



# AGROMETEOROLOGICAL BULLETIN

*June 2016*  
*2nd 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



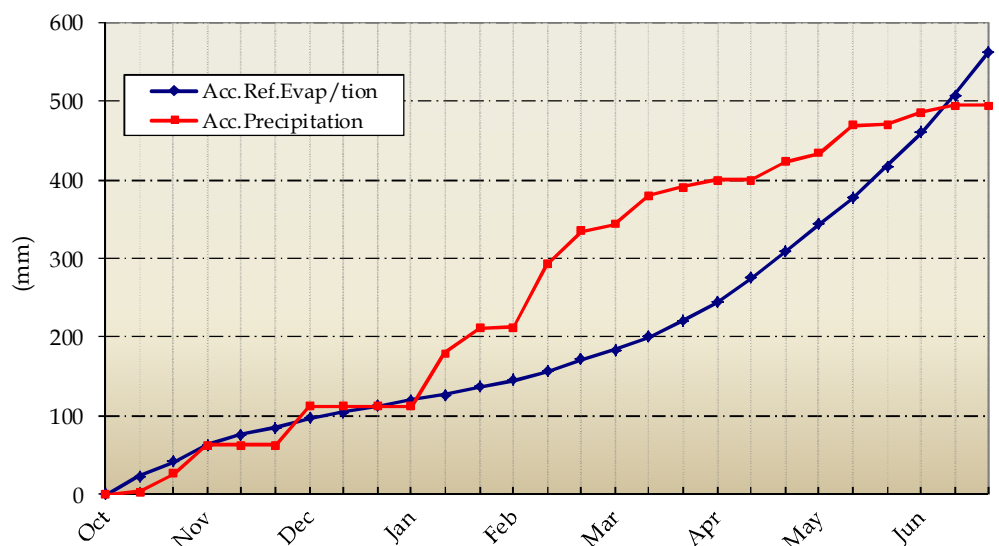
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2nd 10-day period (11-20/06/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.0	28.4	26.0	26.4	28.6	29.4	31.6	36.2	38.0	36.2	30.7	28.3	27.5
	Min	12.6	13.6	11.6	20.8	10.6	16.6	16.8	18.4	19.2	24.4	16.5	16.6	15.2
Relative Humidity	Max	94	87	85	87	94	88	75	88	84	64	85	89	-
	Min	56	49	60	60	50	44	36	30	21	30	44	42	-
Soil Temperature at 10 cm	06 UTC	21.8	22.4	24.6	24.2	23.6	24.6	25.6	26.2	26.8	27.8	24.8	22.7	22.6
	12 UTC	28.8	29.8	28.4	27.6	29.6	31.4	31.8	32.4	33.2	33.6	30.7	28.0	27.3
Sunshine Duration		12.7	12.7	8.0	8.8	13.1	13.0	12.3	10.0	7.6	11.4	11.0	10.7	10.3
Precipitation					0.0							0.0	16.1	11.6
Evaporation		10.8	6.2	7.5	5.5	7.2	10.0	6.8	7.9	14.0	13.3	89.2	67.2	79.3
Growing Degrees	5	14.3	16.0	13.8	18.6	14.6	18.0	19.2	22.3	23.6	25.3	185.7	174.5	163.4
	10	9.3	11.0	8.8	13.6	9.6	13.0	14.2	17.3	18.6	20.3	135.7	124.5	113.4

2nd 10-day period (11-20/06/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	55.2	50.1	52.7
Precipitation - Reference Evapotranspiration	-55.2	-34.0	-41.1
Number of Rainy Days	0.0	3.0	1.6
Number of Dry Days	13.0	0.0	-

