



AGROMETEOROLOGICAL BULLETIN

*May 2011
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



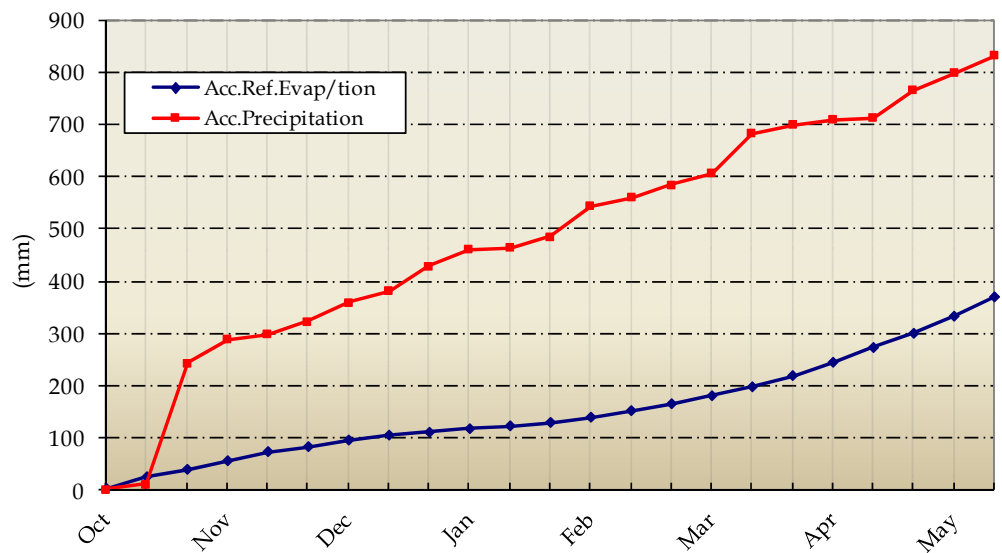
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1st 10-day period (1-10/05/2011)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.4	24.0	24.8	19.4	23.4	23.0	23.7	23.6	23.0	20.4	23.0	-	24.1
	Min	14.0	15.0	14.6	15.6	14.4	12.2	7.6	8.6	8.4	11.4	12.2	-	10.8
Relative Humidity	Max	83	98	94	98	98	72	94	97	95	88	92	-	-
	Min	46	50	56	79	58	36	34	42	45	37	48	-	-
Soil Temperature at 10 cm	06 UTC	16.8	18.6	18.6	18.2	18.6	18.6	17.6	17.6	17.6	18.0	18.0	-	16.9
	12 UTC	19.2	21.0	21.0	20.0	20.4	20.8	20.6	20.6	20.2	19.6	20.3	-	21.9
Sunshine Duration		6.8	8.8	8.1	1.1	6.4	12.9	12.5	12.5	10.0	11.5	9.1	-	7.8
Precipitation		1.2		6.2	17.3	2.1				6.8	0.8	34.4	-	17.1
Evaporation		4.2	6.0	4.5	0.1	10.0	6.5	6.5	6.8	5.6	5.7	55.9	-	53.8
Growing Degrees	5	14.2	14.5	14.7	12.5	13.9	12.6	10.7	11.1	10.7	10.9	125.8	-	124.9
	10	9.2	9.5	9.7	7.5	8.9	7.6	5.7	6.1	5.7	5.9	75.8	-	74.9

1st 10-day period (1-10/05/2011)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	37.3	-	38.7
Precipitation - Reference Evapotranspiration	-2.9	-	-21.6
Number of Rainy Days	6.0	-	2.8
Number of Dry Days	0.0	-	-

