	-	7.4	9.6	7.0	8.4	9.4	10.1	7.6
	12 UTC	13.0	-	-	-	12.8	13.0	13.8	13.6	13.2	11.1	10.5
Sunshine Duration		1.2	-	-	0.0	7.8	7.1	5.7	-	4.4	4.2	5.1
Precipitation											-	30.5
Evaporation		-	-	-	1.3	1.4	2.8	1.4	-	-	-	16.9
Growing Degrees	5	7.1	-	-	-	6.0	5.1	3.3	4.6	-	-	34.1
	10	2.1	-	-	-	1.0	0.1	0.0	0.0	-	-	6.4

3rd 10-day period (21-28/02/2014)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	12.9
Precipitation - Reference Evapotranspiration	-	17.6
Number of Rainy Days	0.0	3.0
Number of Dry Days	15.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

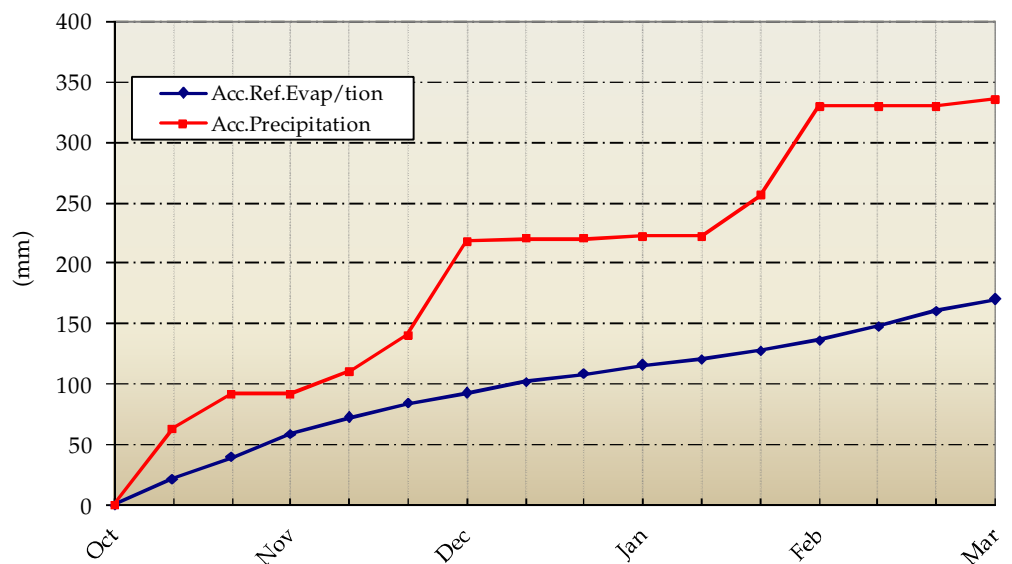
This station is not fully operated



3rd 10-day period (21-28/02/2014)		21	22	23	24	25	26	27	28	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.8	14.0	12.2	8.4	9.4	10.8	12.4	11.4	11.8	12.3	9.7
	Min	10.0	6.2	8.0	6.0	4.4	1.2	2.6	3.0	5.2	5.0	1.6
Relative Humidity	Max	95	94	94	94	74	93	93	97	92	92	-
	Min	75	71	67	65	48	52	68	75	65	65	-
Soil Temperature at 10 cm	06 UTC	12.0	11.0	11.4	9.8	7.4	7.4	8.2	8.2	9.4	7.3	5.7
	12 UTC	14.6	13.0	12.4	9.0	9.2	10.2	10.8	10.4	11.2	8.8	7.3
Sunshine Duration		1.7	3.8	0.0	0.0	1.8	6.6	6.6	0.0	2.6	3.5	4.8
Precipitation				4.4	0.1				1.5	6.0	24.8	14.4
Evaporation		2.7	2.0	4.4	2.5	1.6	0.3	4.0	1.5	19.0	10.8	9.4
Growing Degrees	5	7.9	5.1	5.1	2.2	1.9	1.0	2.5	2.2	27.9	29.8	17.0
	10	2.9	0.1	0.1	0.0	0.0	0.0	0.0	0.0	3.1	4.0	2.5

