



# AGROMETEOROLOGICAL BULLETIN

*October 2015  
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



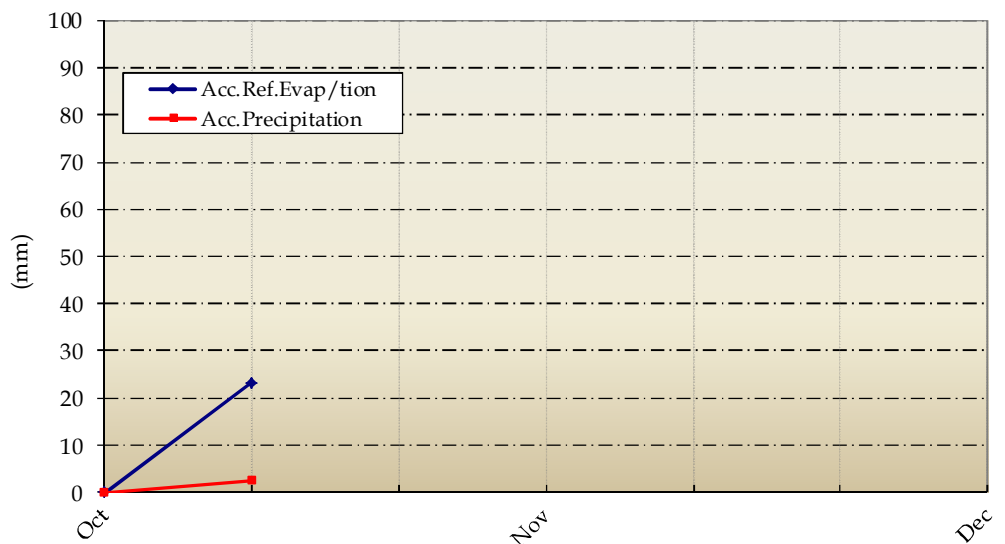
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[www.meteo.gov.gr](http://www.meteo.gov.gr)  
[www.meteohellas.gr](http://www.meteohellas.gr)*

1st 10-day period (1-10/10/2015)		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	21.8	24.0	25.2	24.4	25.0	24.0	20.2	20.4	20.4	22.5	22.6	22.8
	Min	12.0	9.4	12.0	11.4	12.0	16.0	14.2	16.6	14.0	14.2	13.2	13.2	11.7
Relative Humidity	Max	66	85	90	93	93	95	95	76	85	83	86	82	-
	Min	43	42	47	50	52	47	51	53	61	60	51	41	-
Soil Temperature at 10 cm	06 UTC	15.6	15.2	17.0	17.4	18.0	19.4	18.2	19.0	28.0	17.6	18.5	18.0	17.4
	12 UTC	19.6	20.0	21.4	21.2	22.0	22.4	21.4	20.6	20.6	20.4	21.0	21.2	20.5
Sunshine Duration		10.7	9.1	8.5	9.3	8.8	6.1	5.7	3.3	1.7	3.3	6.6	7.0	6.7
Precipitation							2.5		0.0	0.0	0.0	2.5	3.4	17.2
Evaporation		2.8	4.7	3.4	3.3	3.9	2.8	0.8	6.5	0.7	1.6	30.5	43.6	48.1
Growing Degrees	5	10.9	10.6	13.0	13.3	13.2	15.5	14.1	13.4	12.2	12.3	128.5	128.7	122.8
	10	5.9	5.6	8.0	8.3	8.2	10.5	9.1	8.4	7.2	7.3	78.5	78.7	73.0

1st 10-day period (1-10/10/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	23.3	27.0	27.4
Precipitation - Reference Evapotranspiration	-20.8	-23.6	-10.2
Number of Rainy Days	1.0	2.0	1.6
Number of Dry Days	5.0	9.0	-

