



AGROMETEOROLOGICAL BULLETIN

July 2016
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



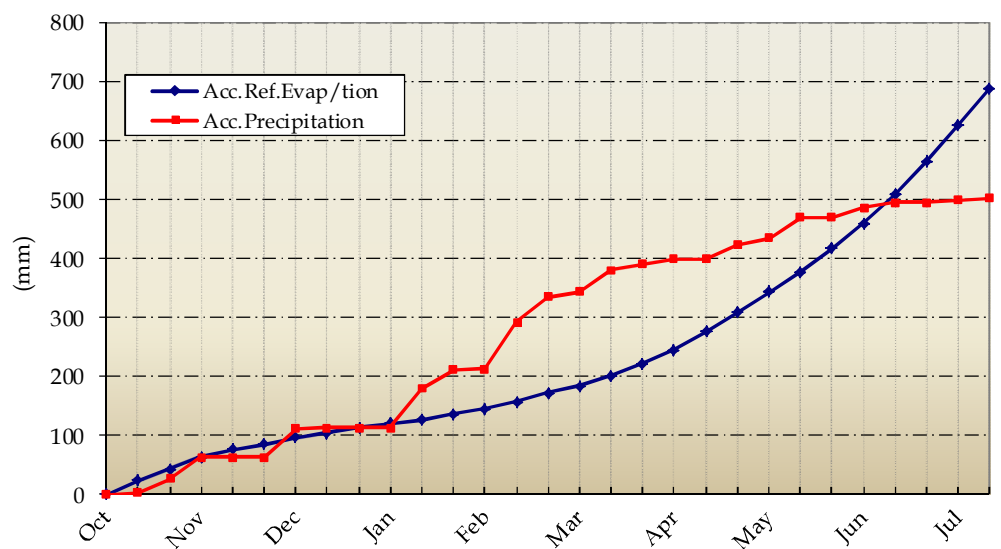
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1st 10-day period (1-10/07/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.4	34.0	33.2	33.2	32.0	31.4	32.6	31.6	30.8	33.4	32.7	30.8	29.3
	Min	19.2	22.6	20.8	20.6	23.2	20.2	18.2	20.8	19.0	17.2	20.2	17.6	17.0
Relative Humidity	Max	92	78	84	85	77	77	81	58	70	88	79	82	-
	Min	32	34	36	40	34	32	28	28	32	26	32	36	-
Soil Temperature at 10 cm	06 UTC	26.0	28.6	27.6	27.7	26.8	27.3	27.0	27.0	27.0	27.0	27.2	24.7	23.7
	12 UTC	32.6	33.6	33.4	33.0	32.6	33.0	32.2	33.5	33.2	33.8	33.1	29.8	28.2
Sunshine Duration		12.0	7.9	12.7	9.4	12.8	11.5	12.3	12.4	13.3	13.2	11.8	9.5	10.3
Precipitation			0.0		2.0							2.0	11.6	12.1
Evaporation		9.3	8.5	10.2	4.8	15.0	10.8	8.4	14.3	8.3	9.9	99.5	93.3	85.9
Growing Degrees	5	21.8	23.3	22.0	21.9	22.6	20.8	20.4	21.2	19.9	20.3	214.2	191.9	181.3
	10	16.8	18.3	17.0	16.9	17.6	15.8	15.4	16.2	14.9	15.3	164.2	141.9	131.3

1st 10-day period (1-10/07/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	60.6	52.6	56.1
Precipitation - Reference Evapotranspiration	-58.6	-41.0	-44.0
Number of Rainy Days	1.0	1.0	2.2
Number of Dry Days	4.0	10.0	-

