

AGROMETEOROLOGICAL BULLETIN

June 2012
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



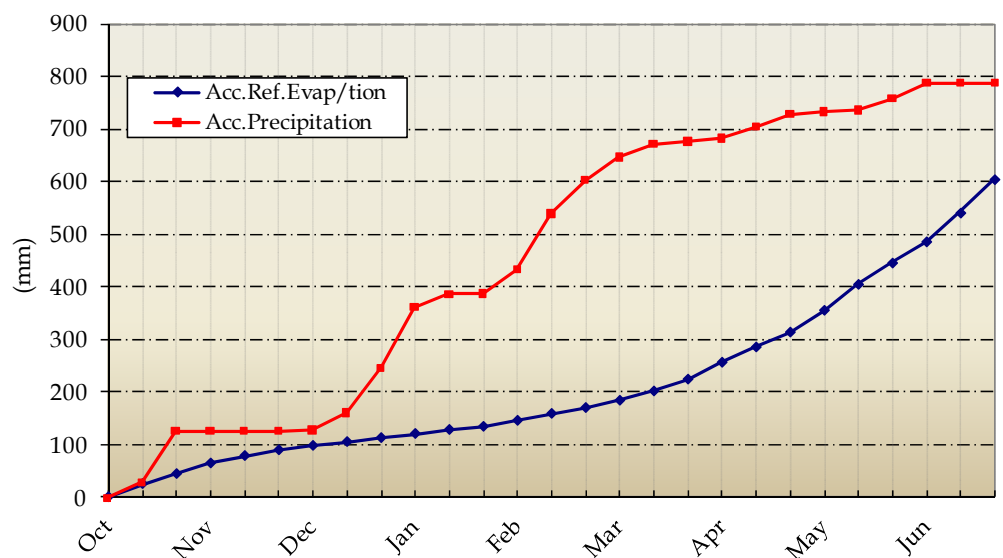
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2nd 10-day period (11-20/06/2012)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.0	33.0	35.2	32.4	35.0	34.4	34.8	35.0	35.8	36.4	34.5	29.5	30.7
	Min	17.4	16.0	15.2	16.4	15.0	17.6	16.4	16.4	14.6	17.0	16.2	15.9	15.5
Relative Humidity	Max	73	80	66	75	67	64	46	41	61	66	64	96	-
	Min	40	44	34	24	29	30	30	19	20	24	29	44	-
Soil Temperature at 10 cm	06 UTC	26.8	26.6	26.8	27.0	27.0	28.2	28.0	28.2	28.6	28.4	27.6	24.0	24.5
	12 UTC	31.4	31.2	32.0	32.0	31.6	31.4	33.8	34.4	34.6	35.2	32.8	28.7	30.5
Sunshine Duration		13.8	13.4	14.0	14.0	13.8	14.0	14.0	14.0	14.0	14.0	13.9	9.3	10.9
Precipitation													32.2	7.2
Evaporation		9.6	8.6	10.4	9.5	7.6	11.3	12.9	10.5	11.5	11.0	102.9	64.8	80.5
Growing Degrees	5	20.2	19.5	20.2	19.4	20.0	21.0	20.6	20.7	20.2	21.7	203.5	177.0	180.7
	10	15.2	14.5	15.2	14.4	15.0	16.0	15.6	15.7	15.2	16.7	153.5	127.0	130.7

2nd 10-day period (11-20/06/2012)	Previous Year Value	Past Years Mean Value	
Reference Evapotranspiration	63.8	46.2	53.4
Precipitation - Reference Evapotranspiration	-63.8	-14.0	-46.2
Number of Rainy Days	0.0	6.0	1.1
Number of Dry Days	21.0	12.0	-

