



# AGROMETEOROLOGICAL BULLETIN

*May 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



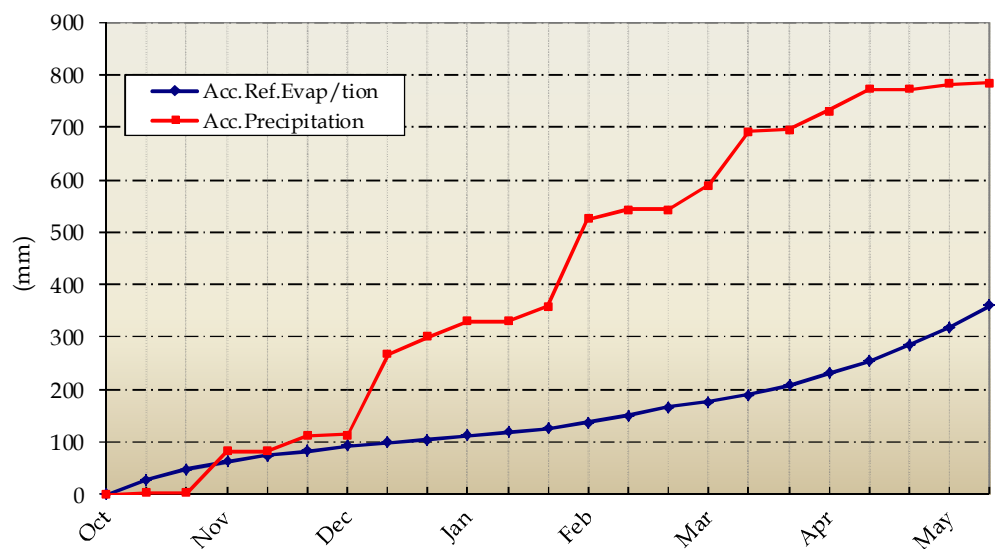
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1st 10-day period (1-10/05/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.2	21.4	21.0	24.0	26.4	28.0	26.4	25.2	25.4	24.8	24.3	20.7	20.6
	Min	9.8	10.2	12.6	11.8	13.8	14.4	14.8	15.8	12.0	13.8	12.9	11.8	9.7
Relative Humidity	Max	95	100	91	93	87	85	90	94	80	80	90	89	-
	Min	63	57	57	41	34	32	52	52	32	27	45	50	-
Soil Temperature at 10 cm	06 UTC	16.6	17.6	17.6	18.4	20.0	20.8	21.4	20.6	18.4	17.8	18.9	17.3	15.1
	12 UTC	23.6	23.5	24.6	24.6	26.6	27.8	25.6	23.6	24.4	25.6	25.0	21.1	19.2
Sunshine Duration		11.9	4.6	11.1	11.2	11.8	12.9	5.2	10.1	9.9	13.1	10.2	7.9	8.0
Precipitation									2.2			2.2	9.3	9.3
Evaporation		3.6	4.7	3.3	5.0	10.4	3.2	4.3	5.5	8.4	9.6	58.0	68.8	55.4
Growing Degrees	5	10.0	10.8	11.8	12.9	15.1	16.2	15.6	15.5	13.7	14.3	135.9	112.3	101.5
	10	5.0	5.8	6.8	7.9	10.1	11.2	10.6	10.5	8.7	9.3	85.9	62.3	51.6

1st 10-day period (1-10/05/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	41.1	34.8	37.0
Precipitation - Reference Evapotranspiration	-38.9	-25.5	-27.7
Number of Rainy Days	1.0	6.0	2.2
Number of Dry Days	11.0	0.0	-