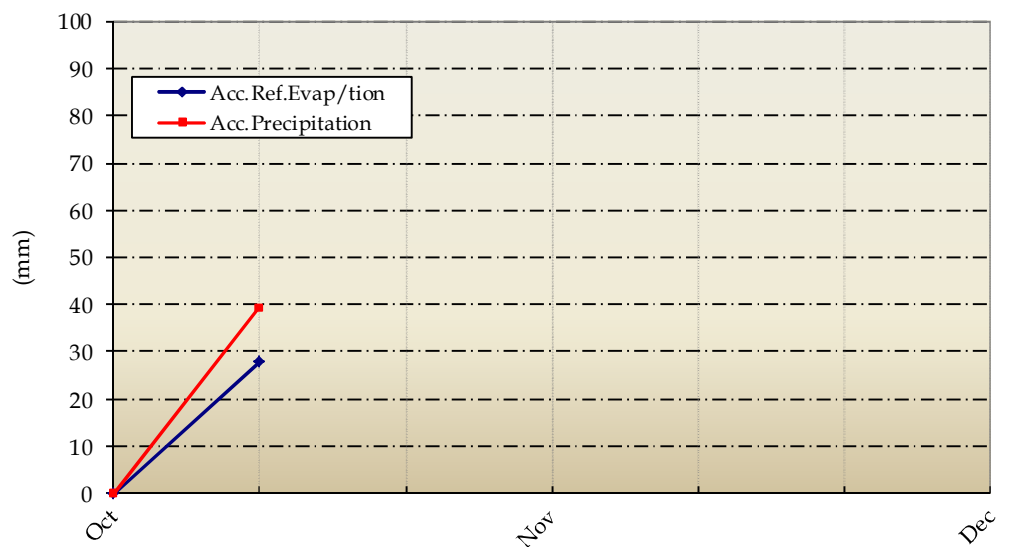
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/10/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.4	25.9	25.3	26.4	26.0	26.1	27.4	25.6	26.0	26.2	26.2	25.4	25.6
	Min	14.0	12.8	11.8	16.0	16.5	16.8	17.7	17.0	16.3	16.6	15.6	14.0	14.3
Relative Humidity	Max	88	87	87	87	89	87	92	91	89	81	88	90	-
	Min	31	34	35	49	44	49	54	56	44	51	45	45	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	19.1	20.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	22.5	23.8
Sunshine Duration		9.5	9.1	6.9	9.4	9.0	8.0	5.7	8.8	9.1	2.2	7.8	6.1	7.7
Precipitation								30.0	7.9		1.5	39.4	87.4	23.2
Evaporation		5.5	3.0	2.0	4.0	5.0	5.0	0.9	2.8	0.6	0.4	29.2	-	42.9
Growing Degrees	5	15.7	14.4	13.6	16.2	16.3	16.5	17.6	16.3	16.2	16.4	158.9	146.5	149.6
	10	10.7	9.4	8.6	11.2	11.3	11.5	12.6	11.3	11.2	11.4	108.9	96.5	99.6

1st 10-day period (1-10/10/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	27.8	25.8	26.8
Precipitation - Reference Evapotranspiration	11.6	61.6	-3.6
Number of Rainy Days	3.0	4.0	2.2
Number of Dry Days	10.0	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

