



AGROMETEOROLOGICAL BULLETIN

*April 2014
2nd 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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www.emy.gr
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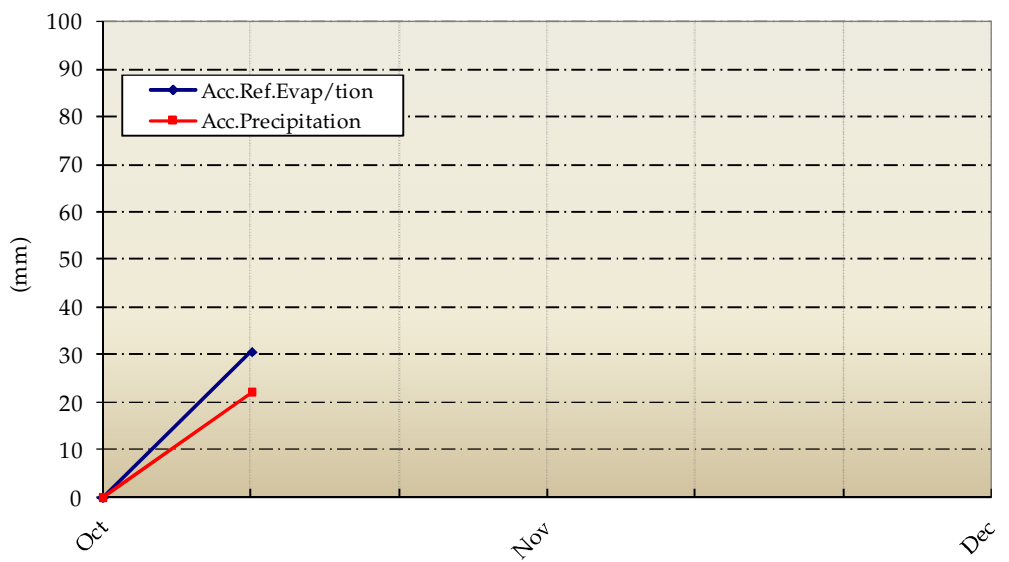
Agrinio

2nd 10-day period (11-20/04/2014)		11	12	13	14	15	16	17	18	19	20	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													

2nd 10-day period (11-20/04/2014)	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

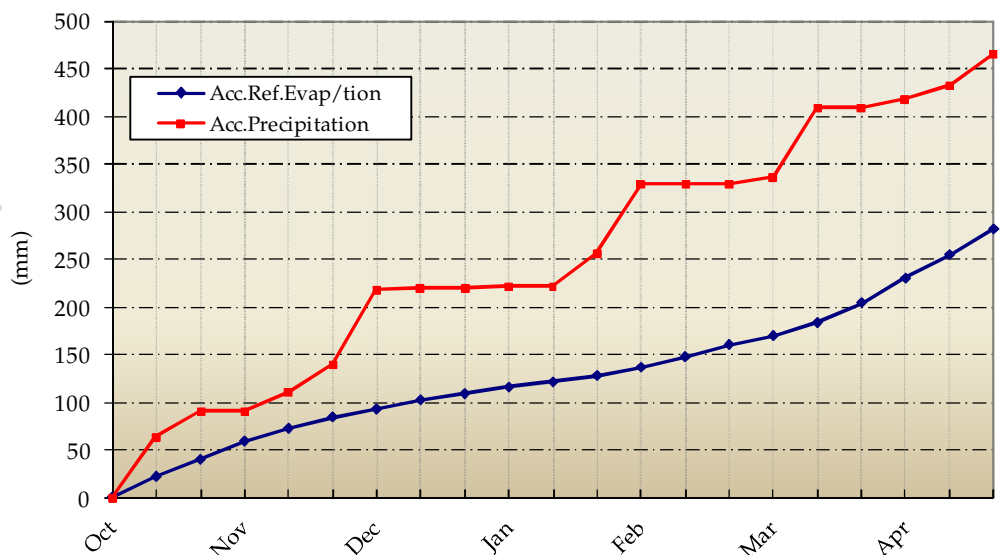
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.2	15.6	16.8	17.0	18.6	17.8	16.6	14.8	16.4	18.0	16.6	18.5	16.6
	Min	7.4	8.0	6.4	5.0	5.4	11.4	12.4	11.0	12.0	14.2	9.3	8.8	7.0
Relative Humidity	Max	92	92	91	94	94	91	95	95	85	92	92	82	-
	Min	55	60	53	56	49	64	61	58	50	65	57	43	-
Soil Temperature at 10 cm	06 UTC	11.8	12.4	12.2	12.0	13.2	15.4	15.6	13.8	13.0	14.6	13.4	13.3	11.5
	12 UTC	14.6	16.2	17.4	17.6	17.4	17.0	17.0	14.4	15.5	15.6	16.3	16.6	14.7
Sunshine Duration		6.8	10.1	9.3	12.2	10.7	0.5	0.6	2.7	7.2	4.2	6.4	5.6	5.9
Precipitation		2.3	3.0	0.7				2.4	24.3	0.3	0.1	33.1	0.5	15.2
Evaporation		2.5	2.9	3.2	4.2	4.3	0.7	2.8	4.2	4.7	3.0	32.5	39.4	38.8
Growing Degrees	5	5.8	6.8	6.6	6.0	7.0	9.6	9.5	7.9	9.2	11.1	79.5	86.7	67.9
	10	0.8	1.8	1.6	1.0	2.0	4.6	4.5	2.9	4.2	6.1	29.5	36.7	22.8

