



AGROMETEOROLOGICAL BULLETIN

*October 2014
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



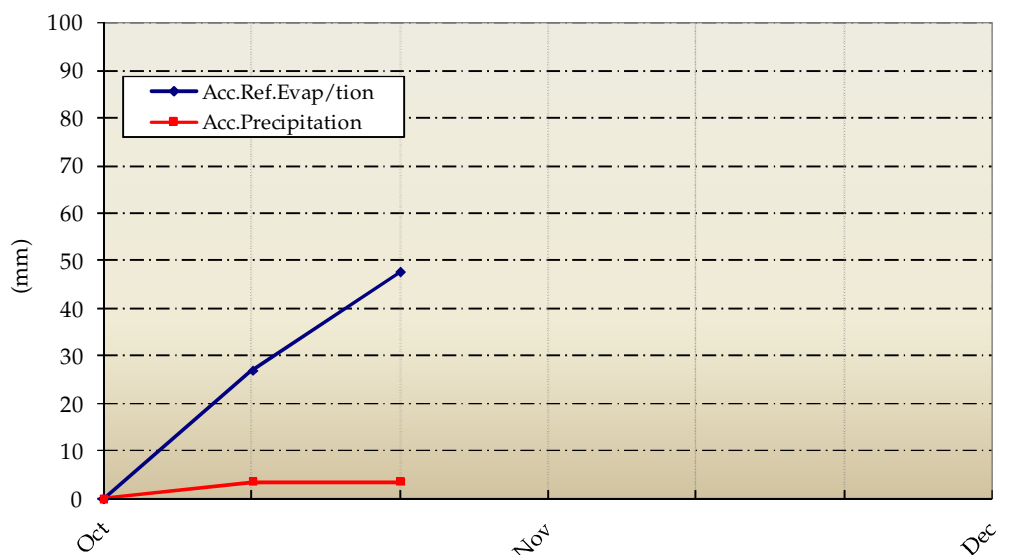
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2nd 10-day period (11-20/10/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.0	23.4	22.6	22.8	21.2	23.8	23.6	26.4	20.0	18.6	22.5	21.0	20.8
	Min	11.2	8.4	8.6	8.6	9.8	16.8	17.0	15.2	11.4	3.4	11.0	12.0	10.8
Relative Humidity	Max	85	94	87	92	96	96	98	96	71	92	91	93	-
	Min	41	40	45	46	73	73	70	28	20	48	48	59	-
Soil Temperature at 10 cm	06 UTC	17.2	17.0	16.6	16.6	16.8	19.5	19.8	19.4	18.4	15.4	17.7	16.6	15.2
	12 UTC	21.0	20.5	20.2	20.2	20.0	21.0	22.6	22.6	20.8	18.6	20.8	19.3	18.0
Sunshine Duration		10.6	6.8	7.6	9.2	6.6	1.0	7.1	9.6	10.1	10.0	7.9	6.6	5.9
Precipitation						0.0	0.0	0.0				0.0	28.7	15.0
Evaporation		4.2	5.7	3.8	0.7	2.4	2.2	2.2	8.1	4.1	3.4	36.8	19.9	42.1
Growing Degrees	5	12.1	10.9	10.6	10.7	10.5	15.3	15.3	15.8	10.7	6.0	117.9	115.3	107.7
	10	7.1	5.9	5.6	5.7	5.5	10.3	10.3	10.8	5.7	1.0	67.9	65.3	58.4

2nd 10-day period (11-20/10/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	20.6	17.9	22.7
Precipitation - Reference Evapotranspiration	-20.6	10.8	-7.7
Number of Rainy Days	0.0	3.0	1.9
Number of Dry Days	12.0	13.0	-

