



AGROMETEOROLOGICAL BULLETIN

July 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



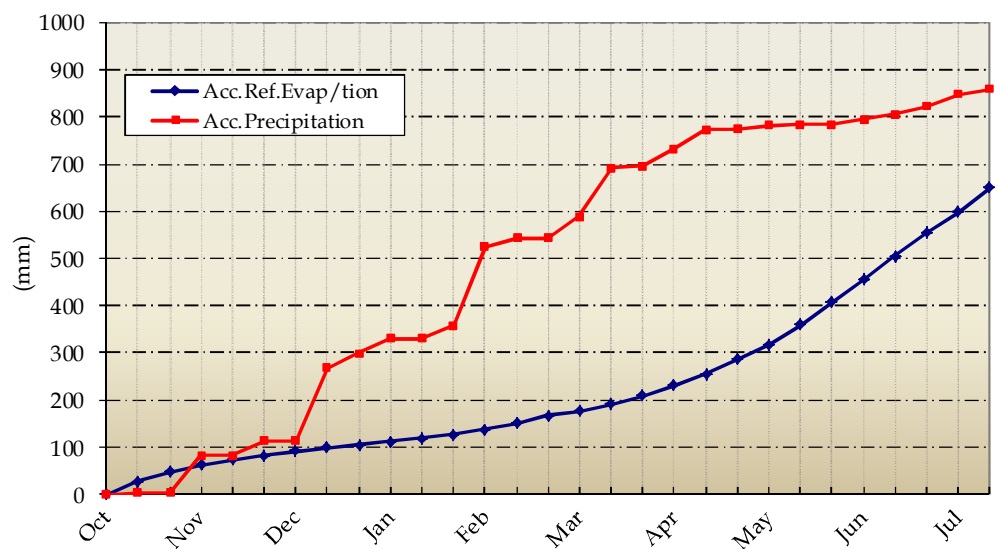
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1st 10-day period (1-10/07/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.6	28.2	29.8	28.0	27.8	30.8	34.6	34.0	32.0	33.0	30.8	30.8	29.3
	Min	16.4	14.4	19.4	15.6	16.0	15.8	17.8	20.0	20.0	20.6	17.6	18.4	17.0
Relative Humidity	Max	83	83	91	83	86	79	83	62	79	91	82	79	-
	Min	30	40	33	39	49	38	30	30	38	35	36	30	-
Soil Temperature at 10 cm	06 UTC	22.2	22.8	24.0	23.0	24.0	24.2	25.5	26.6	27.0	27.6	24.7	26.0	23.7
	12 UTC	28.6	27.6	28.8	28.4	27.8	29.6	30.5	31.8	32.4	32.4	29.8	31.2	28.2
Sunshine Duration		8.8	8.0	7.2	8.4	11.9	11.7	9.5	9.0	12.9	7.8	9.5	12.3	10.3
Precipitation				0.0							11.6	11.6		12.1
Evaporation		11.6	5.9	9.8	4.0	11.1	9.5	11.6	14.6	7.1	8.1	93.3	86.1	85.9
Growing Degrees	5	18.0	16.3	19.6	16.8	16.9	18.3	21.2	22.0	21.0	21.8	191.9	196.0	181.3
	10	13.0	11.3	14.6	11.8	11.9	13.3	16.2	17.0	16.0	16.8	141.9	146.0	131.3

1st 10-day period (1-10/07/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	52.6	59.2	56.1
Precipitation - Reference Evapotranspiration	-41.0	-59.2	-44.0
Number of Rainy Days	1.0	0.0	2.2
Number of Dry Days	10.0	15.0	-

