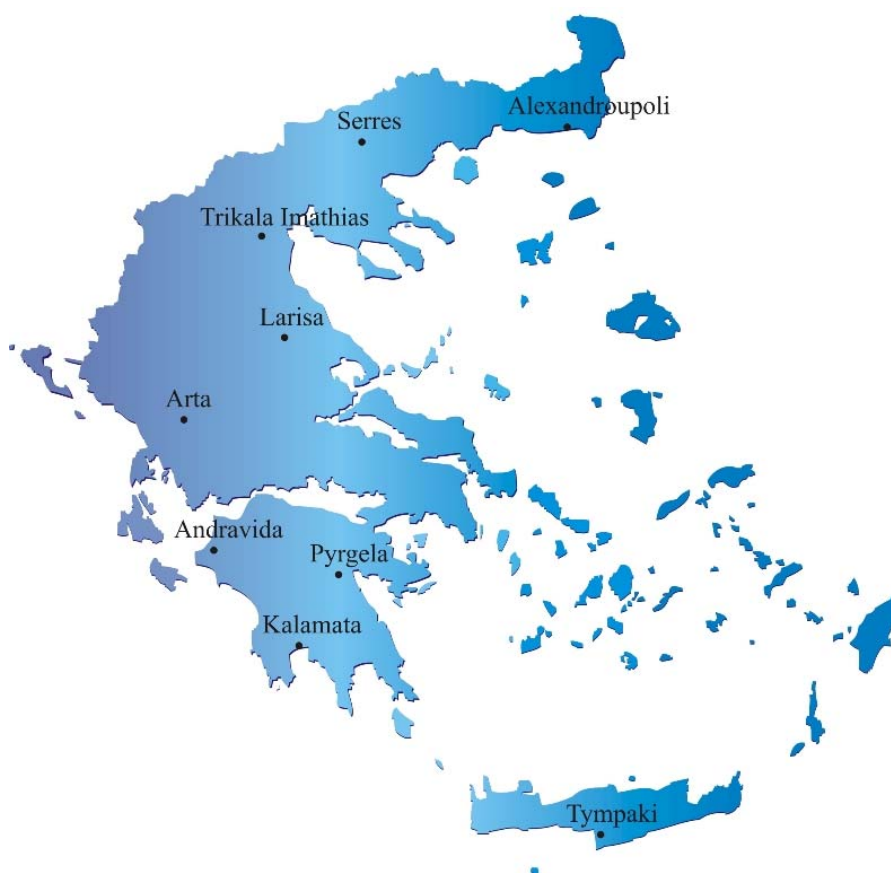




AGROMETEOROLOGICAL BULLETIN

April 2010
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



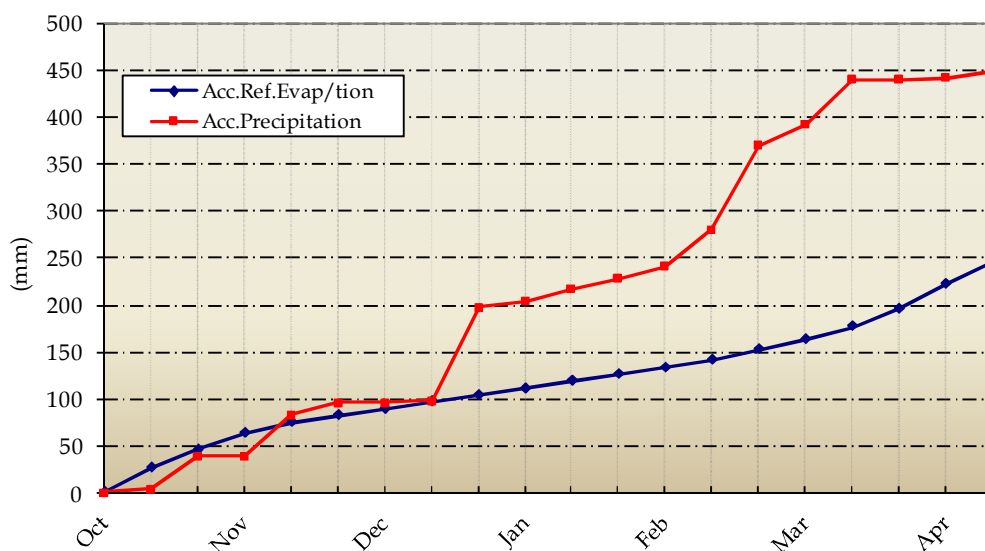
Hellenic National Meteorological Service
Division of Climatology-Applications
El. Venizelou Street 14, 16777
Helliniko, Athens