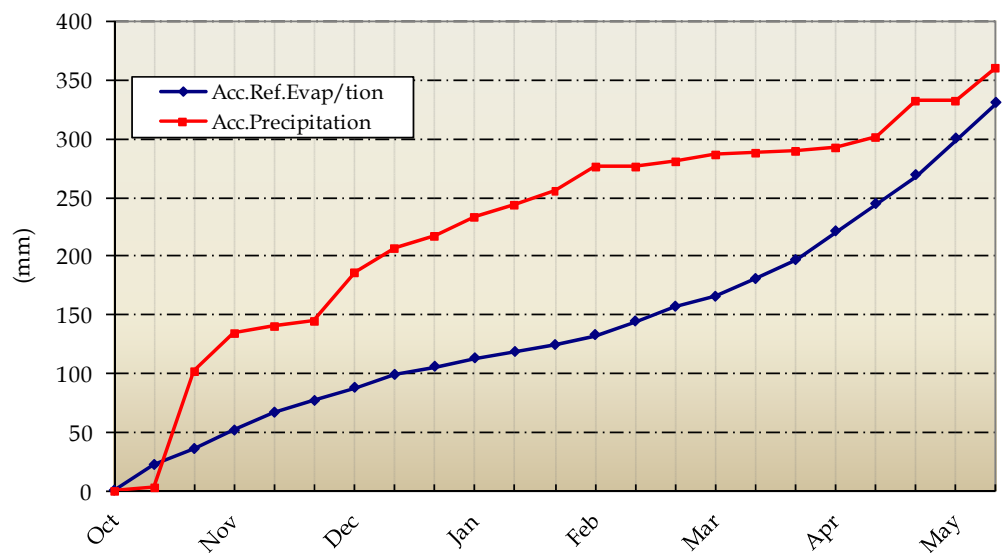
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2011)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.2	20.2	20.0	18.2	20.4	17.6	17.2	17.6	17.6	21.0	19.0	24.1	20.6
	Min	11.8	9.8	12.4	15.0	12.8	9.8	4.2	7.6	9.8	11.0	10.4	10.6	9.7
Relative Humidity	Max	93	89	98	98	98	92	83	83	83	85	90	82	-
	Min	51	66	77	86	53	47	30	60	37	42	55	36	-
Soil Temperature at 10 cm	06 UTC	15.4	14.2	15.8	16.0	15.2	14.4	12.6	13.5	14.0	14.8	14.6	18.4	15.1
	12 UTC	17.6	18.2	18.0	18.0	17.6	16.6	16.8	16.6	16.8	17.4	17.4	21.0	19.2
Sunshine Duration		2.9	11.4	2.1	1.7	4.6	7.9	12.3	3.0	8.9	10.5	6.5	11.2	8.0
Precipitation		3.0		4.3	13.6		6.8			0.0		27.7	0.1	9.3
Evaporation		0.1	4.1	1.3	1.1	5.0	5.6	4.3	2.7	4.9	3.4	32.5	60.5	55.4
Growing Degrees	5	11.0	10.0	11.2	11.6	11.6	8.7	5.7	7.6	8.7	11.0	97.1	123.5	101.5
	10	6.0	5.0	6.2	6.6	6.6	3.7	0.7	2.6	3.7	6.0	47.1	73.5	51.6

1st 10-day period (1-10/05/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	30.4	41.2	37.0
Precipitation - Reference Evapotranspiration	-2.7	-41.1	-27.7
Number of Rainy Days	4.0	1.0	2.2
Number of Dry Days	3.0	18.0	-