2nd 10-day period (11-20/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	26.8	30.0	26.7
Precipitation - Reference Evapotranspiration	6.3	-29.5	-11.5
Number of Rainy Days	7.0	2.0	2.8
Number of Dry Days	0.0	5.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

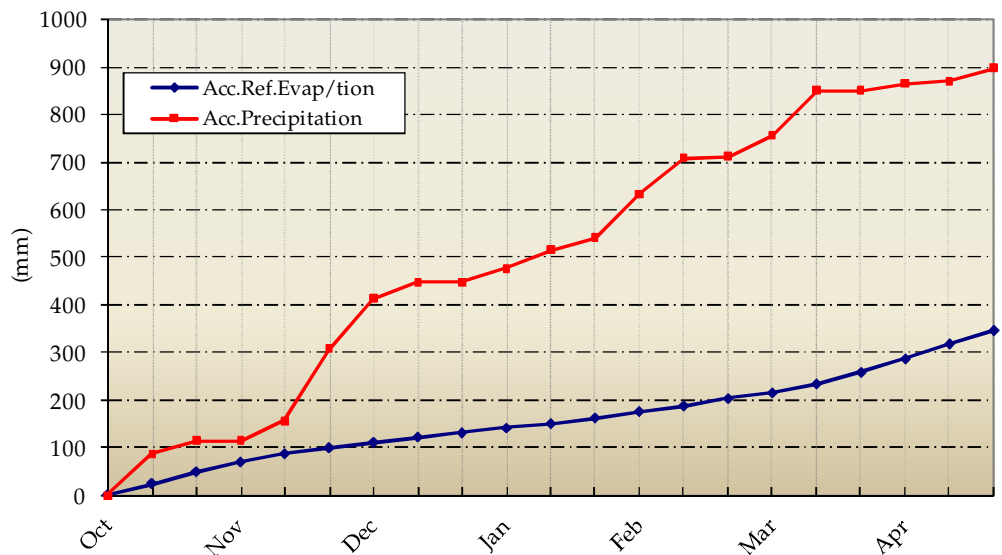


Andravida

2nd 10-day period (11-20/04/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.3	18.0	18.5	20.5	19.6	16.3	15.2	14.9	17.8	19.8	17.9	20.4	18.4
	Min	6.7	8.2	11.4	6.9	9.5	11.6	6.1	7.8	7.9	11.4	8.8	8.9	9.1
Relative Humidity	Max	87	87	91	92	89	92	90	88	89	86	89	89	-
	Min	30	53	52	38	53	68	43	52	50	50	49	44	-
Soil Temperature at 10 cm	06 UTC	14.4	14.6	15.8	14.0	15.4	16.6	13.6	14.4	14.2	14.8	14.8	15.5	13.7
	12 UTC	19.6	19.8	16.8	18.2	19.0	16.8	17.2	16.4	17.0	16.4	17.7	19.8	16.7
Sunshine Duration		6.5	9.9	1.5	11.0	10.5	0.7	11.0	6.8	4.7	7.4	7.0	11.2	7.2
Precipitation		1.3		6.6			14.8		1.0	3.6		27.3		25.7
Evaporation		4.8	2.0	1.8	3.8	4.0	-	2.9	0.0	0.4	1.0	-	-	37.7
Growing Degrees	5	7.5	8.1	10.0	8.7	9.6	9.0	5.7	6.4	7.9	10.6	83.2	96.6	87.1
	10	2.5	3.1	5.0	3.7	4.6	4.0	0.7	1.4	2.9	5.6	33.2	46.6	37.4

