

AGROMETEOROLOGICAL BULLETIN

May 2009
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



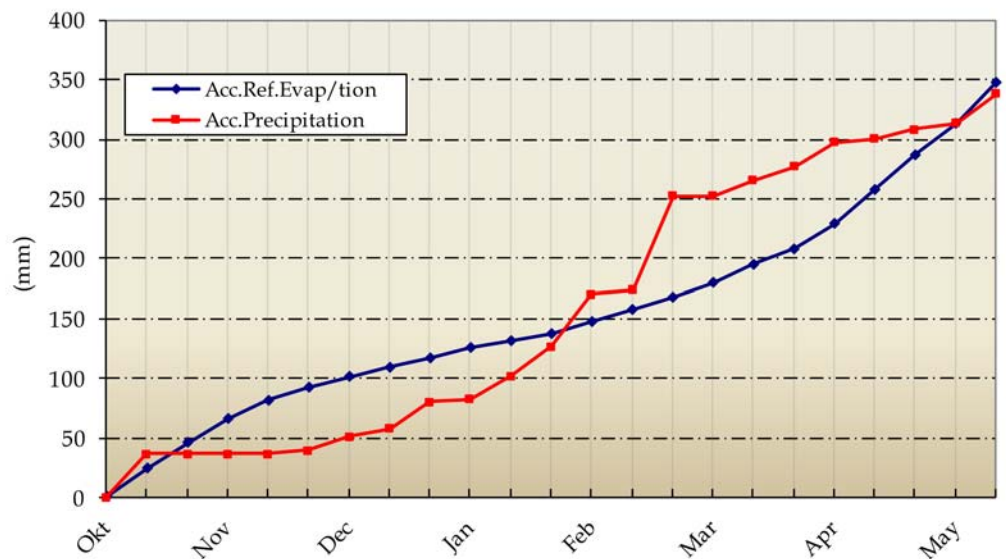
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1st 10-day period (1-10/05/2009)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.8	17.0	20.4	19.2	18.6	-	20.4	21.8	22.4	26.2	20.1	-	20.6
	Min	9.0	10.0	-	-	10.0	-	9.6	11.6	8.6	9.8	9.8	-	9.7
Relative Humidity	Max	95	-	-	92	-	90	92	80	85	92	89	-	-
	Min	85	-	-	48	-	51	57	43	45	30	51	-	-
Soil Temperature at 10 cm	06 UTC	14.8	13.0	-	-	14.6	-	14.6	16.6	17.0	17.6	15.5	-	15.1
	12 UTC	15.0	15.4	17.2	16.8	16.6	-	18.4	21.6	21.4	21.8	18.2	-	19.2
Sunshine Duration		0.4	-	-	6.6	-	7.1	9.0	12.9	13.3	12.9	8.9	-	8.0
Precipitation		23.6	1.3									24.9	-	9.3
Evaporation		0.0	-	-	3.0	-	2.8	3.7	6.9	6.6	10.0	-	-	55.4
Growing Degrees	5	6.9	8.5	-	-	9.3	-	10.0	11.7	10.5	13.0	-	-	101.5
	10	1.9	3.5	-	-	4.3	-	5.0	6.7	5.5	8.0	-	-	51.6

1st 10-day period (1-10/05/2009)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	34.5	37.0
Precipitation - Reference Evapotranspiration	-9.6	-27.7
Number of Rainy Days	2.0	2.2
Number of Dry Days	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

