



AGROMETEOROLOGICAL BULLETIN

June 2018
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 (11-20/06/2018)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.0	31.6	31.2	32.4	29.4	27.4	28.4	27.2	31.4	33.2	30.4	27.5	27.5
	Min	22.0	18.0	16.4	16.4	17.8	17.8	18.0	16.0	17.0	17.4	17.7	16.0	15.2
Relative Humidity	Max	53	93	74	85	96	97	94	93	94	80	86	89	-
	Min	26	29	28	29	44	54	58	62	26	20	38	42	-
Soil Temperature at 10 cm	06 UTC	26.2	25.4	25.6	25.6	25.8	26.0	24.0	22.2	21.2	22.0	24.4	23.7	22.6
	12 UTC	29.2	30.2	29.8	29.8	29.6	27.6	26.8	24.0	23.6	25.8	27.6	30.8	27.3
Sunshine Duration		11.7	13.4	12.7	9.7	13.3	5.7	7.0	3.2	12.4	13.7	10.3	9.4	10.3
Precipitation							0.4	9.5	9.2			19.1	7.2	11.6
Evaporation		11.0	12.2	1.8	7.8	9.3	4.1	4.2	3.0	10.7	11.7	75.8	62.8	79.3
Growing Degrees	5	22.0	19.8	18.8	19.4	18.6	17.6	18.2	16.6	19.2	20.3	190.5	167.2	163.4
	10	17.0	14.8	13.8	14.4	13.6	12.6	13.2	11.6	14.2	15.3	140.5	117.2	113.4

2nd 10-day period (11-20/06/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	52.6	46.7	52.7
Precipitation - Reference Evapotranspiration	-33.5	-39.5	-41.1
Number of Rainy Days	3.0	5.0	1.6
Number of Dry Days	20.0	5.0	-

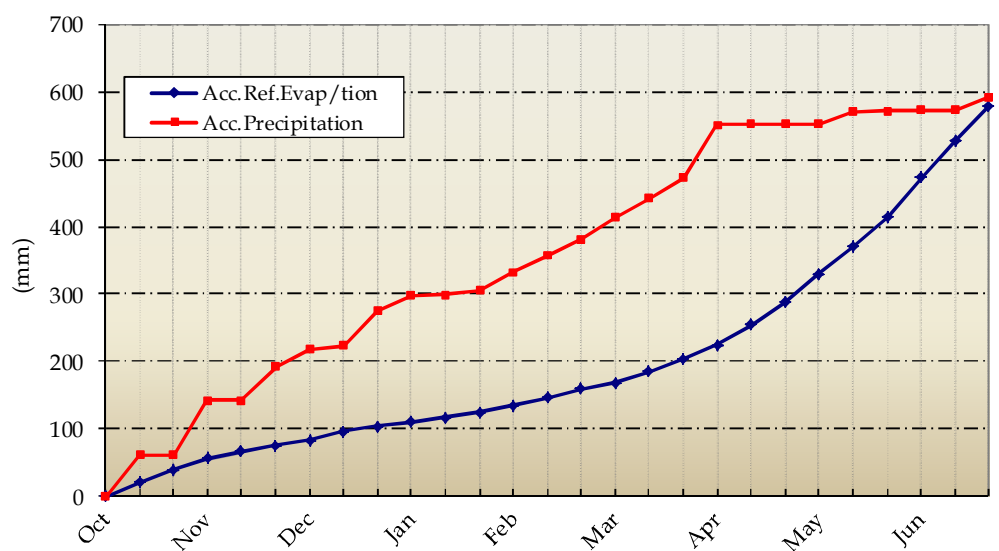
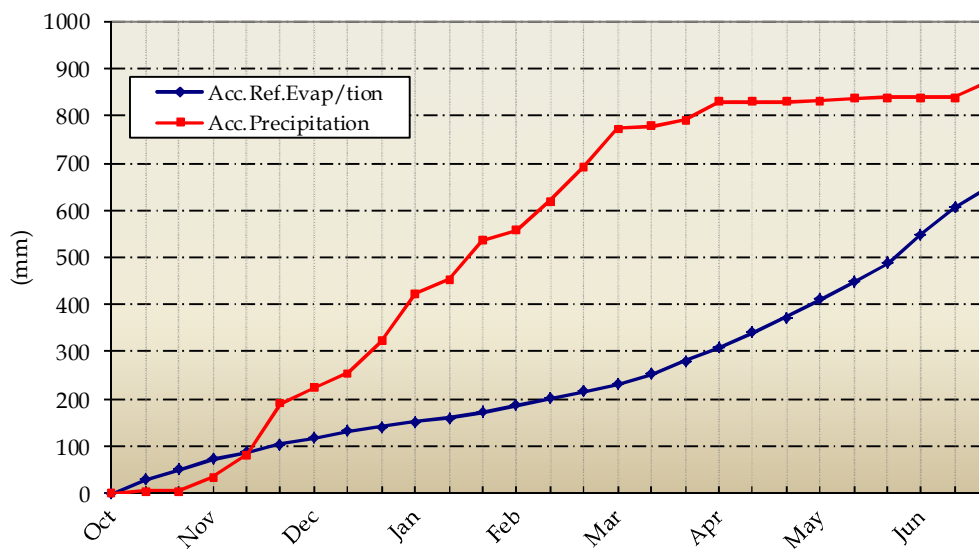


Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

2nd 10-day period (11-20/06/2018)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.8	30.8	31.6	30.2	26.0	25.8	27.0	28.7	28.2	32.5	29.1	28.9	28.1
	Min	17.7	18.2	19.3	20.1	17.0	16.4	18.0	18.1	18.5	17.4	18.1	17.2	16.4
Relative Humidity	Max	94	94	97	98	100	97	97	100	100	93	97	87	-
	Min	18	36	36	37	54	55	51	49	51	24	41	33	-
Soil Temperature at 10 cm	06 UTC	27.5	28.0	28.2	27.4	28.2	24.6	25.0	24.4	25.2	24.6	26.3	26.4	24.8
	12 UTC	30.0	31.6	31.0	31.6	28.0	24.6	27.0	28.4	28.0	30.0	29.0	28.7	29.7
Sunshine Duration		12.9	12.6	13.1	11.7	0.0	0.7	0.0	0.0	7.9	11.0	7.0	11.2	11.5
Precipitation						24.4		0.0	10.7			35.1	1.4	2.1
Evaporation		6.0	10.0	8.0	8.0	4.0	4.0	5.6	7.7	6.0	3.0	62.3	65.1	71.4
Growing Degrees	5	18.8	19.5	20.5	20.2	16.5	16.1	17.5	18.4	18.4	20.0	185.7	180.4	172.2
	10	13.8	14.5	15.5	15.2	11.5	11.1	12.5	13.4	13.4	15.0	135.7	130.4	122.2

2nd 10-day period (11-20/06/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	43.8	54.3	50.2
Precipitation - Reference Evapotranspiration	-8.7	-52.9	-48.1
Number of Rainy Days	2.0	1.0	0.4
Number of Dry Days	28.0	10.0	-

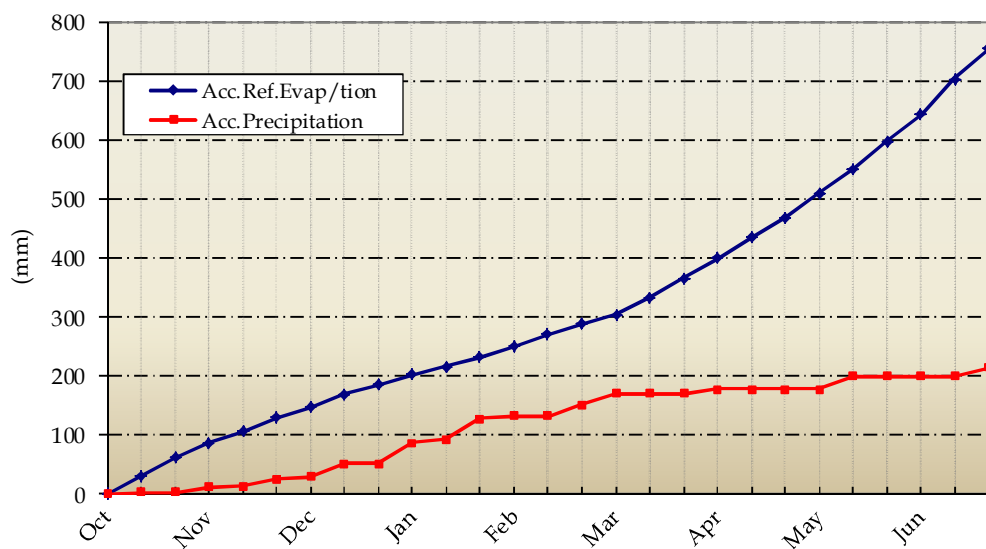
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2018)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	27.4	27.4	29.0	31.4	27.0	27.6	26.2	26.6	26.2	26.8	27.6	26.5	27.5
	Min	20.2	24.0	19.4	21.6	21.2	21.0	19.6	19.6	20.4	21.2	20.8	19.9	19.4
Relative Humidity	Max	79	71	88	74	82	94	90	90	90	86	84	85	-
	Min	46	54	41	45	63	61	70	70	69	65	58	56	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.8	12.5	12.7	10.6	7.3	7.4	10.5	11.4	11.1	8.5	10.4	10.8	12.0
Precipitation							3.3	11.8			0.0	15.1	0.0	0.2
Evaporation		5.9	11.1	16.3	5.0	6.8	3.6	2.6	5.2	8.0	4.3	68.8	56.4	83.8
Growing Degrees	5	18.8	20.7	19.2	21.5	19.1	19.3	17.9	18.1	18.3	19.0	191.9	181.9	184.4
	10	13.8	15.7	14.2	16.5	14.1	14.3	12.9	13.1	13.3	14.0	141.9	131.9	134.4