2nd 10-day period (11-20/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	28.3	35.3	28.0
Precipitation - Reference Evapotranspiration	-1.0	-35.3	-2.3
Number of Rainy Days	5.0	0.0	3.3
Number of Dry Days	4.0	12.0	-

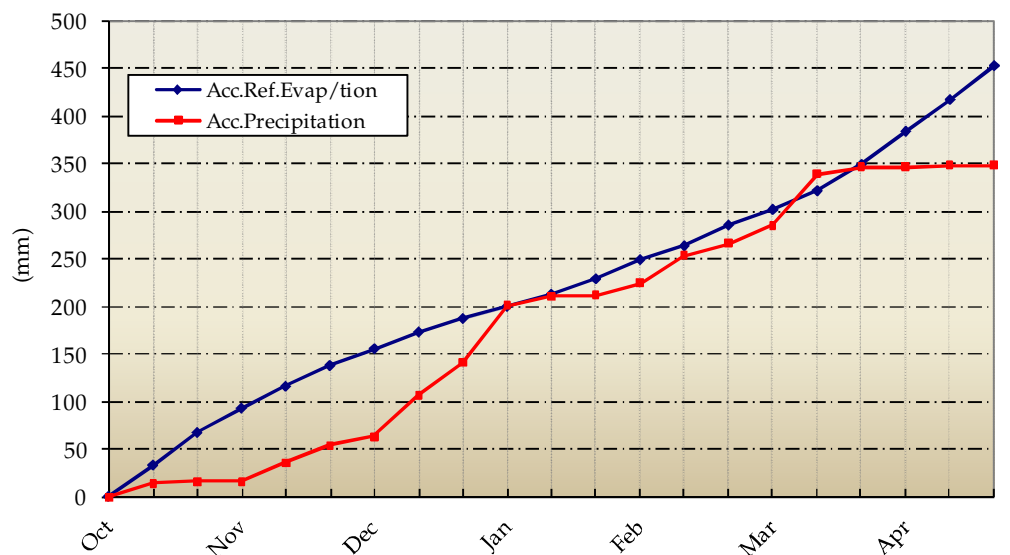
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.5	19.0	19.6	17.0	19.6	23.0	22.5	18.0	21.0	20.8	19.9	18.5	19.9
	Min	13.0	10.4	11.2	14.0	14.6	11.6	14.5	10.0	12.4	10.8	12.2	12.6	12.0
Relative Humidity	Max	89	85	88	87	85	85	82	76	80	83	84	83	-
	Min	57	55	59	65	66	37	52	48	49	48	54	56	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.2	10.4	10.2	0.0	10.8	8.3	5.2	9.3	11.2	11.1	8.8	7.7	7.4
Precipitation					0.3							0.3	6.9	11.4
Evaporation		4.1	2.8	1.7	2.0	2.4	3.3	3.2	2.7	4.5	4.1	30.8	-	52.7
Growing Degrees	5	10.8	9.7	10.4	10.5	12.1	12.3	13.5	9.0	11.7	10.8	110.8	105.9	109.6
	10	5.8	4.7	5.4	5.5	7.1	7.3	8.5	4.0	6.7	5.8	60.8	55.9	59.7

2nd 10-day period (11-20/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	35.6	35.5	-
Precipitation - Reference Evapotranspiration	-35.3	-28.6	11.4
Number of Rainy Days	1.0	4.0	2.0
Number of Dry Days	5.0	7.0	-