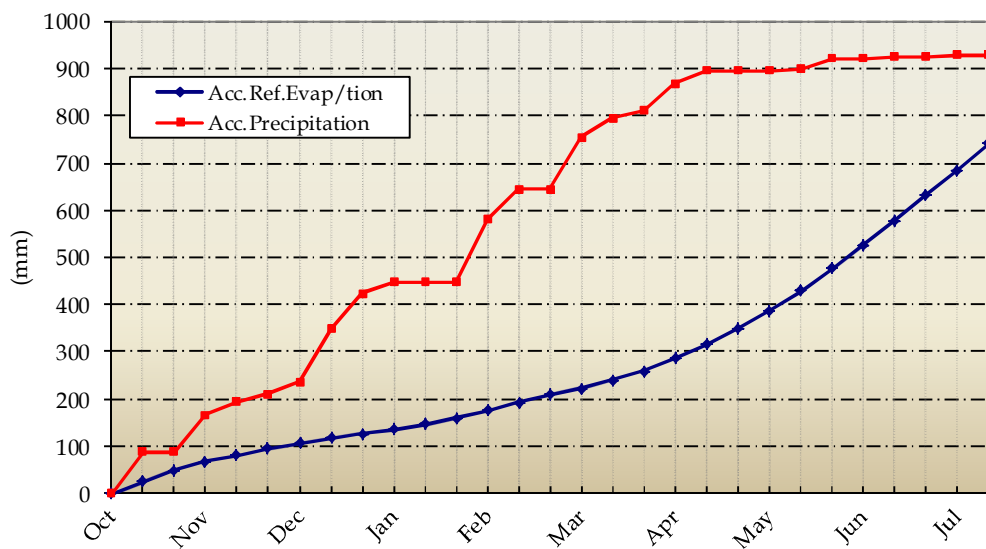
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.9	28.5	29.9	31.6	30.8	29.7	31.9	32.3	31.6	29.5	30.4	30.5	29.5
	Min	16.4	15.5	17.6	18.4	19.0	19.4	19.1	17.6	20.2	20.4	18.4	18.6	17.7
Relative Humidity	Max	88	86	84	85	87	86	84	81	84	86	85	86	-
	Min	43	32	40	30	34	43	35	36	31	53	38	37	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	27.9	26.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	33.5	31.6
Sunshine Duration		10.8	13.4	13.1	13.2	13.2	13.2	12.8	13.2	12.9	9.5	12.5	12.9	12.0
Precipitation														0.7
Evaporation		7.8	7.2	11.0	9.0	10.6	8.4	8.8	5.2	12.0	0.0	80.0	91.0	75.0
Growing Degrees	5	17.2	17.0	18.8	20.0	19.9	19.6	20.5	20.0	20.9	20.0	193.7	195.3	186.1
	10	12.2	12.0	13.8	15.0	14.9	14.6	15.5	15.0	15.9	15.0	143.7	145.3	136.1

1st 10-day period (1-10/07/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	57.0	57.7	53.6
Precipitation - Reference Evapotranspiration	-57.0	-57.7	-52.9
Number of Rainy Days	0.0	0.0	0.3
Number of Dry Days	13.0	31.0	-

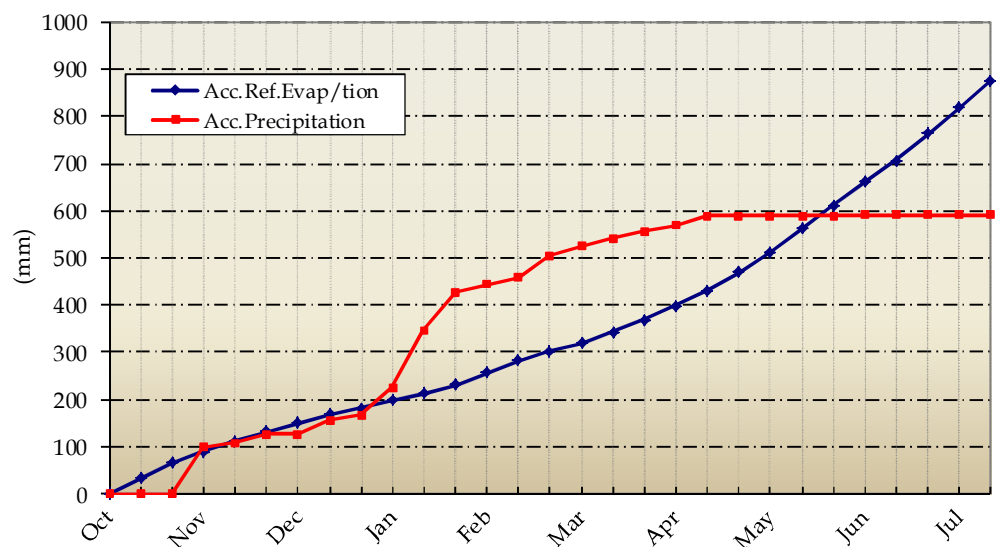
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.2	26.8	27.6	26.0	26.2	27.6	28.4	27.4	28.6	28.4	27.3	29.3	28.4
	Min	19.0	22.0	20.0	23.0	22.4	22.4	24.0	20.8	19.2	20.0	21.3	22.4	21.3
Relative Humidity	Max	90	75	76	73	71	69	66	89	91	89	79	84	-
	Min	62	53	50	52	57	49	50	57	47	61	54	46	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		9.4	12.8	12.9	12.8	12.9	13.0	12.8	13.0	12.9	12.1	12.5	12.2	12.1
Precipitation														0.7
Evaporation		4.5	6.1	11.4	7.4	5.4	13.3	3.7	8.5	1.8	4.2	66.3	72.6	92.1
Growing Degrees	5	17.6	19.4	18.8	19.5	19.3	20.0	21.2	19.1	18.9	19.2	193.0	208.5	198.6
	10	12.6	14.4	13.8	14.5	14.3	15.0	16.2	14.1	13.9	14.2	143.0	158.5	148.6