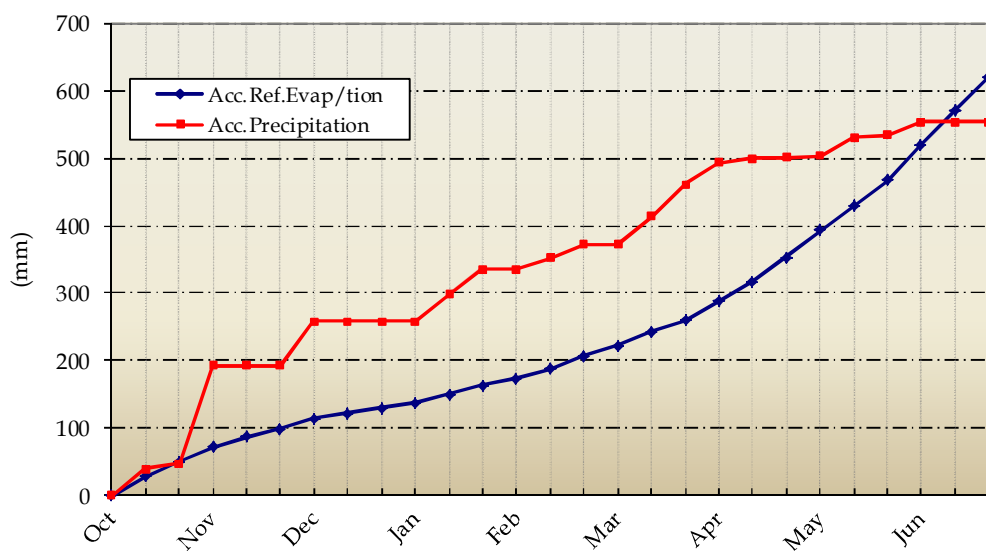
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.8	27.6	26.0	26.4	28.4	33.0	34.4	34.9	30.2	30.0	29.8	28.8	28.1
	Min	15.4	16.2	18.7	17.3	17.4	16.2	17.2	18.4	19.0	20.6	17.6	17.6	16.4
Relative Humidity	Max	87	88	86	89	88	85	86	82	84	87	86	86	-
	Min	42	51	62	47	43	30	34	28	43	44	42	40	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	24.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	29.7
Sunshine Duration		12.5	12.4	6.8	11.9	11.8	12.0	11.9	9.9	2.0	10.2	10.1	12.7	11.5
Precipitation													0.3	2.1
Evaporation		2.6	0.0	3.1	6.9	4.3	3.7	12.6	7.2	3.2	8.0	51.6	75.5	71.4
Growing Degrees	5	16.1	16.9	17.4	16.9	17.9	19.6	20.8	21.7	19.6	20.3	187.1	182.1	172.2
	10	11.1	11.9	12.4	11.9	12.9	14.6	15.8	16.7	14.6	15.3	137.1	132.1	122.2

2nd 10-day period (11-20/06/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	50.2	55.7	50.2
Precipitation - Reference Evapotranspiration	-50.2	-55.4	-48.1
Number of Rainy Days	0.0	1.0	0.4
Number of Dry Days	11.0	11.0	-

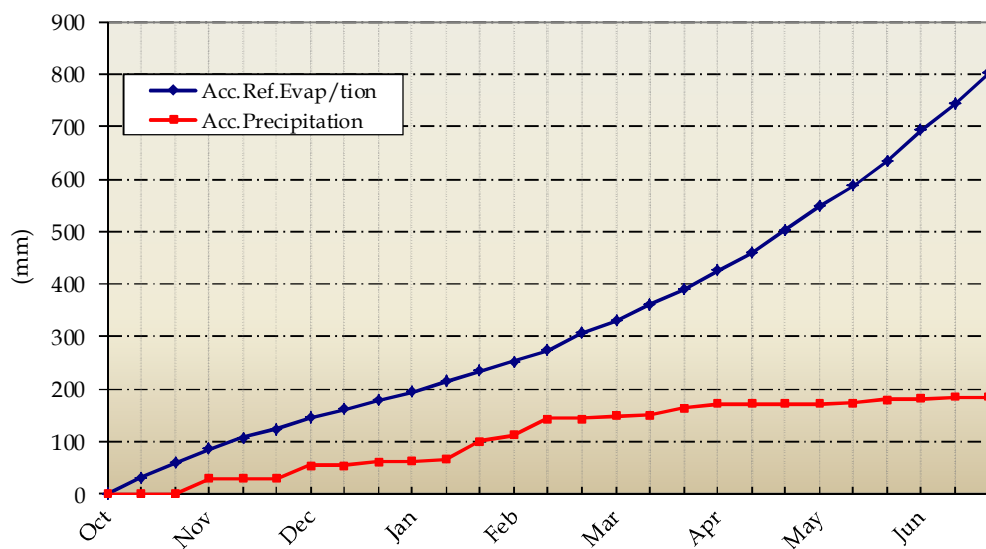
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.4	27.0	33.0	28.2	27.0	27.8	29.0	31.4	33.8	31.0	29.4	27.2	27.5
	Min	18.2	16.0	19.6	25.0	20.6	20.8	20.0	22.4	24.6	23.4	21.1	20.4	19.4
Relative Humidity	Max	80	81	74	87	72	75	69	59	65	84	75	77	-
	Min	56	56	18	27	47	51	48	38	33	47	42	46	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.8	12.9	8.0	7.5	13.0	12.9	12.9	12.5	12.1	11.9	11.6	12.4	12.0
Precipitation													0.0	0.2
Evaporation		6.8	3.0	8.7	7.3	7.5	7.6	6.6	5.0	5.9	2.7	61.1	62.6	83.8
Growing Degrees	5	16.8	16.5	21.3	21.6	18.8	19.3	19.5	21.9	24.2	22.2	202.1	187.7	184.4
	10	11.8	11.5	16.3	16.6	13.8	14.3	14.5	16.9	19.2	17.2	152.1	137.7	134.4