2nd 10-day period (11-20/06/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	52.2	52.0	-
Precipitation - Reference Evapotranspiration	-37.1	-52.0	0.2
Number of Rainy Days	2.0	0.0	0.2
Number of Dry Days	38.0	12.0	-

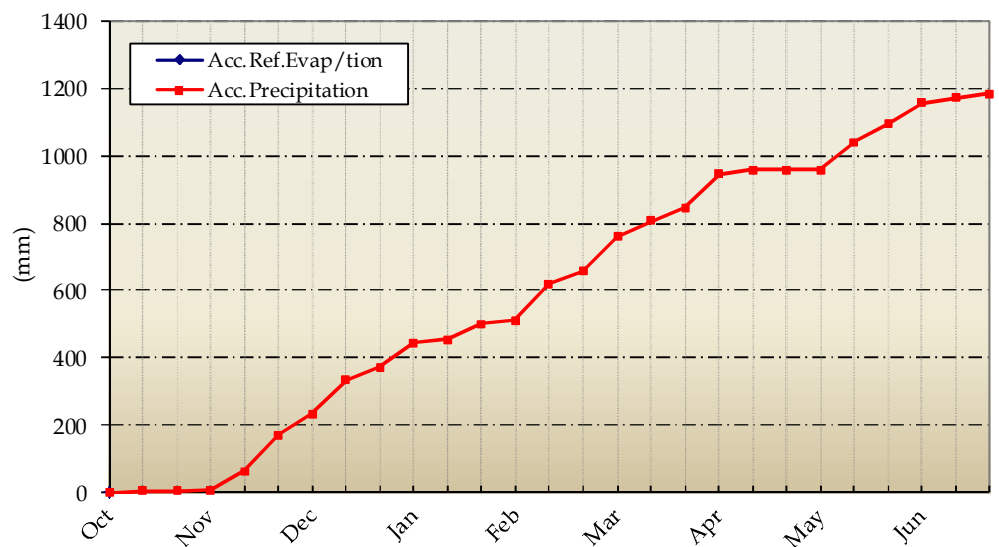
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2018)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.4	31.6	30.6	25.8	24.6	25.6	26.8	26.8	26.0	28.4	27.7	28.3	28.0
	Min	14.5	16.0	17.6	15.6	15.4	14.5	16.0	16.6	15.4	15.6	15.7	15.3	13.0
Relative Humidity	Max	100	98	82	100	100	100	98	100	100	90	97	90	-
	Min	45	44	46	58	59	60	57	58	50	44	52	39	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	20.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.0
Sunshine Duration		8.4	12.6	9.2	2.8	0.9	5.8	5.3	4.7	3.3	5.1	5.8	10.4	9.8
Precipitation		0.1			0.0	2.6	6.4	2.6	0.2	0.1		12.0	34.9	14.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	70.5
Growing Degrees	5	17.5	18.8	19.1	15.7	15.0	15.1	16.4	16.7	15.7	17.0	166.9	167.8	155.2
	10	12.5	13.8	14.1	10.7	10.0	10.1	11.4	11.7	10.7	12.0	116.9	117.8	105.2