3rd 10-day period (21-28/02/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	9.3	10.2	12.0
Precipitation - Reference Evapotranspiration	-3.3	14.6	2.4
Number of Rainy Days	3.0	2.0	1.9
Number of Dry Days	21.0	1.0	-

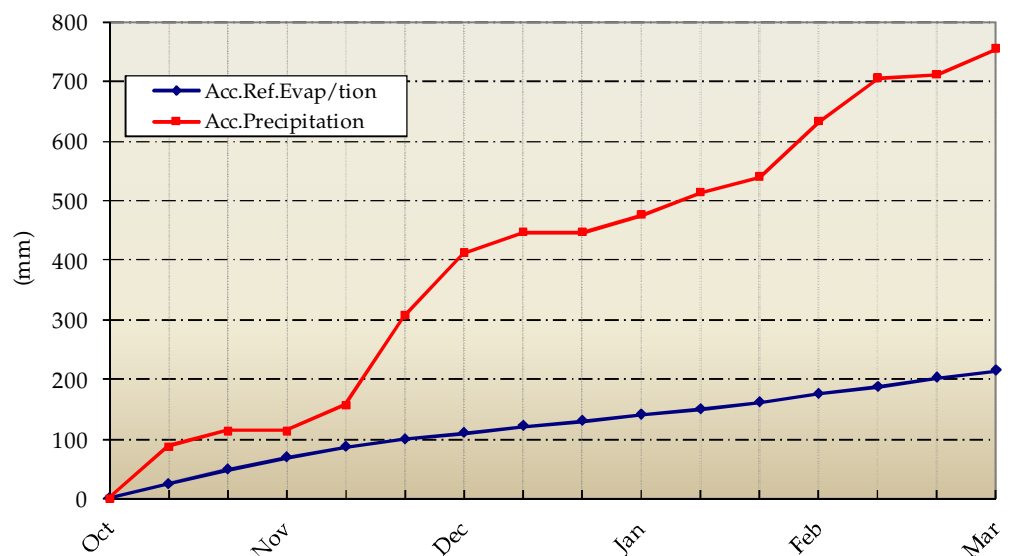
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-28/02/2014)		21	22	23	24	25	26	27	28	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.2	17.8	17.2	12.2	15.4	16.4	16.5	11.6	15.7	16.3	14.1
	Min	9.0	9.2	8.8	9.2	7.8	5.2	6.7	8.2	8.0	8.4	5.3
Relative Humidity	Max	91	93	93	92	92	91	88	91	91	88	-
	Min	58	64	58	73	52	52	53	79	61	55	-
Soil Temperature at 10 cm	06 UTC	13.0	13.0	14.4	13.2	14.6	12.0	12.0	12.4	13.1	11.6	9.0
	12 UTC	15.0	15.4	15.8	13.2	14.4	14.8	14.6	12.2	14.4	13.3	11.2
Sunshine Duration		2.5	4.7	6.3	0.0	9.2	7.6	7.2	0.0	4.7	4.8	5.7
Precipitation			8.4		23.0	0.6			11.7	43.7	9.1	22.1
Evaporation		1.0	0.8	1.6	3.7	0.1	1.4	0.4	0.5	9.5	-	19.2
Growing Degrees	5	8.6	8.5	8.0	5.7	6.6	5.8	6.6	4.9	54.7	58.9	39.2
	10	3.6	3.5	3.0	0.7	1.6	0.8	1.6	0.0	14.8	19.4	8.3

3rd 10-day period (21-28/02/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	12.0	14.4	12.9
Precipitation - Reference Evapotranspiration	31.7	-5.3	9.2
Number of Rainy Days	4.0	4.0	3.2
Number of Dry Days	7.0	0.0	-