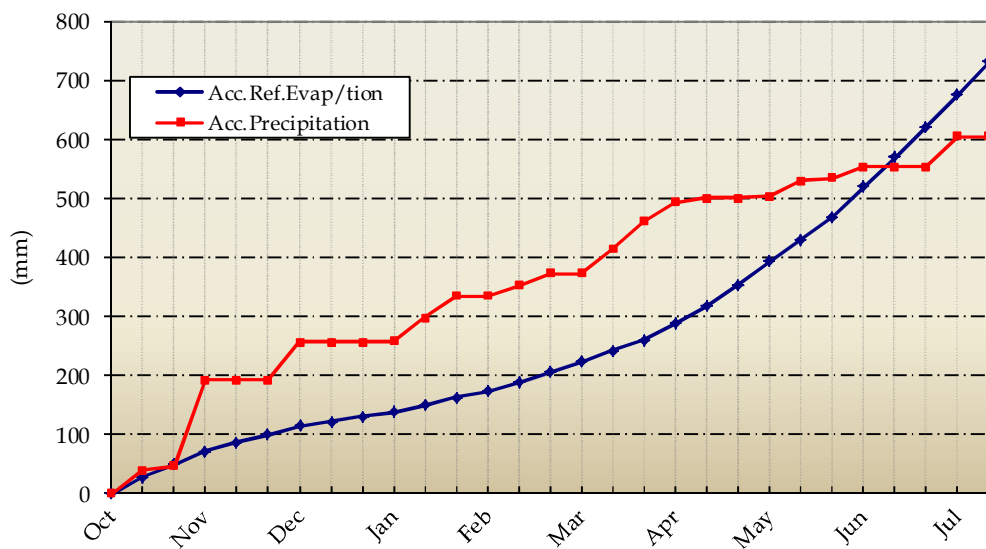
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.4	30.9	29.5	32.1	33.6	30.2	30.4	31.4	31.3	32.8	31.1	30.4	29.5
	Min	18.0	19.8	18.9	20.2	21.1	21.0	20.6	21.0	19.8	19.6	20.0	18.4	17.7
Relative Humidity	Max	90	89	88	88	87	89	89	89	89	85	88	85	-
	Min	41	36	50	44	37	50	51	21	31	35	40	38	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	26.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	31.6
Sunshine Duration		13.1	13.2	13.3	13.0	13.0	12.9	13.0	13.1	12.8	13.1	13.0	12.5	12.0
Precipitation														0.7
Evaporation		2.1	2.0	6.4	5.6	8.0	7.0	7.0	13.0	3.9	8.1	63.1	80.0	75.0
Growing Degrees	5	18.2	20.4	19.2	21.2	22.4	20.6	20.5	21.2	20.6	21.2	205.3	193.7	186.1
	10	13.2	15.4	14.2	16.2	17.4	15.6	15.5	16.2	15.6	16.2	155.3	143.7	136.1

1st 10-day period (1-10/07/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	57.2	57.0	53.6
Precipitation - Reference Evapotranspiration	-57.2	-57.0	-52.9
Number of Rainy Days	0.0	0.0	0.3
Number of Dry Days	14.0	13.0	-

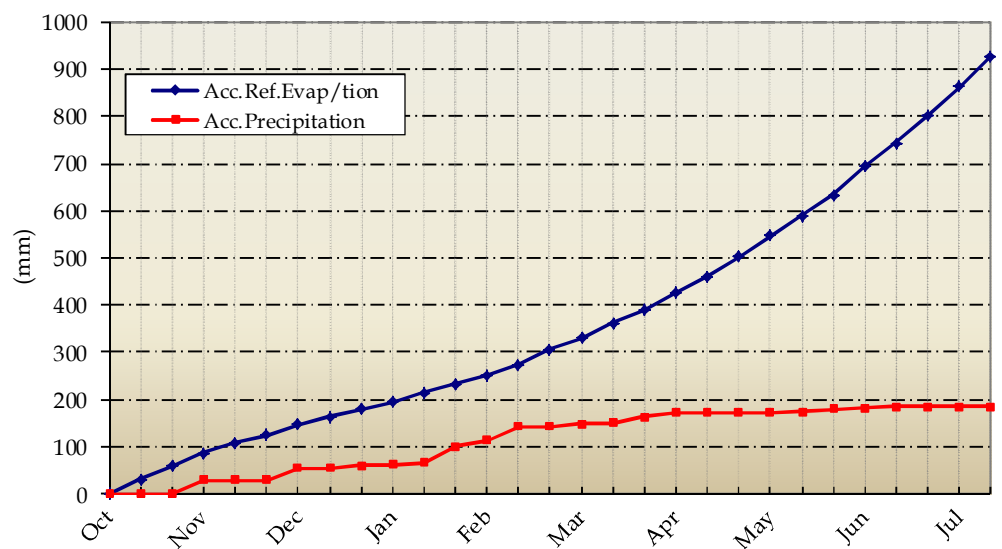
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.8	30.4	30.2	29.4	29.8	29.2	29.6	29.6	28.8	29.6	29.6	27.3	28.4
	Min	25.0	23.2	25.4	25.6	25.6	25.0	22.0	25.6	24.4	24.2	24.6	21.3	21.3
Relative Humidity	Max	79	77	85	80	82	80	79	76	72	78	79	79	-
	Min	60	62	59	68	67	61	59	63	60	61	62	54	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		13.4	13.4	13.3	13.3	13.3	13.3	13.1	13.3	13.3	13.2	13.3	12.5	12.1
Precipitation														0.7
Evaporation		10.1	8.2	4.9	8.4	7.7	11.3	8.4	7.0	12.7	4.0	82.7	66.3	92.1
Growing Degrees	5	22.4	21.8	22.8	22.5	22.7	22.1	20.8	22.6	21.6	21.9	221.2	193.0	198.6
	10	17.4	16.8	17.8	17.5	17.7	17.1	15.8	17.6	16.6	16.9	171.2	143.0	148.6