Web addresses of HNMS
www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr

1st 10-day period (1-10/04/2010)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.6	17.8	16.4	20.4	19.4	15.6	17.0	19.2	16.8	16.0	17.7	18.9	16.7
	Min	12.0	9.0	6.6	6.0	5.4	10.8	10.4	8.6	4.0	3.6	7.6	7.4	6.5
Relative Humidity	Max	93	93	95	91	86	90	80	89	90	91	90	87	-
	Min	69	66	63	40	42	57	47	30	47	47	51	38	-
Soil Temperature at 10 cm	06 UTC	12.6	13.0	11.6	12.0	12.0	14.2	12.4	10.4	10.2	10.6	11.9	12.5	10.4
	12 UTC	15.2	14.8	14.2	15.6	16.4	15.2	15.4	15.6	15.4	14.0	15.2	14.9	13.5
Sunshine Duration		9.1	1.3	10.8	11.0	9.0	2.5	1.1	4.2	7.6	11.4	6.8	7.2	6.1
Precipitation			1.7			0.0	3.5	0.0	2.7			7.9	3.2	11.5
Evaporation		2.7	0.3	3.4	3.0	3.5	2.0	5.8	2.7	3.0	1.2	27.6	46.2	34.0
Growing Degrees	5	10.3	8.4	6.5	8.2	7.4	8.2	8.7	8.9	5.4	4.8	76.8	81.6	66.0
	10	5.3	3.4	1.5	3.2	2.4	3.2	3.7	3.9	0.4	0.0	27.0	31.6	21.0

1st 10-day period (1-10/04/2010)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	24.6	28.5	24.4
Precipitation - Reference Evapotranspiration	-16.7	-25.3	-12.9
Number of Rainy Days	3.0	2.0	2.6
Number of Dry Days	3.0	7.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