1st 10-day period (1-10/07/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	58.3	62.6	-
Precipitation - Reference Evapotranspiration	-58.3	-62.6	0.7
Number of Rainy Days	0.0	0.0	0.1
Number of Dry Days	42.0	35.0	-

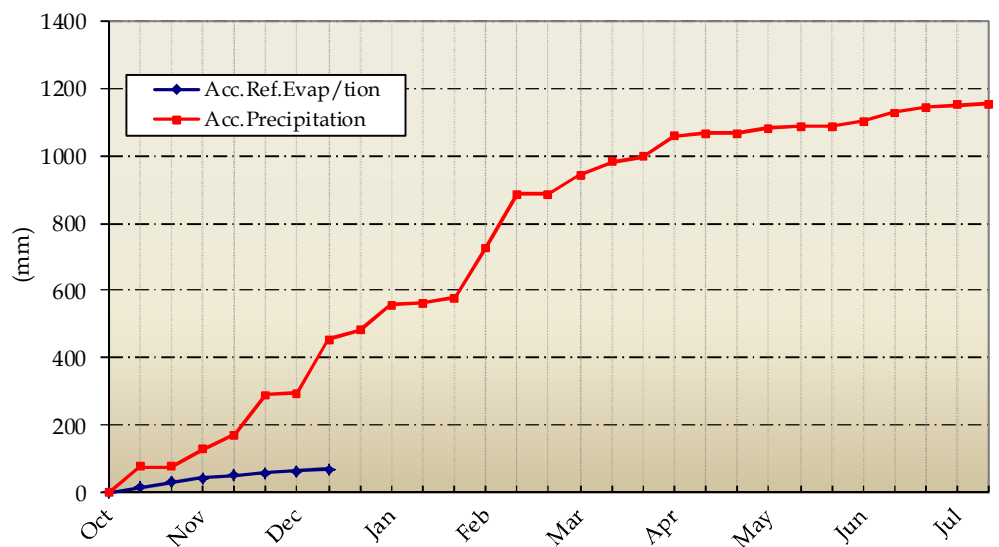
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2015)		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	30.1	31.7	31.7	31.7	34.0	34.0	35.1	33.8	33.1	32.2	31.8	30.4
	Min	14.9	16.9	12.3	15.5	12.8	13.6	14.1	14.0	15.5	17.6	14.7	14.4	14.5
Relative Humidity	Max	81	99	100	95	100	98	97	96	90	100	96	82	-
	Min	40	29	27	22	25	23	19	22	26	24	26	23	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	22.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	27.2
Sunshine Duration		5.0	11.1	11.5	11.2	11.2	12.3	12.6	12.2	11.2	7.2	10.6	12.6	10.5
Precipitation											1.4	1.4		6.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	72.0
Growing Degrees	5	16.1	18.5	17.0	18.6	17.3	18.8	19.1	19.6	19.7	20.4	184.8	181.4	168.8
	10	11.1	13.5	12.0	13.6	12.3	13.8	14.1	14.6	14.7	15.4	134.8	131.4	120.3