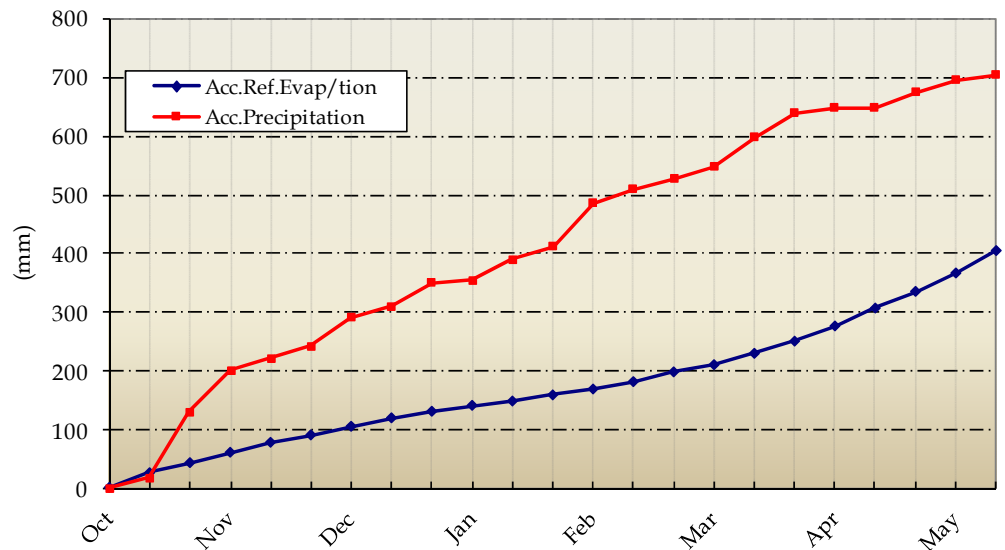
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2011)		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	22.6	22.2	21.6	20.8	22.6	20.8	20.4	23.8	22.0	22.0	24.4	22.2
	Min	13.8	15.0	15.0	16.2	14.8	11.0	9.8	10.4	8.8	11.4	12.6	12.1	11.6
Relative Humidity	Max	92	96	94	96	95	91	93	90	93	93	93	94	-
	Min	45	58	65	69	63	33	43	51	41	34	50	38	-
Soil Temperature at 10 cm	06 UTC	17.4	18.0	18.8	19.8	18.6	18.0	17.2	16.8	16.0	18.0	17.9	19.4	17.3
	12 UTC	23.4	23.0	24.4	23.4	19.0	24.0	24.0	24.0	24.0	23.8	23.3	26.6	21.1
Sunshine Duration		8.3	8.7	5.4	5.0	8.9	10.8	11.0	11.5	11.0	10.9	9.2	8.8	8.8
Precipitation		2.9		3.5							1.1	7.5		8.6
Evaporation		5.2	3.7	5.0	1.4	4.8	6.5	7.3	6.5	5.6	5.8	51.8	59.1	49.3
Growing Degrees	5	13.7	13.8	13.6	13.9	12.8	11.8	10.3	10.4	11.3	11.7	123.3	132.8	119.0
	10	8.7	8.8	8.6	8.9	7.8	6.8	5.3	5.4	6.3	6.7	73.3	82.8	69.0

1st 10-day period (1-10/05/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	38.4	39.7	35.8
Precipitation - Reference Evapotranspiration	-30.9	-39.7	-27.2
Number of Rainy Days	3.0	0.0	2.0
Number of Dry Days	2.0	21.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