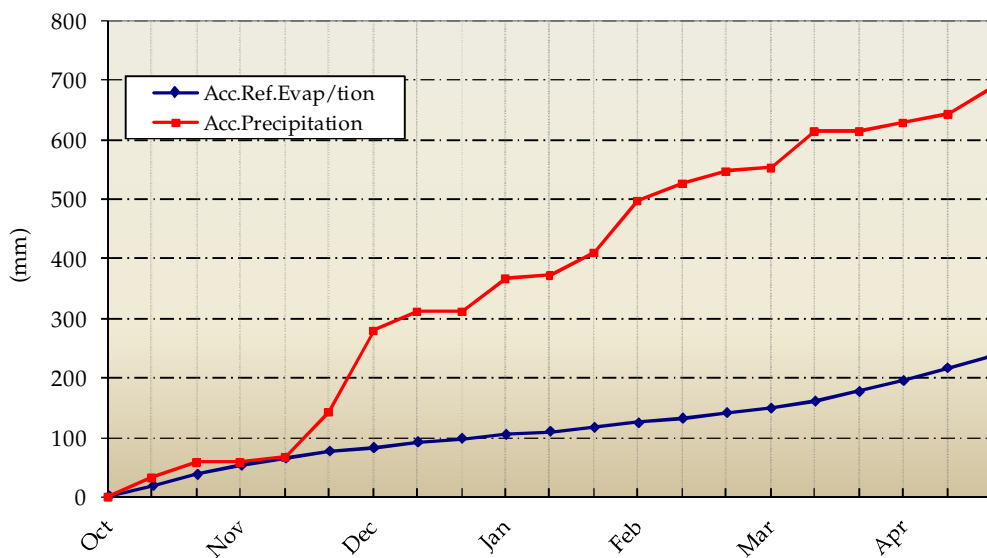
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	11.8	16.5	18.1	19.9	15.7	15.8	10.6	11.5	9.4	16.6	14.6	20.6	16.1
	Min	-0.1	3.3	1.0	5.6	2.2	6.3	2.3	-0.6	6.0	8.4	3.4	6.6	5.7
Relative Humidity	Max	99	99	99	97	98	96	88	96	98	97	97	77	-
	Min	58	39	16	16	59	60	56	54	62	50	47	29	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	10.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	12.9
Sunshine Duration		2.5	8.1	7.4	7.4	1.9	3.4	3.8	3.3	3.4	3.8	4.5	8.6	4.9
Precipitation		6.4	0.0			0.0	22.6	0.2	1.9	12.3	0.2	43.6		35.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	28.5
Growing Degrees	5	0.9	4.9	4.6	7.8	4.0	6.1	1.5	0.5	2.7	7.5	40.2	-	58.8
	10	0.0	0.0	0.0	2.8	0.0	1.1	0.0	0.0	0.0	2.5	6.3	-	15.8

2nd 10-day period (11-20/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	19.6	34.9	24.2
Precipitation - Reference Evapotranspiration	24.0	-34.9	10.9
Number of Rainy Days	6.0	0.0	4.7
Number of Dry Days	0.0	12.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