2nd 10-day period (11-20/06/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	59.0	57.7	-
Precipitation - Reference Evapotranspiration	-59.0	-57.7	0.2
Number of Rainy Days	0.0	0.0	0.2
Number of Dry Days	12.0	22.0	-

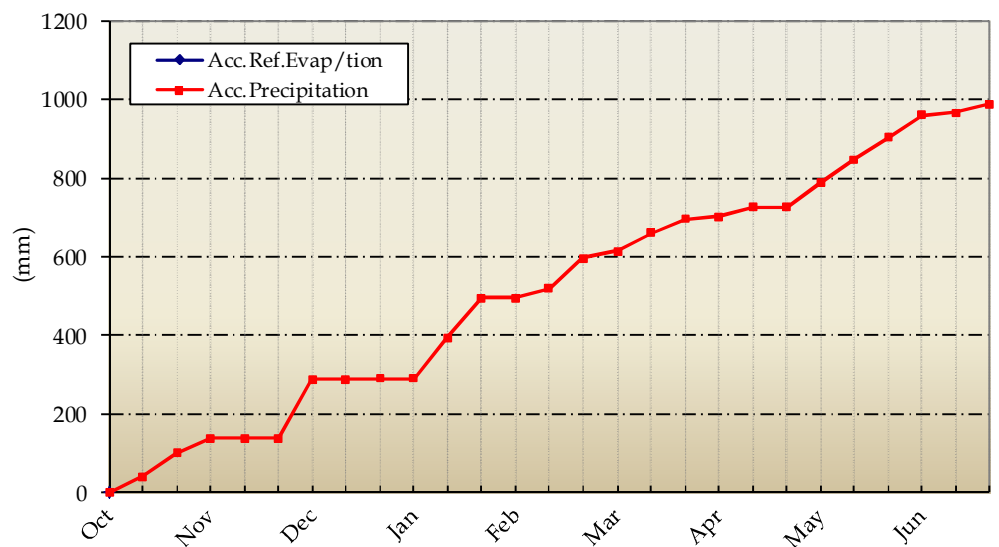
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.4	25.7	21.2	22.9	26.7	31.6	36.1	35.8	29.1	33.0	28.8	29.0	28.0
	Min	13.0	10.2	15.2	12.0	11.2	10.4	13.2	14.9	15.8	16.6	13.2	13.4	13.0
Relative Humidity	Max	100	100	100	100	100	82	100	74	98	82	94	100	-
	Min	30	40	64	60	42	25	21	27	40	33	38	32	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	20.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.0
Sunshine Duration		11.3	6.6	1.9	8.0	11.1	11.9	12.3	12.7	0.9	8.3	8.5	9.7	9.8
Precipitation		0.9	0.0	17.1	3.4					0.0		21.4	15.7	14.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	70.5
Growing Degrees	5	14.2	13.0	13.2	12.5	14.0	16.0	19.7	20.4	17.5	19.8	160.0	161.9	155.2
	10	9.2	8.0	8.2	7.5	9.0	11.0	14.7	15.4	12.5	14.8	110.0	111.9	105.2

2nd 10-day period (11-20/06/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	46.5
Precipitation - Reference Evapotranspiration	-	-	-32.4
Number of Rainy Days	3.0	3.0	2.0
Number of Dry Days	0.0	2.0	-