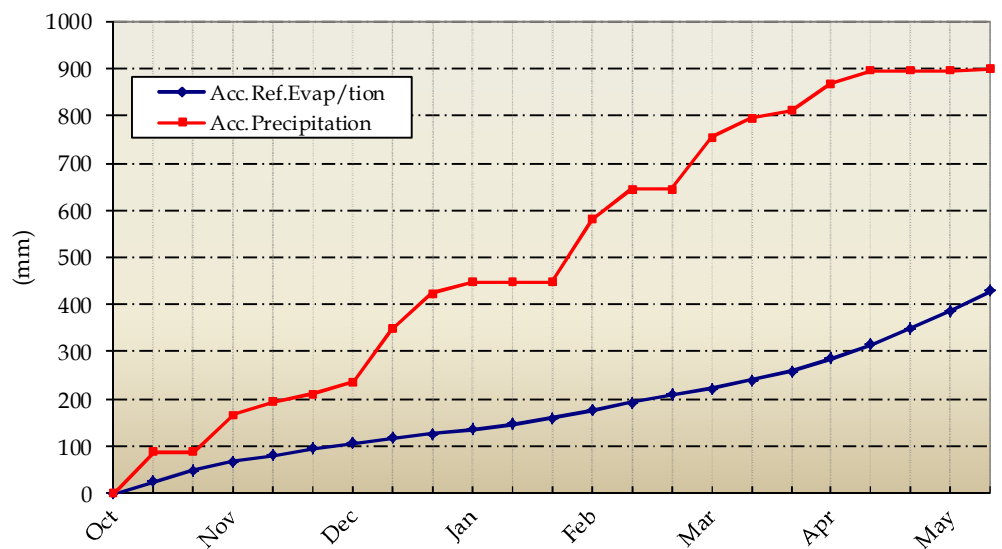
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2015)		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	21.4	23.4	24.8	25.1	26.6	30.1	29.0	27.6	26.3	25.6	21.6	22.2
	Min	10.6	11.6	11.2	11.8	13.6	15.1	13.8	15.5	16.3	13.9	13.3	11.2	11.6
Relative Humidity	Max	91	92	89	90	85	84	90	91	90	90	89	90	-
	Min	51	49	38	40	39	35	28	42	32	31	38	48	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	16.9	17.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	21.3	21.1
Sunshine Duration		11.5	7.5	9.6	13.3	12.0	12.4	9.7	11.2	12.2	8.3	10.8	9.8	8.8
Precipitation													3.8	8.6
Evaporation		1.9	8.4	4.7	2.1	10.9	6.0	3.2	10.8	7.0	6.0	61.0	44.5	49.3
Growing Degrees	5	11.0	11.5	12.3	13.3	14.4	15.9	17.0	17.3	17.0	15.1	144.6	114.0	119.0
	10	6.0	6.5	7.3	8.3	9.4	10.9	12.0	12.3	12.0	10.1	94.6	64.0	69.0

1st 10-day period (1-10/05/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	43.0	38.2	35.8
Precipitation - Reference Evapotranspiration	-43.0	-34.4	-27.2
Number of Rainy Days	0.0	2.0	2.0
Number of Dry Days	33.0	4.0	-

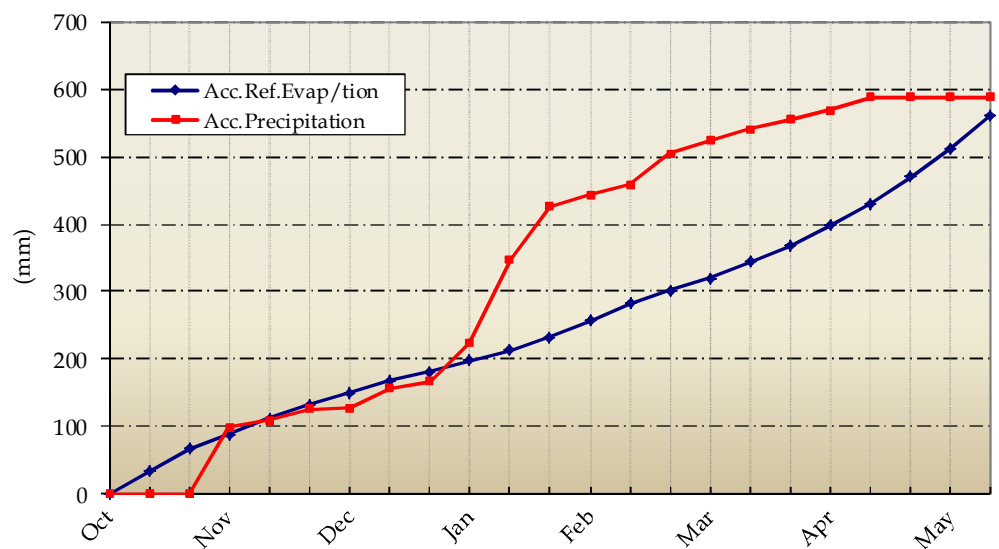
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.2	22.0	21.0	22.8	23.8	25.0	30.2	24.0	24.0	22.2	23.5	22.1	22.0
	Min	14.0	12.6	14.2	13.0	15.0	15.4	18.4	19.4	18.8	18.2	15.9	14.2	14.0
Relative Humidity	Max	89	84	91	85	70	74	75	83	80	71	80	83	-
	Min	63	49	57	50	46	38	33	48	40	51	48	52	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.6	11.1	11.7	12.7	13.1	12.7	11.1	11.7	11.9	12.5	12.1	9.7	9.1
Precipitation													2.0	5.2
Evaporation		5.2	3.1	5.4	4.3	4.7	5.1	4.8	7.3	5.8	5.5	51.2	39.7	59.2
Growing Degrees	5	12.1	12.3	12.6	12.9	14.4	15.2	19.3	16.7	16.4	15.2	147.1	131.8	130.2
	10	7.1	7.3	7.6	7.9	9.4	10.2	14.3	11.7	11.4	10.2	97.1	81.8	80.2