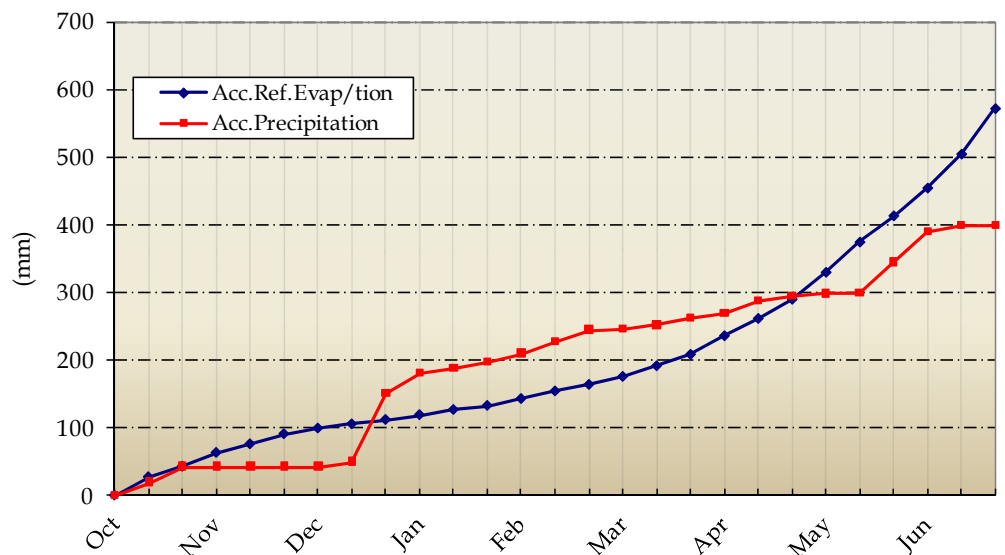
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2012)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	28.4	29.6	29.8	33.6	32.4	32.4	32.0	32.6	34.0	34.6	31.9	27.8	27.5
	Min	17.6	17.4	17.8	18.8	23.2	21.0	20.2	19.4	21.6	26.2	20.3	17.1	15.2
Relative Humidity	Max	82	92	88	83	66	71	67	70	47	52	72	92	-
	Min	48	48	61	40	29	29	23	26	26	23	35	46	-
Soil Temperature at 10 cm	06 UTC	24.6	25.0	25.6	25.6	27.2	26.8	26.2	25.8	26.2	27.4	26.0	22.3	22.6
	12 UTC	28.6	29.6	29.6	30.0	30.2	30.0	29.4	29.2	29.2	30.2	29.6	25.5	27.3
Sunshine Duration		13.7	13.7	13.4	13.7	13.5	13.2	13.2	13.2	13.2	13.2	13.4	8.7	10.3
Precipitation													22.5	11.6
Evaporation		4.8	7.4	6.6	10.3	11.7	11.0	12.0	10.0	18.0	13.0	104.8	58.9	79.3
Growing Degrees	5	18.0	18.5	18.8	21.2	22.8	21.7	21.1	21.0	22.8	25.4	211.3	174.8	163.4
	10	13.0	13.5	13.8	16.2	17.8	16.7	16.1	16.0	17.8	20.4	161.3	124.8	113.4

2nd 10-day period (11-20/06/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	67.4	44.7	52.7
Precipitation - Reference Evapotranspiration	-67.4	-22.2	-41.1
Number of Rainy Days	0.0	4.0	1.6
Number of Dry Days	14.0	10.0	-