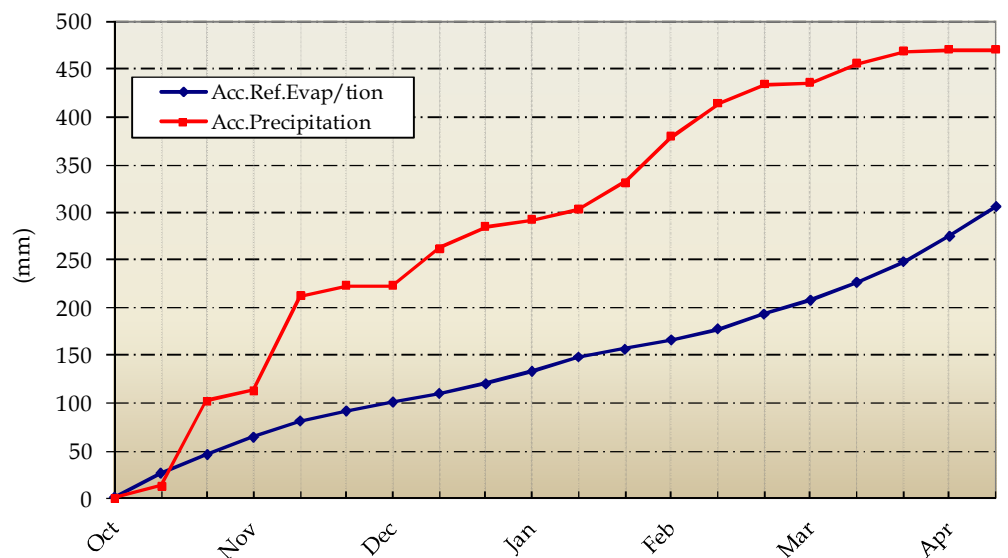


Andravida

1st 10-day period (1-10/04/2010)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.4	18.2	19.0	20.4	20.6	16.2	17.4	19.6	23.0	21.4	19.6	20.5	18.6
	Min	8.6	10.4	6.6	8.0	8.0	10.8	11.4	7.0	7.4	5.2	8.3	10.1	8.6
Relative Humidity	Max	95	95	94	95	93	88	89	94	91	88	92	97	-
	Min	52	48	49	53	38	55	52	50	28	32	46	49	-
Soil Temperature at 10 cm	06 UTC	14.2	15.2	14.0	14.4	14.8	15.2	14.6	14.8	14.4	14.2	14.6	15.6	12.9
	12 UTC	17.8	16.8	19.0	19.8	19.4	18.2	19.4	18.4	19.2	19.8	18.8	19.9	15.7
Sunshine Duration		9.9	5.7	10.3	10.4	10.8	9.3	9.6	9.7	9.9	10.3	9.6	7.4	6.9
Precipitation			0.0									0.0		14.7
Evaporation		3.4	2.2	3.4	4.9	1.0	6.7	4.1	3.3	2.0	4.9	35.9	46.1	34.4
Growing Degrees	5	9.5	9.3	7.8	9.2	9.3	8.5	9.4	8.3	10.2	8.3	89.8	103.1	86.1
	10	4.5	4.3	2.8	4.2	4.3	3.5	4.4	3.3	5.2	3.3	39.8	53.1	36.7

1st 10-day period (1-10/04/2010)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	31.2	27.6	26.7
Precipitation - Reference Evapotranspiration	-31.2	-27.6	-12.0
Number of Rainy Days	0.0	0.0	2.8
Number of Dry Days	16.0	14.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

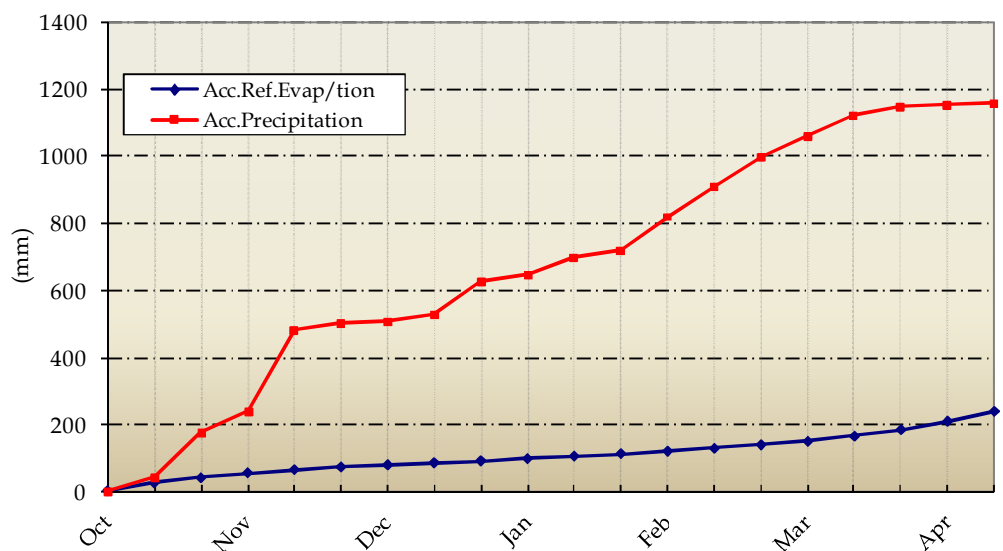




1st 10-day period (1-10/04/2010)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.8	20.4	21.2	21.0	21.8	18.0	21.2	22.0	24.0	22.4	21.3	23.4	19.5
	Min	11.0	8.6	6.0	6.6	6.8	8.2	5.4	9.0	6.0	5.0	7.3	9.7	7.8
Relative Humidity	Max	95	99	90	100	85	100	89	98	80	99	94	95	-
	Min	44	32	35	29	56	43	40	32	32	20	36	24	-
Soil Temperature at 10 cm	06 UTC	14.0	14.2	13.4	14.6	14.2	14.6	12.8	14.6	14.2	14.6	14.1	13.9	12.5
	12 UTC	16.2	15.4	15.8	16.0	16.4	16.4	16.0	16.8	16.6	16.0	16.2	15.2	15.8
Sunshine Duration		8.9	7.2	10.8	10.9	8.9	8.1	10.8	6.4	10.7	8.9	9.2	6.5	6.5
Precipitation			0.3				2.8					3.1	3.4	29.0
Evaporation		1.8	4.2	3.0	5.6	4.2	2.1	6.5	4.2	8.6	5.3	45.5	32.6	-
Growing Degrees	5	10.9	9.5	8.6	8.8	9.3	8.1	8.3	10.5	10.0	8.7	92.7	115.5	85.7
	10	5.9	4.5	3.6	3.8	4.3	3.1	3.3	5.5	5.0	3.7	42.7	65.5	37.4