1st 10-day period (1-10/07/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	65.2	58.3	-
Precipitation - Reference Evapotranspiration	-65.2	-58.3	0.7
Number of Rainy Days	0.0	0.0	0.1
Number of Dry Days	32.0	42.0	-

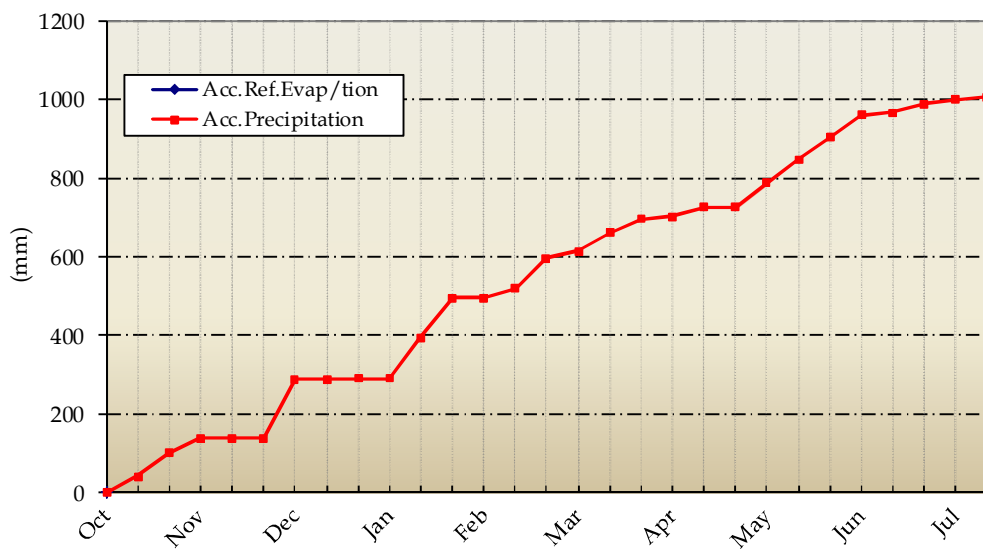
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.5	33.0	33.8	34.0	30.5	32.8	32.7	30.8	33.8	34.8	32.9	32.2	30.4
	Min	15.0	15.6	14.6	15.6	17.3	18.0	15.0	16.3	14.0	14.2	15.6	14.7	14.5
Relative Humidity	Max	100	100	100	100	99	100	97	97	98	98	99	96	-
	Min	34	25	28	28	49	24	26	33	21	21	29	26	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	22.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	27.2
Sunshine Duration		12.7	-	9.7	8.6	6.2	11.5	11.1	12.4	12.7	12.5	10.8	10.6	10.5
Precipitation				0.6	0.5	4.6						5.7	1.4	6.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	72.0
Growing Degrees	5	18.8	19.3	19.2	19.8	18.9	20.4	18.9	18.6	18.9	19.5	192.2	184.8	168.8
	10	13.8	14.3	14.2	14.8	13.9	15.4	13.9	13.6	13.9	14.5	142.2	134.8	120.3

1st 10-day period (1-10/07/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	51.3
Precipitation - Reference Evapotranspiration	-	-	-44.7
Number of Rainy Days	3.0	1.0	1.5
Number of Dry Days	4.0	9.0	-