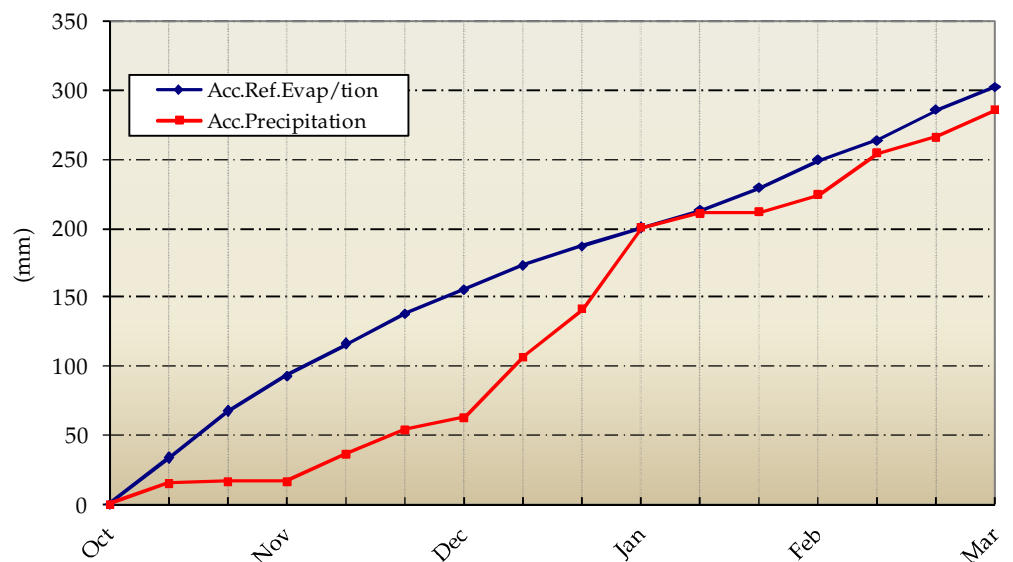
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-28/02/2014)		21	22	23	24	25	26	27	28	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.0	18.2	18.0	16.8	14.5	15.5	16.4	18.0	17.3	18.9	14.9
	Min	14.0	11.5	10.0	10.5	10.0	9.6	7.0	7.5	10.0	11.8	8.9
Relative Humidity	Max	95	93	92	90	88	94	94	86	92	87	-
	Min	52	77	58	63	59	60	69	59	62	53	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		6.2	7.1	7.9	2.0	5.1	4.8	9.3	2.8	5.6	5.9	4.7
Precipitation					13.1	6.3				19.4	0.7	19.7
Evaporation		1.1	1.7	1.9	3.2	0.4	1.7	1.5	0.9	12.4	-	26.4
Growing Degrees	5	12.5	9.9	9.0	8.7	7.3	7.6	6.7	7.8	69.3	82.9	57.1
	10	7.5	4.9	4.0	3.7	2.3	2.6	1.7	2.8	29.3	42.9	18.9

3rd 10-day period (21-28/02/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	16.4	19.9	-
Precipitation - Reference Evapotranspiration	3.0	-19.2	19.7
Number of Rainy Days	2.0	1.0	3.4
Number of Dry Days	8.0	3.0	-