1st 10-day period (1-10/05/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	48.8	43.1	-
Precipitation - Reference Evapotranspiration	-48.8	-41.1	5.2
Number of Rainy Days	0.0	2.0	1.4
Number of Dry Days	30.0	6.0	-

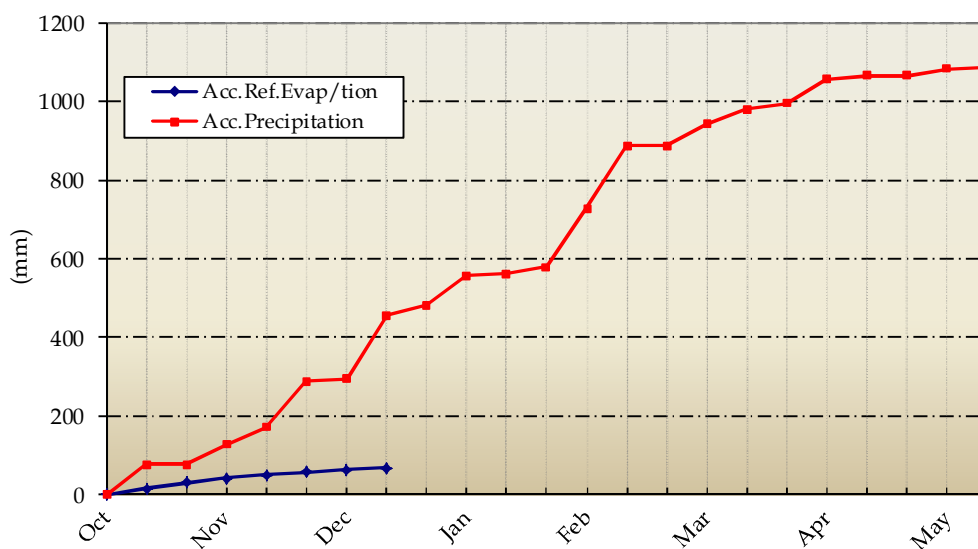
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.4	19.4	25.5	28.3	30.3	31.7	33.0	30.6	28.8	23.0	27.3	19.0	21.2
	Min	9.1	6.0	5.6	7.7	10.6	10.4	13.2	13.2	13.1	12.2	10.1	7.0	8.6
Relative Humidity	Max	100	100	100	100	100	100	100	93	98	91	98	97	-
	Min	38	43	30	32	31	24	26	19	22	34	30	48	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	13.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	17.5
Sunshine Duration		9.6	3.9	9.5	11.5	11.2	11.7	8.5	12.0	6.3	2.4	8.7	5.1	6.7
Precipitation										2.8	0.3	3.1	61.1	22.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	36.0
Growing Degrees	5	10.8	7.7	10.6	13.0	15.5	16.1	18.1	16.9	16.0	12.6	137.1	80.3	99.4
	10	5.8	2.7	5.6	8.0	10.5	11.1	13.1	11.9	11.0	7.6	87.1	30.3	49.6