2nd 10-day period (11-20/06/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	46.5
Precipitation - Reference Evapotranspiration	-	-	-32.4
Number of Rainy Days	6.0	2.0	2.0
Number of Dry Days	0.0	5.0	-

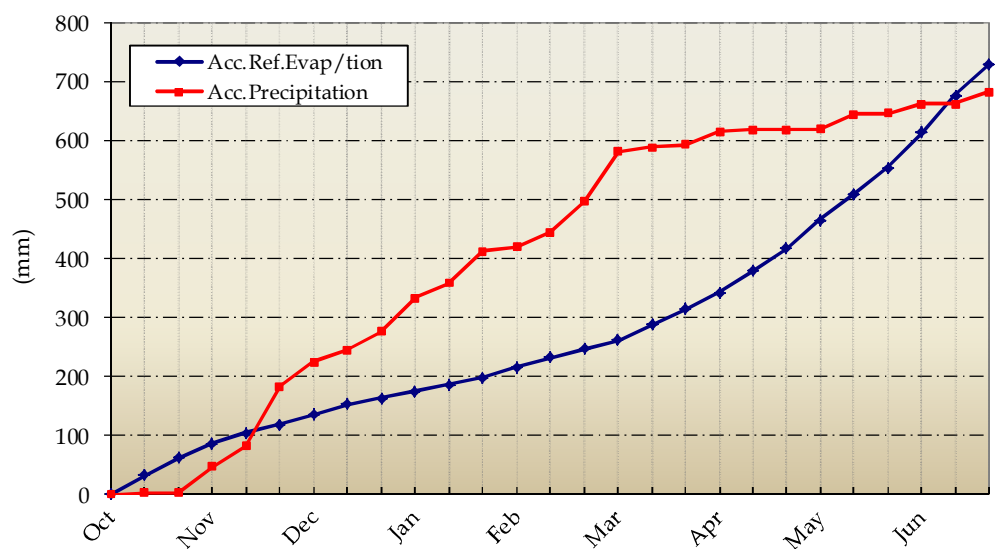
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2018)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.2	29.7	34.4	32.6	26.4	26.2	29.8	26.9	28.6	31.5	29.7	29.2	29.3
	Min	20.2	17.3	18.7	19.6	17.2	16.4	16.7	17.5	17.7	17.8	17.9	16.4	15.9
Relative Humidity	Max	82	87	84	85	92	97	90	91	91	83	88	86	-
	Min	35	40	24	22	48	54	40	51	44	24	38	36	-
Soil Temperature at 10 cm	06 UTC	26.0	26.6	27.0	27.0	27.0	25.2	24.0	24.4	24.2	23.4	25.5	-	23.0
	12 UTC	29.4	29.4	30.4	30.4	28.0	26.8	27.8	27.8	27.0	25.6	28.3	-	27.4
Sunshine Duration		13.4	13.0	13.0	11.7	8.3	5.5	10.0	6.6	8.3	5.6	9.5	10.5	11.0
Precipitation						2.1	2.8	4.1		12.6	0.1	21.7	0.5	3.1
Evaporation		11.2	7.2	8.6	11.0	4.8	3.7	5.2	5.3	0.0	4.6	61.6	65.7	80.7
Growing Degrees	5	20.7	18.5	21.6	21.1	16.8	16.3	18.3	17.2	18.2	19.7	188.2	178.3	175.9
	10	15.7	13.5	16.6	16.1	11.8	11.3	13.3	12.2	13.2	14.7	138.2	128.3	125.9

2nd 10-day period (11-20/06/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	53.1	54.8	54.6
Precipitation - Reference Evapotranspiration	-31.4	-54.3	-51.5
Number of Rainy Days	5.0	2.0	0.9
Number of Dry Days	14.0	9.0	-