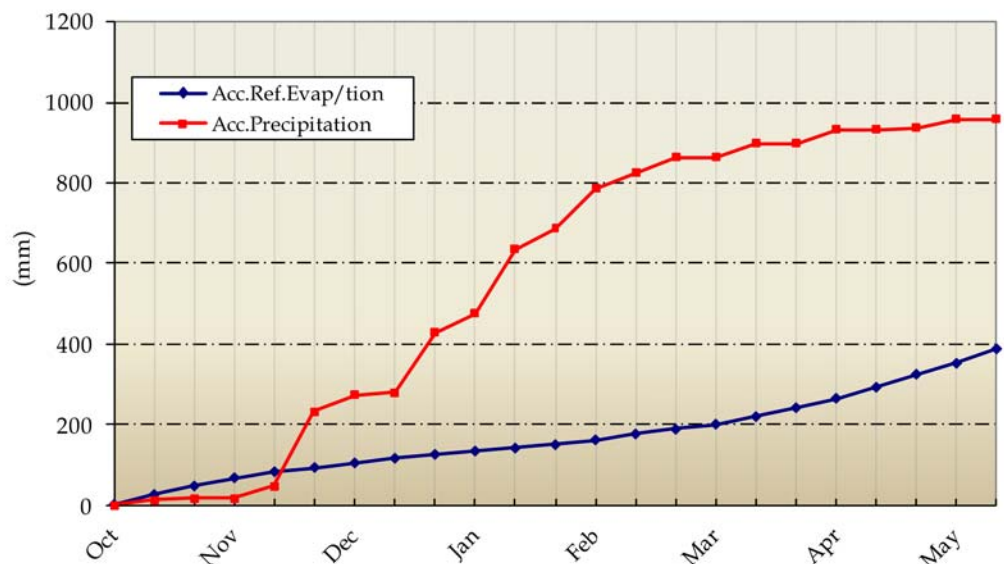


Andravida

1st 10-day period (1-10/05/2009)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.4	18.8	22.0	19.0	19.4	20.4	21.2	21.6	23.2	23.2	20.6	-	22.2
	Min	10.4	10.2	11.0	13.0	10.4	11.0	12.4	10.4	11.0	11.8	11.2	-	11.6
Relative Humidity	Max	97	93	95	95	98	100	98	98	98	98	97	-	-
	Min	58	56	43	55	60	70	52	58	46	56	55	-	-
Soil Temperature at 10 cm	06 UTC	16.2	16.0	16.8	17.8	16.0	17.2	18.0	17.8	17.8	18.8	17.2	-	17.3
	12 UTC	17.8	17.6	18.4	20.4	24.0	20.4	25.8	25.4	27.0	27.0	22.4	-	21.1
Sunshine Duration		9.9	10.7	8.0	0.0	9.9	12.8	11.9	11.1	11.0	12.0	9.7	-	8.8
Precipitation													-	8.6
Evaporation		10.8	13.2	2.0	1.4	8.8	1.2	2.4	0.4	2.4	11.8	54.4	-	49.3
Growing Degrees	5	8.9	9.5	11.5	11.0	9.9	10.7	11.8	11.0	12.1	12.5	108.9	-	119.0
	10	3.9	4.5	6.5	6.0	4.9	5.7	6.8	6.0	7.1	7.5	58.9	-	69.0

1st 10-day period (1-10/05/2009)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	36.1	-	35.8
Precipitation - Reference Evapotranspiration	-36.1	-	-27.2
Number of Rainy Days	0.0	-	2.0
Number of Dry Days	12.0	-	-