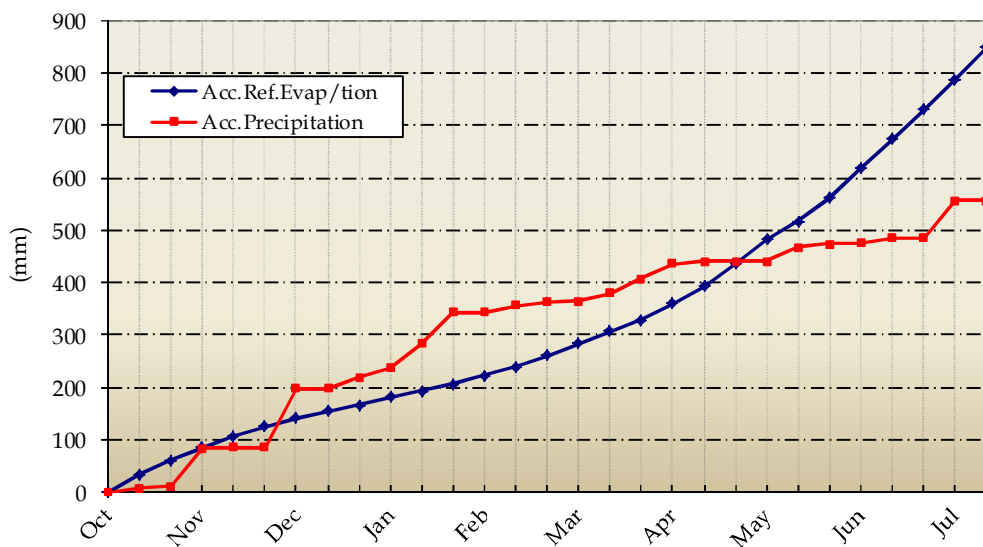
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.3	32.1	30.6	34.8	35.8	30.9	30.2	32.5	29.4	32.2	32.0	31.0	30.8
	Min	19.2	20.5	19.0	21.1	20.4	20.0	19.2	20.0	18.9	18.1	19.6	17.5	17.6
Relative Humidity	Max	85	81	75	87	89	90	90	87	89	86	86	92	-
	Min	33	28	38	29	30	44	49	31	46	30	36	36	-
Soil Temperature at 10 cm	06 UTC	25.6	25.4	25.8	26.2	26.4	26.6	26.6	26.0	26.0	26.2	26.1	23.4	25.3
	12 UTC	27.4	27.6	27.4	27.8	28.2	28.2	28.0	28.4	27.8	29.2	28.0	24.7	29.5
Sunshine Duration		12.6	12.6	12.8	11.8	10.7	12.5	10.3	11.3	12.4	12.4	11.9	11.4	11.4
Precipitation								0.5				0.5	4.6	1.0
Evaporation		9.6	6.7	8.7	4.6	9.6	7.8	7.2	7.0	10.0	6.0	77.2	-	89.7
Growing Degrees	5	20.3	21.3	19.8	23.0	23.1	20.5	19.7	21.3	19.2	20.2	208.1	192.8	191.7
	10	15.3	16.3	14.8	18.0	18.1	15.5	14.7	16.3	14.2	15.2	158.1	142.8	141.7

1st 10-day period (1-10/07/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	60.7	56.9	56.4
Precipitation - Reference Evapotranspiration	-60.2	-52.3	-55.4
Number of Rainy Days	1.0	2.0	0.3
Number of Dry Days	10.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