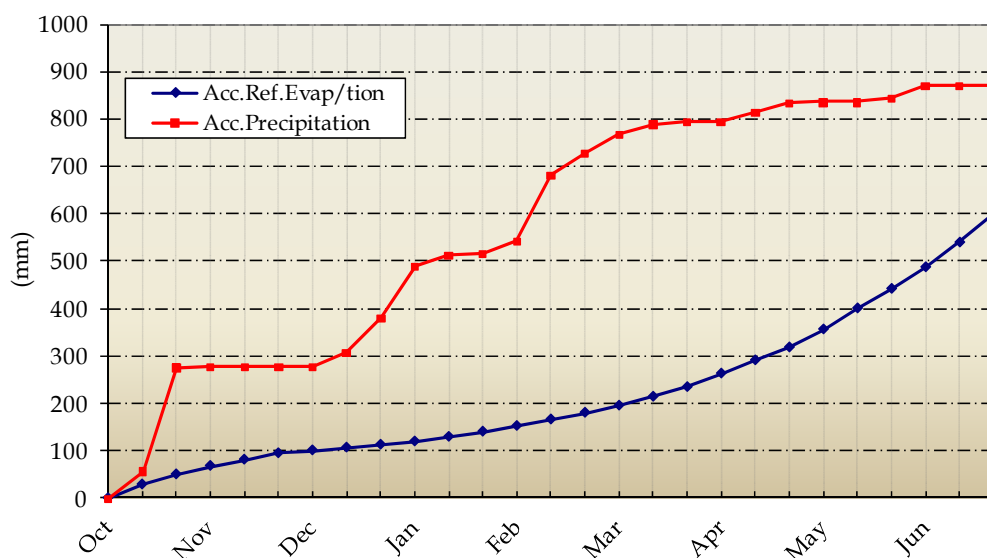
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2012)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.7	28.6	31.0	27.8	28.6	33.4	34.5	33.2	30.4	34.5	31.3	27.1	28.1
	Min	18.0	17.4	16.7	19.8	15.2	17.8	15.4	15.8	15.7	17.4	16.9	17.3	16.4
Relative Humidity	Max	90	89	89	85	89	87	77	78	82	74	84	91	-
	Min	30	39	31	43	45	27	22	21	31	25	31	47	-
Soil Temperature at 10 cm	06 UTC	26.0	26.0	26.0	26.4	25.2	26.2	25.4	25.6	25.8	25.8	25.8	24.3	24.8
	12 UTC	34.2	33.8	34.0	32.8	32.6	32.4	33.6	34.0	33.2	33.0	33.4	31.8	29.7
Sunshine Duration		13.1	13.0	12.9	13.3	13.1	13.6	13.5	13.1	13.1	13.4	13.2	10.0	11.5
Precipitation													13.2	2.1
Evaporation		7.0	7.0	5.6	8.1	6.5	13.8	21.0	8.2	13.8	12.2	103.2	58.0	71.4
Growing Degrees	5	19.4	18.0	18.9	18.8	16.9	20.6	20.0	19.5	18.1	21.0	191.0	172.1	172.2
	10	14.4	13.0	13.9	13.8	11.9	15.6	15.0	14.5	13.1	16.0	141.0	122.1	122.2

2nd 10-day period (11-20/06/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	60.8	48.1	50.2
Precipitation - Reference Evapotranspiration	-60.8	-34.9	-48.1
Number of Rainy Days	0.0	2.0	0.4
Number of Dry Days	22.0	16.0	-