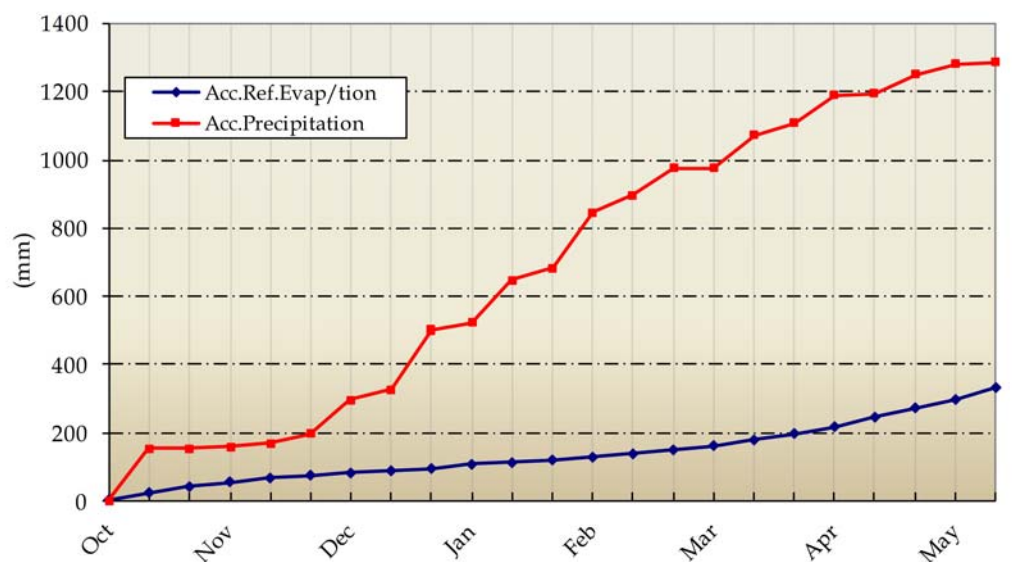
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2009)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.2	20.8	24.0	21.0	22.6	-	23.2	26.0	25.0	27.0	23.0	-	23.3
	Min	11.6	7.6	13.4	11.0	9.0	8.4	8.4	11.6	12.6	12.0	10.6	-	11.2
Relative Humidity	Max	98	99	96	97	95	97	96	97	97	97	97	-	-
	Min	46	42	27	39	33	31	45	22	40	57	38	-	-
Soil Temperature at 10 cm	06 UTC	16.2	14.6	16.4	16.4	15.6	15.4	15.2	16.8	17.4	17.8	16.2	-	17.0
	12 UTC	17.2	17.0	18.6	17.8	18.0	-	17.6	19.0	20.0	20.4	18.4	-	21.5
Sunshine Duration		4.2	10.7	6.2	0.4	8.2	7.8	10.6	11.8	12.0	10.2	8.2	-	7.6
Precipitation		3.6		0.2	2.4							6.2	-	19.0
Evaporation		1.9	3.2	4.7	-	3.3	3.0	4.6	4.3	5.1	4.9	-	-	-
Growing Degrees	5	9.4	9.2	13.7	11.0	10.8	-	10.8	13.8	13.8	14.5	-	-	122.7
	10	4.4	4.2	8.7	6.0	5.8	-	5.8	8.8	8.8	9.5	-	-	72.7

1st 10-day period (1-10/05/2009)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	35.1	-	34.9
Precipitation - Reference Evapotranspiration	-28.9	-	-15.9
Number of Rainy Days	3.0	-	3.2
Number of Dry Days	1.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