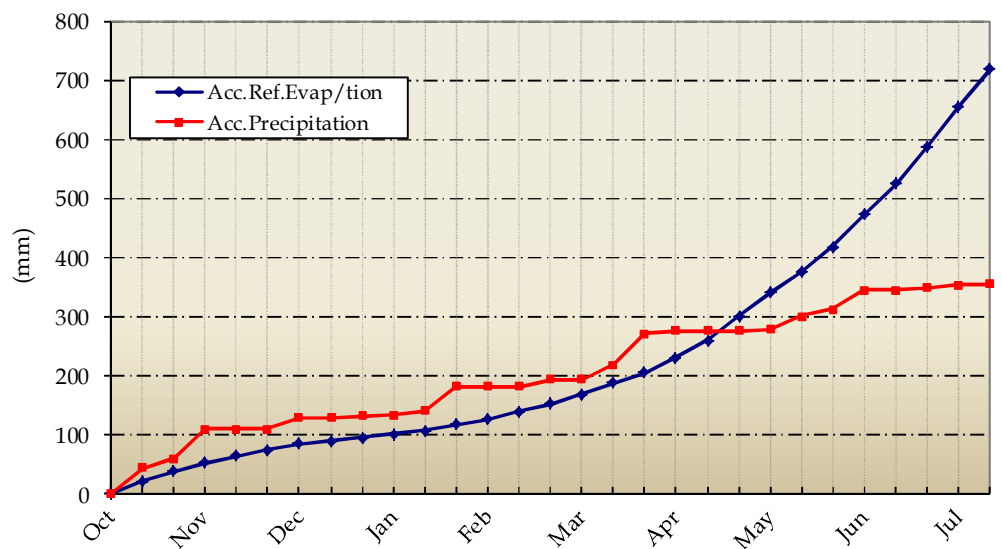


Larisa

1st 10-day period (1-10/07/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	35.6	35.6	34.9	36.0	32.2	32.7	31.4	31.6	33.6	36.6	34.0	32.8	32.9
	Min	20.0	20.6	16.3	21.4	23.6	24.0	18.2	22.6	15.8	17.2	20.0	17.6	17.5
Relative Humidity	Max	86	95	100	68	57	100	100	65	81	71	82	90	-
	Min	24	27	26	23	37	31	26	19	20	16	25	24	-
Soil Temperature at 10 cm	06 UTC	26.8	26.6	27.2	27.2	27.2	27.6	27.4	27.2	27.0	27.2	27.1	25.6	26.1
	12 UTC	26.8	37.0	27.0	27.4	27.6	27.4	27.4	27.2	27.0	27.2	28.2	25.7	28.7
Sunshine Duration		9.5	10.5	12.1	8.7	10.4	8.4	9.6	12.3	12.0	11.8	10.5	10.4	10.7
Precipitation				0.4				1.0				1.4		5.5
Evaporation		8.1	11.6	10.1	13.6	12.6	19.9	3.7	7.6	13.2	16.0	116.4	100.0	95.9
Growing Degrees	5	22.8	23.1	20.6	23.7	22.9	23.4	19.8	22.1	19.7	21.9	220.0	202.2	202.1
	10	17.8	18.1	15.6	18.7	17.9	18.4	14.8	17.1	14.7	16.9	170.0	152.2	152.1

1st 10-day period (1-10/07/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	63.3	57.2	62.4
Precipitation - Reference Evapotranspiration	-61.9	-57.2	-56.9
Number of Rainy Days	2.0	0.0	1.4
Number of Dry Days	4.0	10.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