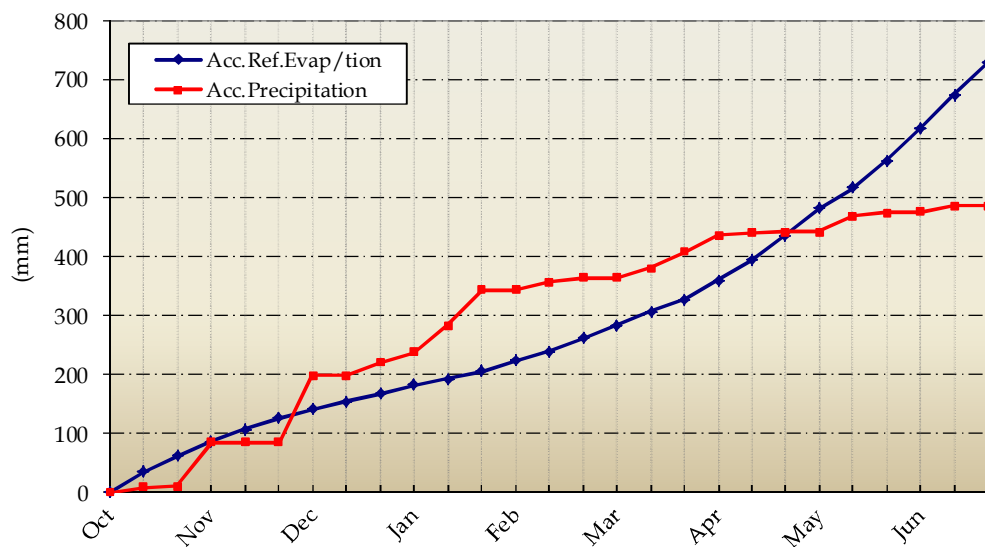
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.0	29.4	25.4	28.4	31.1	28.8	32.3	33.0	39.0	32.8	30.6	30.1	29.3
	Min	12.7	15.4	16.0	16.5	15.1	15.8	16.6	19.5	18.8	18.0	16.4	17.0	15.9
Relative Humidity	Max	91	91	92	93	90	80	83	68	76	79	84	87	-
	Min	44	31	55	34	24	34	26	29	18	31	33	36	-
Soil Temperature at 10 cm	06 UTC	21.2	22.0	22.2	22.4	22.4	22.8	23.4	24.2	24.6	24.6	23.0	22.4	23.0
	12 UTC	23.4	24.4	23.6	23.8	24.8	24.6	25.0	26.0	26.2	26.2	24.8	24.0	27.4
Sunshine Duration		12.8	12.1	4.3	12.5	12.7	12.5	12.1	12.3	3.8	11.9	10.7	11.7	11.0
Precipitation				0.4	0.0							0.4	0.2	3.1
Evaporation		7.2	6.6	2.2	6.4	8.0	5.8	10.2	8.0	3.2	6.7	64.3	-	80.7
Growing Degrees	5	14.4	17.4	15.7	17.5	18.1	17.3	19.5	21.3	23.9	20.4	185.3	185.5	175.9
	10	9.4	12.4	10.7	12.5	13.1	12.3	14.5	16.3	18.9	15.4	135.3	135.5	125.9

2nd 10-day period (11-20/06/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	56.0	59.1	54.6
Precipitation - Reference Evapotranspiration	-55.6	-58.9	-51.5
Number of Rainy Days	1.0	1.0	0.9
Number of Dry Days	4.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