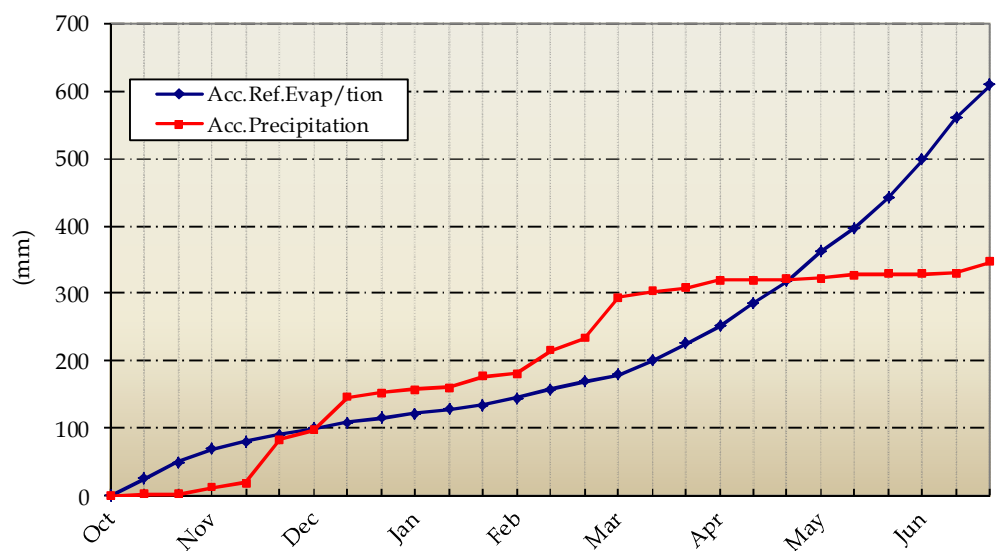
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2018)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.8	35.2	35.4	33.4	27.6	26.2	29.0	30.4	28.4	32.0	30.9	29.7	31.7
	Min	17.6	16.8	16.8	17.8	18.6	17.2	18.0	16.8	17.8	19.0	17.6	16.4	15.7
Relative Humidity	Max	86	70	89	92	91	91	84	96	95	85	88	94	-
	Min	26	22	29	21	34	48	38	37	36	17	31	34	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	23.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	26.6
Sunshine Duration		11.6	11.1	8.3	9.2	4.3	3.9	7.6	6.1	7.3	7.6	7.7	8.1	10.5
Precipitation				8.0			0.0	0.0	2.5	5.7		16.2	10.9	6.2
Evaporation		14.3	7.3	8.5	6.0	11.4	0.7	5.1	5.6	3.6	10.6	73.1	67.1	85.8
Growing Degrees	5	19.7	21.0	21.1	20.6	18.1	16.7	18.5	18.6	18.1	20.5	192.9	180.6	186.8
	10	14.7	16.0	16.1	15.6	13.1	11.7	13.5	13.6	13.1	15.5	142.9	130.6	136.8

2nd 10-day period (11-20/06/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	49.3	46.9	58.5
Precipitation - Reference Evapotranspiration	-33.1	-36.0	-52.3
Number of Rainy Days	3.0	3.0	1.7
Number of Dry Days	8.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