1st 10-day period (1-10/04/2010)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	29.1	27.8	25.8
Precipitation - Reference Evapotranspiration	-26.0	-24.4	3.2
Number of Rainy Days	2.0	2.0	3.4
Number of Dry Days	7.0	9.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

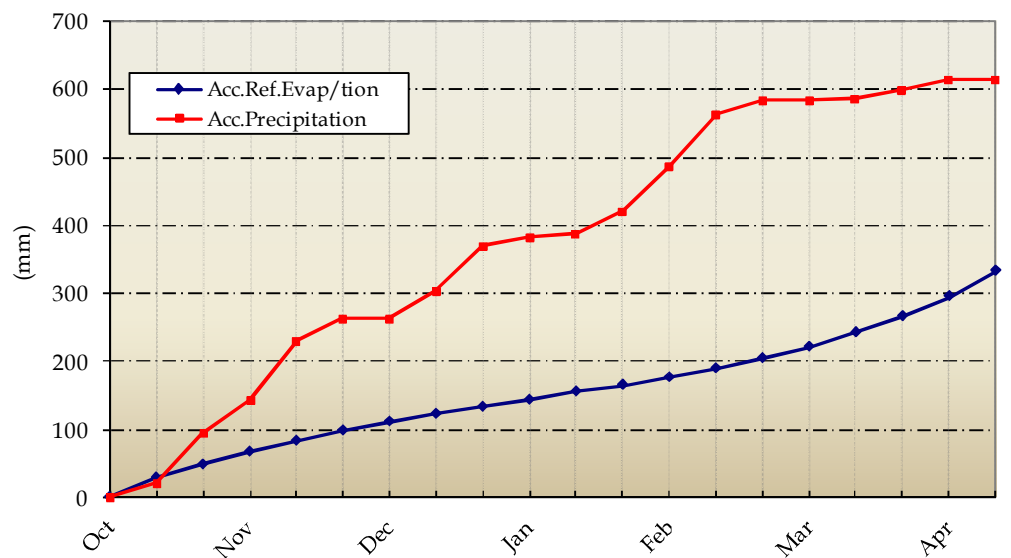


Kalamata

1st 10-day period (1-10/04/2010)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.4	23.6	22.8	20.4	21.4	18.6	20.4	19.6	22.2	21.8	21.2	21.3	19.3
	Min	8.2	10.2	8.2	7.0	7.2	9.0	6.2	7.0	7.2	10.0	8.0	9.8	8.0
Relative Humidity	Max	97	95	92	94	97	92	97	94	87	75	92	96	-
	Min	47	32	33	44	45	45	40	44	30	36	40	50	-
Soil Temperature at 10 cm	06 UTC	14.6	15.2	14.6	15.0	15.0	15.0	14.4	14.6	14.6	14.6	14.8	14.7	12.9
	12 UTC	16.6	16.2	16.4	16.6	16.4	16.4	16.2	16.4	16.4	16.2	16.4	16.0	15.8
Sunshine Duration		10.5	9.0	11.5	11.4	10.7	8.7	11.4	11.1	11.4	6.4	10.2	7.2	6.7
Precipitation													4.0	16.3
Evaporation		7.8	2.7	4.0	4.4	4.9	5.1	4.8	5.0	5.7	4.3	48.7	48.0	37.8
Growing Degrees	5	9.8	11.9	10.5	8.7	9.3	8.8	8.3	8.3	9.7	10.9	96.2	105.5	86.4
	10	4.8	6.9	5.5	3.7	4.3	3.8	3.3	3.3	4.7	5.9	46.2	55.5	36.8

1st 10-day period (1-10/04/2010)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	37.1	27.6	28.3
Precipitation - Reference Evapotranspiration	-37.1	-23.6	-12.0
Number of Rainy Days	0.0	1.0	2.8
Number of Dry Days	16.0	9.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