1st 10-day period (1-10/05/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	25.0	33.0
Precipitation - Reference Evapotranspiration	-	36.1	-10.8
Number of Rainy Days	2.0	5.0	3.9
Number of Dry Days	8.0	0.0	-

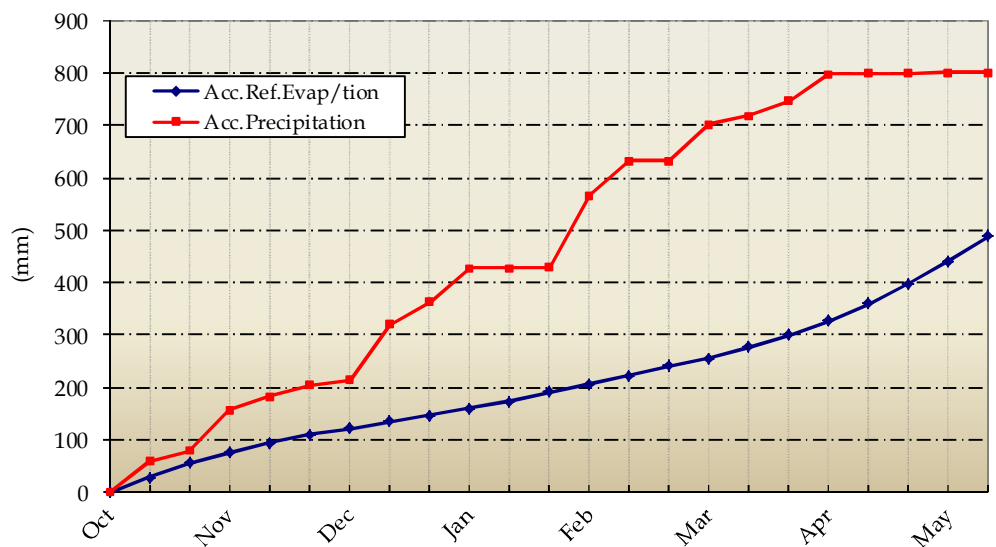
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.3	26.0	24.8	24.6	27.2	27.6	27.0	25.9	26.4	26.8	26.2	22.6	22.8
	Min	11.7	10.1	10.2	10.7	12.2	14.7	15.5	13.6	14.6	13.2	12.6	9.8	11.0
Relative Humidity	Max	90	91	90	90	89	89	93	93	94	93	91	93	-
	Min	33	23	36	41	41	37	21	55	45	32	36	44	-
Soil Temperature at 10 cm	06 UTC	17.6	17.8	17.6	17.8	18.2	19.0	19.4	19.6	20.0	19.8	18.7	17.4	16.9
	12 UTC	19.4	19.6	19.6	19.6	20.0	21.2	21.4	21.6	21.8	20.8	20.5	19.7	20.6
Sunshine Duration		12.4	10.6	12.1	12.2	12.4	12.6	11.7	10.9	10.1	8.3	11.3	10.0	8.6
Precipitation											0.0	0.0	0.1	9.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	52.2
Growing Degrees	5	13.5	13.1	12.5	12.7	14.7	16.2	16.3	14.8	15.5	15.0	144.1	111.9	119.0
	10	8.5	8.1	7.5	7.7	9.7	11.2	11.3	9.8	10.5	10.0	94.1	61.9	69.0

1st 10-day period (1-10/05/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	48.1	41.0	36.5
Precipitation - Reference Evapotranspiration	-48.1	-40.9	-27.4
Number of Rainy Days	0.0	1.0	2.3
Number of Dry Days	15.0	3.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