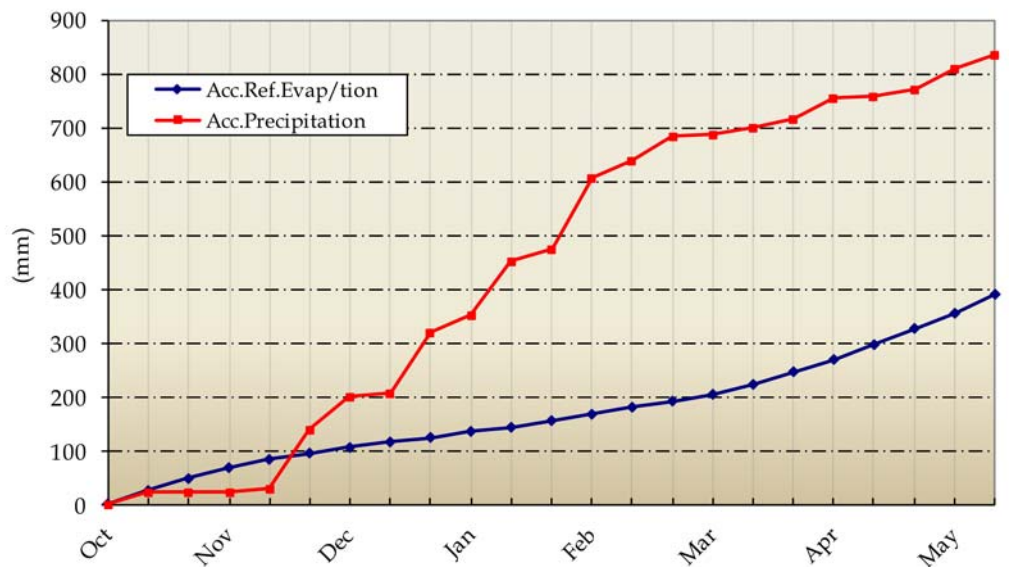


Kalamata

1st 10-day period (1-10/05/2009)		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	20.6	21.0	17.8	23.0	20.2	-	22.0	23.4	23.0	21.3	-	22.8
	Min	8.0	9.0	9.2	-	11.2	9.8	11.0	11.0	11.2	11.8	10.2	-	11.0
Relative Humidity	Max	95	93	-	95	95	95	95	91	93	93	94	-	-
	Min	44	52	-	71	45	61	56	53	50	53	54	-	-
Soil Temperature at 10 cm	06 UTC	15.6	15.4	15.6	-	16.0	16.0	17.0	17.0	17.0	17.4	16.3	-	16.9
	12 UTC	16.8	17.4	17.6	17.6	17.6	17.6	18.0	18.6	19.2	19.0	17.9	-	20.6
Sunshine Duration		9.5	9.6	-	0.2	7.7	10.5	10.9	10.6	12.4	10.9	9.1	-	8.6
Precipitation		2.1			6.0	15.6	1.1					24.8	-	9.1
Evaporation		3.1	4.0	-	3.9	5.6	3.1	7.0	3.0	3.0	9.0	-	-	52.2
Growing Degrees	5	9.3	9.8	10.1	-	12.1	10.0	-	11.5	12.3	12.4	-	-	119.0
	10	4.3	4.8	5.1	-	7.1	5.0	-	6.5	7.3	7.4	-	-	69.0

1st 10-day period (1-10/05/2009)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	35.5	-	36.5
Precipitation - Reference Evapotranspiration	-10.7	-	-27.4
Number of Rainy Days	4.0	-	2.3
Number of Dry Days	5.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

