



AGROMETEOROLOGICAL BULLETIN

April 2012
1st 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
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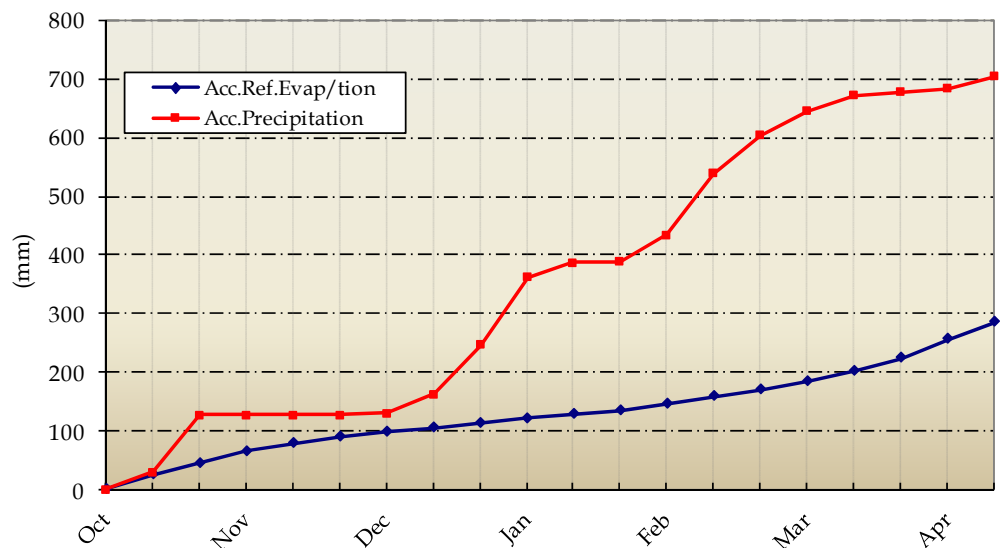
Web addresses of HNMS
www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr

Agrinio

1st 10-day period (1-10/04/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.0	22.4	24.0	25.4	19.0	22.4	23.0	20.4	12.4	17.0	20.6	21.6	19.9
	Min	9.0	8.4	7.2	12.0	12.6	15.0	8.4	12.0	6.6	5.0	9.6	7.1	7.2
Relative Humidity	Max	90	90	92	77	89	87	95	89	95	91	90	94	-
	Min	55	43	35	27	69	54	47	55	73	40	50	43	-
Soil Temperature at 10 cm	06 UTC	14.8	14.8	15.4	16.4	16.4	16.2	16.2	16.6	15.0	13.0	15.5	13.2	11.8
	12 UTC	17.2	18.0	19.2	18.4	16.6	19.4	19.4	19.6	15.2	16.0	17.9	15.6	16.3
Sunshine Duration		10.2	10.7	8.5	5.7	1.0	10.0	7.2	5.9	0.2	7.0	6.6	8.2	6.3
Precipitation				0.3	1.0	8.2		0.2	1.0	11.2		21.9	2.7	20.5
Evaporation		6.0	5.5	3.6	5.1	2.7	6.2	3.7	3.4	2.8	3.4	42.4	35.2	35.8
Growing Degrees	5	9.5	10.4	10.6	13.7	10.8	13.7	10.7	11.2	4.5	6.0	101.1	93.8	85.7
	10	4.5	5.4	5.6	8.7	5.8	8.7	5.7	6.2	0.0	1.0	51.6	43.8	36.8

1st 10-day period (1-10/04/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	29.1	28.6	26.6
Precipitation - Reference Evapotranspiration	-7.2	-25.9	-6.1
Number of Rainy Days	6.0	3.0	3.3
Number of Dry Days	8.0	0.0	-