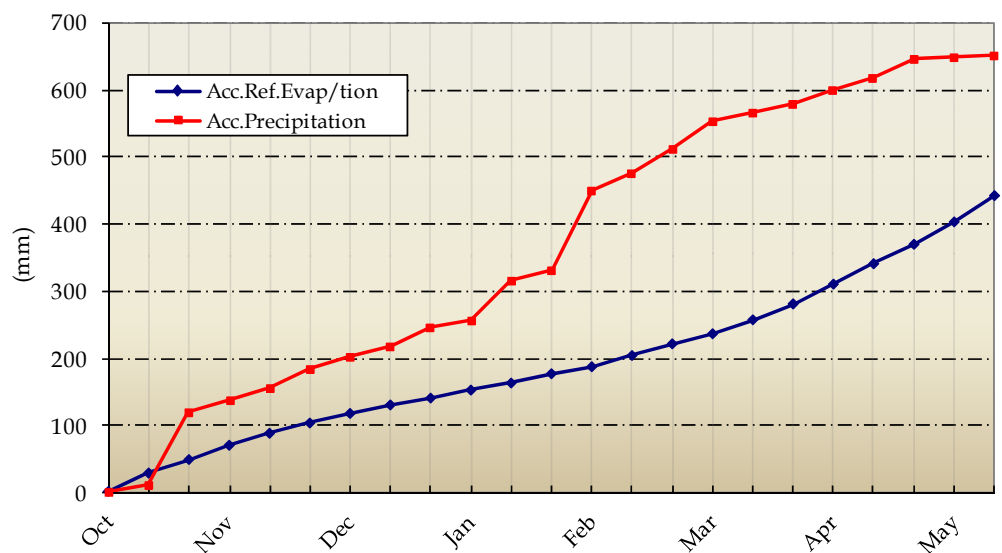


Kalamata

1st 10-day period (1-10/05/2011)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.0	22.6	22.2	22.0	23.4	20.4	20.6	22.6	21.2	22.8	22.0	24.9	22.8
	Min	13.0	12.4	14.8	11.6	14.2	11.8	8.4	9.0	9.4	10.4	11.5	11.8	11.0
Relative Humidity	Max	95	98	98	98	95	93	90	92	95	95	95	90	-
	Min	57	59	60	64	47	56	36	40	51	32	50	36	-
Soil Temperature at 10 cm	06 UTC	17.2	17.4	18.0	17.4	18.0	17.6	16.2	16.0	16.8	17.2	17.2	17.9	16.9
	12 UTC	18.6	22.4	20.8	18.6	20.6	20.6	20.0	20.4	20.6	20.6	20.3	20.4	20.6
Sunshine Duration		8.7	8.7	8.7	5.3	11.3	6.1	12.9	12.0	9.4	9.5	9.3	9.8	8.6
Precipitation				1.2	0.3		0.5					2.0		9.1
Evaporation		7.0	8.4	0.6	1.7	4.0	3.7	6.4	6.4	4.4	5.2	47.8	-	52.2
Growing Degrees	5	12.5	12.5	13.5	11.8	13.8	11.1	9.5	10.8	10.3	11.6	117.4	133.8	119.0
	10	7.5	7.5	8.5	6.8	8.8	6.1	4.5	5.8	5.3	6.6	67.4	83.8	69.0

1st 10-day period (1-10/05/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	39.3	46.6	36.5
Precipitation - Reference Evapotranspiration	-37.3	-46.6	-27.4
Number of Rainy Days	3.0	0.0	2.3
Number of Dry Days	4.0	21.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