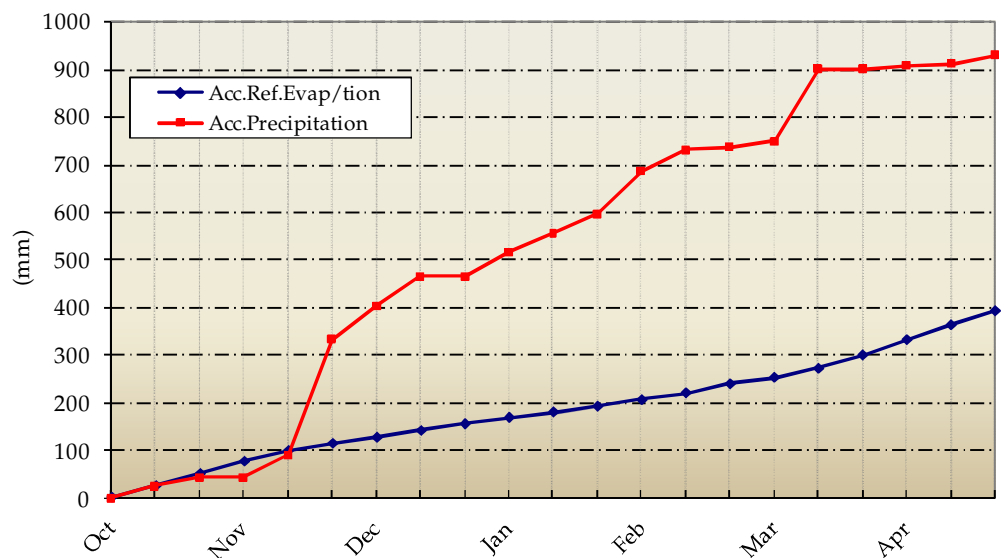


Kalamata

2nd 10-day period (11-20/04/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.2	20.8	19.3	21.4	22.6	18.2	18.5	14.3	16.9	19.7	19.3	21.5	19.2
	Min	5.1	7.8	6.7	7.2	6.4	8.5	6.0	5.8	5.7	7.5	6.7	7.8	8.4
Relative Humidity	Max	92	91	92	93	93	93	92	93	95	95	93	91	-
	Min	26	37	47	47	33	58	25	63	53	48	44	36	-
Soil Temperature at 10 cm	06 UTC	15.0	15.4	15.4	14.6	15.0	16.0	15.8	15.4	14.0	14.0	15.1	15.1	13.9
	12 UTC	16.0	16.4	16.2	16.2	17.2	16.6	16.4	14.8	14.8	16.0	16.1	18.8	16.9
Sunshine Duration		12.2	6.7	2.1	4.7	11.3	1.5	10.2	3.6	2.2	9.5	6.4	10.0	7.1
Precipitation				0.9			7.7		7.7	1.3		17.6	10.5	25.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	55.8	41.0
Growing Degrees	5	8.2	9.3	8.0	9.3	9.5	8.4	7.3	5.1	6.3	8.6	79.8	96.4	88.0
	10	3.2	4.3	3.0	4.3	4.5	3.4	2.3	0.1	1.3	3.6	29.8	46.4	38.2

2nd 10-day period (11-20/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	29.5	38.8	28.5
Precipitation - Reference Evapotranspiration	-11.9	-28.3	-3.0
Number of Rainy Days	4.0	3.0	4.1
Number of Dry Days	5.0	6.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