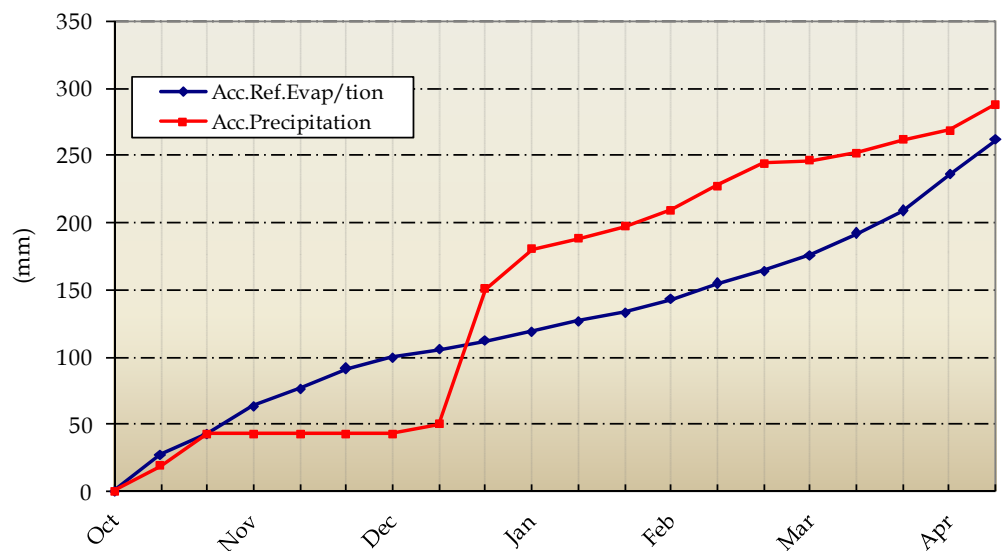
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/04/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.4	12.4	14.6	19.8	19.6	17.0	17.8	19.4	16.6	11.4	16.5	15.7	16.7
	Min	7.2	1.6	2.0	6.8	11.6	8.4	12.0	10.8	6.0	6.8	7.3	7.0	6.5
Relative Humidity	Max	92	89	91	94	95	95	98	93	87	84	92	88	-
	Min	76	47	52	55	56	68	74	57	58	45	59	54	-
Soil Temperature at 10 cm	06 UTC	11.8	10.4	9.4	11.4	13.6	14.0	14.4	15.2	14.2	10.8	12.5	10.6	10.4
	12 UTC	14.6	12.8	13.2	15.2	17.0	17.0	17.2	18.2	13.6	11.6	15.0	12.8	13.5
Sunshine Duration		7.7	11.7	10.6	8.5	7.8	9.9	8.1	10.3	1.7	1.7	7.8	5.2	6.1
Precipitation			8.8		0.0	1.0	0.4			9.2		19.4	9.3	11.5
Evaporation		3.8	3.4	3.1	2.5	4.4	2.5	3.0	2.2	4.4	1.0	30.3	29.6	34.0
Growing Degrees	5	6.8	2.0	3.3	8.3	10.6	7.7	9.9	10.1	6.3	4.1	69.1	63.1	66.0
	10	1.8	0.0	0.0	3.3	5.6	2.7	4.9	5.1	1.3	0.0	24.7	14.0	21.0

1st 10-day period (1-10/04/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	25.7	23.3	24.4
Precipitation - Reference Evapotranspiration	-6.3	-14.0	-12.9
Number of Rainy Days	4.0	3.0	2.6
Number of Dry Days	2.0	1.0	-