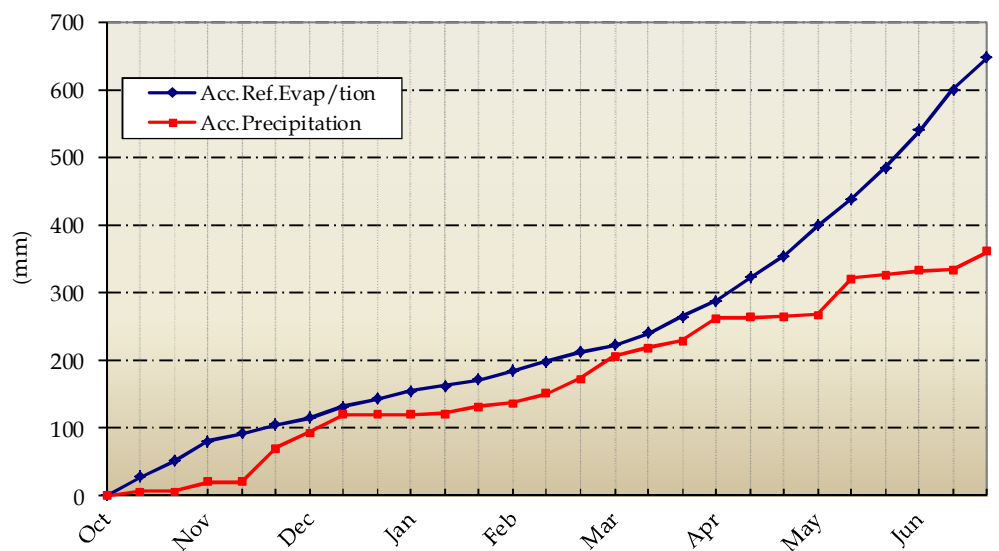


Mikra

2nd 10-day period (11-20/06/2018)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.3	32.0	32.3	31.0	31.0	25.5	26.6	29.6	28.7	31.9	30.0	28.7	29.7
	Min	19.0	19.2	19.6	19.5	17.7	18.9	16.8	18.5	19.6	19.2	18.8	17.8	17.0
Relative Humidity	Max	76	67	70	77	91	90	90	88	89	88	83	78	-
	Min	26	24	24	33	56	43	47	42	40	22	36	36	-
Soil Temperature at 10 cm	06 UTC	24.5	26.2	27.0	27.0	25.2	23.6	23.0	23.4	24.0	23.2	24.7	24.8	24.4
	12 UTC	30.0	31.0	31.0	30.8	27.8	25.6	26.2	28.0	30.6	26.6	28.8	28.5	29.1
Sunshine Duration		12.9	12.5	8.9	9.6	3.6	1.8	5.0	5.1	3.2	10.1	7.3	8.4	10.3
Precipitation					0.0	13.6	1.0	2.2	0.0	10.1		26.9	12.1	11.5
Evaporation		11.9	8.5	9.1	8.2	6.0	1.9	3.4	2.5	5.8	8.5	65.8	77.5	85.4
Growing Degrees	5	20.2	20.6	21.0	20.3	19.4	17.2	16.7	19.1	19.2	20.6	194.0	183.0	183.4
	10	15.2	15.6	16.0	15.3	14.4	12.2	11.7	14.1	14.2	15.6	144.0	133.0	133.4

2nd 10-day period (11-20/06/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	47.1	53.7	57.4
Precipitation - Reference Evapotranspiration	-20.2	-41.6	-45.9
Number of Rainy Days	4.0	2.0	1.8
Number of Dry Days	4.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

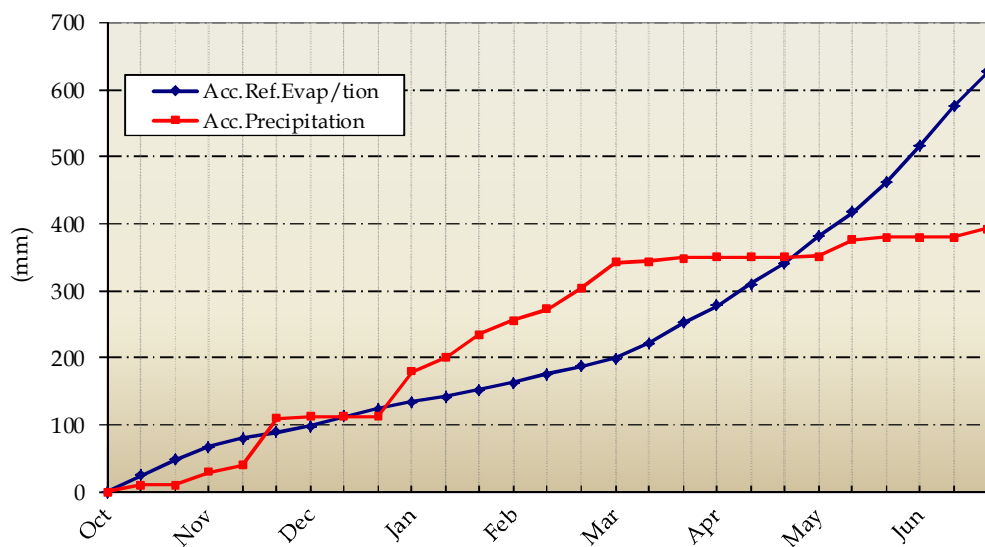


Tanagra

2nd 10-day period (11-20/06/2018)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.3	33.2	34.3	34.6	32.1	25.8	26.5	28.4	28.2	29.7	30.2	27.1	30.3
	Min	19.2	19.0	18.4	21.2	19.0	18.9	17.4	16.5	18.0	20.6	18.8	16.6	15.8
Relative Humidity	Max	71	56	59	70	75	100	100	100	93	73	80	91	-
	Min	22	19	20	16	21	46	46	37	17	22	27	37	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.4	13.0	11.5	11.7	11.1	3.0	4.2	8.9	10.2	5.4	9.1	9.7	
Precipitation							11.5	1.0				12.5	38.1	2.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	19.3	21.1	21.4	22.9	20.6	17.4	17.0	17.5	18.1	20.2	195.2	168.4	
	10	14.3	16.1	16.4	17.9	15.6	12.4	12.0	12.5	13.1	15.2	145.2	118.4	