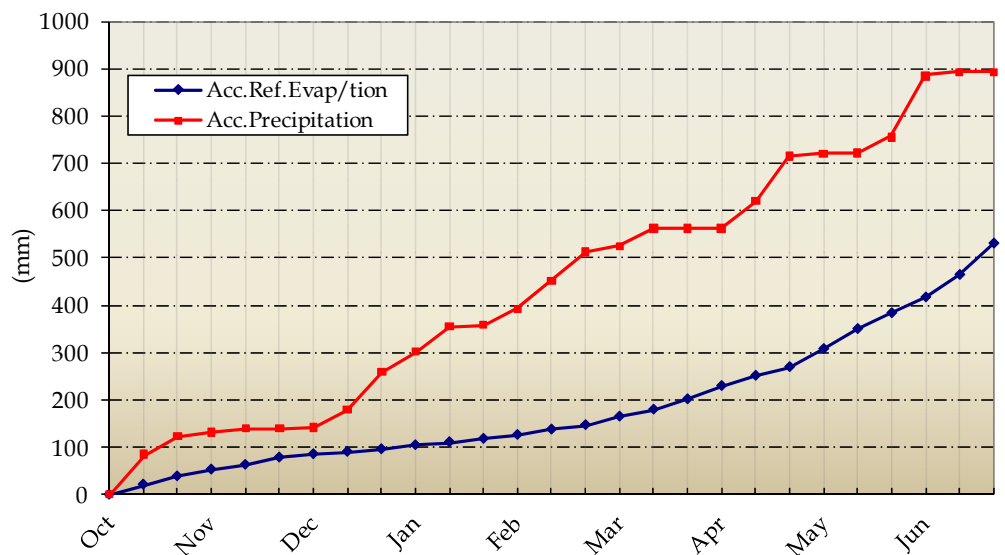
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2012)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.0	30.2	30.6	30.0	31.0	31.0	30.8	32.2	33.6	32.8	31.3	-	28.0
	Min	16.0	13.0	20.2	12.2	12.4	20.6	20.4	20.5	21.6	27.0	18.4	-	13.0
Relative Humidity	Max	90	80	74	79	76	43	45	35	35	39	60	-	-
	Min	43	32	34	26	29	32	28	18	20	21	28	-	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	20.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.0
Sunshine Duration		11.9	13.3	13.2	12.8	12.9	12.2	13.2	13.3	13.4	13.1	12.9	-	9.8
Precipitation													-	14.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	70.5
Growing Degrees	5	18.5	16.6	20.4	16.1	16.7	20.8	20.6	21.4	22.6	24.9	198.6	-	155.2
	10	13.5	11.6	15.4	11.1	11.7	15.8	15.6	16.4	17.6	19.9	148.6	-	105.2

2nd 10-day period (11-20/06/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	66.3	-	46.5
Precipitation - Reference Evapotranspiration	-66.3	-	-32.4
Number of Rainy Days	0.0	-	2.0
Number of Dry Days	15.0	-	-

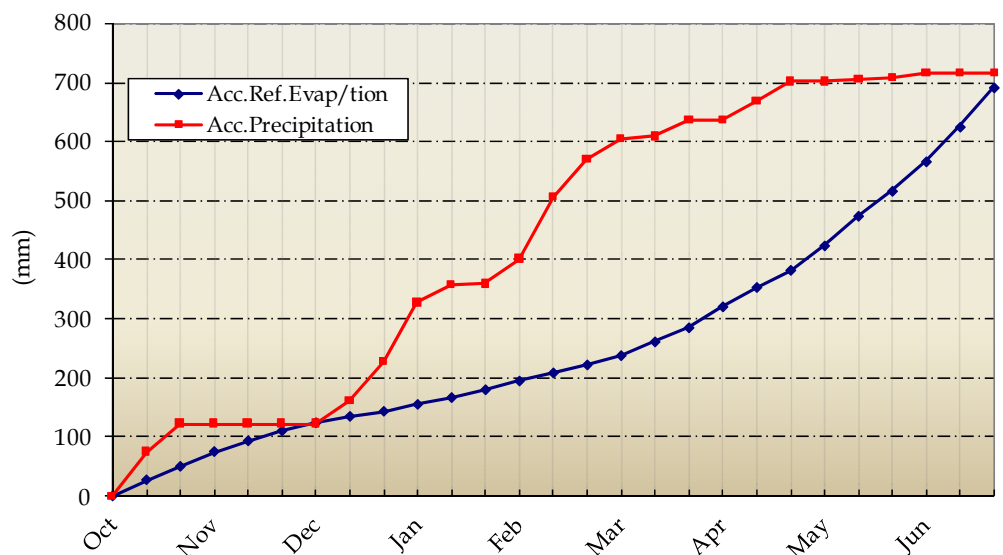
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2012)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.9	30.7	33.2	32.8	32.3	36.0	31.1	30.2	29.2	32.8	32.0	28.2	29.3
	Min	18.4	14.0	19.6	20.1	17.6	19.2	19.6	14.0	17.8	15.6	17.6	16.7	15.9
Relative Humidity	Max	89	86	71	73	77	52	91	93	96	89	82	95	-
	Min	25	33	22	26	25	23	28	35	36	27	28	44	-
Soil Temperature at 10 cm	06 UTC	23.2	23.2	23.8	24.4	24.0	24.4	25.0	24.6	25.0	24.6	24.2	22.2	23.0
	12 UTC	26.8	26.6	26.6	26.8	26.8	27.0	27.8	27.4	27.6	27.4	27.1	24.6	27.4
Sunshine Duration		13.2	13.3	13.2	13.2	13.2	13.2	13.3	12.2	13.6	13.2	13.2	9.1	11.0
Precipitation													4.6	3.1
Evaporation		4.8	15.8	9.6	9.8	7.1	13.3	3.6	1.2	11.6	3.5	80.3	65.7	80.7
Growing Degrees	5	20.2	17.4	21.4	21.5	20.0	22.6	20.4	17.1	18.5	19.2	198.1	174.5	175.9
	10	15.2	12.4	16.4	16.5	15.0	17.6	15.4	12.1	13.5	14.2	148.1	124.5	125.9