1st 10-day period (1-10/07/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	47.0	51.3
Precipitation - Reference Evapotranspiration	-	-47.0	-44.7
Number of Rainy Days	1.0	0.0	1.5
Number of Dry Days	9.0	20.0	-

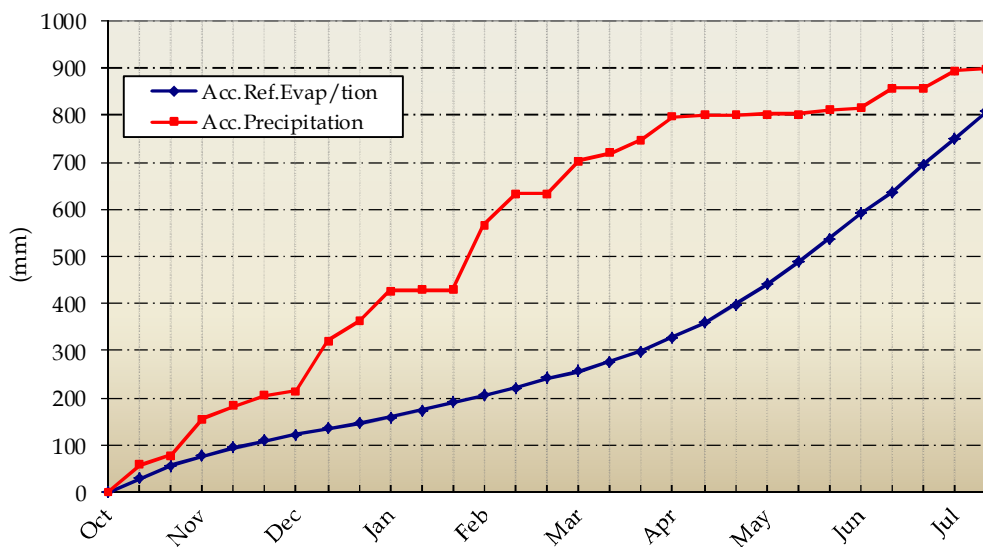
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.0	29.8	31.5	31.9	28.9	29.2	35.6	31.4	31.5	34.6	31.0	32.0	30.8
	Min	16.7	15.7	17.4	17.7	16.2	17.4	19.3	16.1	18.2	20.5	17.5	17.6	17.6
Relative Humidity	Max	93	92	88	88	93	94	90	92	92	93	92	83	-
	Min	59	34	29	26	47	48	27	30	37	26	36	31	-
Soil Temperature at 10 cm	06 UTC	23.0	21.8	22.4	23.4	23.6	23.8	24.0	24.0	23.6	24.4	23.4	25.5	25.3
	12 UTC	24.4	24.0	24.2	24.6	24.0	24.2	25.0	25.0	25.8	25.8	24.7	27.8	29.5
Sunshine Duration		6.6	12.6	10.3	11.9	12.5	12.3	12.9	12.9	12.2	10.0	11.4	12.5	11.4
Precipitation		0.7									3.9	4.6		1.0
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	89.7
Growing Degrees	5	16.4	17.8	19.5	19.8	17.6	18.3	22.5	18.8	19.9	22.6	192.8	198.2	191.7
	10	11.4	12.8	14.5	14.8	12.6	13.3	17.5	13.8	14.9	17.6	142.8	148.2	141.7

1st 10-day period (1-10/07/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	56.9	64.5	56.4
Precipitation - Reference Evapotranspiration	-52.3	-64.5	-55.4
Number of Rainy Days	2.0	0.0	0.3
Number of Dry Days	0.0	20.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