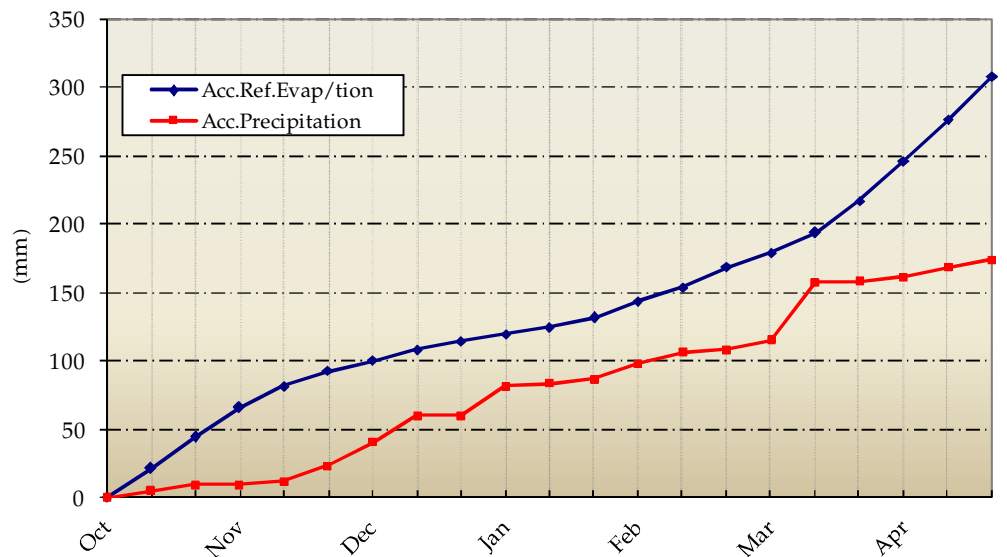


Larisa

2nd 10-day period (11-20/04/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.6	19.2	19.8	21.8	23.4	17.8	18.0	19.2	21.4	22.2	19.9	21.7	19.0
	Min	1.0	0.6	3.3	6.2	4.3	8.0	1.0	5.8	7.0	5.7	4.3	6.4	6.4
Relative Humidity	Max	100	100	100	99	96	100	100	97	94	96	98	89	-
	Min	35	27	32	26	24	64	29	25	32	29	32	29	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	13.7	12.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	16.0	14.4
Sunshine Duration		4.6	11.4	8.2	11.1	11.3	1.6	11.0	10.4	4.9	6.3	8.1	8.6	6.4
Precipitation		2.3					3.3	0.1				5.7		13.6
Evaporation		-	5.3	5.4	6.2	7.3	0.1	7.3	5.1	4.6	4.6	-	-	36.9
Growing Degrees	5	3.8	4.9	6.6	9.0	8.9	7.9	4.5	7.5	9.2	9.0	71.2	90.3	77.0
	10	0.0	0.0	1.6	4.0	3.9	2.9	0.0	2.5	4.2	4.0	23.0	40.3	28.8

2nd 10-day period (11-20/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	32.0	35.5	28.6
Precipitation - Reference Evapotranspiration	-26.3	-35.5	-15.0
Number of Rainy Days	3.0	0.0	3.4
Number of Dry Days	0.0	11.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

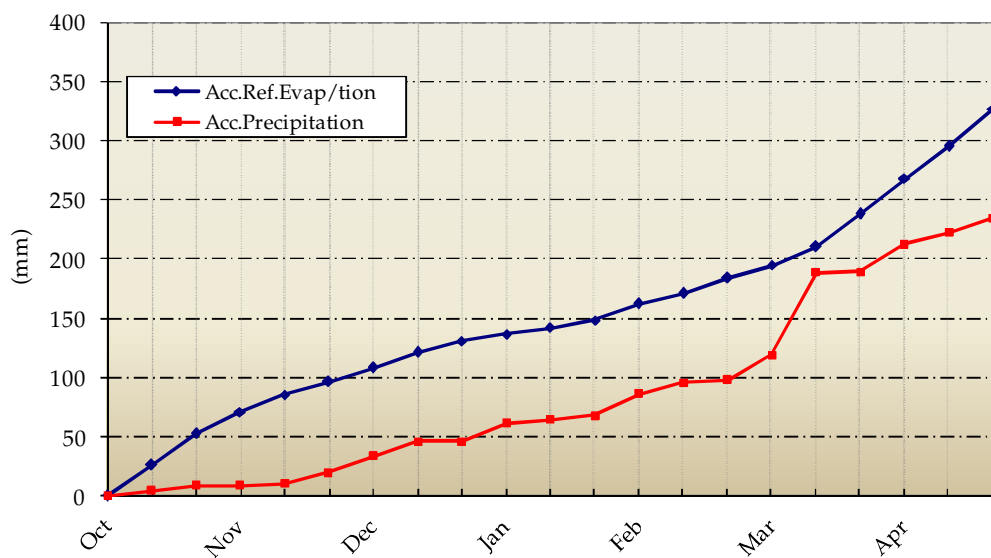


Mikra

2nd 10-day period (11-20/04/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.6	19.0	19.5	20.1	23.0	17.6	16.4	14.3	15.8	20.4	18.2	19.8	18.2
	Min	10.2	8.2	8.2	6.6	7.9	7.9	5.5	9.5	8.4	8.0	8.0	7.3	7.7
Relative Humidity	Max	76	76	81	83	79	88	83	88	90	90	83	88	-
	Min	33	29	38	30	22	65	37	51	56	38	40	38	-
Soil Temperature at 10 cm	06 UTC	13.0	12.4	14.0	14.4	15.2	15.6	13.0	13.8	14.0	13.8	13.9	13.9	12.6
	12 UTC	14.8	15.0	16.0	17.8	17.2	15.0	15.6	17.0	15.4	15.6	15.9	17.6	16.4
Sunshine Duration		5.8	10.7	9.5	11.4	11.1	3.3	8.8	1.5	0.2	8.3	7.1	7.9	6.1
Precipitation		0.0					2.3	0.0	7.2	2.7		12.2	1.5	14.5
Evaporation		2.8	3.8	6.6	5.3	-	12.5	4.1	1.5	1.2	5.9	-	39.5	39.8
Growing Degrees	5	7.9	8.6	8.9	8.4	10.5	7.8	6.0	6.9	7.1	9.2	81.1	85.7	79.5
	10	2.9	3.6	3.9	3.4	5.5	2.8	1.0	1.9	2.1	4.2	31.1	35.7	31.0