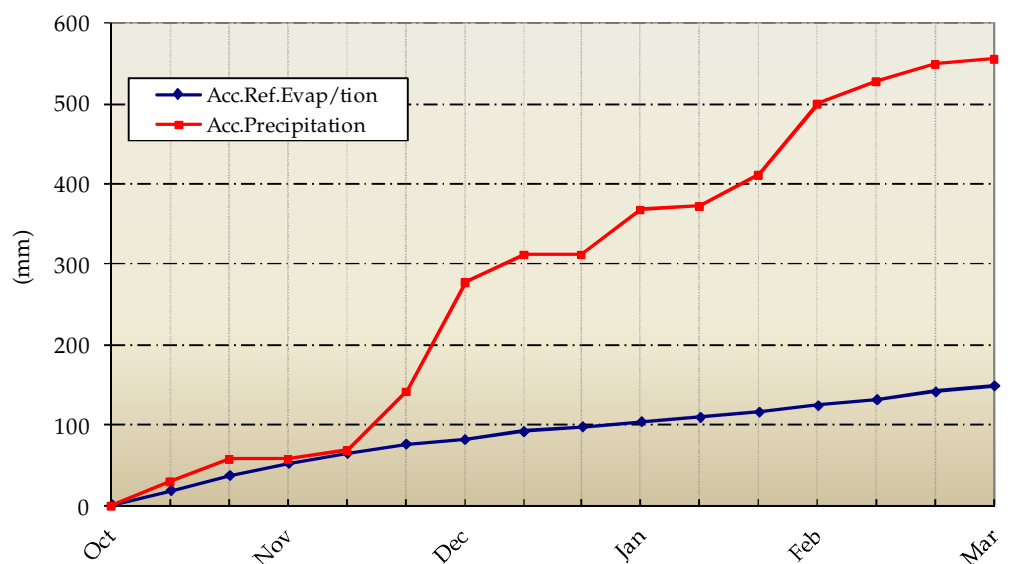
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-28/02/2014)		21	22	23	24	25	26	27	28	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.1	11.7	11.8	11.2	14.1	14.7	12.6	7.9	12.1	10.8	10.4
	Min	4.8	5.4	6.3	4.6	3.6	2.2	-1.9	2.7	3.5	4.0	1.4
Relative Humidity	Max	95	98	98	93	98	97	99	96	97	97	-
	Min	59	71	50	58	37	37	37	75	53	63	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	4.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	5.7
Sunshine Duration		0.0	0.0	4.5	0.0	3.4	4.4	4.7	0.0	2.1	0.7	4.3
Precipitation			0.0		0.5	0.2		0.0	6.6	7.3	66.7	21.1
Evaporation		-	-	-	-	-	-	-	-	-	-	6.7
Growing Degrees	5	4.0	3.6	4.1	2.9	3.9	3.5	0.4	0.3	22.4	20.5	14.5
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	1.1

3rd 10-day period (21-28/02/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	7.5	8.8	10.3
Precipitation - Reference Evapotranspiration	-0.2	57.9	10.8
Number of Rainy Days	3.0	7.0	2.9
Number of Dry Days	8.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