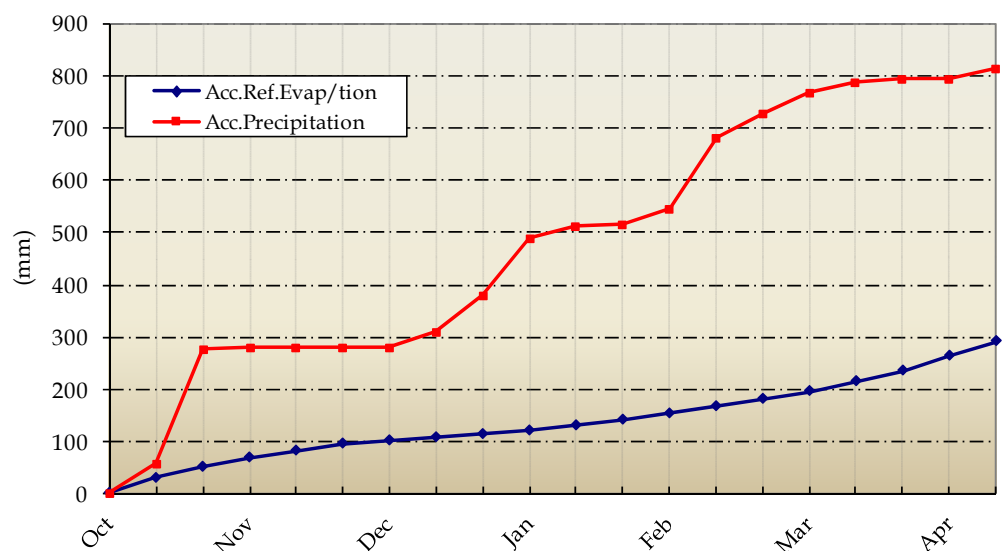
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/04/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.8	19.6	23.2	25.4	22.0	20.8	23.6	18.8	14.0	15.2	20.1	20.1	18.6
	Min	9.4	8.2	10.6	13.2	11.6	16.0	12.0	12.4	9.6	6.0	10.9	9.8	8.6
Relative Humidity	Max	100	100	97	95	95	98	100	100	97	97	98	91	-
	Min	68	70	42	45	64	68	43	65	68	66	60	48	-
Soil Temperature at 10 cm	06 UTC	14.4	14.4	15.0	16.2	16.2	17.2	17.2	17.0	15.0	13.0	15.6	14.4	12.9
	12 UTC	18.0	19.4	18.8	20.2	18.6	20.8	21.2	20.4	15.4	15.6	18.8	18.9	15.7
Sunshine Duration		10.2	9.5	6.9	6.0	5.3	8.5	8.9	5.7	2.8	7.1	7.1	8.4	6.9
Precipitation					1.1	3.4			0.2	10.4	4.7	19.8	1.1	14.7
Evaporation		4.1	3.5	3.4	3.3	0.7	3.3	4.3	2.5	2.1	0.2	27.4	37.2	34.4
Growing Degrees	5	9.1	8.9	11.9	14.3	11.8	13.4	12.8	10.6	6.8	5.6	105.2	99.6	86.1
	10	4.1	3.9	6.9	9.3	6.8	8.4	7.8	5.6	1.8	0.6	55.2	49.6	36.7

1st 10-day period (1-10/04/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	28.0	30.6	26.7
Precipitation - Reference Evapotranspiration	-8.2	-29.5	-12.0
Number of Rainy Days	5.0	2.0	2.8
Number of Dry Days	22.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