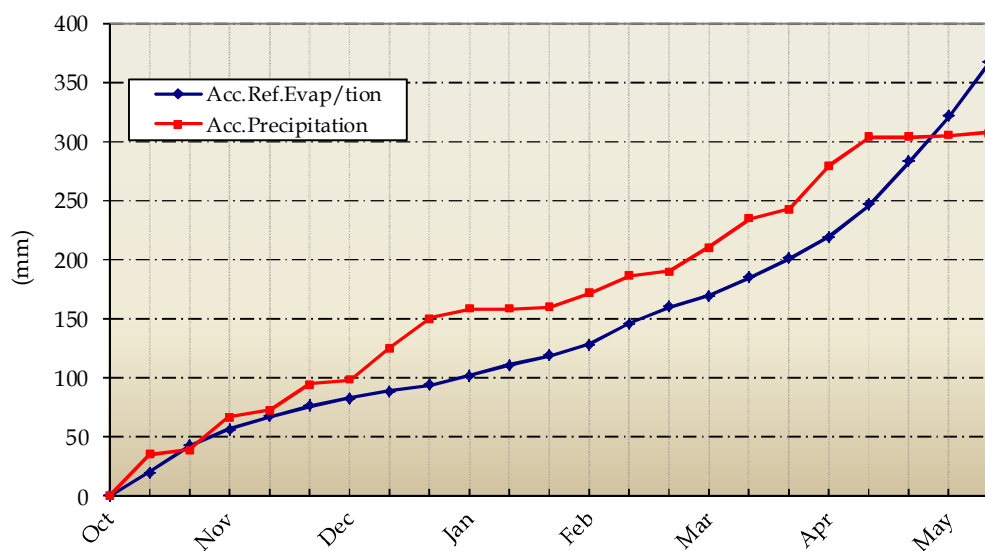


Larisa

1st 10-day period (1-10/05/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.4	24.8	27.0	28.6	30.3	33.2	31.0	28.2	25.0	25.2	27.9	23.2	23.7
	Min	7.4	8.4	9.1	11.0	14.0	12.4	14.8	18.2	15.4	14.0	12.5	9.0	9.3
Relative Humidity	Max	100	100	100	99	99	100	100	80	100	100	98	99	-
	Min	30	27	25	33	29	28	36	29	21	31	29	35	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	16.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	18.4
Sunshine Duration		11.3	4.6	10.1	12.0	10.6	11.5	5.1	11.8	3.3	7.7	8.8	7.8	8.0
Precipitation										1.6	0.5	2.1	2.8	10.2
Evaporation		6.3	6.2	5.8	8.9	5.4	9.5	6.1	9.5	6.5	6.6	70.8	48.4	50.6
Growing Degrees	5	11.4	11.6	13.1	14.8	17.2	17.8	17.9	18.2	15.2	14.6	151.7	111.1	115.4
	10	6.4	6.6	8.1	9.8	12.2	12.8	12.9	13.2	10.2	9.6	101.7	61.1	65.4

1st 10-day period (1-10/05/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	45.0	36.7	38.0
Precipitation - Reference Evapotranspiration	-42.9	-33.9	-27.8
Number of Rainy Days	2.0	2.0	2.5
Number of Dry Days	8.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

