



AGROMETEOROLOGICAL BULLETIN

*October 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



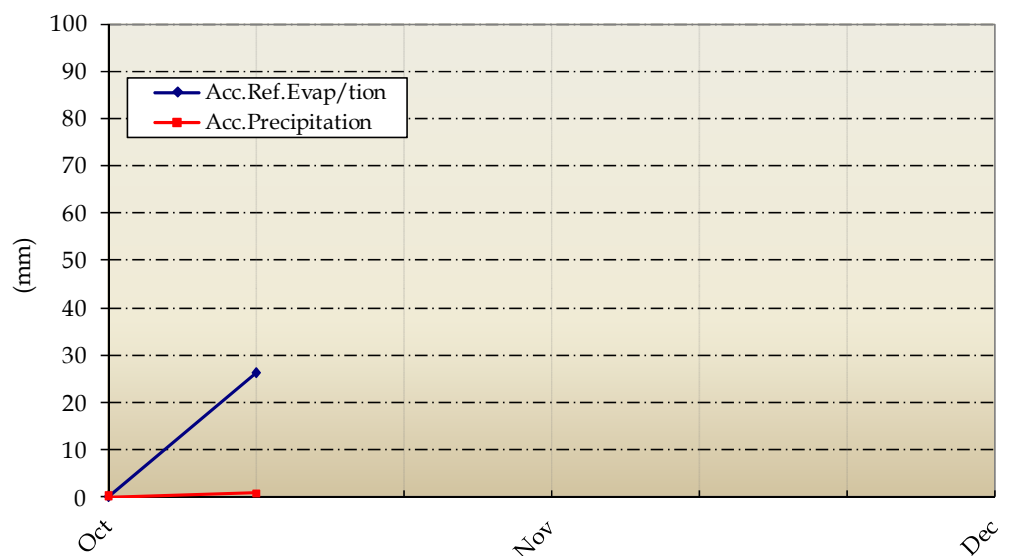
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1st 10-day period (1-10/10/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.4	32.0	28.4	28.4	30.2	30.4	30.2	27.6	27.0	26.0	29.5	25.8	26.7
	Min	13.6	14.2	16.0	14.6	14.2	13.6	12.6	15.6	13.8	15.6	14.4	12.7	12.6
Relative Humidity	Max	87	85	90	98	92	84	85	94	92	90	90	90	-
	Min	21	37	53	38	45	28	46	50	46	49	41	42	-
Soil Temperature at 10 cm	06 UTC	22.6	22.6	23.4	22.8	22.4	23.4	22.0	22.4	22.2	22.6	22.6	20.6	19.3
	12 UTC	25.4	25.0	25.6	25.0	24.8	24.6	24.2	24.6	24.4	24.2	24.8	22.8	23.5
Sunshine Duration		10.1	9.6	7.1	10.1	10.1	10.0	9.8	7.7	7.9	5.8	8.8	7.1	7.4
Precipitation				0.2							0.6	0.8	29.1	23.3
Evaporation		5.0	3.2	3.4	6.2	4.4	4.4	5.0	3.8	9.8	2.8	48.0	34.7	41.8
Growing Degrees	5	19.0	18.1	17.2	16.5	17.2	17.0	16.4	16.6	15.4	15.8	169.2	142.7	146.6
	10	14.0	13.1	12.2	11.5	12.2	12.0	11.4	11.6	10.4	10.8	119.2	92.7	96.6

1st 10-day period (1-10/10/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	26.3	25.1	26.9
Precipitation - Reference Evapotranspiration	-25.5	4.0	-3.6
Number of Rainy Days	2.0	3.0	2.3
Number of Dry Days	12.0	15.0	-