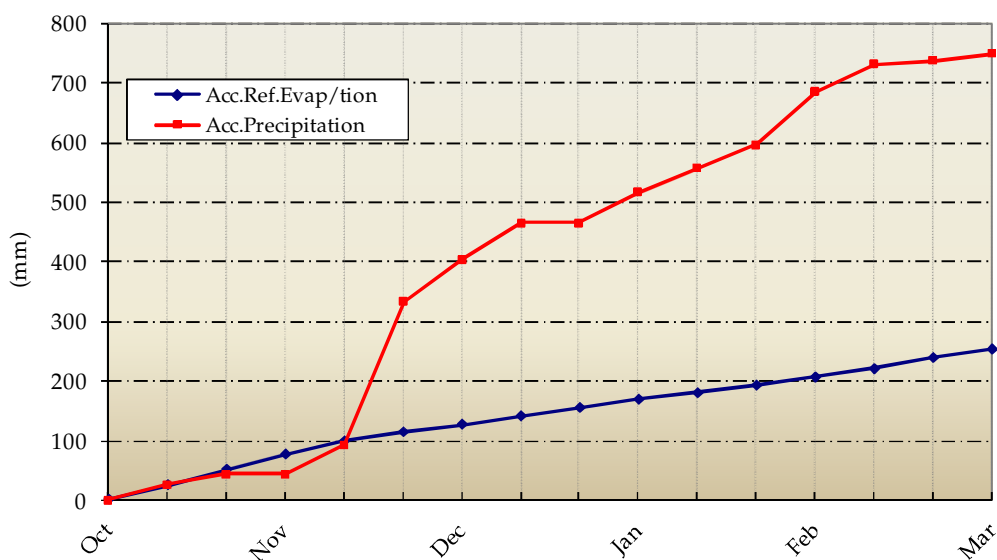


Kalamata

3rd 10-day period (21-28/02/2014)		21	22	23	24	25	26	27	28	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.1	19.9	19.4	15.3	16.6	16.5	18.1	12.8	17.2	17.5	14.8
	Min	8.6	9.8	7.5	9.1	4.6	5.5	4.2	6.7	7.0	7.8	5.1
Relative Humidity	Max	91	93	93	93	93	93	94	94	93	93	-
	Min	54	51	49	53	51	58	47	77	55	50	-
Soil Temperature at 10 cm	06 UTC	11.8	12.8	12.6	13.0	11.4	11.0	11.2	12.0	12.0	11.9	9.6
	12 UTC	13.4	13.4	13.0	13.0	12.0	12.8	12.4	12.4	12.8	13.0	11.1
Sunshine Duration		2.5	3.7	6.8	2.1	9.1	6.5	9.6	0.0	5.0	1.7	5.3
Precipitation			0.2	0.1	2.2				9.6	12.1	4.9	28.6
Evaporation		-	-	-	-	-	-	-	-	-	22.2	20.1
Growing Degrees	5	8.9	9.9	8.5	7.2	5.6	6.0	6.2	4.8	56.9	61.1	40.8
	10	3.9	4.9	3.5	2.2	0.6	1.0	1.2	0.0	17.1	21.2	8.0

3rd 10-day period (21-28/02/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	14.1	14.8	13.5
Precipitation - Reference Evapotranspiration	-2.0	-9.9	15.1
Number of Rainy Days	4.0	2.0	3.3
Number of Dry Days	6.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