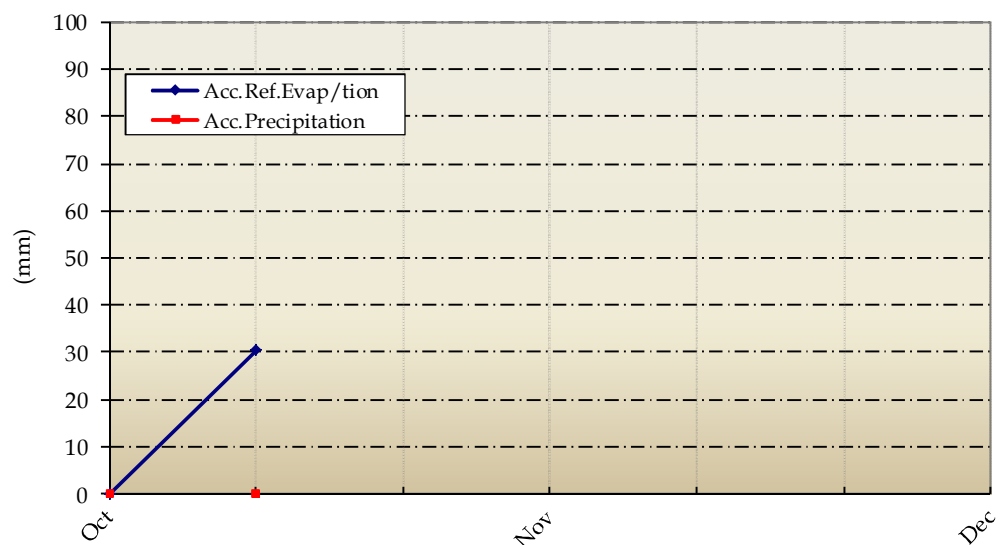


Iraklio

1st 10-day period (1-10/10/2015)		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	23.6	24.4	24.4	26.6	25.6	26.4	27.4	25.6	25.0	25.2	24.4	24.6
	Min	21.2	20.4	20.0	21.0	18.0	18.4	19.0	20.4	19.2	18.2	19.6	18.9	17.5
Relative Humidity	Max	73	76	74	82	90	90	86	88	92	88	84	81	-
	Min	66	61	59	54	67	64	64	56	70	66	63	57	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		2.4	3.5	4.5	8.3	8.0	9.0	8.8	8.6	7.8	7.7	6.9	7.7	7.9
Precipitation													0.0	6.0
Evaporation		5.7	5.1	2.3	4.5	4.2	0.9	1.4	7.2	4.8	4.3	40.4	40.3	53.7
Growing Degrees	5	17.1	17.0	17.2	17.7	17.3	17.0	17.7	18.9	17.4	16.6	173.9	166.5	160.1
	10	12.1	12.0	12.2	12.7	12.3	12.0	12.7	13.9	12.4	11.6	123.9	116.5	110.1

1st 10-day period (1-10/10/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	30.4	32.9	-
Precipitation - Reference Evapotranspiration	-30.4	-32.9	6.0
Number of Rainy Days	0.0	0.0	0.9
Number of Dry Days	10.0	12.0	-