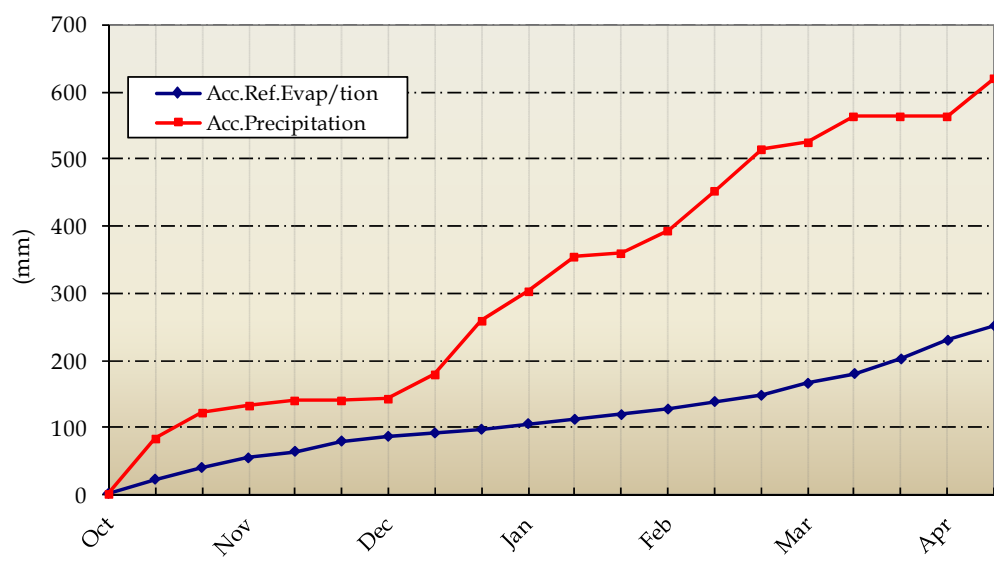


Ioannina

1st 10-day period (1-10/04/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.2	20.0	21.0	17.2	17.0	20.0	18.8	15.0	9.8	13.8	16.9	-	16.8
	Min	3.0	2.0	5.4	11.6	7.2	12.4	6.0	6.8	6.0	5.0	6.5	-	5.4
Relative Humidity	Max	98	97	94	95	95	95	97	94	94	87	95	-	-
	Min	50	40	21	62	68	51	55	64	56	47	51	-	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	9.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	12.3
Sunshine Duration		2.9	8.3	8.5	3.0	1.6	6.7	2.0	1.1	0.9	5.7	4.1	-	5.1
Precipitation					9.2	10.3	0.4		25.0	11.5	0.5	56.9	-	25.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	24.5
Growing Degrees	5	4.6	6.0	8.2	9.4	7.1	11.2	7.4	5.9	2.9	4.4	67.1	-	60.9
	10	0.0	1.0	3.2	4.4	2.1	6.2	2.4	0.9	0.0	0.0	20.2	-	17.6

1st 10-day period (1-10/04/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	21.7	-	22.5
Precipitation - Reference Evapotranspiration	35.2	-	3.2
Number of Rainy Days	6.0	-	4.1
Number of Dry Days	23.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