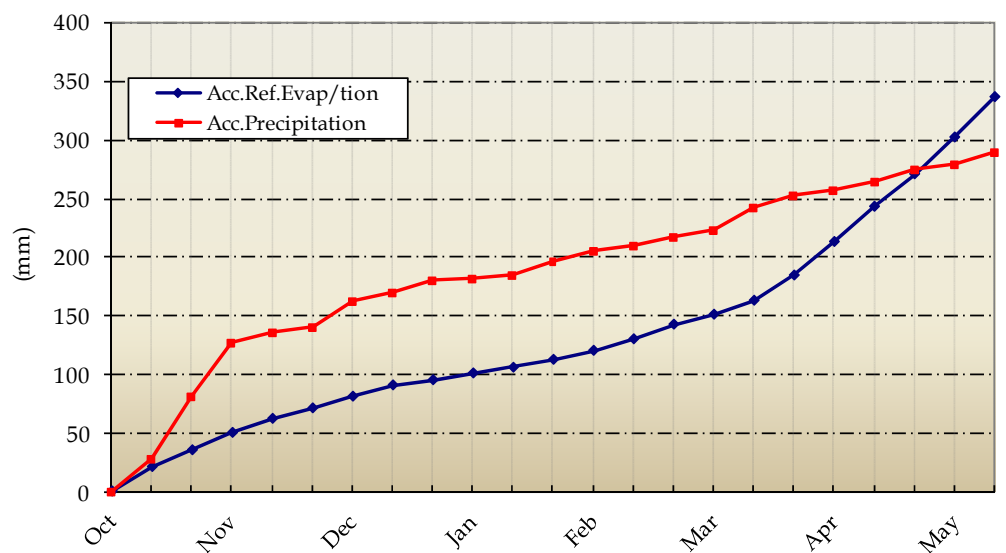


Larisa

1st 10-day period (1-10/05/2011)		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	25.6	25.2	21.4	17.8	20.2	22.6	24.2	16.2	20.2	21.4	26.9	23.7
	Min	11.8	9.4	13.8	14.0	12.6	9.0	4.8	7.0	11.8	10.0	10.4	10.6	9.3
Relative Humidity	Max	98	98	93	93	95	89	94	92	86	90	93	88	-
	Min	66	44	48	60	59	33	35	31	62	44	48	32	-
Soil Temperature at 10 cm	06 UTC	15.0	15.4	17.2	17.4	11.0	15.0	14.8	15.4	16.0	15.0	15.2	17.4	16.2
	12 UTC	17.4	19.0	19.2	18.6	17.6	18.2	17.6	20.0	18.6	18.4	18.5	19.2	18.4
Sunshine Duration		3.9	7.3	6.8	3.2	1.3	12.8	12.0	12.4	0.0	3.4	6.3	9.7	8.0
Precipitation				0.0	0.0	10.8				0.0		10.8	0.0	10.2
Evaporation		0.8	5.5	2.4	7.0	0.0	2.6	4.7	7.3	2.8	2.1	35.2	62.9	50.6
Growing Degrees	5	11.2	12.5	14.5	12.7	10.2	9.6	8.7	10.6	9.0	10.1	109.1	137.2	115.4
	10	6.2	7.5	9.5	7.7	5.2	4.6	3.7	5.6	4.0	5.1	59.1	87.2	65.4

1st 10-day period (1-10/05/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	34.4	46.3	38.0
Precipitation - Reference Evapotranspiration	-23.6	-46.3	-27.8
Number of Rainy Days	1.0	0.0	2.5
Number of Dry Days	5.0	15.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