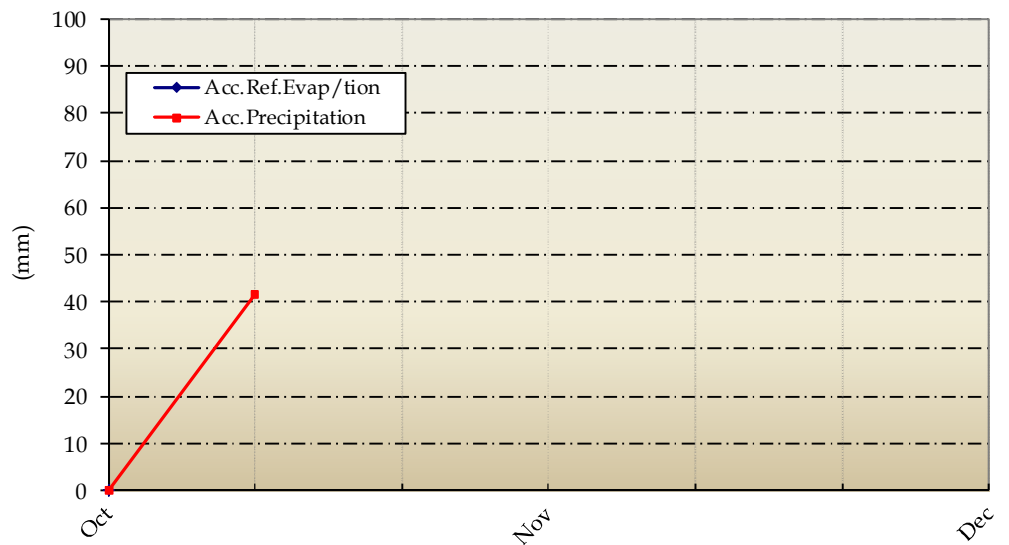
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/10/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.6	22.7	23.4	21.6	23.0	22.9	21.6	23.2	23.8	20.1	22.6	21.9	22.8
	Min	13.6	10.6	6.6	12.0	13.0	11.2	9.7	9.9	10.5	13.9	11.1	9.2	10.0
Relative Humidity	Max	88	100	100	100	100	100	100	100	100	100	99	96	-
	Min	39	39	41	68	41	47	69	57	38	76	52	48	-
Soil Temperature at 10 cm	06 UTC	30.4	31.5	31.0	31.5	31.4	31.5	31.5	-	33.5	-	31.5	-	15.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	18.3
Sunshine Duration		9.1	8.0	8.7	2.8	5.0	4.1	1.5	5.3	5.9	1.2	5.2	4.2	5.7
Precipitation								9.9	11.8		20.0	41.7	75.5	25.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	32.1
Growing Degrees	5	13.6	11.7	10.0	11.8	13.0	12.1	10.7	11.6	12.2	12.0	118.5	105.6	114.5
	10	8.6	6.7	5.0	6.8	8.0	7.1	5.7	6.6	7.2	7.0	68.5	55.6	64.7

1st 10-day period (1-10/10/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	15.6	21.0
Precipitation - Reference Evapotranspiration	-	59.9	4.8
Number of Rainy Days	3.0	3.0	2.6
Number of Dry Days	10.0	8.0	-

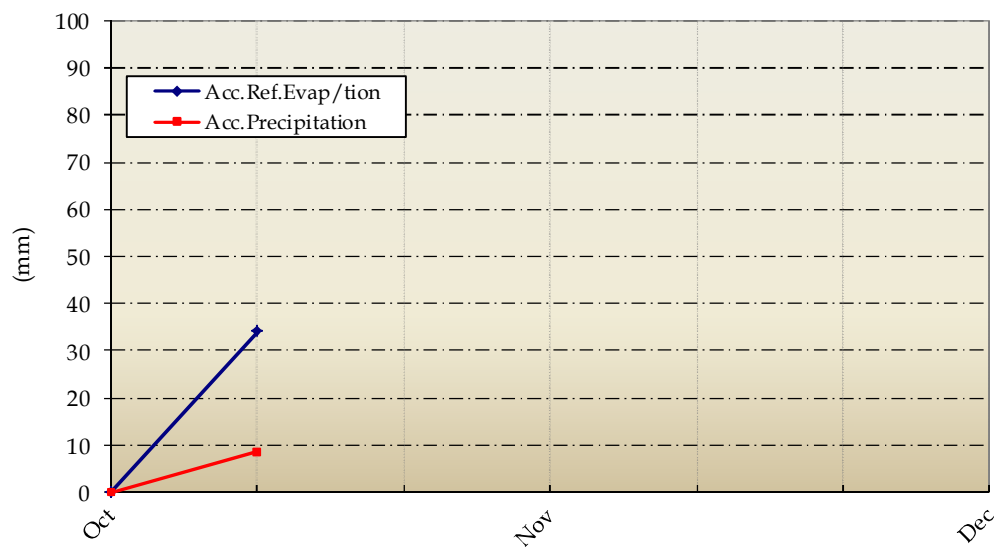
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/10/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.2	27.2	27.6	29.2	28.5	29.4	29.1	29.7	28.6	22.3	27.9	25.4	26.1
	Min	15.2	14.7	14.0	14.6	17.0	15.4	16.2	16.2	15.8	16.2	15.5	14.0	13.8
Relative Humidity	Max	73	82	90	91	92	88	92	93	92	93	89	90	-
	Min	37	29	36	37	34	36	40	35	32	71	39	44	-
Soil Temperature at 10 cm	06 UTC	22.2	22.0	21.2	21.6	22.0	21.6	21.8	22.2	22.0	22.0	21.9	20.4	20.0
	12 UTC	23.0	23.0	22.6	22.6	23.0	23.6	23.0	23.2	23.0	22.0	22.9	21.2	22.6
Sunshine Duration		9.6	10.4	9.3	9.0	9.9	8.6	10.4	10.1	9.5	0.2	8.7	6.4	7.4
Precipitation									0.7		7.8	8.5	58.8	17.8
Evaporation		5.4	5.4	4.0	5.8	4.8	5.0	2.9	4.8	6.6	9.7	54.4	-	46.9
Growing Degrees	5	16.2	16.0	15.8	16.9	17.8	17.4	17.7	18.0	17.2	14.3	167.1	147.1	149.4
	10	11.2	11.0	10.8	11.9	12.8	12.4	12.7	13.0	12.2	9.3	117.1	97.1	99.4