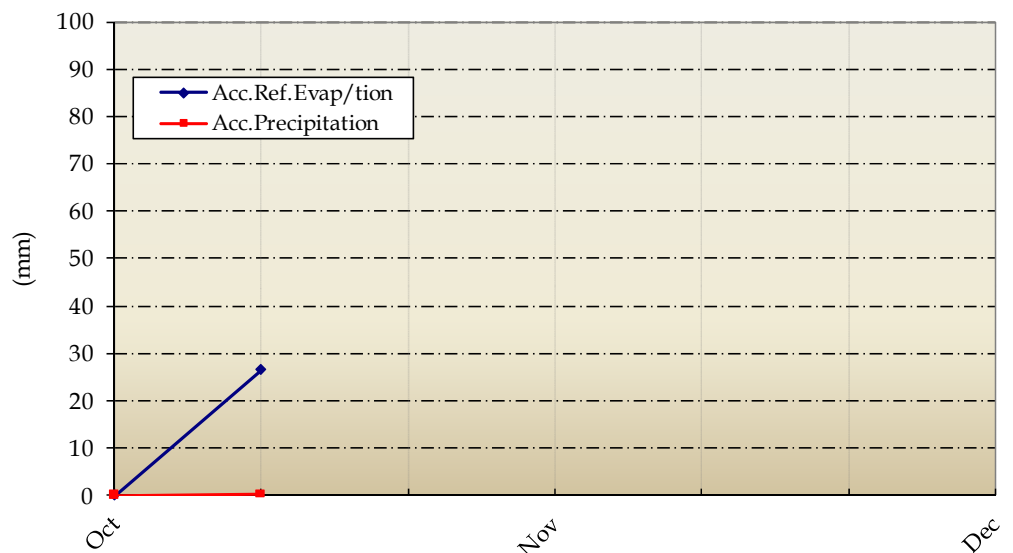
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/10/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.4	28.6	25.6	27.2	28.4	29.2	26.4	24.4	22.0	22.2	26.6	24.1	22.8
	Min	15.6	16.4	18.0	18.0	14.0	13.8	11.8	13.6	12.4	9.5	14.3	11.7	11.7
Relative Humidity	Max	100	94	94	96	80	91	89	90	93	91	92	89	-
	Min	20	52	71	49	42	32	51	34	36	41	43	49	-
Soil Temperature at 10 cm	06 UTC	23.0	23.4	23.2	23.6	22.4	22.2	21.8	22.2	19.4	18.8	22.0	20.4	17.4
	12 UTC	25.2	25.4	25.6	25.2	27.6	24.6	24.0	24.2	21.0	21.2	24.4	21.9	20.5
Sunshine Duration		11.1	10.2	10.0	5.2	9.9	10.0	10.5	4.6	8.2	6.2	8.6	7.7	6.7
Precipitation					0.0				0.4			0.4	19.1	17.2
Evaporation		7.8	5.1	4.8	2.7	4.0	8.9	3.1	3.0	3.9	4.0	47.3	41.3	48.1
Growing Degrees	5	19.0	17.5	16.8	17.6	16.2	16.5	14.1	14.0	12.2	10.9	154.8	129.4	122.8
	10	14.0	12.5	11.8	12.6	11.2	11.5	9.1	9.0	7.2	5.9	104.8	79.4	73.0

1st 10-day period (1-10/10/2012)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	26.6	27.2	27.4
Precipitation - Reference Evapotranspiration	-26.2	-8.1	-10.2
Number of Rainy Days	1.0	2.0	1.6
Number of Dry Days	20.0	16.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