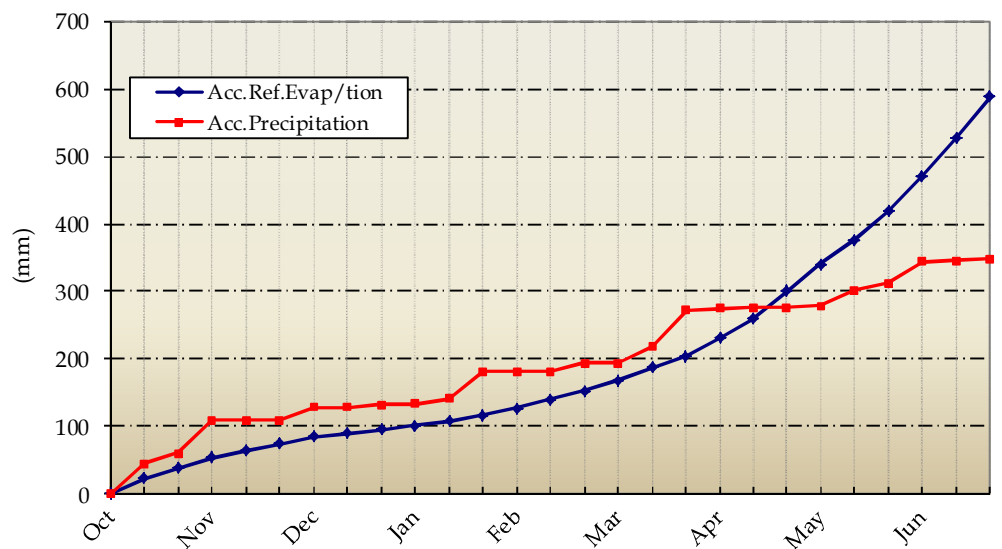




2nd 10-day period (11-20/06/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.2	32.6	29.0	30.0	32.6	36.0	38.2	40.1	33.6	36.5	34.1	32.9	31.7
	Min	12.7	15.0	19.8	15.0	15.0	16.0	17.6	19.0	19.8	20.6	17.0	17.2	15.7
Relative Humidity	Max	93	87	91	100	90	78	74	81	85	76	86	85	-
	Min	18	16	23	26	20	14	17	18	26	22	20	22	-
Soil Temperature at 10 cm	06 UTC	23.2	23.8	24.2	23.6	23.4	24.0	24.8	25.2	25.8	25.4	24.3	25.5	23.9
	12 UTC	23.2	23.8	24.0	24.0	23.6	24.0	24.8	25.2	25.6	25.6	24.4	25.7	26.6
Sunshine Duration		12.0	11.7	4.5	9.6	12.1	11.8	11.8	10.3	5.4	11.7	10.1	10.3	10.5
Precipitation				2.7	0.5							3.2	33.2	6.2
Evaporation		10.2	15.0	4.1	7.5	13.6	10.3	13.7	10.4	10.2	11.3	106.3	105.3	85.8
Growing Degrees	5	17.5	18.8	19.4	17.5	18.8	21.0	22.9	24.6	21.7	23.6	205.7	200.5	186.8
	10	12.5	13.8	14.4	12.5	13.8	16.0	17.9	19.6	16.7	18.6	155.7	150.5	136.8

2nd 10-day period (11-20/06/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	62.4	58.4	58.5
Precipitation - Reference Evapotranspiration	-59.2	-25.2	-52.3
Number of Rainy Days	2.0	4.0	1.7
Number of Dry Days	4.0	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