2nd 10-day period (11-20/06/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	66.5	50.0	54.6
Precipitation - Reference Evapotranspiration	-66.5	-45.4	-51.5
Number of Rainy Days	0.0	2.0	0.9
Number of Dry Days	27.0	14.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

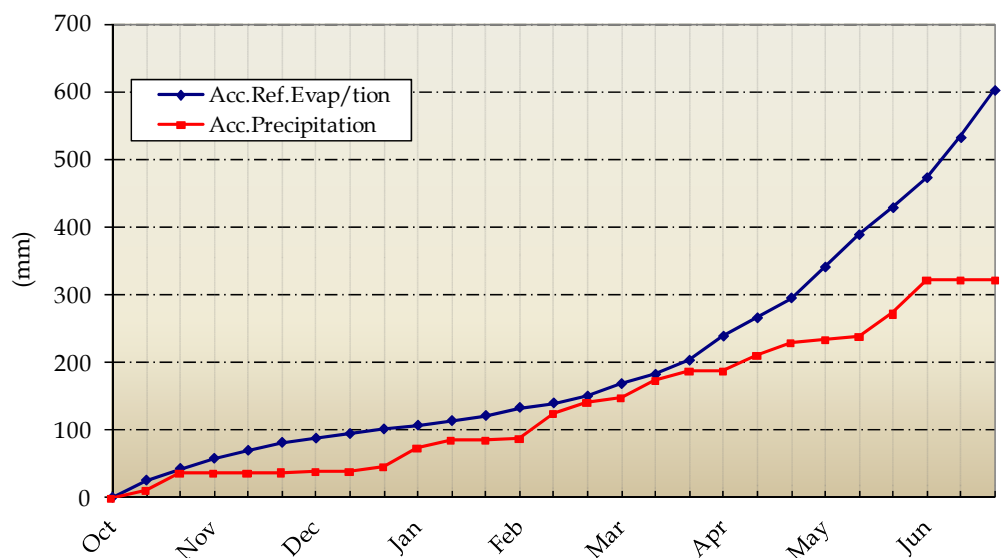


Larisa

2nd 10-day period (11-20/06/2012)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	37.4	37.0	38.2	35.9	33.2	31.8	31.0	32.4	34.2	34.4	34.6	30.5	31.7
	Min	11.4	16.4	18.6	18.8	18.8	19.2	17.6	15.0	14.0	19.0	16.9	16.6	15.7
Relative Humidity	Max	74	67	71	53	69	73	66	57	60	60	65	87	-
	Min	20	18	16	13	28	25	15	13	16	19	18	30	-
Soil Temperature at 10 cm	06 UTC	24.0	24.4	24.0	24.8	25.0	24.8	25.2	23.8	24.0	25.0	24.5	22.5	23.9
	12 UTC	25.0	25.4	27.2	26.0	26.0	26.4	27.0	25.6	25.8	26.0	26.0	25.7	26.6
Sunshine Duration		13.1	13.1	13.2	13.2	12.9	12.6	13.1	13.3	13.2	13.1	13.1	9.5	10.5
Precipitation													6.0	6.2
Evaporation		10.5	5.3	15.0	9.0	5.0	8.5	10.0	12.9	10.9	10.3	97.4	71.0	85.8
Growing Degrees	5	19.4	21.7	23.4	22.4	21.0	20.5	19.3	18.7	19.1	21.7	207.2	185.5	186.8
	10	14.4	16.7	18.4	17.4	16.0	15.5	14.3	13.7	14.1	16.7	157.2	135.5	136.8