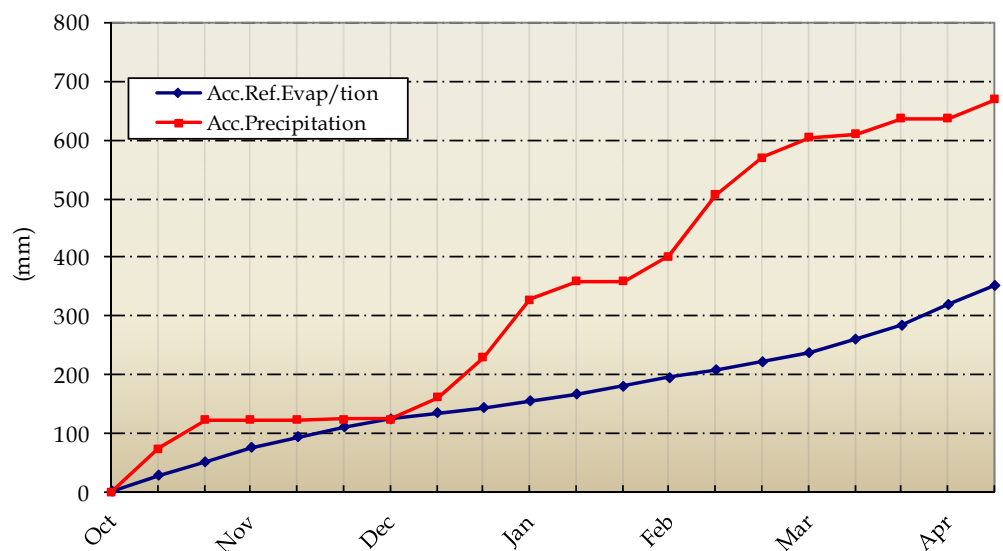


Kalamata

1st 10-day period (1-10/04/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.6	18.8	21.3	25.2	26.2	21.2	23.6	21.7	14.4	16.6	21.0	19.8	19.3
	Min	7.2	6.8	7.5	11.8	12.6	15.6	9.6	9.9	8.7	5.0	9.5	9.0	8.0
Relative Humidity	Max	93	94	93	84	82	90	93	93	94	93	91	96	-
	Min	48	58	41	37	31	64	45	42	79	49	49	52	-
Soil Temperature at 10 cm	06 UTC	13.8	13.6	13.4	15.2	15.4	15.6	15.8	16.0	15.4	13.2	14.7	14.2	12.9
	12 UTC	16.2	16.0	16.4	17.0	17.2	18.4	18.6	17.8	15.2	14.4	16.7	16.5	15.8
Sunshine Duration		11.2	10.1	10.6	5.3	7.2	9.5	9.8	7.5	7.5	7.0	8.6	8.2	6.7
Precipitation									6.3	24.4	1.6	32.3	19.5	16.3
Evaporation		2.4	4.0	9.7	3.3	3.2	5.0	11.0	2.7	1.5	3.4	46.2	38.0	37.8
Growing Degrees	5	8.9	7.8	9.4	13.5	14.4	13.4	11.6	10.8	6.6	5.8	102.2	93.8	86.4
	10	3.9	2.8	4.4	8.5	9.4	8.4	6.6	5.8	1.6	0.8	52.2	43.8	36.8

1st 10-day period (1-10/04/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	32.7	30.6	28.3
Precipitation - Reference Evapotranspiration	-0.4	-11.1	-12.0
Number of Rainy Days	3.0	2.0	2.8
Number of Dry Days	10.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