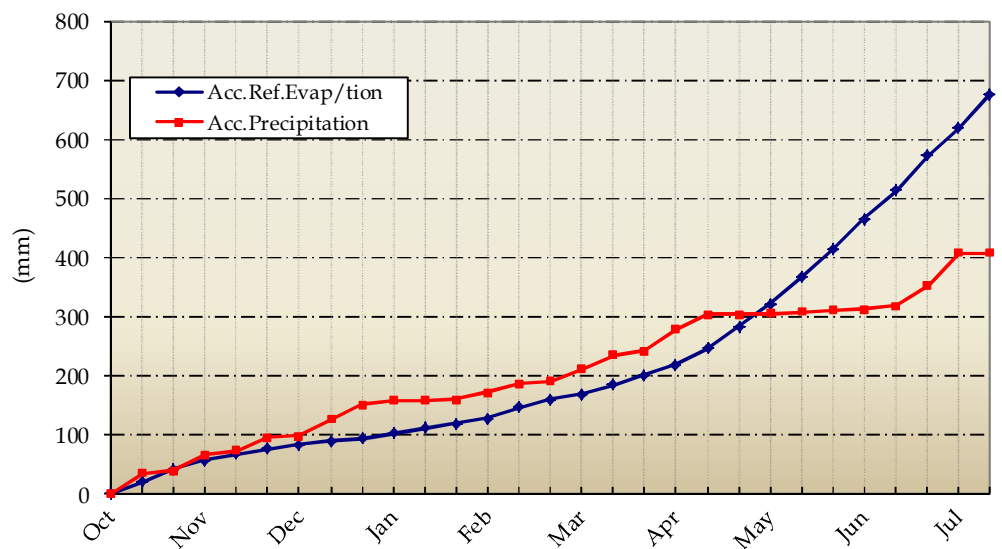


Larisa

1st 10-day period (1-10/07/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.8	31.6	30.6	31.2	33.0	34.6	34.8	35.4	36.2	33.6	32.8	34.1	32.9
	Min	16.4	14.6	17.5	18.8	16.5	17.6	20.3	18.5	16.1	20.2	17.6	18.4	17.5
Relative Humidity	Max	100	100	100	86	91	92	79	70	84	96	90	69	-
	Min	34	27	23	27	25	20	16	21	19	31	24	20	-
Soil Temperature at 10 cm	06 UTC	23.4	23.4	24.6	25.1	25.6	26.0	26.6	26.8	27.0	27.8	25.6	-	26.1
	12 UTC	23.6	23.6	24.8	25.4	25.4	26.2	26.8	27.0	27.0	27.5	25.7	-	28.7
Sunshine Duration		4.5	12.4	10.5	11.2	12.2	12.6	12.4	11.6	10.8	6.3	10.4	12.3	10.7
Precipitation														5.5
Evaporation		9.2	10.9	11.7	7.0	10.1	10.7	10.4	10.2	11.9	7.9	100.0	130.7	95.9
Growing Degrees	5	16.6	18.1	19.1	20.0	19.8	21.1	22.6	22.0	21.2	21.9	202.2	212.8	202.1
	10	11.6	13.1	14.1	15.0	14.8	16.1	17.6	17.0	16.2	16.9	152.2	162.8	152.1

1st 10-day period (1-10/07/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	57.2	71.0	62.4
Precipitation - Reference Evapotranspiration	-57.2	-71.0	-56.9
Number of Rainy Days	0.0	0.0	1.4
Number of Dry Days	10.0	26.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