2nd 10-day period (11-20/06/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	69.9	52.1	58.5
Precipitation - Reference Evapotranspiration	-69.9	-46.1	-52.3
Number of Rainy Days	0.0	2.0	1.7
Number of Dry Days	21.0	14.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

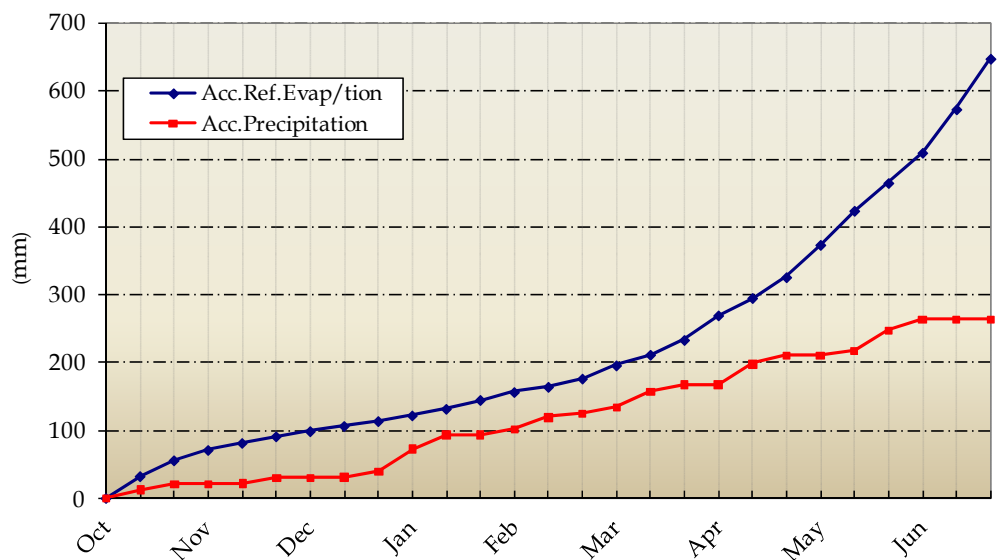


Mikra

2nd 10-day period (11-20/06/2012)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.2	34.3	35.6	32.6	32.0	31.6	30.6	33.2	34.4	34.6	33.2	-	29.7
	Min	20.0	18.0	18.9	23.8	19.4	20.8	23.6	18.0	19.2	23.5	20.5	-	17.0
Relative Humidity	Max	81	71	70	46	70	70	55	57	59	64	64	-	-
	Min	21	23	25	28	32	31	26	19	20	21	25	-	-
Soil Temperature at 10 cm	06 UTC	26.4	27.0	26.2	28.0	28.0	28.4	28.2	26.8	28.2	28.4	27.6	-	24.4
	12 UTC	31.2	30.4	30.4	31.4	31.8	31.8	32.0	31.6	31.8	32.4	31.5	-	29.1
Sunshine Duration		13.5	12.9	12.7	12.5	13.8	12.6	13.8	14.0	13.5	13.6	13.3	-	10.3
Precipitation													-	11.5
Evaporation		8.2	11.6	21.6	8.8	14.2	10.4	11.2	15.4	14.6	13.0	129.0	-	85.4
Growing Degrees	5	21.6	21.2	22.3	23.2	20.7	21.2	22.1	20.6	21.8	24.1	218.7	-	183.4
	10	16.6	16.2	17.3	18.2	15.7	16.2	17.1	15.6	16.8	19.1	168.7	-	133.4