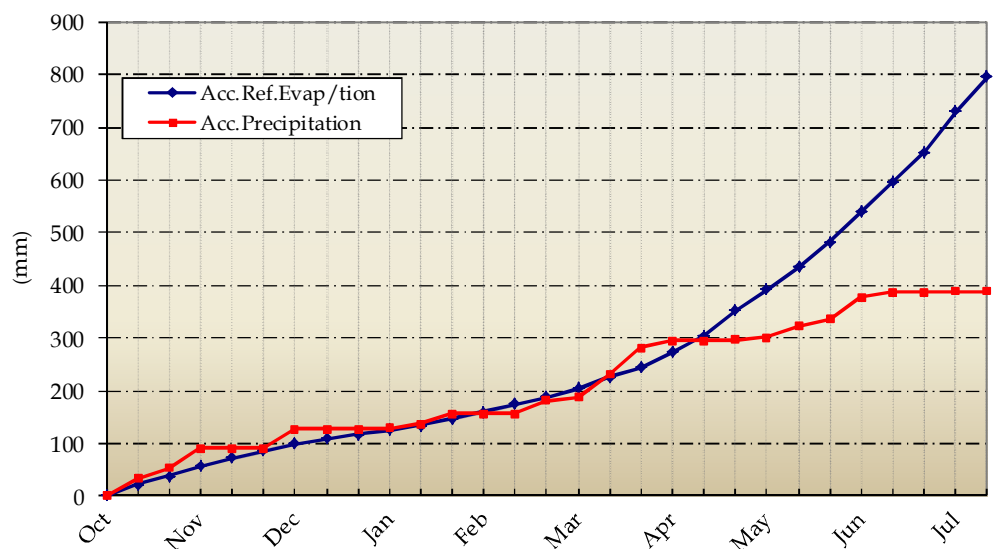


Mikra

1st 10-day period (1-10/07/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.4	33.0	33.0	34.2	31.8	30.4	32.1	31.0	31.8	34.2	32.5	31.1	31.1
	Min	20.0	20.2	19.8	21.6	23.8	23.2	20.2	22.4	17.4	18.8	20.7	19.7	18.5
Relative Humidity	Max	68	75	85	78	96	81	81	70	75	80	79	83	-
	Min	26	28	35	38	38	37	28	19	36	27	31	33	-
Soil Temperature at 10 cm	06 UTC	29.4	29.2	29.4	30.0	31.0	30.2	38.8	28.4	28.6	29.2	30.4	25.6	26.2
	12 UTC	34.0	35.0	35.0	35.6	34.8	32.0	33.0	34.0	34.2	35.0	34.3	29.8	30.9
Sunshine Duration		8.4	11.6	13.4	12.5	7.9	6.7	9.3	13.4	13.6	13.1	11.0	11.5	10.7
Precipitation						0.0		0.8				0.8	5.4	8.7
Evaporation		2.1	10.1	9.3	12.1	8.4	7.4	9.4	8.7	12.7	12.6	92.8	81.6	95.7
Growing Degrees	5	21.7	21.6	21.4	22.9	22.8	21.8	21.2	21.7	19.6	21.5	216.2	203.9	198.0
	10	16.7	16.6	16.4	17.9	17.8	16.8	16.2	16.7	14.6	16.5	166.2	153.9	148.0

1st 10-day period (1-10/07/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	65.5	61.1	61.2
Precipitation - Reference Evapotranspiration	-64.7	-55.7	-52.5
Number of Rainy Days	1.0	3.0	1.7
Number of Dry Days	8.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

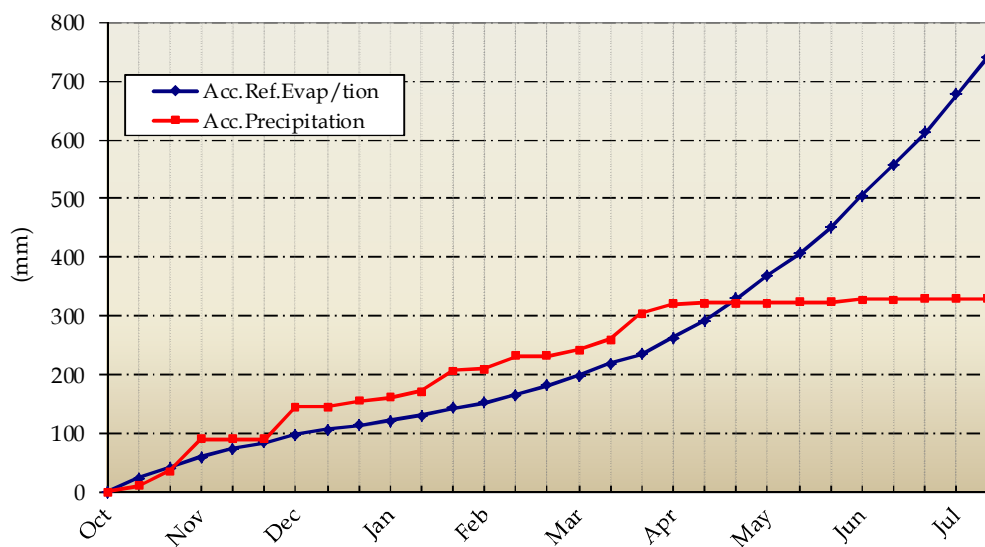


Tanagra

1st 10-day period (1-10/07/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.9	34.2	33.4	32.4	31.4	32.4	30.5	29.7	30.7	34.1	32.3	30.0	31.6
	Min	18.2	20.4	21.1	22.0	24.2	21.5	22.0	22.0	19.6	18.4	20.9	17.7	17.5
Relative Humidity	Max	70	66	61	60	60	65	66	54	62	55	62	77	-
	Min	26	25	25	28	31	26	33	27	21	17	26	30	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		13.2	13.0	13.2	12.3	12.8	11.5	13.0	13.0	12.1	13.2	12.7	12.8	
Precipitation													3.0	3.9
Evaporation		11.0	10.0	10.0	9.0	8.5	11.0	7.5	9.5	10.5	10.5	97.5	-	
Growing Degrees	5	21.1	22.3	22.3	22.2	22.8	22.0	21.3	20.9	20.2	21.3	216.1	188.8	
	10	16.1	17.3	17.3	17.2	17.8	17.0	16.3	15.9	15.2	16.3	166.1	138.8	