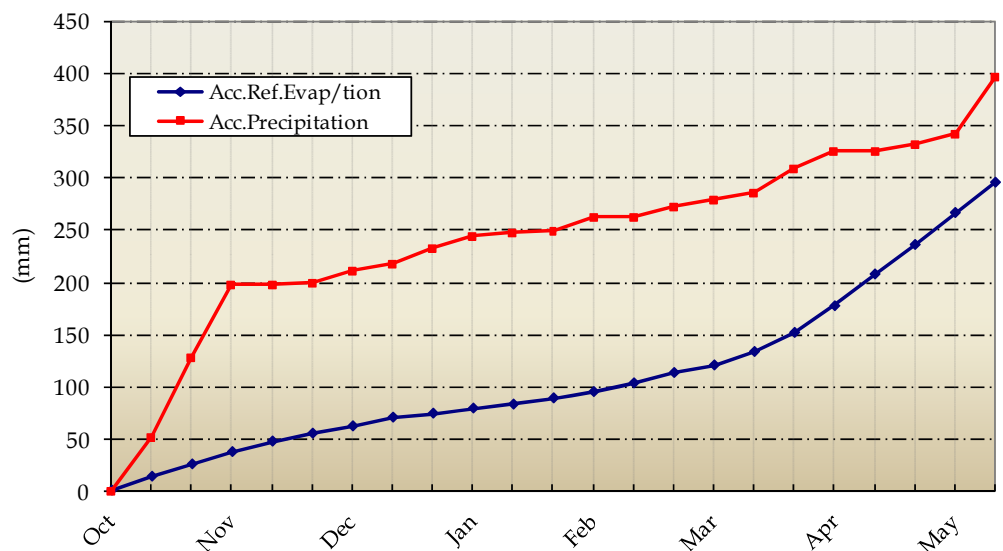


1st 10-day period (1-10/05/2011)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.0	26.8	21.2	24.4	17.2	21.6	23.4	22.8	16.6	24.2	21.9	27.0	23.7
	Min	13.8	11.2	14.8	12.6	11.4	9.2	6.8	7.4	10.0	7.6	10.5	11.3	11.0
Relative Humidity	Max	96	96	95	96	96	91	94	95	94	94	95	73	-
	Min	56	34	68	46	67	32	36	29	58	26	45	33	-
Soil Temperature at 10 cm	06 UTC	17.0	16.0	18.0	17.2	17.4	15.2	15.2	16.0	16.6	15.0	16.4	18.8	16.5
	12 UTC	18.0	19.2	18.4	19.0	16.6	17.6	16.8	17.8	16.6	17.4	17.7	20.2	20.0
Sunshine Duration		0.8	8.7	3.4	5.6	0.0	11.5	10.9	4.7	0.4	8.0	5.4	9.1	7.6
Precipitation		1.4		6.1	6.2	34.4				6.5		54.6	1.0	11.6
Evaporation		0.5	4.6	0.8	1.7	0.2	2.9	3.9	2.0	0.4	3.3	20.3	39.3	43.4
Growing Degrees	5	12.4	14.0	13.0	13.5	9.3	10.4	10.1	10.1	8.3	10.9	112.0	141.5	122.6
	10	7.4	9.0	8.0	8.5	4.3	5.4	5.1	5.1	3.3	5.9	62.0	91.5	72.9

Series

1st 10-day period (1-10/05/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	29.1	40.4	34.2
Precipitation - Reference Evapotranspiration	25.5	-39.4	-22.6
Number of Rainy Days	5.0	2.0	3.1
Number of Dry Days	1.0	13.0	-

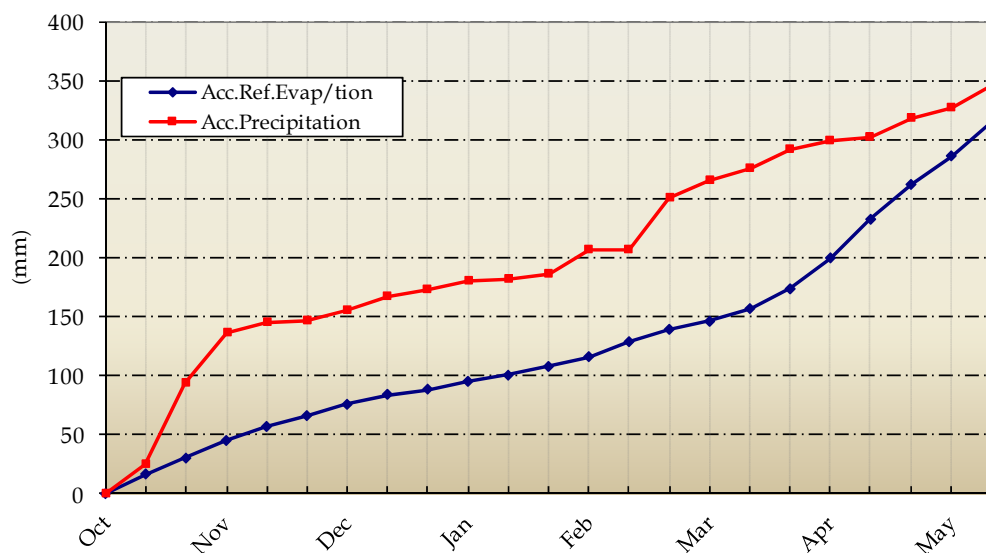
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2011)		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	23.6	19.4	25.2	17.2	21.2	19.8	-	15.2	23.6	20.4	26.6	23.0
	Min	13.0	11.4	14.4	13.8	9.8	7.6	7.4	-	10.2	10.4	10.9	12.2	11.1
Relative Humidity	Max	100	100	100	96	95	98	-	100	95	86	97	91	-
	Min	82	54	81	40	55	30	-	80	78	29	59	29	-
Soil Temperature at 10 cm	06 UTC	16.4	15.4	15.8	16.2	16.4	13.8	14.4	-	16.8	15.2	15.6	18.5	16.6
	12 UTC	16.6	18.8	17.2	20.2	15.2	17.2	17.6	-	16.4	17.4	17.4	21.6	18.0
Sunshine Duration		0.0	8.4	2.7	6.0	0.1	12.2	-	9.8	0.0	8.6	5.3	9.0	7.2
Precipitation		0.8		5.0	8.3	5.4						19.5	0.6	16.4
Evaporation		0.7	2.7	1.9	8.7	3.1	2.6	-	-	1.8	2.6	-	42.3	41.6
Growing Degrees	5	10.7	12.5	11.9	14.5	8.5	9.4	8.6	-	7.7	12.0	-	-	120.7
	10	5.7	7.5	6.9	9.5	3.5	4.4	3.6	-	2.7	7.0	-	-	70.7