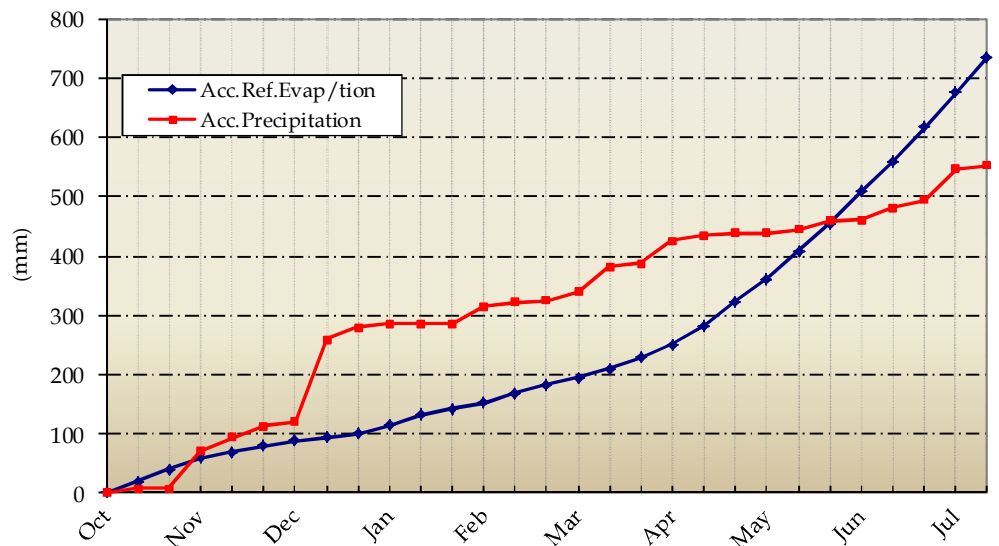


Mikra

1st 10-day period (1-10/07/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.8	29.8	30.6	29.0	31.0	33.6	33.5	34.0	33.2	31.7	31.1	31.8	31.1
	Min	18.3	16.2	20.5	18.8	18.1	19.2	21.3	21.0	20.6	22.6	19.7	18.5	18.5
Relative Humidity	Max	94	92	81	92	91	90	82	69	74	68	83	71	-
	Min	47	34	34	39	34	28	26	26	30	34	33	28	-
Soil Temperature at 10 cm	06 UTC	23.2	22.4	24.9	24.7	24.6	25.8	27.0	27.5	27.4	28.0	25.6	27.6	26.2
	12 UTC	24.1	27.6	29.6	29.4	29.9	30.8	32.8	31.8	31.9	30.4	29.8	33.8	30.9
Sunshine Duration		3.4	13.6	10.9	12.2	13.4	11.9	13.8	13.6	13.5	9.0	11.5	13.3	10.7
Precipitation		2.0		0.0	3.2						0.2	5.4		8.7
Evaporation		2.7	13.9	0.1	9.0	8.7	7.8	10.1	10.0	10.8	8.5	81.6	103.6	95.7
Growing Degrees	5	16.6	18.0	20.6	18.9	19.6	21.4	22.4	22.5	21.9	22.2	203.9	201.4	198.0
	10	11.6	13.0	15.6	13.9	14.6	16.4	17.4	17.5	16.9	17.2	153.9	151.4	148.0

1st 10-day period (1-10/07/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	61.1	70.7	61.2
Precipitation - Reference Evapotranspiration	-55.7	-70.7	-52.5
Number of Rainy Days	3.0	0.0	1.7
Number of Dry Days	0.0	12.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

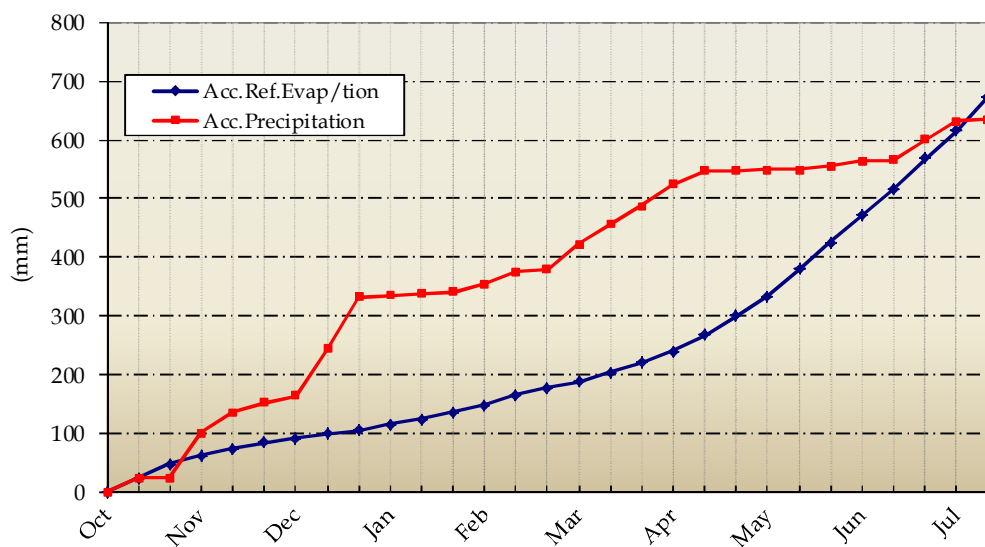


Tanagra

1st 10-day period (1-10/07/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.4	27.9	28.5	27.1	29.4	31.5	31.4	31.4	34.2	32.4	30.0	32.4	31.6
	Min	14.7	16.5	18.0	17.6	16.2	18.2	19.4	19.6	18.6	18.5	17.7	18.8	17.5
Relative Humidity	Max	100	81	74	75	75	67	69	68	79	80	77	61	-
	Min	42	30	33	32	29	24	28	27	19	32	30	22	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		10.8	13.3	13.2	13.2	13.4	12.1	13.1	13.5	13.3	12.4	12.8	-	-
Precipitation		3.0										3.0	-	3.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	15.6	17.2	18.3	17.4	17.8	19.9	20.4	20.5	21.4	20.5	188.8	-	-
	10	10.6	12.2	13.3	12.4	12.8	14.9	15.4	15.5	16.4	15.5	138.8	-	-