1st 10-day period (1-10/10/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	34.1	28.2	28.3
Precipitation - Reference Evapotranspiration	-25.6	30.6	-10.5
Number of Rainy Days	2.0	5.0	2.3
Number of Dry Days	8.0	6.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

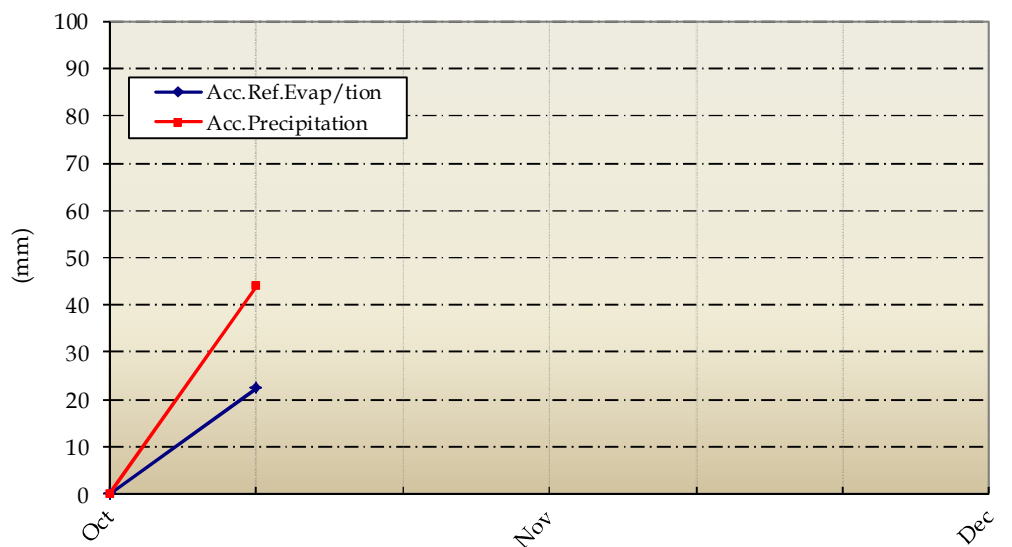


Larisa

1st 10-day period (1-10/10/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.4	21.7	25.0	26.4	27.5	27.7	26.8	22.0	25.1	21.0	24.3	22.0	25.0
	Min	15.1	12.7	9.1	11.6	13.6	15.2	13.0	16.5	16.7	16.8	14.0	12.1	11.6
Relative Humidity	Max	100	100	100	100	100	100	100	100	100	100	100	96	-
	Min	58	51	36	42	39	32	41	65	48	80	49	51	-
Soil Temperature at 10 cm	06 UTC	22.2	21.2	20.8	20.6	21.2	21.4	21.4	21.4	21.4	21.4	21.3	-	19.3
	12 UTC	21.8	21.2	20.4	20.8	21.2	21.4	21.4	21.4	21.4	21.2	21.2	-	20.9
Sunshine Duration		2.0	1.9	7.7	7.5	6.7	7.2	5.5	3.2	7.4	0.2	4.9	3.2	6.2
Precipitation		0.2	0.0					19.3	4.1		20.5	44.1	35.4	10.5
Evaporation		0.9	1.7	3.0	3.5	2.9	4.8	1.0	3.7	3.8	2.4	27.7	24.4	41.2
Growing Degrees	5	12.3	12.2	12.1	14.0	15.6	16.5	14.9	14.3	15.9	13.9	141.5	120.3	133.0
	10	7.3	7.2	7.1	9.0	10.6	11.5	9.9	9.3	10.9	8.9	91.5	70.3	83.0