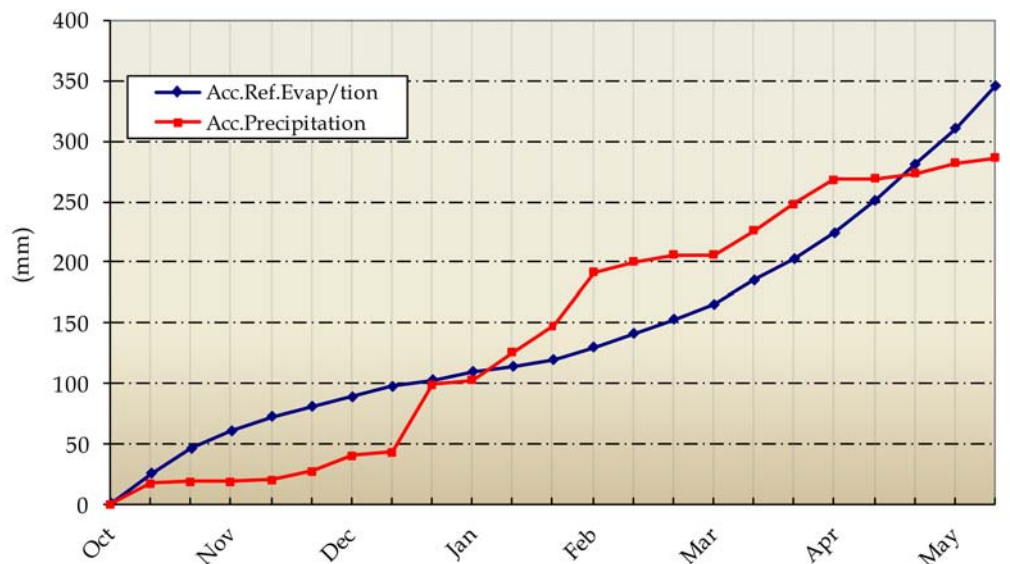


Larisa

1st 10-day period (1-10/05/2009)		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	22.0	20.2	18.6	22.8	22.0	25.0	26.4	28.2	27.4	23.2	-	23.7
	Min	8.6	9.6	9.0	8.2	10.2	13.0	7.0	9.0	8.2	9.4	9.2	-	9.3
Relative Humidity	Max	-	95	89	95	95	93	94	88	92	90	92	-	-
	Min	46	43	47	57	41	43	35	29	33	32	41	-	-
Soil Temperature at 10 cm	06 UTC	15.0	12.8	16.4	15.6	15.2	17.0	16.6	16.8	17.6	18.2	16.1	-	16.2
	12 UTC	16.6	14.6	14.8	17.0	20.0	19.4	19.6	20.6	21.4	21.4	18.5	-	18.4
Sunshine Duration		4.1	9.0	8.9	0.0	4.8	6.6	9.9	12.5	10.8	10.1	7.7	-	8.0
Precipitation		0.4	0.8	0.7		1.6	0.8					4.3	-	10.2
Evaporation		2.8	5.1	11.3	2.3	2.6	3.5	5.5	6.1	6.3	8.3	53.8	-	50.6
Growing Degrees	5	9.0	10.8	9.6	8.4	11.5	12.5	11.0	12.7	13.2	13.4	112.1	-	115.4
	10	4.0	5.8	4.6	3.4	6.5	7.5	6.0	7.7	8.2	8.4	62.1	-	65.4

1st 10-day period (1-10/05/2009)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	35.2	-	38.0
Precipitation - Reference Evapotranspiration	-30.9	-	-27.8
Number of Rainy Days	5.0	-	2.5
Number of Dry Days	0.0	-	-

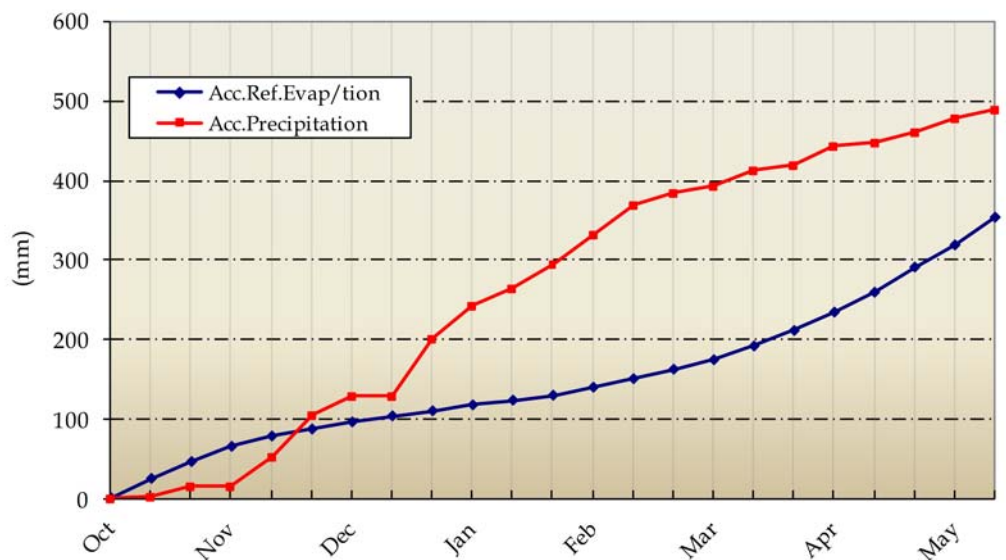
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2009)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.6	21.0	21.6	18.2	-	24.4	24.0	26.8	26.4	28.0	23.7	-	24.1
	Min	6.8	4.8	7.8	12.6	10.8	8.2	6.4	-	9.2	-	8.3	-	8.8
Relative Humidity	Max	67	79	81	91	84	88	-	83	-	73	81	-	-
	Min	39	36	62	53	33	36	-	39	-	30	41	-	-
Soil Temperature at 10 cm	06 UTC	14.8	13.4	14.8	15.4	15.2	15.0	14.4	-	16.2	-	14.9	-	16.3
	12 UTC	21.0	20.6	20.4	17.6	21.8	22.0	-	24.0	24.6	26.0	22.0	-	24.3
Sunshine Duration		8.5	11.4	4.0	0.0	7.1	6.6	-	10.9	-	11.6	7.5	-	7.9
Precipitation						5.0	6.0					11.0	-	8.2
Evaporation		4.4	3.8	4.1	1.5	4.4	3.0	-	5.7	-	6.5	-	-	47.3
Growing Degrees	5	9.7	7.9	9.7	10.4	-	11.3	10.2	-	12.8	-	-	-	113.4
	10	4.7	2.9	4.7	5.4	-	6.3	5.2	-	7.8	-	-	-	63.9