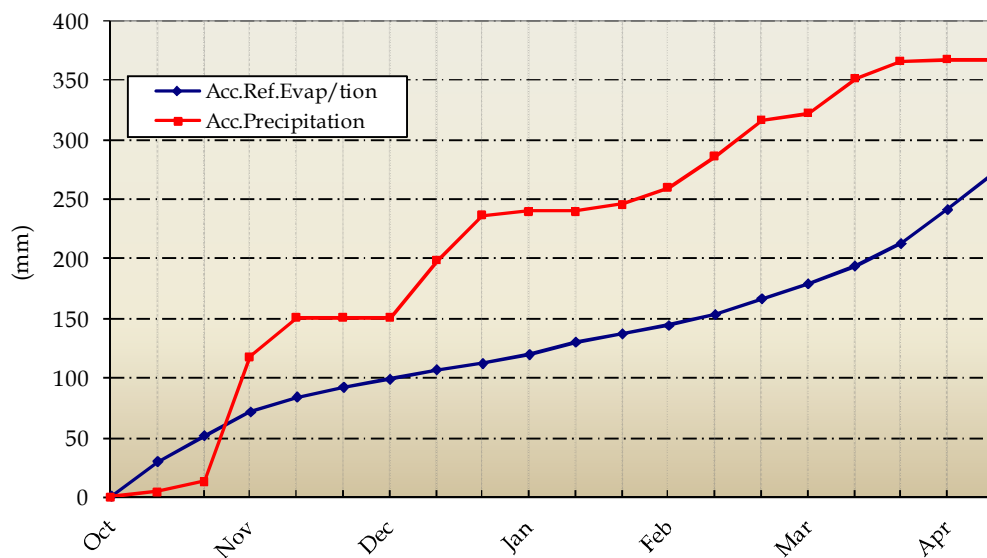


Larisa

1st 10-day period (1-10/04/2010)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.4	19.8	20.6	21.0	21.4	19.2	18.6	20.4	19.2	20.0	20.4	19.4	19.4
	Min	6.4	7.8	3.2	4.0	4.8	10.4	5.0	8.8	5.8	2.6	5.9	7.2	5.6
Relative Humidity	Max	90	95	97	97	95	72	91	85	85	93	90	93	-
	Min	30	44	37	49	42	32	38	31	37	38	38	49	-
Soil Temperature at 10 cm	06 UTC	13.6	14.0	12.8	13.0	13.4	14.2	12.8	13.6	13.4	13.0	13.4	12.9	11.7
	12 UTC	15.8	14.4	15.2	15.6	15.4	15.4	15.0	15.4	15.4	13.8	15.1	15.3	13.1
Sunshine Duration		10.6	6.3	10.3	10.8	9.3	6.2	9.4	9.7	11.3	10.8	9.5	6.1	6.6
Precipitation			0.6									0.6	0.8	12.2
Evaporation		-	2.5	4.7	3.3	3.6	4.2	7.1	3.8	5.2	4.0	-	31.8	32.3
Growing Degrees	5	9.9	8.8	6.9	7.5	8.1	9.8	6.8	9.6	7.5	6.3	81.2	-	75.0
	10	4.9	3.8	1.9	2.5	3.1	4.8	1.8	4.6	2.5	1.3	31.2	-	27.5

1st 10-day period (1-10/04/2010)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	30.9	26.9	26.4
Precipitation - Reference Evapotranspiration	-30.3	-26.1	-14.2
Number of Rainy Days	1.0	1.0	2.6
Number of Dry Days	8.0	11.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