1st 10-day period (1-10/10/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	22.3	19.6	26.4
Precipitation - Reference Evapotranspiration	21.8	15.8	-15.9
Number of Rainy Days	4.0	3.0	2.1
Number of Dry Days	0.0	5.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



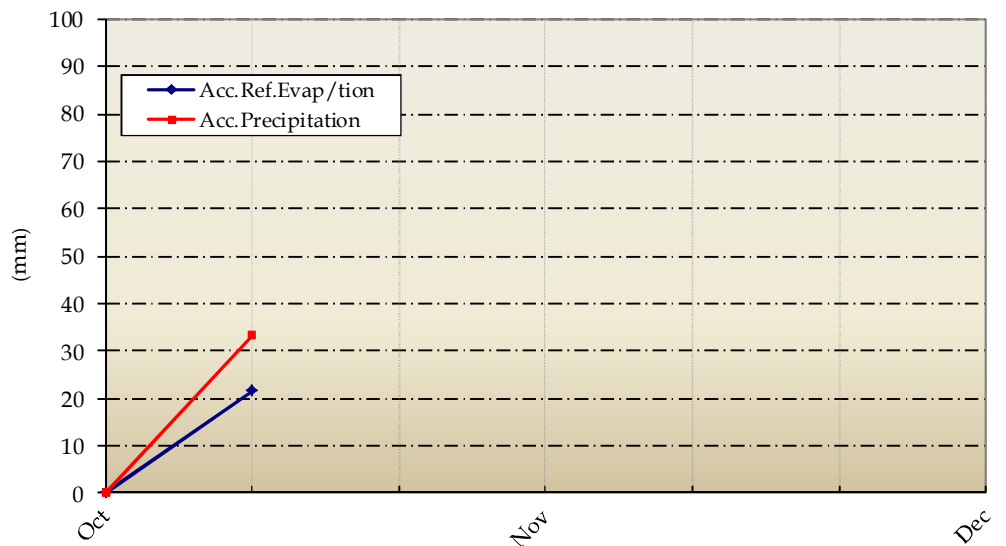


Mikra

1st 10-day period (1-10/10/2015)		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	22.8	22.8	23.6	24.6	26.4	21.8	19.8	22.0	20.4	22.5	21.9	23.5
	Min	16.2	14.5	11.6	13.6	15.2	16.2	16.4	17.0	16.8	16.0	15.4	13.9	12.8
Relative Humidity	Max	89	91	86	94	93	91	96	96	94	92	92	88	-
	Min	59	53	51	45	19	38	62	80	66	70	54	53	-
Soil Temperature at 10 cm	06 UTC	19.2	19.4	18.8	18.9	19.4	19.8	20.4	20.2	19.8	20.2	19.6	18.5	18.4
	12 UTC	20.4	22.0	21.4	22.0	22.2	22.2	22.4	20.6	21.8	20.2	21.5	20.8	21.9
Sunshine Duration		5.3	2.0	11.2	7.8	7.2	10.1	1.1	0.0	7.9	0.0	5.3	4.3	6.2
Precipitation		0.2						9.4	9.6	1.8	12.3	33.3	7.4	9.7
Evaporation		3.0	4.8	2.2	7.0	2.0	3.9	2.2	2.2	14.0	7.7	49.0	21.3	40.2
Growing Degrees	5	13.3	13.7	12.2	13.6	14.9	16.3	14.1	13.4	14.4	13.2	139.1	128.9	131.6
	10	8.3	8.7	7.2	8.6	9.9	11.3	9.1	8.4	9.4	8.2	89.1	78.9	81.6