1st 10-day period (1-10/07/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	57.9	-	-
Precipitation - Reference Evapotranspiration	-54.9	-	-
Number of Rainy Days	1.0	-	1.0
Number of Dry Days	0.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

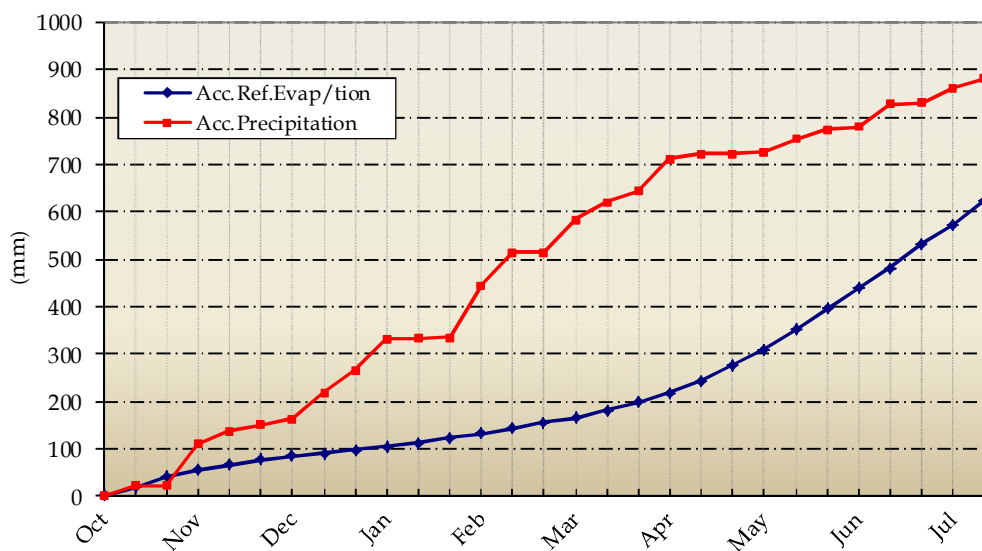


Tripoli

1st 10-day period (1-10/07/2015)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	27.4	29.3	27.9	29.8	31.2	31.2	32.2	31.6	32.1	29.7	32.2	30.2
	Min	11.6	10.1	12.0	15.6	12.2	12.9	13.9	19.9	12.4	14.5	13.5	13.9	13.4
Relative Humidity	Max	100	100	95	93	99	98	88	46	90	96	90	77	-
	Min	51	30	32	32	28	25	21	24	19	28	29	20	-
Soil Temperature at 10 cm	06 UTC	19.0	18.4	20.0	-	22.0	23.0	23.8	25.2	24.8	25.6	22.4	27.4	25.0
	12 UTC	21.2	24.0	26.8	-	-	29.8	30.6	31.2	31.6	31.4	28.3	34.4	28.1
Sunshine Duration		4.2	13.2	-	13.0	12.1	12.7	12.6	13.0	11.2	8.5	11.2	11.2	10.6
Precipitation		19.8										19.8		7.1
Evaporation		1.6	7.3	-	-	8.0	7.8	10.0	6.4	9.8	5.6	-	-	64.6
Growing Degrees	5	12.8	13.8	15.7	16.8	16.0	17.1	17.6	21.1	17.0	18.3	165.9	180.2	167.9
	10	7.8	8.8	10.7	11.8	11.0	12.1	12.6	16.1	12.0	13.3	115.9	130.2	117.9

1st 10-day period (1-10/07/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	51.6	55.3	53.2
Precipitation - Reference Evapotranspiration	-31.8	-55.3	-46.1
Number of Rainy Days	1.0	0.0	1.3
Number of Dry Days	0.0	31.0	-

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.

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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