1st 10-day period (1-10/05/2009)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	34.9	-	36.2
Precipitation - Reference Evapotranspiration	-23.9	-	-28.0
Number of Rainy Days	2.0	-	2.5
Number of Dry Days	7.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

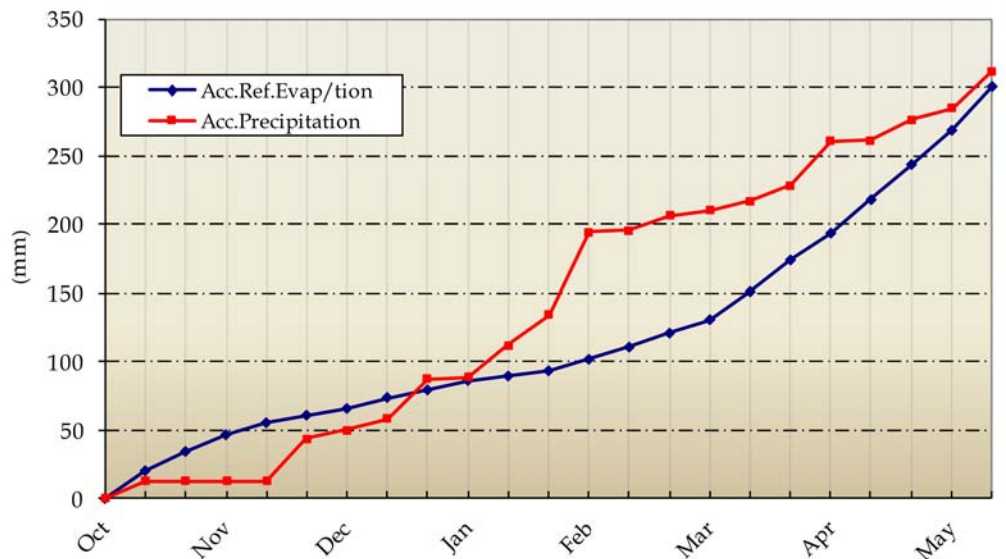


Series

1st 10-day period (1-10/05/2009)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.4	19.0	21.6	22.0	23.4	25.0	26.0	26.4	27.0	28.4	23.6	-	23.7
	Min	6.4	9.4	11.0	10.6	10.4	12.0	10.6	-	9.8	11.2	10.2	-	11.0
Relative Humidity	Max	95	88	93	86	81	80	-	66	68	74	81	-	-
	Min	88	59	52	42	38	38	-	29	26	26	44	-	-
Soil Temperature at 10 cm	06 UTC	15.2	14.2	15.2	15.6	15.6	16.0	16.6	-	17.2	18.0	16.0	-	16.5
	12 UTC	15.2	15.8	16.6	17.0	17.2	18.6	-	18.4	18.6	19.6	17.4	-	20.0
Sunshine Duration		0.0	3.8	5.4	5.4	4.9	8.0	-	13.1	12.2	12.1	7.2	-	7.6
Precipitation		11.7	6.4			9.2						27.3	-	11.6
Evaporation		0.0	0.9	2.4	3.6	1.1	4.2	-	4.0	4.0	5.0	-	-	43.4
Growing Degrees	5	6.9	9.2	11.3	11.3	11.9	13.5	13.3	-	13.4	14.8	-	-	122.6
	10	1.9	4.2	6.3	6.3	6.9	8.5	8.3	-	8.4	9.8	-	-	72.9