1st 10-day period (1-10/07/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	62.9	57.9	
Precipitation - Reference Evapotranspiration	-62.9	-54.9	3.9
Number of Rainy Days	0.0	1.0	1.2
Number of Dry Days	12.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

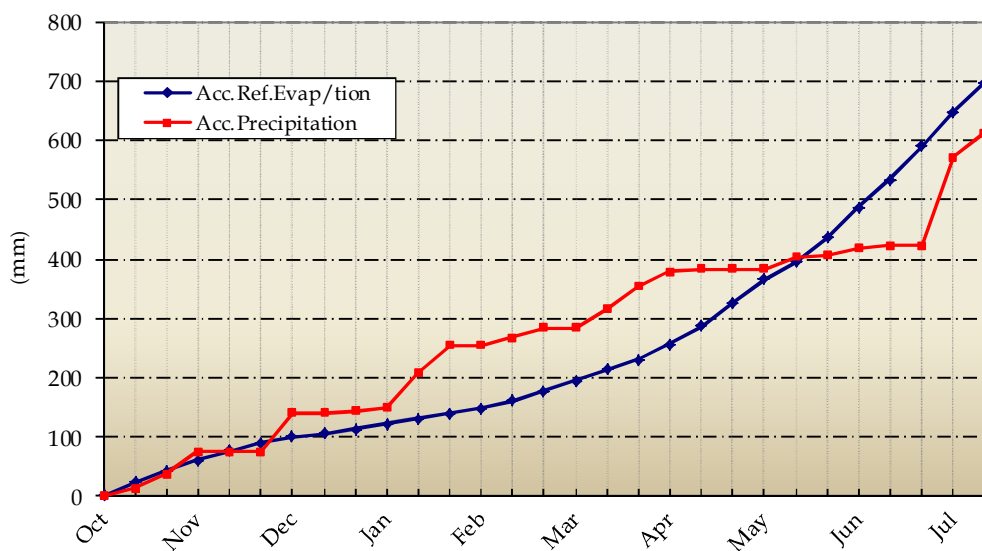


Tripoli

1st 10-day period (1-10/07/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.1	31.0	30.6	31.9	31.5	30.2	27.7	29.9	30.7	33.5	30.9	29.7	30.2
	Min	15.7	16.4	15.3	15.8	17.3	17.6	15.2	14.8	14.3	13.6	15.6	13.5	13.4
Relative Humidity	Max	100	100	100	100	85	100	100	96	99	98	98	90	-
	Min	24	33	34	28	34	34	42	31	23	19	30	29	-
Soil Temperature at 10 cm	06 UTC	25.6	24.6	23.4	23.4	24.0	24.6	22.8	22.4	22.4	22.2	23.5	22.4	25.0
	12 UTC	32.8	-	-	28.6	29.2	29.2	25.8	27.0	-	-	28.8	28.3	28.1
Sunshine Duration		9.4	9.5	9.2	12.8	8.5	9.4	8.4	8.4	13.0	12.8	10.1	11.2	10.6
Precipitation		8.4	12.3	3.7			16.7	0.0				41.1	19.8	7.1
Evaporation		6.8	5.6	3.7	8.3	7.0	8.7	4.3	8.0	3.7	11.0	67.1	-	64.6
Growing Degrees	5	18.9	18.7	18.0	18.9	19.4	18.9	16.5	17.4	17.5	18.6	182.6	165.9	167.9
	10	13.9	13.7	13.0	13.9	14.4	13.9	11.5	12.4	12.5	13.6	132.6	115.9	117.9

1st 10-day period (1-10/07/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	49.9	51.6	53.2
Precipitation - Reference Evapotranspiration	-8.8	-31.8	-46.1
Number of Rainy Days	4.0	1.0	1.3
Number of Dry Days	4.0	0.0	-

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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