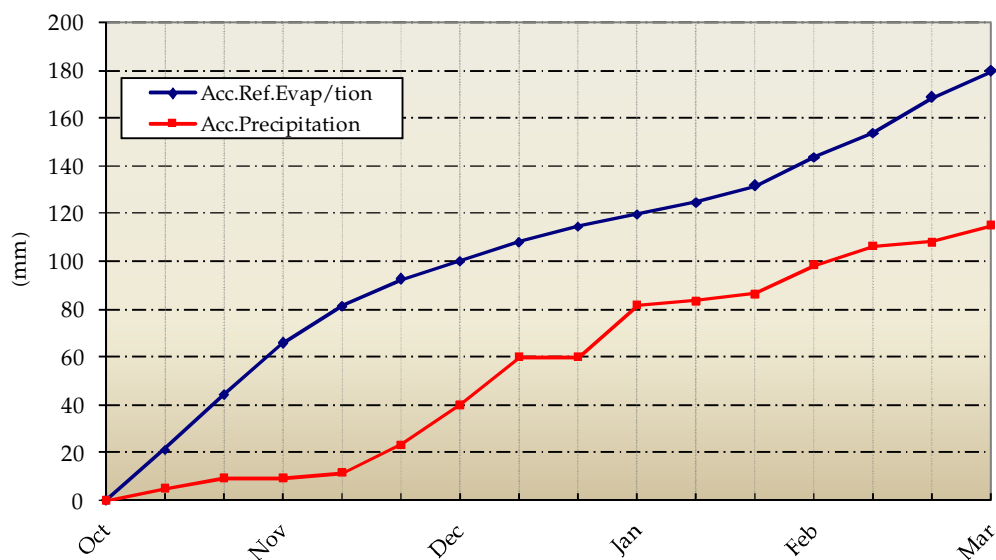


Larisa

3rd 10-day period (21-28/02/2014)		21	22	23	24	25	26	27	28	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.5	18.2	16.7	12.0	11.6	14.8	16.6	13.3	14.8	14.0	11.9
	Min	8.0	7.0	7.4	8.4	7.2	7.0	0.0	3.9	6.1	5.0	1.7
Relative Humidity	Max	98	100	100	100	100	100	100	100	100	99	-
	Min	63	53	61	83	68	53	42	58	60	63	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	9.1	7.0
	12 UTC	-	-	-	-	-	-	-	-	-	10.4	7.7
Sunshine Duration		0.0	6.1	3.4	0.0	1.4	6.1	7.5	0.0	3.1	3.5	4.6
Precipitation				1.1	3.4	1.1			1.1	6.7	26.2	13.4
Evaporation		0.8	1.3	2.0	0.6	1.7	1.5	0.7	0.2	8.8	15.8	9.6
Growing Degrees	5	6.8	7.6	7.1	5.2	4.4	5.9	3.3	3.6	43.8	36.2	20.2
	10	1.8	2.6	2.1	0.2	0.0	0.9	0.0	0.0	7.5	6.8	2.5

3rd 10-day period (21-28/02/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	10.7	10.5	11.5
Precipitation - Reference Evapotranspiration	-4.0	15.7	1.9
Number of Rainy Days	4.0	4.0	2.6
Number of Dry Days	10.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

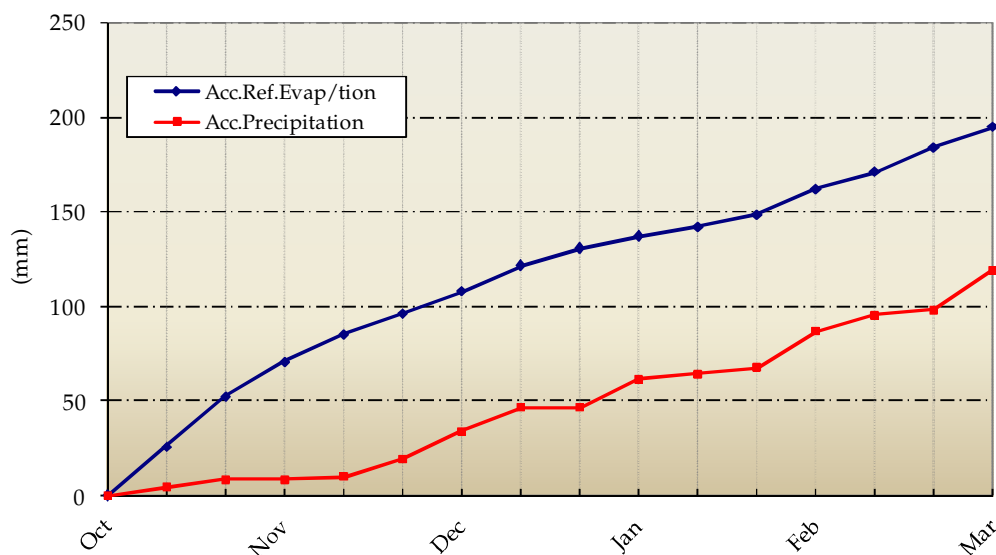


Mikra

3rd 10-day period (21-28/02/2014)		21	22	23	24	25	26	27	28	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.2	16.0	14.4	12.2	12.6	14.0	14.0	14.5	14.0	13.3	11.1
	Min	8.0	7.0	10.6	9.4	7.5	6.0	5.4	6.8	7.6	7.6	2.8
Relative Humidity	Max	91	94	94	92	92	90	89	91	92	92	-
	Min	70	61	74	79	36	56	62	54	62	63	-
Soil Temperature at 10 cm	06 UTC	11.2	11.4	12.8	11.6	10.8	10.5	10.2	11.0	11.2	10.0	6.7
	12 UTC	12.4	13.0	13.4	12.2	11.2	11.8	12.2	11.8	12.2	10.6	9.0
Sunshine Duration		1.6	6.8	1.5	0.1	6.6	2.9	6.3	0.0	3.2	2.1	4.4
Precipitation			0.3	12.0	3.5	5.3			0.0	21.1	36.6	13.2
Evaporation		0.8	0.5	2.7	0.3	0.1	1.4	3.9	0.4	10.1	12.8	13.2
Growing Degrees	5	6.1	6.5	7.5	5.8	5.1	5.0	4.7	5.7	46.3	43.6	21.0
	10	1.1	1.5	2.5	0.8	0.1	0.0	0.0	0.7	6.6	12.0	2.4