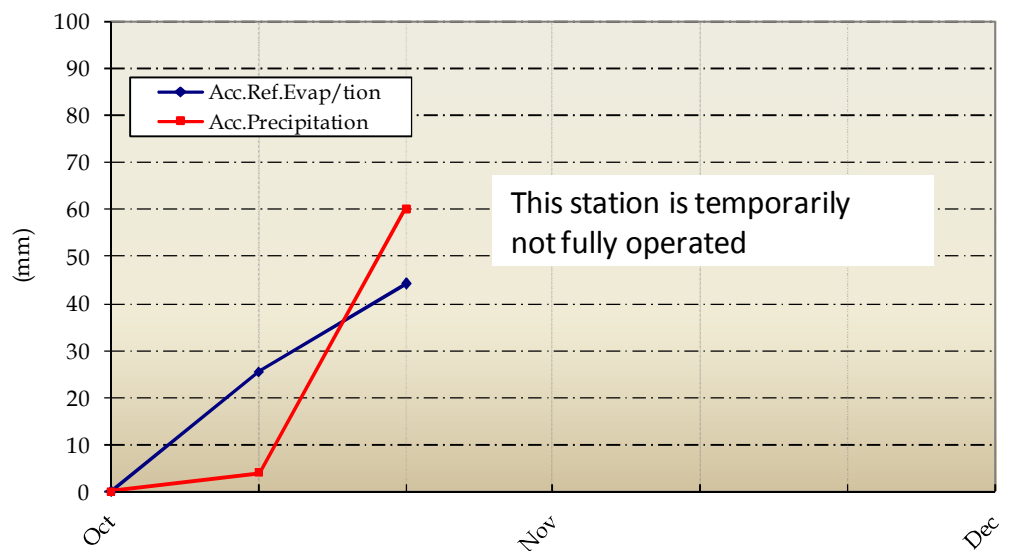


Pyrgela

1st 10-day period (1-10/04/2010)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	-	-	-	-	-	-	-	-	-	-	-	22.3	20.4
	Min	-	9.0	-	4.2	-	-	-	-	-	2.6	5.3	8.2	5.2
Relative Humidity	Max	91	-	91	-	-	-	-	-	92	77	88	84	-
	Min	22	-	17	-	-	-	-	-	25	24	22	39	-
Soil Temperature at 10 cm	06 UTC	-	14.2	-	13.0	-	-	-	-	-	12.6	13.3	12.9	11.0
	12 UTC	-	18.4	-	21.4	-	-	-	-	-	17.0	18.9	18.4	17.9
Sunshine Duration		7.7	-	-	-	-	-	-	-	-	3.9	5.8	5.7	6.6
Precipitation												-	5.0	12.1
Evaporation		3.6	-	5.0	-	-	-	-	-	-	3.0	-	30.3	32.0
Growing Degrees	5	-	-	-	-	-	-	-	-	-	-	-	102.4	76.1
	10	-	-	-	-	-	-	-	-	-	-	-	52.4	28.7

1st 10-day period (1-10/04/2010)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	25.0	25.6
Precipitation - Reference Evapotranspiration	-	-20.0	-13.5
Number of Rainy Days	-	3.0	2.5
Number of Dry Days	-	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