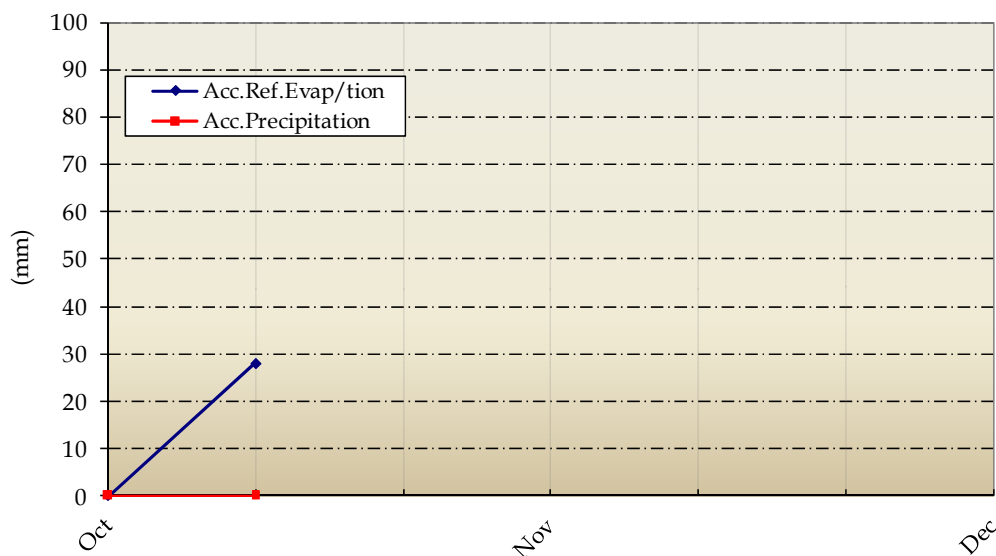


Andravida

1st 10-day period (1-10/10/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.0	30.2	27.8	27.1	26.7	28.6	26.2	26.4	26.1	26.8	27.7	25.7	25.6
	Min	14.3	17.5	19.0	20.2	17.0	14.6	15.5	17.5	14.7	16.4	16.7	14.5	14.3
Relative Humidity	Max	86	88	88	88	89	90	88	96	91	84	89	90	-
	Min	26	37	50	43	54	32	50	51	47	34	42	43	-
Soil Temperature at 10 cm	06 UTC	22.0	22.2	23.2	23.6	22.6	22.0	21.8	22.4	21.4	21.4	22.3	20.3	20.5
	12 UTC	27.6	27.6	27.2	27.4	27.2	27.2	26.4	26.0	26.4	25.8	26.9	25.3	23.8
Sunshine Duration		9.7	8.9	8.5	9.6	8.8	8.5	8.9	4.4	7.8	7.4	8.2	6.9	7.7
Precipitation													57.6	23.2
Evaporation		5.8	3.4	8.0	5.8	3.8	5.6	3.8	4.0	4.8	1.8	46.8	59.7	42.9
Growing Degrees	5	17.7	18.9	18.4	18.7	16.9	16.6	15.9	17.0	15.4	16.6	171.8	150.7	149.6
	10	12.7	13.9	13.4	13.7	11.9	11.6	10.9	12.0	10.4	11.6	121.8	100.7	99.6

1st 10-day period (1-10/10/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	28.1	28.8	26.8
Precipitation - Reference Evapotranspiration	-28.1	28.8	-3.6
Number of Rainy Days	0.0	4.0	2.2
Number of Dry Days	25.0	15.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