2nd 10-day period (11-20/06/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	74.4	-	57.4
Precipitation - Reference Evapotranspiration	-74.4	-	-45.9
Number of Rainy Days	0.0	-	1.8
Number of Dry Days	21.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

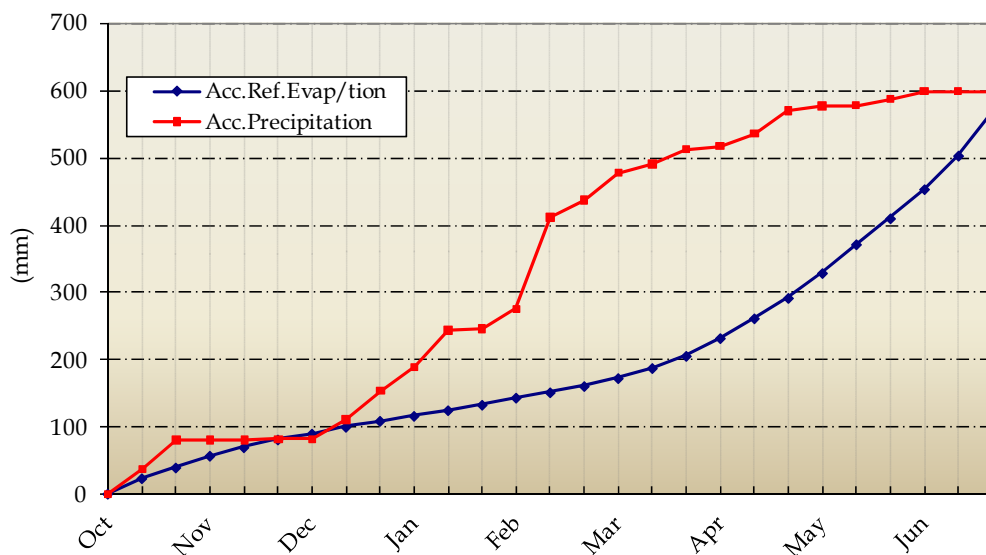


Tripoli

2nd 10-day period (11-20/06/2012)		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	31.8	37.0	34.4	32.6	30.7	32.2	33.2	32.2	32.5	32.8	25.6	28.6
	Min	14.0	12.0	12.9	12.3	11.9	19.7	17.1	12.8	10.9	20.1	14.4	11.1	11.6
Relative Humidity	Max	69	55	69	75	75	55	35	33	63	38	57	93	-
	Min	20	19	17	18	19	25	17	13	18	22	19	40	-
Soil Temperature at 10 cm	06 UTC	25.0	24.4	25.6	26.0	26.2	27.2	26.2	25.4	25.5	26.8	25.8	19.9	22.7
	12 UTC	31.2	31.8	32.4	33.4	33.2	32.2	32.0	32.0	32.0	32.2	32.2	26.3	25.9
Sunshine Duration		13.1	13.4	13.3	13.6	13.6	13.4	13.7	13.5	13.1	13.6	13.4	8.6	10.8
Precipitation													41.7	5.7
Evaporation		9.2	7.4	11.1	7.7	9.7	11.6	9.2	8.8	9.4	7.0	91.1	35.3	62.0
Growing Degrees	5	17.9	16.9	20.0	18.4	17.3	20.2	19.7	18.0	16.6	21.3	186.1	133.7	151.2
	10	12.9	11.9	15.0	13.4	12.3	15.2	14.7	13.0	11.6	16.3	136.1	83.7	101.2