1st 10-day period (1-10/10/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	21.7	19.5	25.5
Precipitation - Reference Evapotranspiration	11.6	-12.1	-15.8
Number of Rainy Days	5.0	4.0	1.7
Number of Dry Days	0.0	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



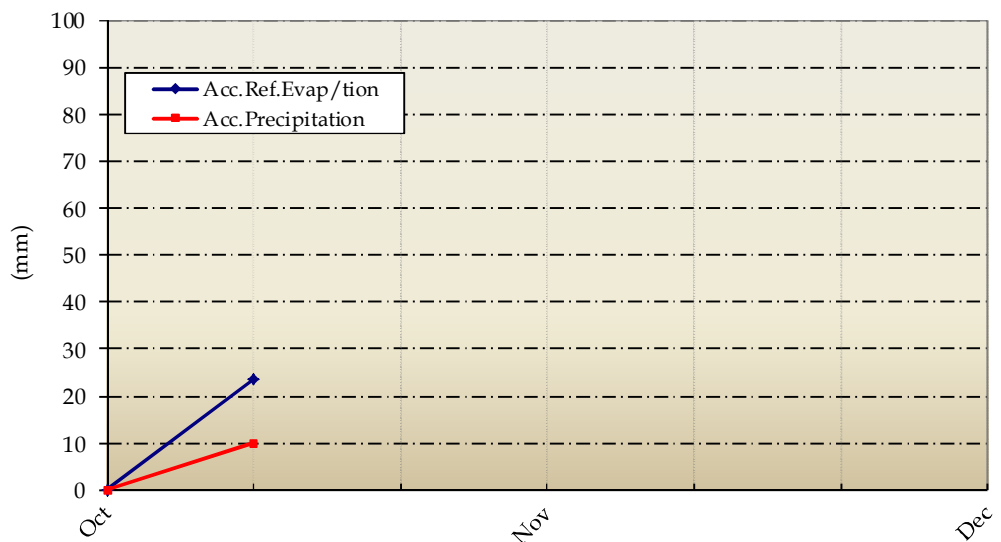


Tanagra

1st 10-day period (1-10/10/2015)		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	21.4	22.0	25.3	26.0	26.8	26.8	21.9	24.7	22.2	23.8	22.9	24.7
	Min	15.2	12.3	12.7	11.9	13.8	15.5	14.6	17.5	14.0	14.0	14.2	12.9	12.9
Relative Humidity	Max	70	85	94	98	98	98	100	100	100	100	94	92	-
	Min	47	46	52	40	47	32	42	65	49	45	46	45	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		7.8	7.3	6.0	9.6	9.0	9.4	7.1	5.2	7.5	3.0	7.2	6.2	
Precipitation								0.0	7.8		2.2	10.0	24.0	9.2
Evaporation		4.5	4.0	5.0	0.9	4.0	4.0	4.0	1.2	2.8	3.5	33.9	-	
Growing Degrees	5	13.0	11.9	12.4	13.6	14.9	16.2	15.7	14.7	14.4	13.1	139.7	129.2	
	10	8.0	6.9	7.4	8.6	9.9	11.2	10.7	9.7	9.4	8.1	89.7	79.2	