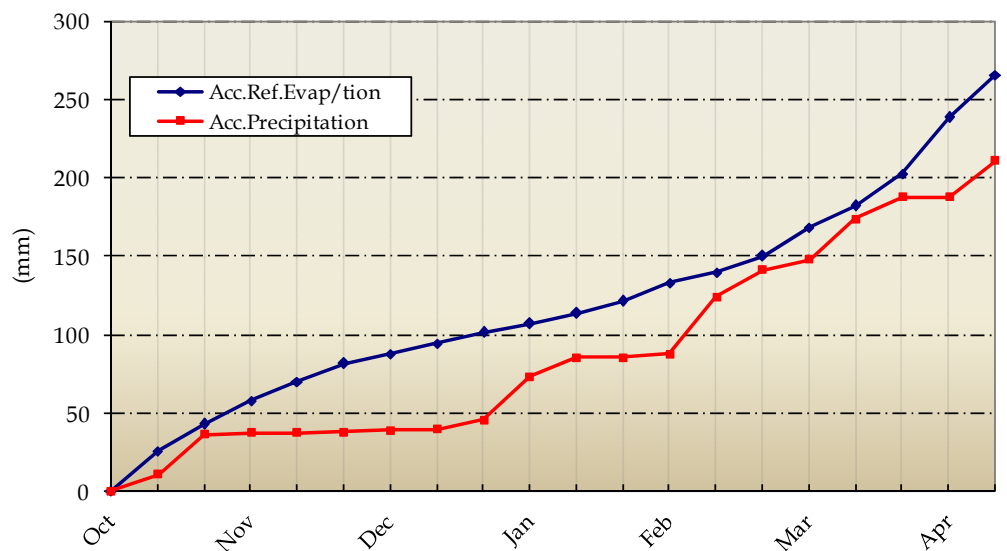


Larisa

1st 10-day period (1-10/04/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.0	16.2	19.2	-	14.4	23.8	23.4	22.0	12.8	11.4	18.5	20.3	19.4
	Min	5.0	5.8	3.8	9.4	9.2	12.0	8.6	11.0	4.9	6.6	7.6	9.0	5.6
Relative Humidity	Max	83	93	94	96	97	97	85	75	90	97	91	89	-
	Min	25	40	52	62	85	39	34	28	53	60	48	44	-
Soil Temperature at 10 cm	06 UTC	13.0	12.4	12.2	13.2	13.0	13.6	14.0	14.6	12.4	9.0	12.7	12.2	11.7
	12 UTC	14.2	14.0	14.4	14.6	13.8	15.2	15.6	16.4	13.4	12.4	14.4	14.0	13.1
Sunshine Duration		10.7	6.1	10.2	2.4	0.2	10.0	8.1	9.1	3.0	1.3	6.1	7.1	6.6
Precipitation					4.0	9.5			0.0	5.7	4.1	23.3	7.0	12.2
Evaporation		3.1	1.7	3.9	4.2	0.0	2.6	3.6	7.1	5.2	1.6	33.0	35.1	32.3
Growing Degrees	5	9.0	6.0	6.5	-	6.8	12.9	11.0	11.5	3.9	4.0	-	96.6	75.0
	10	4.0	1.0	1.5	-	1.8	7.9	6.0	6.5	0.0	0.0	-	46.6	27.5

1st 10-day period (1-10/04/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	27.1	30.0	26.4
Precipitation - Reference Evapotranspiration	-3.8	-23.0	-14.2
Number of Rainy Days	4.0	2.0	2.6
Number of Dry Days	21.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