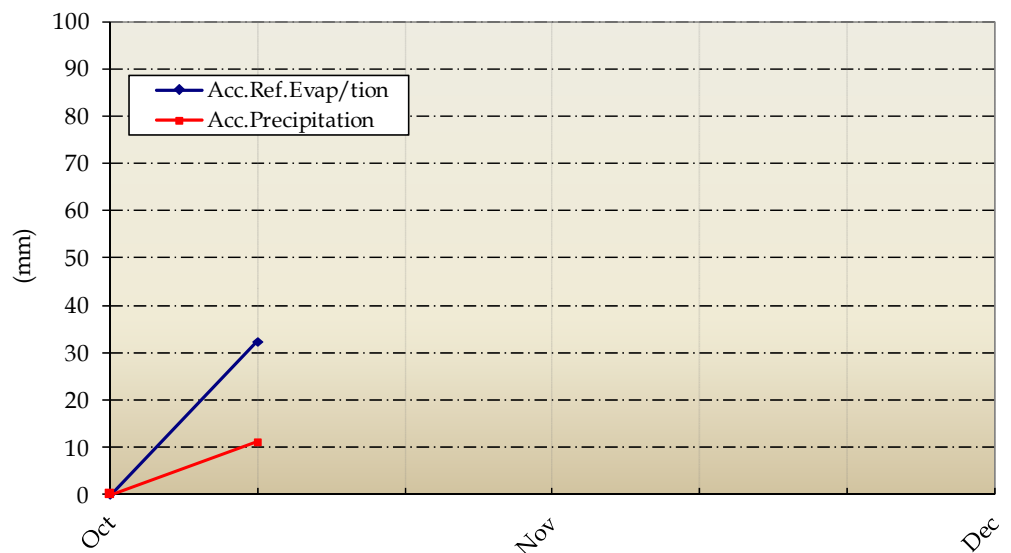


Iraklio

1st 10-day period (1-10/10/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.6	26.8	30.0	27.0	26.4	26.0	26.0	26.8	26.4	24.6	26.7	-	24.6
	Min	20.2	19.2	19.0	20.2	20.0	22.8	18.0	18.2	19.4	18.4	19.5	-	17.5
Relative Humidity	Max	92	92	87	86	89	83	90	84	94	94	89	-	-
	Min	71	75	48	66	67	65	65	60	63	71	65	-	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.7	9.0	6.0	9.5	8.1	8.5	8.8	7.9	6.0	7.5	8.0	-	7.9
Precipitation				0.0						4.8	6.3	11.1	-	6.0
Evaporation		0.7	1.6	2.6	3.9	4.3	4.2	3.3	3.8	0.7	2.2	27.3	-	53.7
Growing Degrees	5	18.4	18.0	19.5	18.6	18.2	19.4	17.0	17.5	17.9	16.5	181.0	-	160.1
	10	13.4	13.0	14.5	13.6	13.2	14.4	12.0	12.5	12.9	11.5	131.0	-	110.1

1st 10-day period (1-10/10/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	32.4	-	-
Precipitation - Reference Evapotranspiration	-21.3	-	6.0
Number of Rainy Days	2.0	-	0.9
Number of Dry Days	22.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