1st 10-day period (1-10/10/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	23.6	23.2	
Precipitation - Reference Evapotranspiration	-13.6	0.8	9.2
Number of Rainy Days	2.0	2.0	2.1
Number of Dry Days	11.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

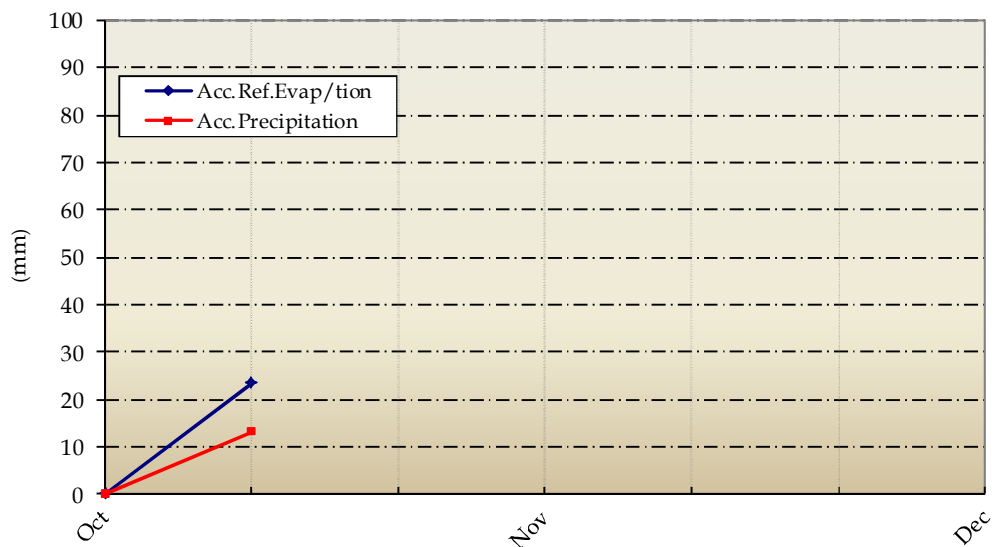


Tripoli

1st 10-day period (1-10/10/2015)		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	20.5	23.2	25.0	25.1	26.4	25.3	24.9	24.8	18.4	23.5	21.2	23.3
	Min	12.5	9.2	6.2	8.1	9.3	9.1	10.2	12.9	9.4	13.1	10.0	8.4	9.0
Relative Humidity	Max	84	100	100	100	100	100	100	100	100	100	98	96	-
	Min	43	48	39	37	27	29	44	43	31	83	42	47	-
Soil Temperature at 10 cm	06 UTC	17.2	16.6	15.4	16.2	17.0	17.0	17.4	18.4	17.8	18.4	17.1	15.9	17.3
	12 UTC	19.8	18.6	-	-	21.0	21.0	21.2	21.8	21.2	-	20.7	19.8	19.3
Sunshine Duration		7.5	6.2	8.7	9.2	7.2	9.2	8.5	8.0	8.1	0.0	7.3	5.2	7.4
Precipitation								0.4	3.0		9.8	13.2	22.0	9.7
Evaporation		3.1	2.1	2.2	3.1	2.8	3.8	2.7	3.0	2.5	0.0	25.3	20.6	32.6
Growing Degrees	5	12.0	9.9	9.7	11.6	12.2	12.8	12.8	13.9	12.1	10.8	117.5	97.7	111.8
	10	7.0	4.9	4.7	6.6	7.2	7.8	7.8	8.9	7.1	5.8	67.5	47.7	62.0

1st 10-day period (1-10/10/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	23.4	19.4	25.4
Precipitation - Reference Evapotranspiration	-10.2	2.6	-15.7
Number of Rainy Days	3.0	4.0	2.0
Number of Dry Days	7.0	8.0	-

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<sub>n</sub> 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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