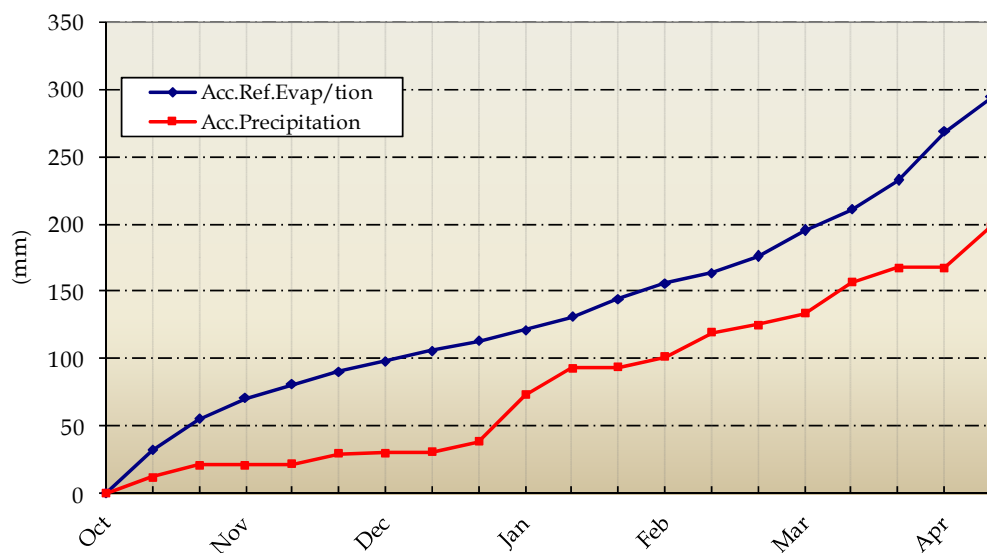


Mikra

1st 10-day period (1-10/04/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.8	14.2	16.2	14.4	15.4	18.4	22.6	21.9	15.8	13.0	17.2	-	18.4
	Min	7.0	5.8	5.0	6.7	9.7	12.3	8.6	11.2	8.8	6.8	8.2	-	7.0
Relative Humidity	Max	76	83	88	93	94	93	94	80	82	88	87	-	-
	Min	40	43	58	71	75	70	34	28	50	54	52	-	-
Soil Temperature at 10 cm	06 UTC	12.4	11.6	11.6	12.2	13.4	13.2	13.6	14.2	13.0	11.0	12.6	-	11.4
	12 UTC	14.4	13.8	14.0	15.4	14.2	16.0	17.0	18.2	13.0	13.8	15.0	-	15.3
Sunshine Duration		8.8	7.4	4.7	0.1	0.1	4.6	7.7	6.5	0.0	3.6	4.4	-	6.4
Precipitation					6.6	11.9	6.3	0.2	0.0	3.5	2.4	30.9	-	12.7
Evaporation		1.8	8.2	3.0	0.2	1.0	2.2	1.2	4.1	1.9	0.2	23.8	-	39.9
Growing Degrees	5	8.4	5.0	5.6	5.6	7.6	10.4	10.6	11.6	7.3	4.9	76.8	-	77.2
	10	3.4	0.0	0.6	0.6	2.6	5.4	5.6	6.6	2.3	0.0	26.9	-	28.9

1st 10-day period (1-10/04/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	25.6	-	26.8
Precipitation - Reference Evapotranspiration	5.3	-	-14.1
Number of Rainy Days	6.0	-	2.5
Number of Dry Days	22.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

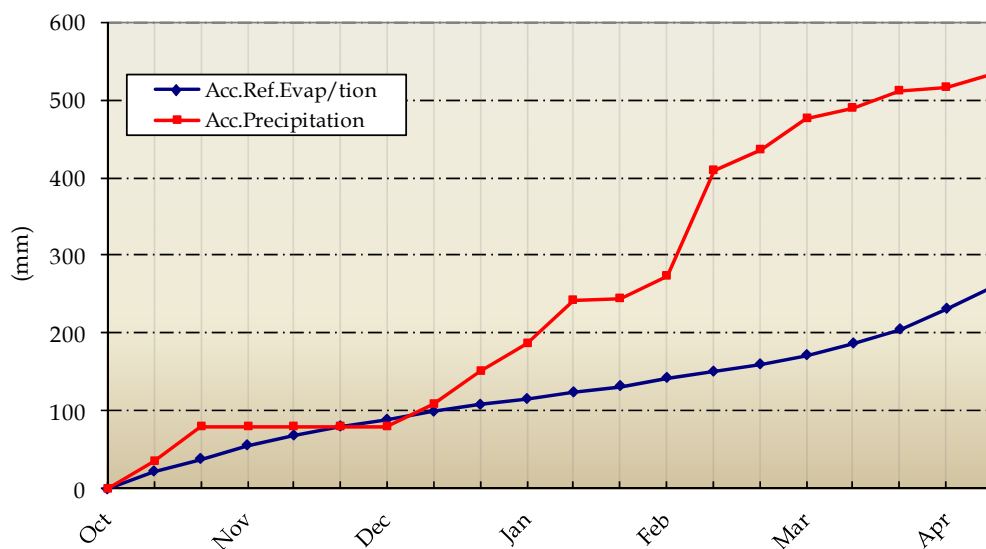


Tripoli

1st 10-day period (1-10/04/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.0	17.8	20.0	19.3	19.4	21.6	23.2	17.4	10.6	11.7	17.8	17.4	17.1
	Min	2.2	1.9	6.6	7.9	6.7	8.6	5.6	11.0	6.3	0.1	5.7	4.7	4.3
Relative Humidity	Max	94	-	95	95	90	92	89	82	90	95	91	90	-
	Min	29	40	32	35	45	25	22	30	56	44	36	44	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	9.8	9.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	15.3	11.3
Sunshine Duration		-	-	-	-	-	-	-	-	-	-	-	7.2	6.6
Precipitation						1.0			8.7	8.5		18.2	8.1	17.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	28.8	26.4
Growing Degrees	5	4.6	4.9	8.3	8.6	8.1	10.1	9.4	9.2	3.5	0.9	67.5	60.5	57.4
	10	0.0	0.0	3.3	3.6	3.1	5.1	4.4	4.2	0.0	0.0	23.7	14.1	16.1