2nd 10-day period (11-20/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	31.7	34.1	29.0
Precipitation - Reference Evapotranspiration	-19.5	-32.6	-14.5
Number of Rainy Days	3.0	3.0	3.4
Number of Dry Days	5.0	4.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

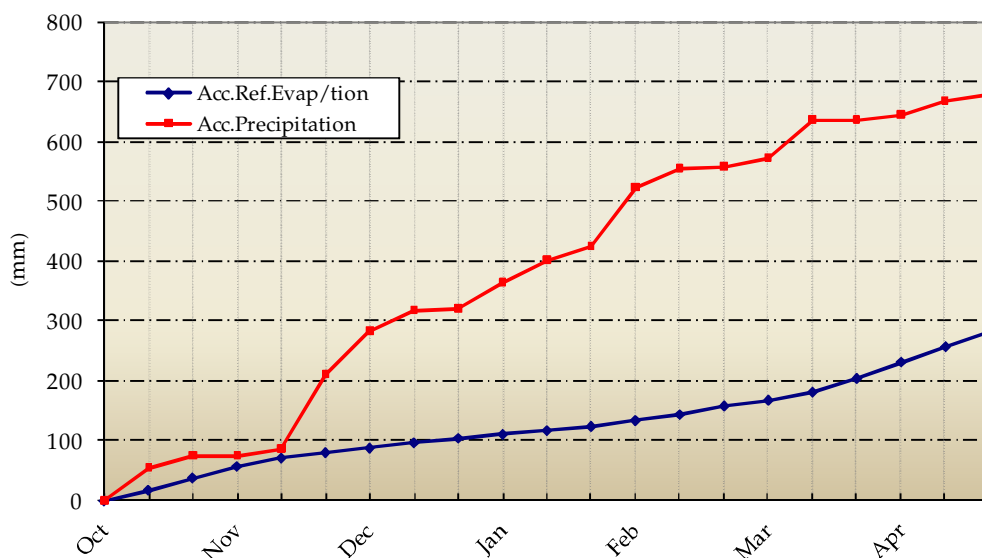


Tripoli

2nd 10-day period (11-20/04/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.3	15.9	14.5	16.0	18.0	13.6	13.6	10.4	12.8	17.8	14.9	19.0	16.3
	Min	0.0	0.8	2.9	3.4	1.6	8.2	1.5	1.3	3.1	8.4	3.1	3.4	4.8
Relative Humidity	Max	94	78	86	100	100	84	100	82	94	73	89	82	-
	Min	34	62	81	52	38	66	45	72	52	56	56	30	-
Soil Temperature at 10 cm	06 UTC	9.4	9.6	10.2	10.2	10.2	12.8	9.4	9.8	9.2	11.2	10.2	12.0	10.9
	12 UTC	16.4	-	-	14.4	17.2	14.4	15.4	-	-	-	15.6	18.1	12.7
Sunshine Duration		10.5	8.6	0.6	7.3	10.8	1.3	7.8	5.6	6.7	8.1	6.7	9.1	6.7
Precipitation		3.3	0.0	0.4			4.9		3.2	0.3	0.1	12.2	4.4	30.8
Evaporation		3.3	2.9	1.3	2.5	4.3	0.0	3.1	1.2	1.7	3.6	23.9	37.8	29.8
Growing Degrees	5	3.2	3.4	3.7	4.7	4.8	5.9	2.6	0.9	3.0	8.1	40.1	62.3	55.6
	10	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	3.1	4.0	16.2	14.5

2nd 10-day period (11-20/04/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	25.0	32.0	28.5
Precipitation - Reference Evapotranspiration	-12.8	-27.6	2.3
Number of Rainy Days	6.0	2.0	4.5
Number of Dry Days	0.0	5.0	-

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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