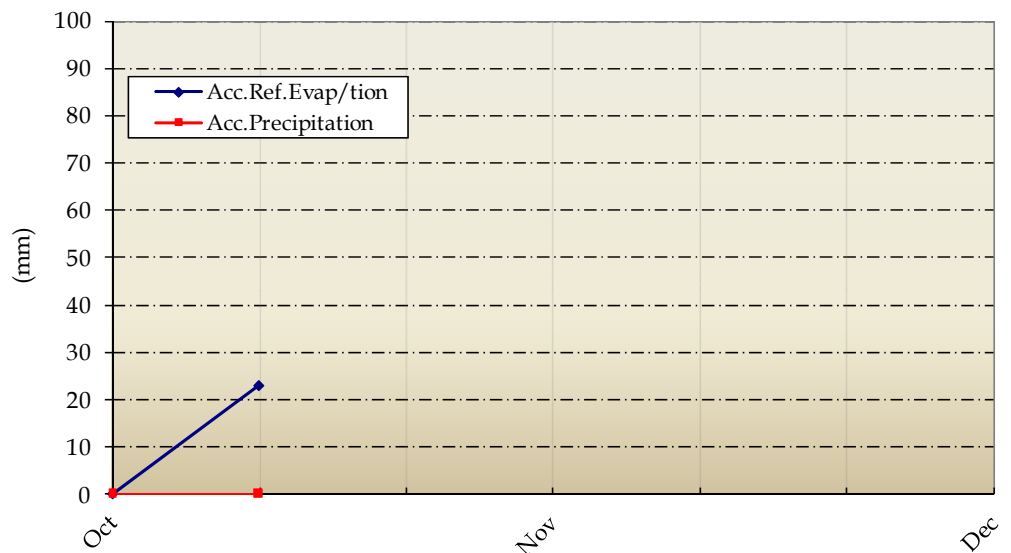


Ioannina

1st 10-day period (1-10/10/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.2	30.6	25.4	26.8	27.0	27.2	26.0	25.0	22.0	20.2	26.1	22.0	22.8
	Min	10.2	12.5	14.0	10.2	9.8	10.2	9.4	12.4	12.0	14.4	11.5	9.9	10.0
Relative Humidity	Max	81	91	93	86	95	-	76	95	88	93	89	88	-
	Min	18	25	34	37	36	44	33	31	47	63	37	46	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	15.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	18.3
Sunshine Duration		8.7	8.7	7.6	8.8	8.0	8.0	8.9	6.7	3.8	0.4	7.0	6.1	5.7
Precipitation											0.0	0.0	83.8	25.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	32.1
Growing Degrees	5	15.7	16.6	14.7	13.5	13.4	13.7	12.7	13.7	12.0	12.3	138.3	-	114.5
	10	10.7	11.6	9.7	8.5	8.4	8.7	7.7	8.7	7.0	7.3	88.3	-	64.7

1st 10-day period (1-10/10/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	23.1	21.4	21.0
Precipitation - Reference Evapotranspiration	-23.1	62.4	4.8
Number of Rainy Days	0.0	3.0	2.6
Number of Dry Days	20.0	13.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