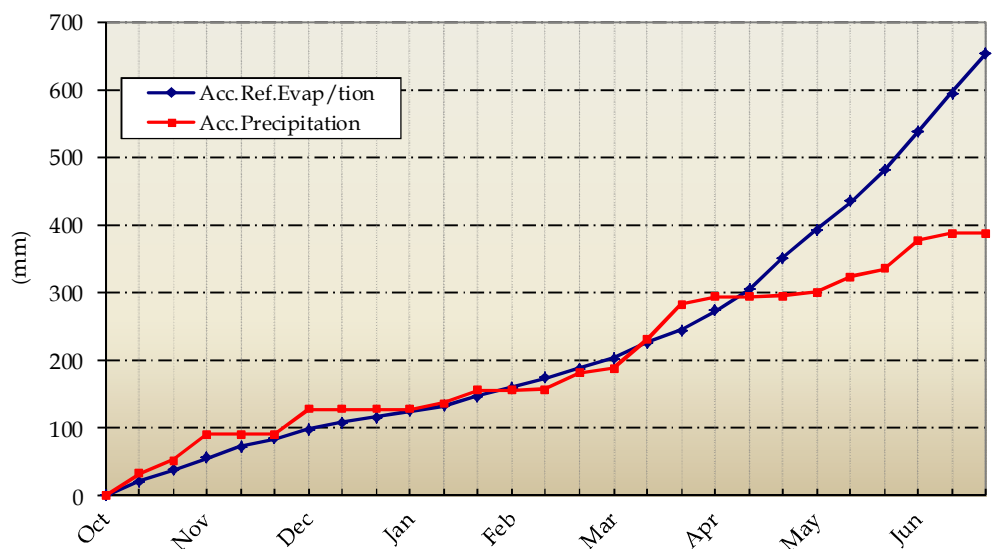


Mikra

2nd 10-day period (11-20/06/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.0	31.0	27.0	27.8	31.6	32.8	32.0	33.2	30.6	34.0	30.9	30.7	29.7
	Min	14.0	15.6	18.8	16.6	15.8	16.0	18.2	19.7	19.2	20.7	17.5	18.6	17.0
Relative Humidity	Max	82	81	76	84	79	79	68	75	79	74	78	80	-
	Min	32	26	42	31	25	17	25	26	45	31	30	31	-
Soil Temperature at 10 cm	06 UTC	22.4	24.2	25.2	24.0	24.4	25.6	26.8	27.2	27.0	26.8	25.4	25.2	24.4
	12 UTC	28.8	30.2	28.5	30.2	31.4	31.5	32.0	32.4	30.4	31.0	30.6	30.9	29.1
Sunshine Duration		12.7	10.7	3.9	10.5	12.9	12.7	12.7	11.5	4.1	13.2	10.5	10.9	10.3
Precipitation				0.0								0.0	13.2	11.5
Evaporation		8.1	6.9	8.0	9.4	9.0	11.6	6.9	9.7	4.7	8.7	83.0	77.9	85.4
Growing Degrees	5	16.5	18.3	17.9	17.2	18.7	19.4	20.1	21.5	19.9	22.4	191.8	196.2	183.4
	10	11.5	13.3	12.9	12.2	13.7	14.4	15.1	16.5	14.9	17.4	141.8	146.2	133.4

2nd 10-day period (11-20/06/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	58.3	58.6	57.4
Precipitation - Reference Evapotranspiration	-58.3	-45.4	-45.9
Number of Rainy Days	0.0	2.0	1.8
Number of Dry Days	12.0	6.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