3rd 10-day period (21-28/02/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	10.7	10.7	11.8
Precipitation - Reference Evapotranspiration	10.4	25.9	1.4
Number of Rainy Days	4.0	5.0	2.4
Number of Dry Days	8.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

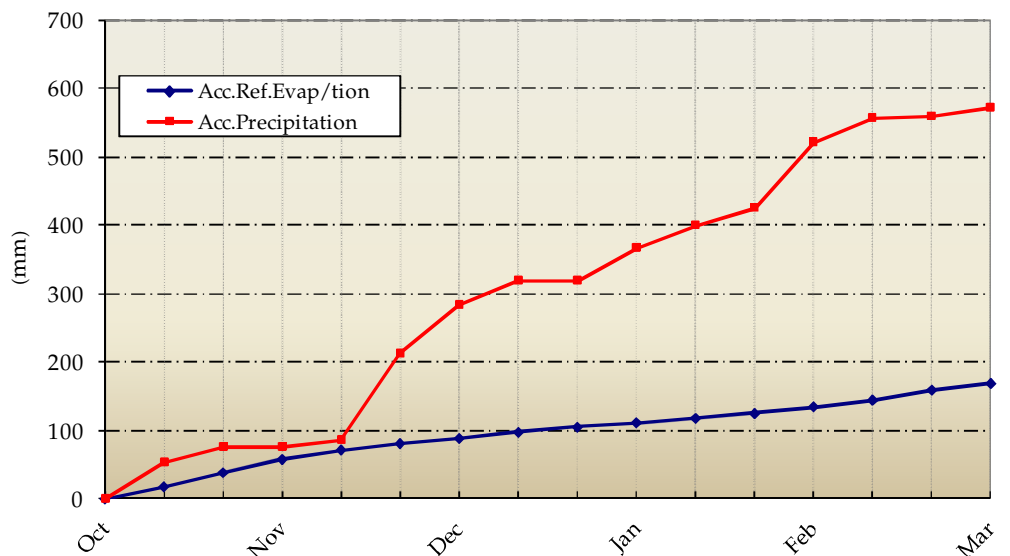


Tripoli

3rd 10-day period (21-28/02/2014)		21	22	23	24	25	26	27	28	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	12.8	15.9	15.0	8.6	11.8	12.7	15.4	10.6	12.8	13.0	10.1
	Min	2.8	3.5	1.4	4.3	3.6	0.8	-1.8	2.1	2.1	3.7	1.0
Relative Humidity	Max	100	100	100	99	100	97	100	100	100	88	-
	Min	69	79	71	91	51	50	38	64	64	57	-
Soil Temperature at 10 cm	06 UTC	8.0	8.4	7.6	8.4	8.0	7.4	6.6	7.6	7.8	6.8	5.0
	12 UTC	10.2	-	-	9.2	10.4	10.4	10.4	9.0	9.9	9.5	6.2
Sunshine Duration		1.0	3.3	6.8	0.0	3.1	5.5	8.0	0.0	3.5	5.5	5.1
Precipitation			0.2		6.8	1.1			4.3	12.4	9.1	27.0
Evaporation		0.8	1.2	1.6	0.1	3.8	1.1	1.9	0.1	10.6	9.4	9.7
Growing Degrees	5	2.8	4.7	3.2	1.5	2.7	1.8	1.8	1.4	19.8	27.6	14.5
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.4

3rd 10-day period (21-28/02/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	9.7	11.7	12.6
Precipitation - Reference Evapotranspiration	2.7	-2.6	14.4
Number of Rainy Days	4.0	4.0	3.2
Number of Dry Days	6.0	1.0	-

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_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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ΕΘΝΙΚΗ
ΜΕΤΕΩΡΟΛΟΓΙΚΗ
ΥΠΗΡΕΣΙΑ

HELLENIC NATIONAL METEOROLOGICAL SERVICE

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