1st 10-day period (1-10/05/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	28.6	41.7	35.2
Precipitation - Reference Evapotranspiration	-9.1	-41.1	-18.8
Number of Rainy Days	4.0	1.0	3.1
Number of Dry Days	0.0	13.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

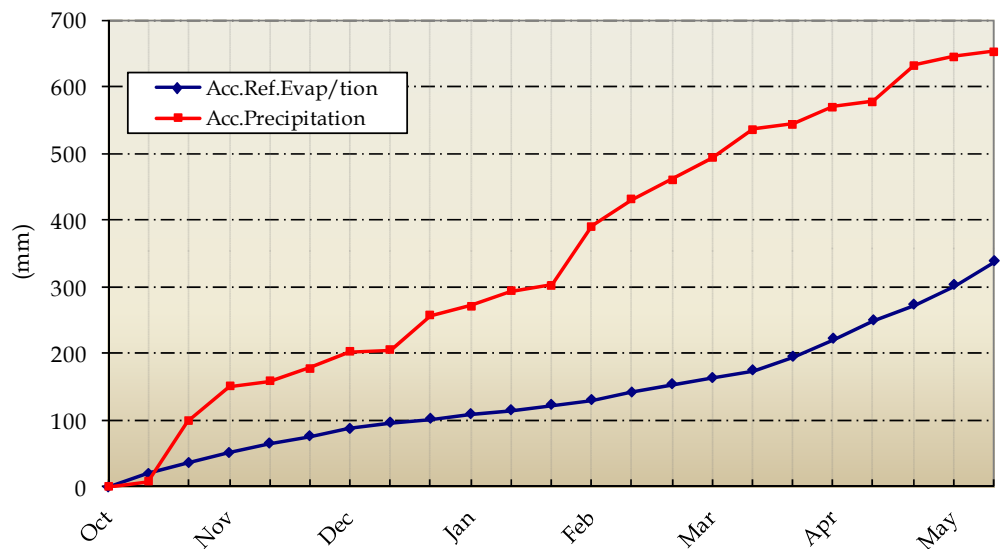


Tripoli

1st 10-day period (1-10/05/2011)		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	25.8	19.0	18.2	15.2	19.2	22.6	18.6	14.8	19.8	-	21.0
	Min	9.6	11.6	11.0	11.4	8.6	10.0	2.4	4.2	5.2	8.2	8.2	-	7.0
Relative Humidity	Max	95	86	95	93	98	90	93	93	94	73	91	-	-
	Min	52	40	41	49	59	52	36	29	46	50	45	-	-
Soil Temperature at 10 cm	06 UTC	13.8	18.0	16.4	16.4	14.8	14.6	12.2	13.0	14.6	14.6	14.8	-	14.6
	12 UTC	20.6	22.4	23.0	19.2	18.4	17.6	15.6	17.0	21.2	18.4	19.3	-	17.1
Sunshine Duration		9.3	12.1	9.7	6.0	5.4	3.1	11.5	11.8	9.3	7.7	8.6	-	8.1
Precipitation				2.1		5.5						7.6	-	10.2
Evaporation		6.0	1.1	6.0	5.6	3.5	2.0	4.0	5.0	6.0	5.0	44.2	-	39.1
Growing Degrees	5	10.5	12.6	13.4	10.2	8.4	7.6	5.8	8.4	6.9	6.5	90.3	-	89.7
	10	5.5	7.6	8.4	5.2	3.4	2.6	0.8	3.4	1.9	1.5	40.3	-	40.9