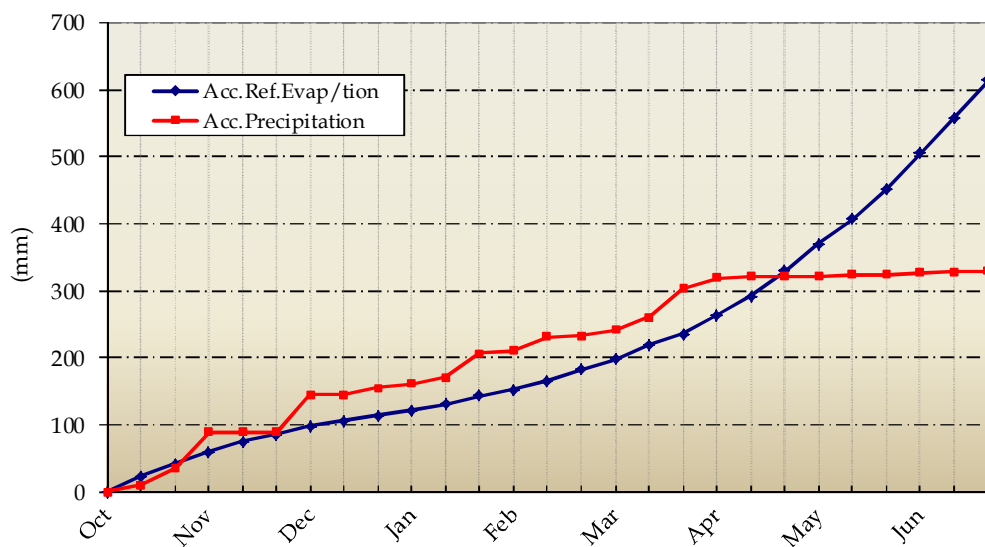


Tanagra

2nd 10-day period (11-20/06/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.9	32.4	30.3	28.6	32.8	34.5	38.3	39.5	37.2	37.0	34.0	30.4	30.3
	Min	14.8	17.4	17.8	19.6	17.6	17.8	18.4	20.6	22.4	20.8	18.7	16.8	15.8
Relative Humidity	Max	70	62	74	69	70	65	59	49	65	65	65	79	-
	Min	23	13	23	27	19	16	12	14	20	24	19	28	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		13.4	12.3	5.2	5.2	13.5	12.8	11.9	11.4	3.1	11.5	10.0	11.1	
Precipitation					1.6							1.6	34.6	2.8
Evaporation		10.0	11.5	6.5	7.0	10.0	10.0	13.0	16.0	12.0	10.0	106.0	-	
Growing Degrees	5	17.4	19.9	19.1	19.1	20.2	21.2	23.4	25.1	24.8	23.9	213.9	185.8	
	10	12.4	14.9	14.1	14.1	15.2	16.2	18.4	20.1	19.8	18.9	163.9	135.8	

2nd 10-day period (11-20/06/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	56.5	52.6	
Precipitation - Reference Evapotranspiration	-54.9	-18.0	2.8
Number of Rainy Days	1.0	2.0	1.4
Number of Dry Days	5.0	12.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

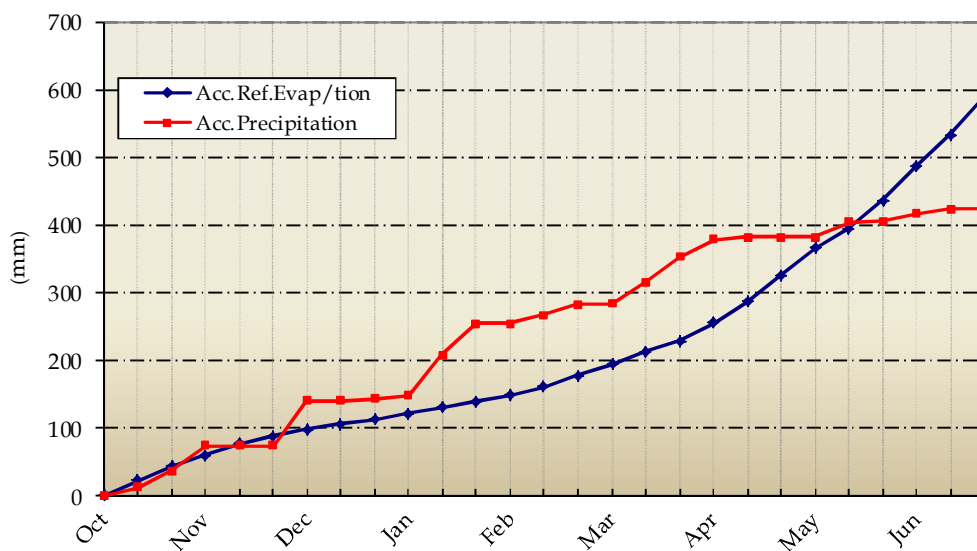


Tripoli

2nd 10-day period (11-20/06/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.1	27.5	24.7	24.6	29.0	33.7	37.2	40.3	38.0	37.1	31.9	28.0	28.6
	Min	7.8	10.2	12.0	12.3	12.5	12.3	14.7	15.4	16.6	15.2	12.9	11.8	11.6
Relative Humidity	Max	100	100	100	100	86	88	88	82	76	78	90	97	-
	Min	27	20	29	33	24	16	12	10	10	14	20	26	-
Soil Temperature at 10 cm	06 UTC	18.4	-	22.2	21.4	20.8	22.4	24.8	-	-	-	21.7	21.6	22.7
	12 UTC	-	-	26.0	27.2	27.6	30.2	32.0	-	-	-	28.6	27.8	25.9
Sunshine Duration		-	13.0	8.3	11.6	13.3	12.9	12.8	-	-	11.8	12.0	11.6	10.8
Precipitation					0.0							0.0	3.2	5.7
Evaporation		-	8.5	5.4	6.6	9.1	9.6	-	-	-	-	-	-	62.0
Growing Degrees	5	12.5	13.9	13.4	13.5	15.8	18.0	21.0	22.9	22.3	21.2	174.1	148.9	151.2
	10	7.5	8.9	8.4	8.5	10.8	13.0	16.0	17.9	17.3	16.2	124.1	98.9	101.2

2nd 10-day period (11-20/06/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	57.3	49.7	52.3
Precipitation - Reference Evapotranspiration	-57.3	-46.5	-46.6
Number of Rainy Days	0.0	3.0	1.4
Number of Dry Days	10.0	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<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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