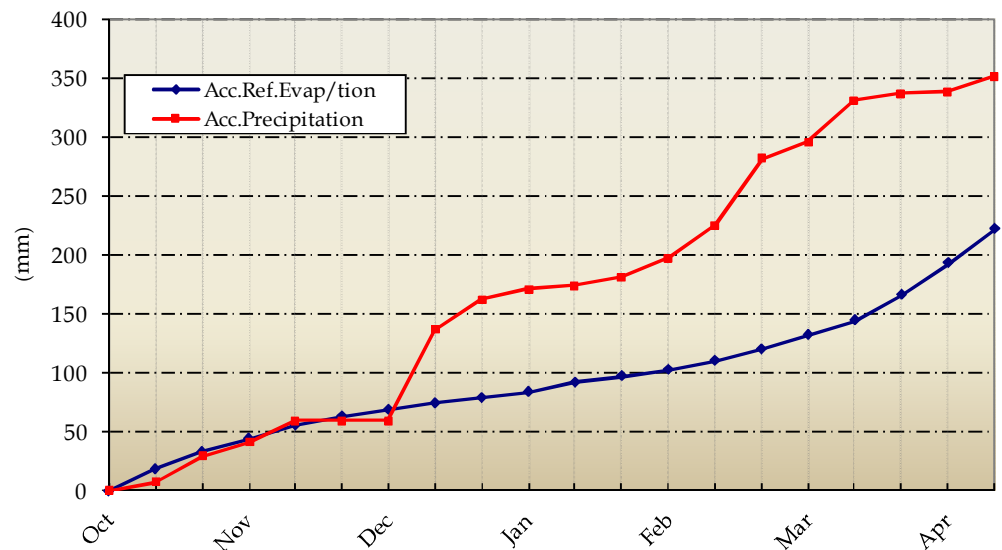


Series

1st 10-day period (1-10/04/2010)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.4	18.4	21.6	22.0	20.6	19.8	20.4	22.0	21.0	21.4	21.2	22.2	19.3
	Min	8.8	9.8	5.0	6.6	7.0	8.0	7.8	8.0	5.4	5.0	7.1	8.3	7.0
Relative Humidity	Max	90	83	97	85	84	57	56	77	76	78	78	76	-
	Min	21	60	49	43	44	28	32	26	29	31	36	38	-
Soil Temperature at 10 cm	06 UTC	13.0	13.6	11.8	12.4	12.0	13.4	13.8	12.8	14.0	13.0	13.0	12.6	11.1
	12 UTC	15.0	14.2	13.4	14.6	14.6	15.2	15.4	15.0	14.4	15.0	14.7	14.0	13.8
Sunshine Duration		10.1	1.4	9.0	9.5	5.7	8.5	5.8	7.0	4.5	7.9	6.9	5.9	5.9
Precipitation			13.1									13.1	0.4	11.0
Evaporation		4.0	1.3	3.4	2.6	4.0	5.0	5.0	3.0	2.9	2.4	33.6	27.4	30.0
Growing Degrees	5	11.6	9.1	8.3	9.3	8.8	8.9	9.1	10.0	8.2	8.2	91.5	-	80.6
	10	6.6	4.1	3.3	4.3	3.8	3.9	4.1	5.0	3.2	3.2	41.5	-	32.7

1st 10-day period (1-10/04/2010)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	28.8	24.4	23.5
Precipitation - Reference Evapotranspiration	-15.7	-24.0	-12.5
Number of Rainy Days	1.0	1.0	2.6
Number of Dry Days	4.0	7.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

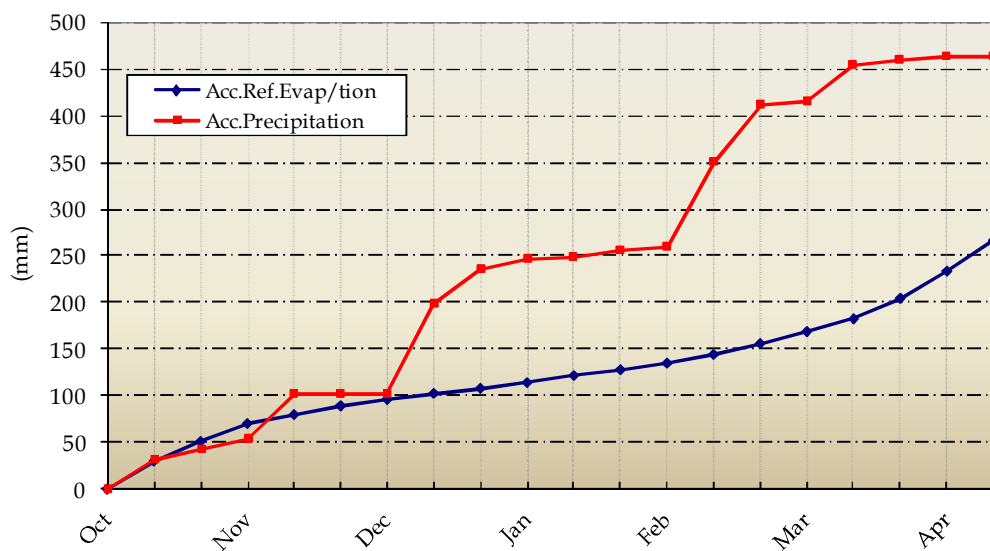


Trikala Imathias

1st 10-day period (1-10/04/2010)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.8	-	22.2	-	20.2	20.0	20.0	23.0	21.6	21.4	21.6	22.4	19.3
	Min	8.0	-	8.6	-	5.0	8.4	6.2	8.8	9.2	6.0	7.5	8.6	7.6
Relative Humidity	Max	-	99	-	98	92	98	70	80	98	-	91	92	-
	Min	-	45	-	45	48	28	25	23	33	-	35	27	-
Soil Temperature at 10 cm	06 UTC	13.0	-	13.6	-	13.8	13.6	13.0	13.8	14.2	14.0	13.6	13.0	12.0
	12 UTC	16.0	-	15.8	-	15.8	16.4	15.6	16.4	16.6	16.4	16.1	15.4	12.9
Sunshine Duration		-	5.6	-	8.7	7.5	9.2	9.2	10.5	10.7	-	8.8	7.1	6.1
Precipitation														11.2
Evaporation		-	4.2	-	2.8	1.4	3.6	3.7	3.6	2.6	-	-	47.6	29.2
Growing Degrees	5	11.4	-	10.4	-	7.6	9.2	8.1	10.9	10.4	8.7	-	105.2	83.5
	10	6.4	-	5.4	-	2.6	4.2	3.1	5.9	5.4	3.7	-	55.2	36.0