1st 10-day period (1-10/04/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	29.5	27.5	26.6
Precipitation - Reference Evapotranspiration	-11.3	-19.4	-9.3
Number of Rainy Days	3.0	3.0	3.3
Number of Dry Days	8.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

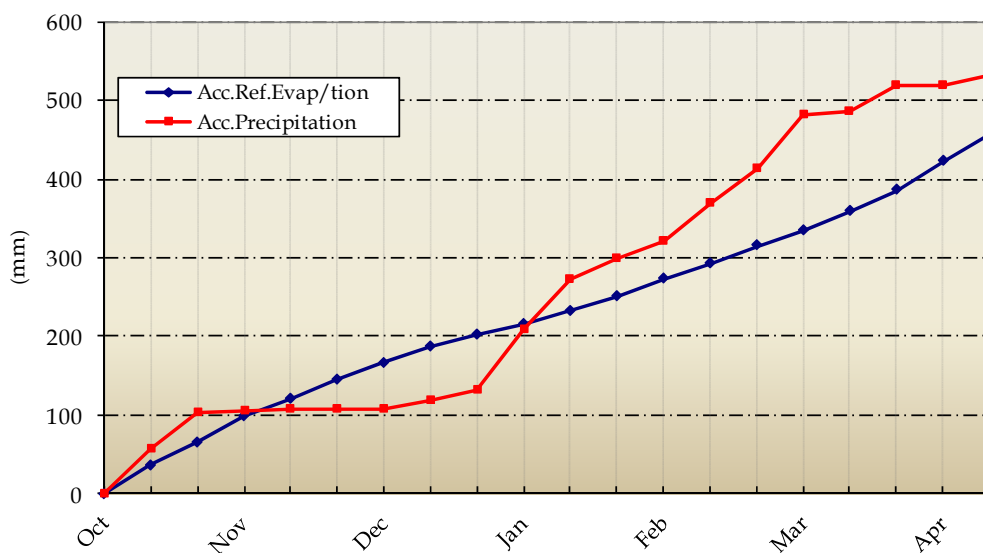


Tympaki

1st 10-day period (1-10/04/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.4	18.6	21.8	22.8	26.4	21.2	21.0	19.6	18.0	16.8	20.5	19.9	19.9
	Min	7.6	9.0	6.6	11.6	14.2	8.6	10.4	9.6	11.6	9.4	9.9	11.2	9.8
Relative Humidity	Max	90	91	91	75	96	100	100	83	93	82	90	92	-
	Min	64	65	29	14	17	38	57	58	44	42	43	47	-
Soil Temperature at 10 cm	06 UTC	16.2	16.8	16.8	18.6	19.6	18.6	18.8	19.0	19.6	15.2	17.9	17.5	15.3
	12 UTC	21.2	23.0	23.2	24.4	22.6	24.8	25.4	25.0	20.8	18.2	22.9	22.0	19.1
Sunshine Duration		7.9	10.2	10.3	7.8	7.3	10.1	10.7	11.3	3.5	4.7	8.4	9.7	7.5
Precipitation										8.0	5.4	13.4		5.8
Evaporation		4.1	4.5	4.8	4.3	5.2	4.2	4.6	5.7	3.1	5.3	45.8	57.6	46.4
Growing Degrees	5	8.0	8.8	9.2	12.2	15.3	9.9	10.7	9.6	9.8	8.1	101.6	105.3	95.6
	10	3.0	3.8	4.2	7.2	10.3	4.9	5.7	4.6	4.8	3.1	51.6	55.3	47.0

1st 10-day period (1-10/04/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	35.2	36.7	30.2
Precipitation - Reference Evapotranspiration	-21.8	-36.7	-24.4
Number of Rainy Days	2.0	0.0	1.4
Number of Dry Days	25.0	10.0	-

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.

Mesurements 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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ΜΕΤΕΩΡΟΛΟΓΙΚΗ
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