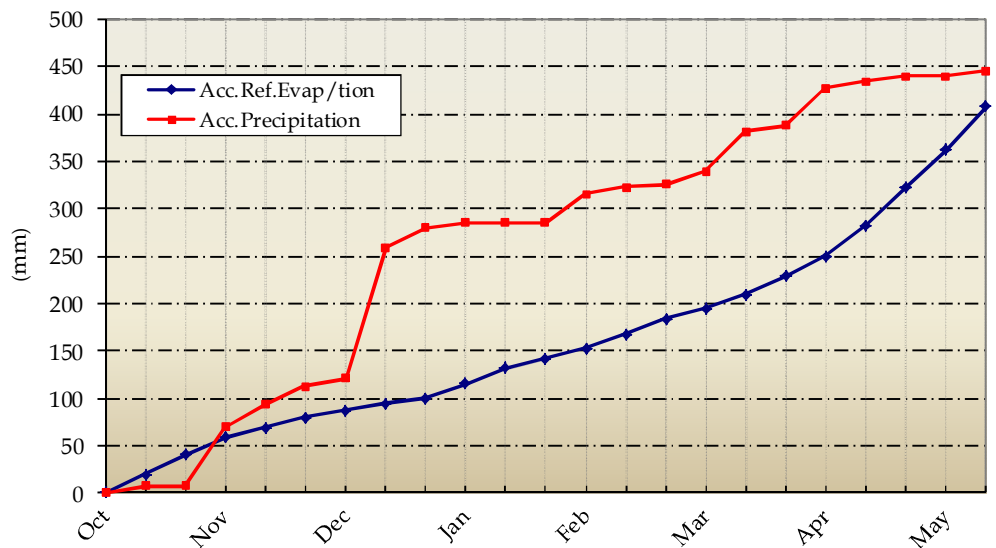


Mikra

1st 10-day period (1-10/05/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.3	21.6	27.5	26.1	28.2	30.0	27.6	28.2	22.8	24.2	26.0	21.8	22.7
	Min	9.8	10.6	9.8	13.6	16.9	13.5	15.2	19.4	15.5	13.2	13.8	11.4	10.7
Relative Humidity	Max	88	85	90	77	75	81	81	79	91	93	84	86	-
	Min	34	46	25	35	26	29	41	25	32	35	33	44	-
Soil Temperature at 10 cm	06 UTC	17.4	18.4	17.0	19.2	20.9	21.0	21.6	20.0	21.2	19.2	19.6	17.5	16.9
	12 UTC	23.0	21.4	22.6	23.9	25.8	25.5	24.2	25.2	23.0	21.8	23.6	23.2	21.5
Sunshine Duration		11.3	6.6	10.4	12.0	11.9	12.3	5.9	13.6	2.5	5.1	9.2	8.8	7.9
Precipitation			0.6					0.2	2.2		2.6	5.6	0.7	12.9
Evaporation		6.4	1.6	7.0	6.6	2.8	9.4	4.6	7.3	4.7	3.8	54.2	50.2	53.6
Growing Degrees	5	12.1	11.1	13.7	14.9	17.6	16.8	16.4	18.8	14.2	13.7	149.0	116.1	116.7
	10	7.1	6.1	8.7	9.9	12.6	11.8	11.4	13.8	9.2	8.7	99.0	66.1	66.7

1st 10-day period (1-10/05/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	46.0	39.9	38.0
Precipitation - Reference Evapotranspiration	-40.4	-39.2	-25.1
Number of Rainy Days	4.0	1.0	2.6
Number of Dry Days	11.0	5.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

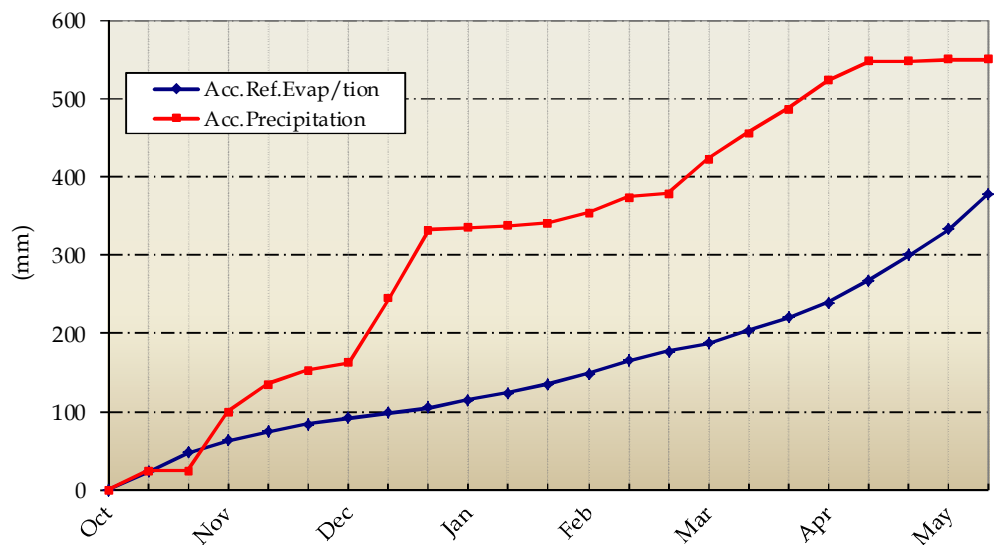




1st 10-day period (1-10/05/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.3	24.8	26.0	26.8	27.9	30.6	32.0	25.3	25.6	22.2	26.6	22.0	22.9
	Min	8.8	12.5	10.2	10.9	11.5	14.0	14.8	16.0	13.1	12.9	12.5	9.8	9.6
Relative Humidity	Max	100	76	88	92	97	79	90	92	95	80	89	92	-
	Min	35	24	33	26	30	32	34	41	23	28	31	38	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.6	7.0	12.2	12.0	10.8	12.5	11.0	12.9	10.4	12.5	11.3	-	-
Precipitation													1.4	8.5
Evaporation		4.4	6.0	4.7	6.3	10.0	6.4	5.6	5.0	6.0	6.5	60.9	-	-
Growing Degrees	5	11.6	13.7	13.1	13.9	14.7	17.3	18.4	15.7	14.4	12.6	145.1	-	-
	10	6.6	8.7	8.1	8.9	9.7	12.3	13.4	10.7	9.4	7.6	95.1	-	-