1st 10-day period (1-10/04/2010)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	32.8	33.3	25.5
Precipitation - Reference Evapotranspiration	-32.8	-33.3	-14.3
Number of Rainy Days	0.0	0.0	2.3
Number of Dry Days	16.0	19.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

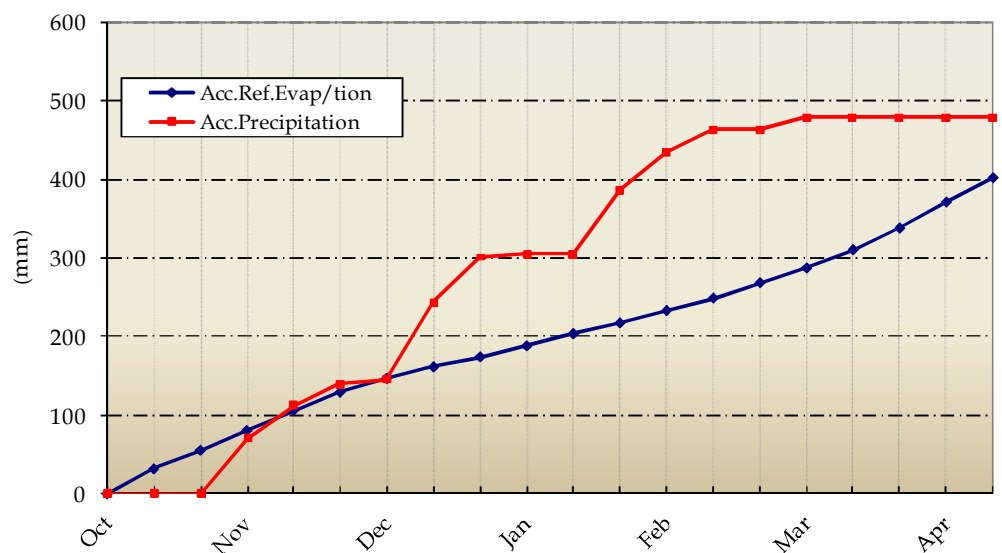


Tympaki

1st 10-day period (1-10/04/2010)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.6	22.4	21.4	20.8	20.4	22.0	20.0	19.0	19.8	19.8	20.5	20.5	19.9
	Min	10.2	9.6	10.6	9.6	9.2	9.0	9.4	8.6	9.6	10.4	9.6	11.8	9.8
Relative Humidity	Max	99	99	92	99	95	99	94	90	86	77	93	96	-
	Min	64	39	35	34	32	21	29	39	39	36	37	48	-
Soil Temperature at 10 cm	06 UTC	18.2	18.0	18.0	18.6	18.4	18.2	18.2	17.2	17.6	18.6	18.1	16.4	15.3
	12 UTC	23.0	23.0	24.0	24.4	24.4	23.6	23.6	22.2	22.2	21.8	23.2	20.0	19.1
Sunshine Duration		1.5	2.4	10.2	10.2	9.4	9.8	8.0	5.7	2.5	0.0	6.0	4.9	7.5
Precipitation													78.7	5.8
Evaporation		4.4	5.6	5.5	5.4	6.4	6.8	4.2	3.0	6.4	5.6	53.3	43.2	46.4
Growing Degrees	5	9.9	11.0	11.0	10.2	9.8	10.5	9.7	8.8	9.7	10.1	100.7	-	95.6
	10	4.9	6.0	6.0	5.2	4.8	5.5	4.7	3.8	4.7	5.1	50.7	-	47.0

1st 10-day period (1-10/04/2010)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	30.8	28.2	30.2
Precipitation - Reference Evapotranspiration	-30.8	50.5	-24.4
Number of Rainy Days	0.0	4.0	1.4
Number of Dry Days	16.0	7.0	-

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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ΜΕΤΕΩΡΟΛΟΓΙΚΗ
ΥΠΗΡΕΣΙΑ

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