2nd 10-day period (11-20/06/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	52.0	47.0	
Precipitation - Reference Evapotranspiration	-39.5	-8.9	2.8
Number of Rainy Days	2.0	4.0	1.4
Number of Dry Days	23.0	3.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

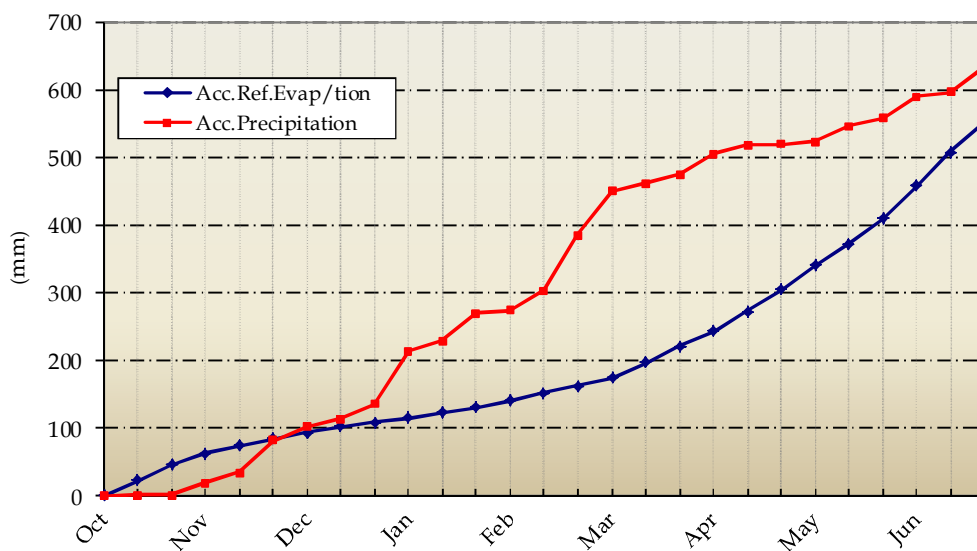


Tripoli

2nd 10-day period (11-20/06/2018)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.3	31.3	31.1	29.8	24.6	23.5	24.0	25.1	23.0	26.4	26.8	27.2	28.6
	Min	12.6	11.9	14.0	14.3	13.6	12.7	11.3	12.3	13.1	15.2	13.1	12.1	11.6
Relative Humidity	Max	100	91	86	87	99	100	100	100	100	82	94	100	-
	Min	29	23	24	20	39	49	51	41	49	30	36	36	-
Soil Temperature at 10 cm	06 UTC	23.0	24.0	24.8	25.8	25.6	23.8	20.8	20.0	20.4	19.4	22.8	21.0	22.7
	12 UTC	29.2	30.4	31.8	31.4	31.0	-	-	25.4	22.2	25.6	28.4	27.0	25.9
Sunshine Duration		12.5	9.7	12.7	10.9	8.6	4.3	4.7	6.4	5.5	11.7	8.7	9.8	10.8
Precipitation			0.1			0.8	9.8	21.1		6.4		38.2	64.5	5.7
Evaporation		6.6	7.0	9.0	6.3	6.6	3.0	3.8	4.1	2.7	7.6	56.7	51.6	62.0
Growing Degrees	5	16.0	16.6	17.6	17.1	14.1	13.1	12.7	13.7	13.1	15.8	149.6	146.8	151.2
	10	11.0	11.6	12.6	12.1	9.1	8.1	7.7	8.7	8.1	10.8	99.6	96.8	101.2

2nd 10-day period (11-20/06/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	43.3	45.8	52.3
Precipitation - Reference Evapotranspiration	-5.1	18.7	-46.6
Number of Rainy Days	5.0	4.0	1.4
Number of Dry Days	1.0	2.0	-

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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