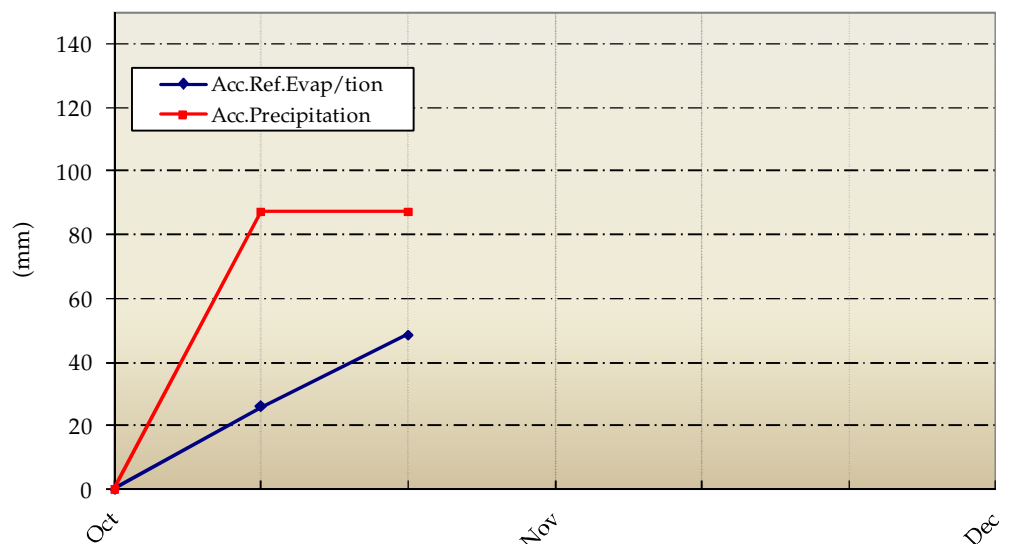
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/10/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.6	24.8	24.8	25.0	26.2	27.0	26.5	26.4	26.4	23.4	25.5	24.7	24.1
	Min	12.2	11.1	15.3	15.9	16.0	14.4	19.7	17.0	16.7	8.6	14.7	15.6	13.2
Relative Humidity	Max	92	92	88	90	91	91	91	92	89	89	90	89	-
	Min	41	45	58	62	62	45	58	50	31	26	48	51	-
Soil Temperature at 10 cm	06 UTC	18.8	17.0	19.4	19.6	20.4	20.2	22.0	21.2	20.6	18.4	19.8	19.2	18.6
	12 UTC	21.4	21.8	22.4	22.6	23.2	23.0	24.0	24.4	24.2	24.0	23.1	23.2	21.5
Sunshine Duration		9.4	9.5	7.1	8.9	8.1	5.3	5.0	9.2	9.0	9.5	8.1	7.4	7.1
Precipitation													28.3	23.9
Evaporation		-	-	4.0	3.0	11.0	2.1	5.4	5.0	1.0	2.0	-	47.0	36.4
Growing Degrees	5	13.4	13.0	15.1	15.5	16.1	15.7	18.1	16.7	16.6	11.0	151.0	151.5	136.6
	10	8.4	8.0	10.1	10.5	11.1	10.7	13.1	11.7	11.6	6.0	101.0	101.5	86.6

2nd 10-day period (11-20/10/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	22.8	24.6	22.5
Precipitation - Reference Evapotranspiration	-22.8	3.7	1.4
Number of Rainy Days	0.0	1.0	2.6
Number of Dry Days	12.0	5.0	-