1st 10-day period (1-10/05/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	35.4	-	36.7
Precipitation - Reference Evapotranspiration	-27.8	-	-26.5
Number of Rainy Days	2.0	-	2.8
Number of Dry Days	3.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

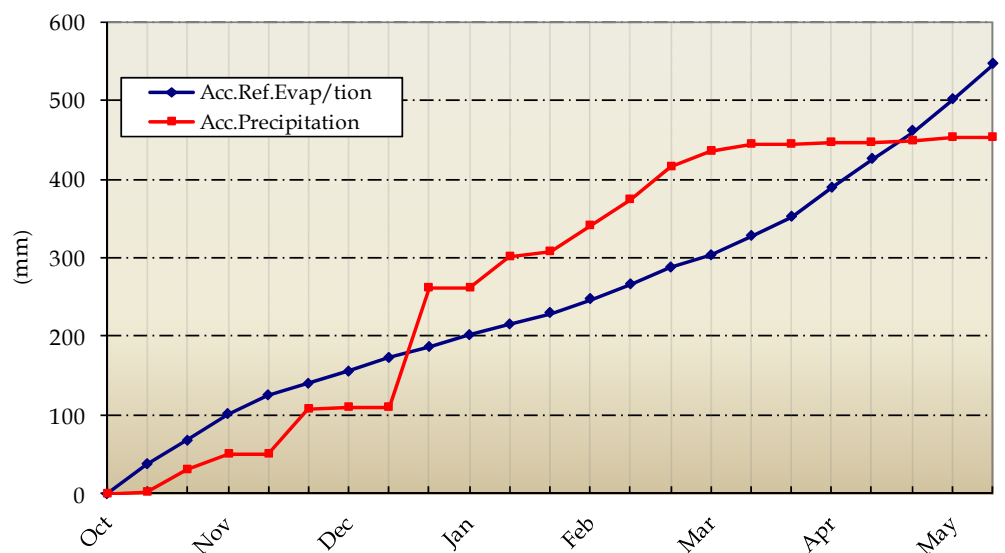


Tympaki

1st 10-day period (1-10/05/2011)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.2	20.8	26.4	22.0	21.6	20.8	21.4	21.0	20.2	21.4	22.1	24.3	23.0
	Min	14.4	13.0	13.6	13.6	15.6	15.2	12.6	9.4	10.0	11.8	12.9	12.4	12.7
Relative Humidity	Max	85	100	96	98	91	91	66	79	79	80	86	81	-
	Min	23	75	23	73	53	36	26	23	34	47	41	27	-
Soil Temperature at 10 cm	06 UTC	21.0	21.4	21.6	22.8	23.0	22.4	20.6	19.0	21.0	21.8	21.5	22.2	21.3
	12 UTC	25.2	26.6	27.2	27.8	28.4	26.0	25.4	26.4	27.4	28.0	26.8	28.7	26.1
Sunshine Duration		1.9	9.6	10.0	9.4	11.3	12.3	12.7	11.6	12.0	10.8	10.2	8.9	9.3
Precipitation														3.0
Evaporation		5.5	6.4	7.3	6.0	4.7	12.5	10.9	6.5	6.4	5.4	71.6	72.3	65.1
Growing Degrees	5	14.8	11.9	15.0	12.8	13.6	13.0	12.0	10.2	10.1	11.6	125.0	133.4	128.8
	10	9.8	6.9	10.0	7.8	8.6	8.0	7.0	5.2	5.1	6.6	75.0	83.4	78.8

1st 10-day period (1-10/05/2011)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	44.9	44.1	39.6
Precipitation - Reference Evapotranspiration	-44.9	-44.1	-36.6
Number of Rainy Days	0.0	0.0	0.9
Number of Dry Days	11.0	21.0	-

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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The present bulletin was designed and implemented under the support of Water Resources Management Division of Agriculture University of Athens (Professor A. Liakatas)