1st 10-day period (1-10/05/2009)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	32.0	-	34.2
Precipitation - Reference Evapotranspiration	-4.7	-	-22.6
Number of Rainy Days	3.0	-	3.1
Number of Dry Days	1.0	-	-

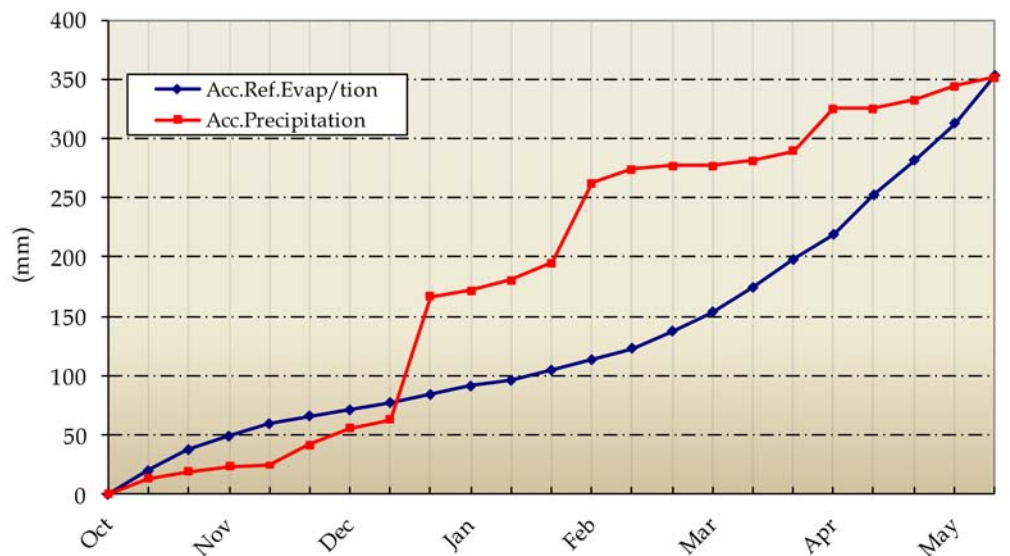
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2009)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.2	23.2	22.2	22.0	25.0	24.4	25.6	-	27.6	28.4	24.1	-	23.0
	Min	12.0	9.0	11.6	10.8	11.4	10.4	12.0	10.4	10.6	12.4	11.1	-	11.1
Relative Humidity	Max	96	97	89	93	90	90	83	90	91	89	91	-	-
	Min	58	45	49	41	29	33	25	20	32	28	36	-	-
Soil Temperature at 10 cm	06 UTC	16.8	15.4	16.0	15.6	15.6	16.8	17.0	17.2	18.0	18.8	16.7	-	16.6
	12 UTC	18.0	19.2	19.8	18.2	-	21.2	21.4	21.4	22.2	23.4	20.5	-	18.0
Sunshine Duration		1.9	6.9	5.9	3.5	7.7	7.1	8.8	12.6	11.6	12.2	7.8	-	7.2
Precipitation		1.1	2.8	3.0								6.9	-	16.4
Evaporation		1.4	0.0	1.8	2.2	2.8	3.0	3.6	3.2	3.6	3.0	24.6	-	41.6
Growing Degrees	5	10.1	11.1	11.9	11.4	13.2	12.4	13.8	-	14.1	15.4	-	-	120.7
	10	5.1	6.1	6.9	6.4	8.2	7.4	8.8	-	9.1	10.4	-	-	70.7