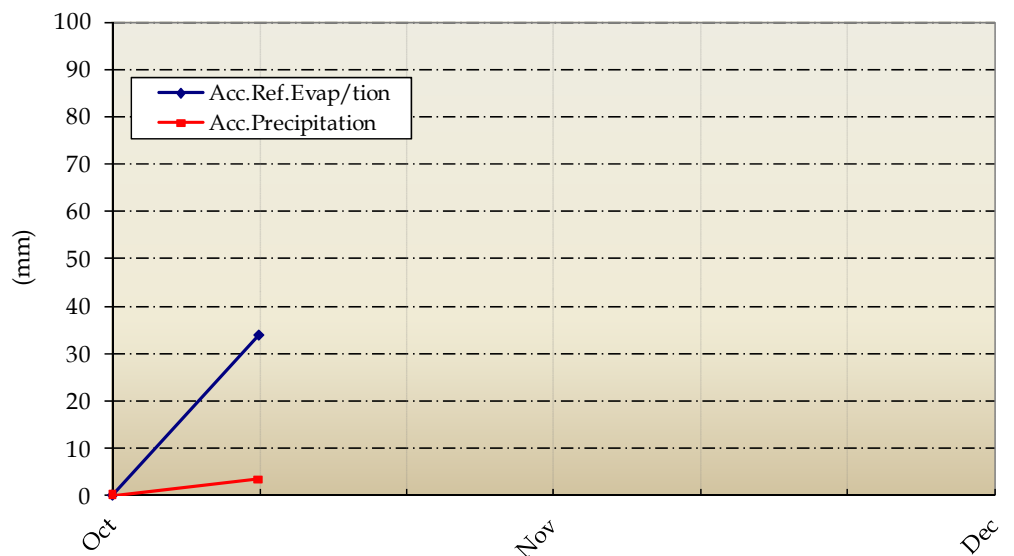


Kalamata

1st 10-day period (1-10/10/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.2	28.8	29.5	29.6	28.2	29.0	28.2	27.8	26.4	25.1	28.3	25.0	26.1
	Min	13.8	16.2	16.6	17.1	17.3	15.3	14.2	15.8	14.4	13.4	15.4	14.4	13.8
Relative Humidity	Max	92	91	91	89	89	87	90	91	93	94	91	91	-
	Min	30	42	38	36	40	31	40	45	48	37	39	50	-
Soil Temperature at 10 cm	06 UTC	21.6	22.4	22.4	22.2	22.0	22.6	21.8	22.0	20.0	21.0	21.8	20.2	20.0
	12 UTC	23.6	23.8	23.6	23.6	23.6	23.4	23.6	23.0	22.8	22.2	23.3	21.4	22.6
Sunshine Duration		10.0	8.0	9.3	10.1	10.2	10.0	9.2	9.6	6.9	6.3	9.0	6.4	7.4
Precipitation										3.5		3.5	74.6	17.8
Evaporation		3.8	4.5	4.4	9.6	4.8	5.0	6.2	2.8	1.9	3.2	46.2	30.7	46.9
Growing Degrees	5	17.0	17.5	18.1	18.4	17.8	17.2	16.2	16.8	15.4	14.3	168.5	147.1	149.4
	10	12.0	12.5	13.1	13.4	12.8	12.2	11.2	11.8	10.4	9.3	118.5	97.1	99.4

1st 10-day period (1-10/10/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	34.0	27.3	28.3
Precipitation - Reference Evapotranspiration	-30.5	47.3	-10.5
Number of Rainy Days	1.0	5.0	2.3
Number of Dry Days	22.0	10.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

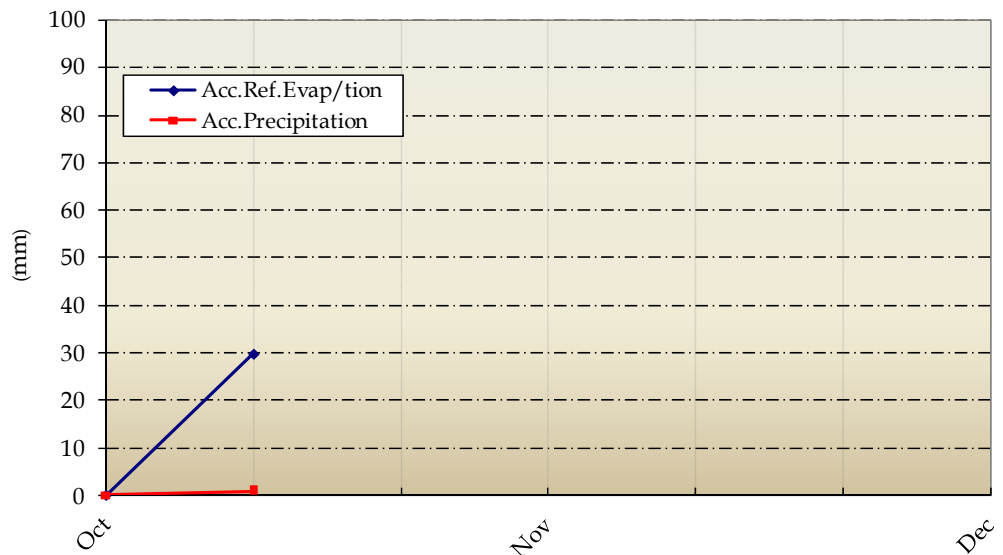


Larisa

1st 10-day period (1-10/10/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.4	31.6	32.2	29.8	30.0	29.0	30.2	29.2	22.4	23.4	29.0	25.0	25.0
	Min	13.6	12.0	13.4	15.2	12.8	11.5	11.0	15.0	14.6	16.2	13.5	11.8	11.6
Relative Humidity	Max	75	81	91	75	78	75	83	66	70	91	78	88	-
	Min	17	23	21	26	20	24	21	17	25	48	24	40	-
Soil Temperature at 10 cm	06 UTC	22.8	20.2	22.2	22.6	22.2	21.6	21.2	21.6	21.8	21.2	21.7	20.0	19.3
	12 UTC	24.2	24.2	23.8	24.0	23.4	23.2	23.4	23.0	22.0	22.2	23.3	22.0	20.9
Sunshine Duration		8.0	7.5	8.0	8.3	8.0	8.0	8.2	7.0	0.1	0.9	6.4	6.1	6.2
Precipitation											0.8	0.8	10.5	10.5
Evaporation		5.6	5.0	6.0	6.4	3.9	4.7	5.8	7.3	0.9	1.8	47.4	41.5	41.2
Growing Degrees	5	18.0	16.8	17.8	17.5	16.4	15.3	15.6	17.1	13.5	14.8	162.8	133.9	133.0
	10	13.0	11.8	12.8	12.5	11.4	10.3	10.6	12.1	8.5	9.8	112.8	83.9	83.0