1st 10-day period (1-10/05/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	45.5	-	-
Precipitation - Reference Evapotranspiration	-45.5	-	0.0
Number of Rainy Days	0.0	-	2.7
Number of Dry Days	10.0	-	-

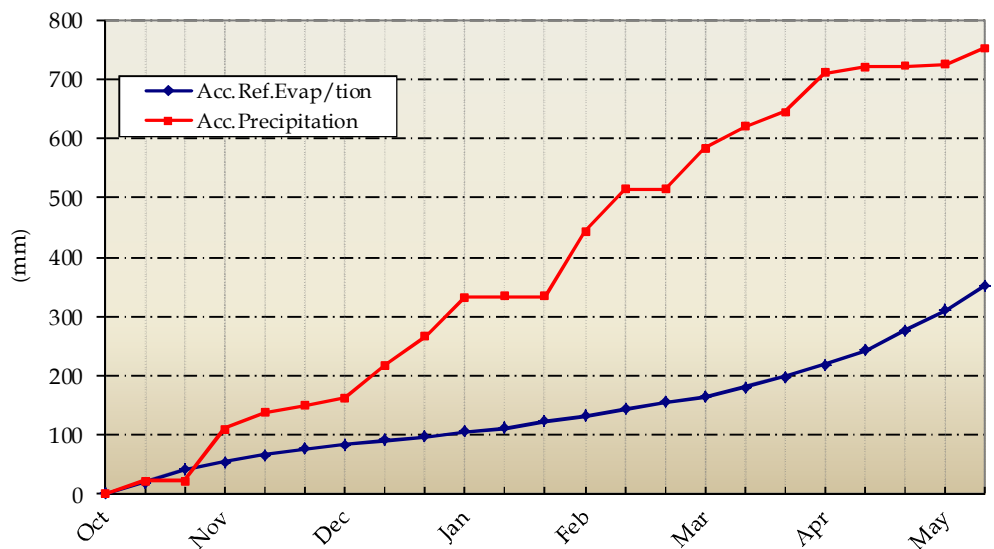
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/05/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.7	23.8	24.2	26.0	27.2	31.2	35.2	25.5	25.1	22.0	26.2	19.9	21.0
	Min	5.2	4.2	6.5	7.2	9.2	10.3	11.1	11.6	9.4	7.8	8.2	4.4	7.0
Relative Humidity	Max	100	100	89	100	100	100	100	100	100	100	99	92	-
	Min	38	21	29	29	33	24	24	41	30	36	30	39	-
Soil Temperature at 10 cm	06 UTC	-	-	-	18.2	19.6	20.6	21.6	22.6	20.2	16.8	19.9	13.9	14.6
	12 UTC	-	-	-	25.8	26.8	27.6	28.8	25.8	-	-	27.0	20.5	17.1
Sunshine Duration		-	-	12.5	11.6	12.3	12.3	12.0	7.0	5.8	6.8	10.0	8.6	8.1
Precipitation		0.0	0.0						0.4	27.2		27.6	5.7	10.2
Evaporation		-	-	-	5.7	7.0	7.0	6.5	3.3	5.3	6.3	-	34.9	39.1
Growing Degrees	5	8.5	9.0	10.4	11.6	13.2	15.8	18.2	13.6	12.3	9.9	122.2	71.9	89.7
	10	3.5	4.0	5.4	6.6	8.2	10.8	13.2	8.6	7.3	4.9	72.2	21.9	40.9

1st 10-day period (1-10/05/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	42.4	33.8	36.7
Precipitation - Reference Evapotranspiration	-14.8	-28.1	-26.5
Number of Rainy Days	2.0	4.0	2.8
Number of Dry Days	15.0	4.0	-

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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