2nd 10-day period (11-20/06/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	64.3	40.9	52.3
Precipitation - Reference Evapotranspiration	-64.3	0.8	-46.6
Number of Rainy Days	0.0	5.0	1.4
Number of Dry Days	19.0	12.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

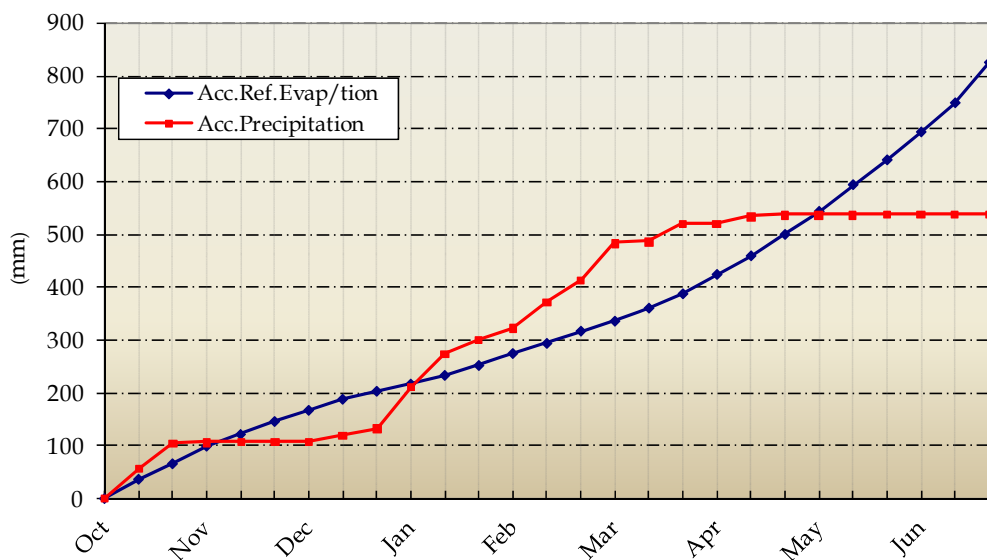


Tympanki

2nd 10-day period (11-20/06/2012)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	26.4	26.2	30.0	33.8	36.0	36.0	32.8	34.8	32.0	33.0	32.1	27.8	28.8
	Min	15.6	16.0	18.2	22.4	22.6	21.6	24.6	21.6	20.0	23.4	20.6	16.9	17.7
Relative Humidity	Max	95	96	91	85	80	80	69	82	81	63	82	89	-
	Min	37	65	27	19	14	37	33	19	30	27	31	36	-
Soil Temperature at 10 cm	06 UTC	28.2	28.4	28.8	30.0	30.6	30.6	30.6	30.0	30.0	30.0	29.7	27.7	28.7
	12 UTC	34.8	35.2	35.6	36.4	36.2	34.6	35.0	35.8	34.0	34.2	35.2	33.7	33.6
Sunshine Duration		13.3	13.5	13.7	13.2	13.7	13.5	12.6	12.4	12.9	13.3	13.2	12.6	12.2
Precipitation														0.0
Evaporation		5.6	8.9	9.6	10.3	13.0	16.5	11.9	15.0	15.0	15.1	120.9	93.0	98.1
Growing Degrees	5	16.0	16.1	19.1	23.1	24.3	23.8	23.7	23.2	21.0	23.2	213.5	173.4	182.4
	10	11.0	11.1	14.1	18.1	19.3	18.8	18.7	18.2	16.0	18.2	163.5	123.4	132.4

2nd 10-day period (11-20/06/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	76.2	60.8	55.6
Precipitation - Reference Evapotranspiration	-76.2	-60.8	-55.6
Number of Rainy Days	0.0	0.0	0.0
Number of Dry Days	34.0	23.0	-

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.

Mesurements 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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