1st 10-day period (1-10/10/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	29.7	25.5	26.4
Precipitation - Reference Evapotranspiration	-28.9	-15.0	-15.9
Number of Rainy Days	1.0	3.0	2.1
Number of Dry Days	22.0	10.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

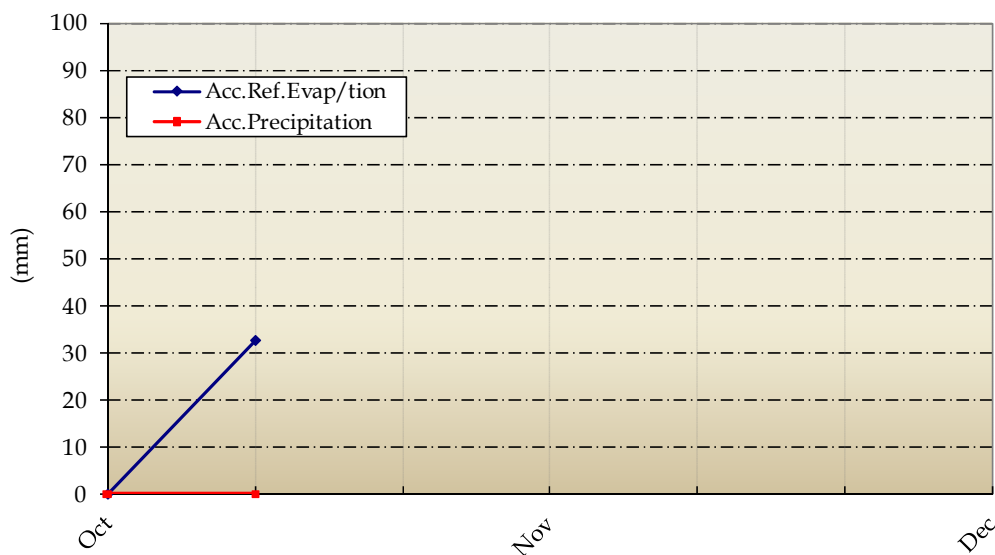


Mikra

1st 10-day period (1-10/10/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.0	27.8	30.4	28.4	29.0	27.8	26.4	24.8	20.6	21.9	26.9	24.1	23.5
	Min	16.2	15.0	15.9	20.6	14.1	13.6	13.8	14.1	14.2	14.3	15.2	14.2	12.8
Relative Humidity	Max	77	83	84	81	83	80	80	79	71	79	80	83	-
	Min	25	51	30	30	25	31	29	25	37	41	32	42	-
Soil Temperature at 10 cm	06 UTC	23.0	22.4	22.4	23.4	22.0	22.0	21.6	21.8	21.0	20.4	22.0	20.1	18.4
	12 UTC	26.4	24.8	26.2	26.0	26.0	26.2	25.6	23.6	23.4	23.4	25.2	22.3	21.9
Sunshine Duration		9.9	8.5	9.5	8.6	9.8	9.8	9.5	9.4	0.0	3.0	7.8	7.4	6.2
Precipitation											0.0	0.0	12.1	9.7
Evaporation		7.5	3.7	6.4	6.6	4.4	6.0	6.4	5.2	1.4	0.6	48.2	47.4	40.2
Growing Degrees	5	19.1	16.4	18.2	19.5	16.6	15.7	15.1	14.5	12.4	13.1	160.5	141.5	131.6
	10	14.1	11.4	13.2	14.5	11.6	10.7	10.1	9.5	7.4	8.1	110.5	91.5	81.6