1st 10-day period (1-10/05/2009)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	40.2	-	35.2
Precipitation - Reference Evapotranspiration	-33.3	-	-18.8
Number of Rainy Days	3.0	-	3.1
Number of Dry Days	1.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

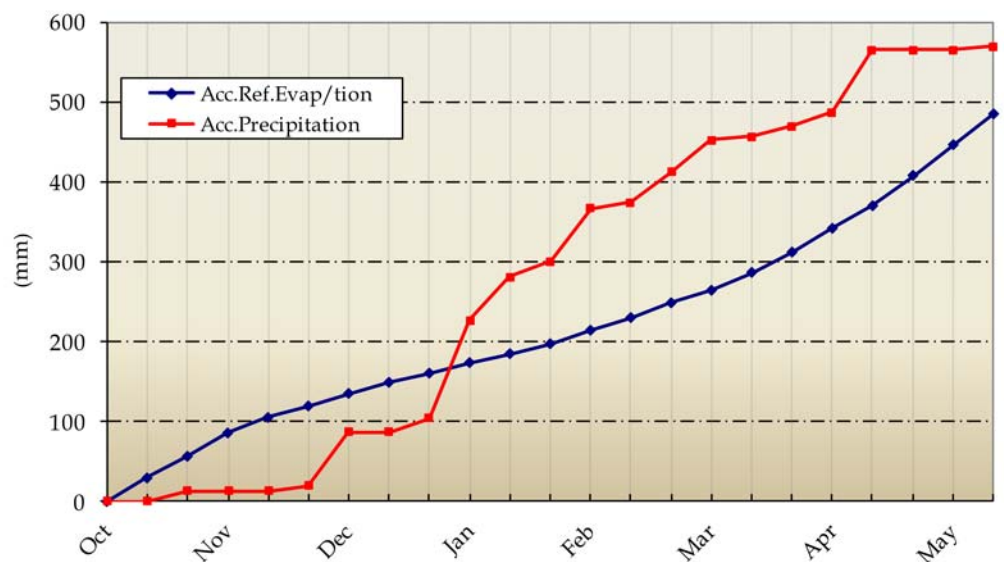


Tympaki

1st 10-day period (1-10/05/2009)		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	19.6	24.0	16.8	20.6	21.6	21.4	21.4	22.0	27.0	21.4	-	23.0
	Min	14.4	9.6	11.0	13.8	13.0	9.8	11.4	11.8	12.0	12.6	11.9	-	12.7
Relative Humidity	Max	97	93	92	97	90	97	97	97	96	90	95	-	-
	Min	67	59	37	68	40	49	50	50	40	21	48	-	-
Soil Temperature at 10 cm	06 UTC	21.0	20.0	20.4	21.0	16.2	16.6	18.4	20.0	20.4	21.2	19.5	-	21.3
	12 UTC	26.4	26.4	27.4	20.6	-	27.4	25.6	26.8	27.6	28.0	26.2	-	26.1
Sunshine Duration		10.3	9.7	3.4	0.4	8.8	11.4	11.4	10.5	11.6	12.9	9.0	-	9.3
Precipitation					4.5							4.5	-	3.0
Evaporation		4.0	6.0	4.8	2.5	5.0	6.0	5.0	5.0	7.0	10.0	55.3	-	65.1
Growing Degrees	5	12.1	9.6	12.5	10.3	11.8	10.7	11.4	11.6	12.0	14.8	116.8	-	128.8
	10	7.1	4.6	7.5	5.3	6.8	5.7	6.4	6.6	7.0	9.8	66.8	-	78.8

1st 10-day period (1-10/05/2009)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	38.5	-	39.6
Precipitation - Reference Evapotranspiration	-34.0	-	-36.6
Number of Rainy Days	1.0	-	0.9
Number of Dry Days	26.0	-	-

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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