1st 10-day period (1-10/10/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	32.5	32.2	25.5
Precipitation - Reference Evapotranspiration	-32.5	-20.1	-15.8
Number of Rainy Days	0.0	2.0	1.7
Number of Dry Days	20.0	17.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

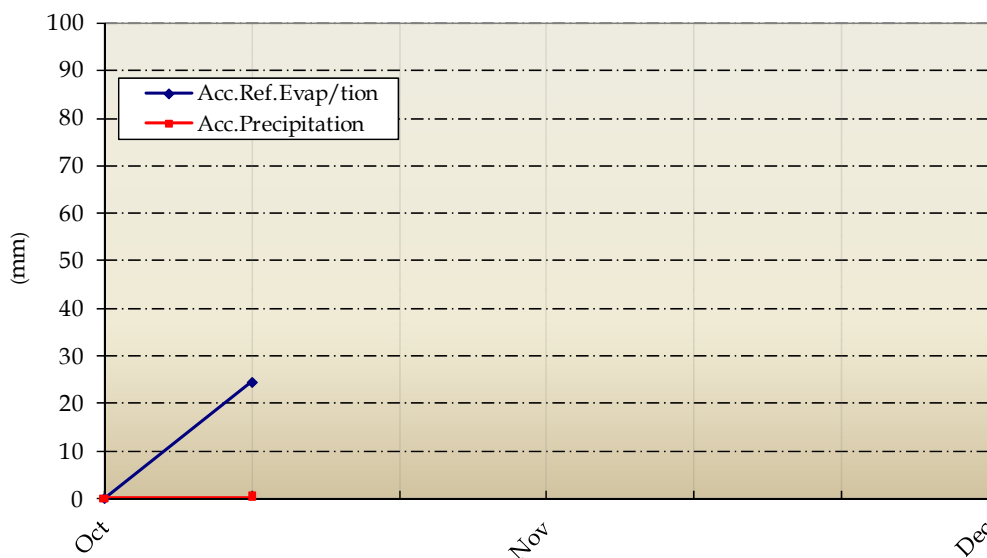


Tripoli

1st 10-day period (1-10/10/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.6	30.6	26.6	25.9	26.2	24.6	27.0	24.7	22.6	22.6	26.1	21.1	23.3
	Min	8.5	10.1	10.8	10.1	9.5	8.4	7.5	9.3	8.9	12.5	9.6	10.5	9.0
Relative Humidity	Max	84	89	82	90	95	92	92	84	92	96	90	89	-
	Min	16	20	38	33	32	29	26	32	49	39	31	43	-
Soil Temperature at 10 cm	06 UTC	19.2	19.6	19.8	19.0	18.4	18.0	17.8	18.2	17.6	18.8	18.6	16.8	17.3
	12 UTC	25.2	25.4	24.0	24.0	23.4	23.0	23.2	21.0	22.2	22.0	23.3	20.3	19.3
Sunshine Duration		10.5	9.0	9.1	7.0	7.4	9.1	9.1	5.3	6.8	3.7	7.7	6.4	7.4
Precipitation					0.2						0.0	0.2	36.3	9.7
Evaporation		6.0	4.5	3.1	0.8	3.8	3.4	4.4	2.4	3.5	2.2	34.1	25.1	32.6
Growing Degrees	5	14.6	15.4	13.7	13.0	12.9	11.5	12.3	12.0	10.8	12.6	128.5	108.2	111.8
	10	9.6	10.4	8.7	8.0	7.9	6.5	7.3	7.0	5.8	7.6	78.5	58.2	62.0

1st 10-day period (1-10/10/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	24.5	23.0	25.4
Precipitation - Reference Evapotranspiration	-24.3	13.3	-15.7
Number of Rainy Days	1.0	6.0	2.0
Number of Dry Days	16.0	10.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





Note: The Met Station "Tympaki" have been replaced by "Iraklio"

◆ 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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