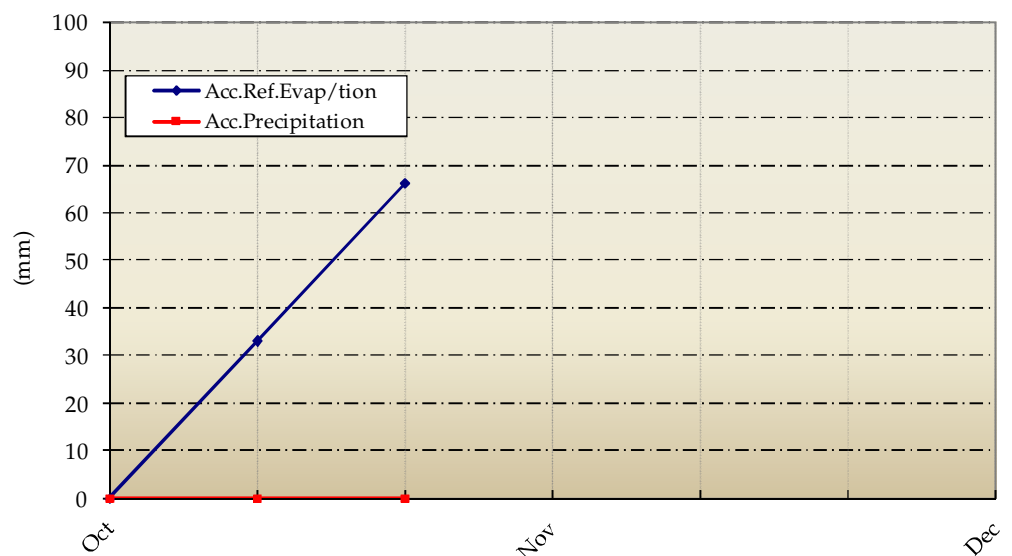
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/10/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	23.4	24.5	24.4	24.6	27.0	33.0	26.5	23.0	21.0	25.1	25.6	24.0
	Min	20.0	18.4	15.2	16.4	16.4	17.2	21.4	24.4	20.8	18.4	18.9	18.7	17.1
Relative Humidity	Max	74	77	86	86	88	80	63	83	74	68	78	81	-
	Min	59	52	62	60	68	30	26	41	46	53	50	47	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		6.4	8.4	8.3	7.7	8.4	8.3	7.6	7.1	8.2	7.3	7.8	8.4	6.5
Precipitation													1.5	12.5
Evaporation		6.6	2.9	4.1	3.5	2.4	1.3	8.2	4.6	6.0	2.3	41.9	33.8	49.3
Growing Degrees	5	17.0	15.9	14.9	15.4	15.5	17.1	22.2	20.5	16.9	14.7	170.0	171.7	155.9
	10	12.0	10.9	9.9	10.4	10.5	12.1	17.2	15.5	11.9	9.7	120.0	121.7	105.9

2nd 10-day period (11-20/10/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	33.3	34.2	-
Precipitation - Reference Evapotranspiration	-33.3	-32.7	12.5
Number of Rainy Days	0.0	1.0	1.7
Number of Dry Days	22.0	13.0	-

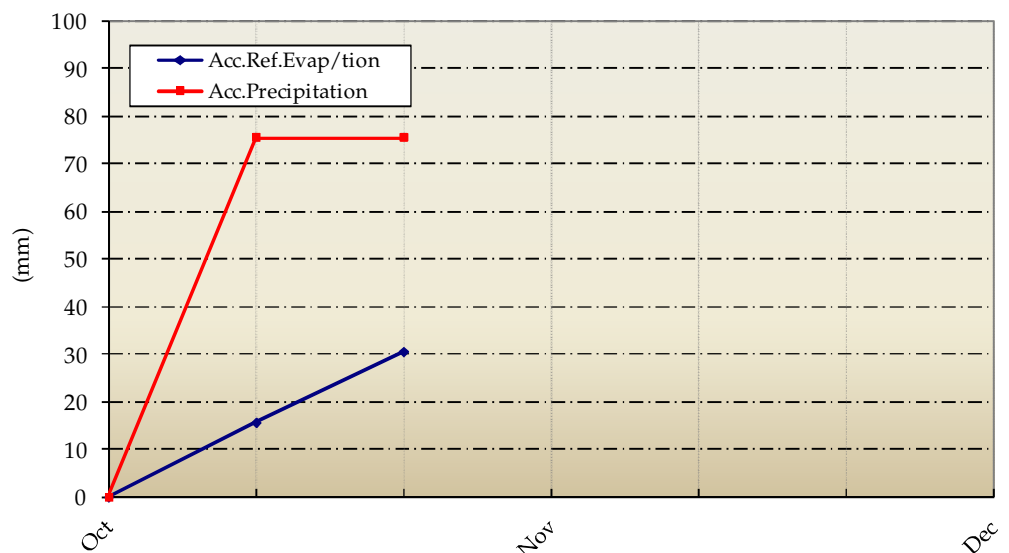
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/10/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.5	24.2	22.6	25.3	23.6	22.8	23.5	23.2	22.4	22.4	23.6	22.4	20.6
	Min	7.0	6.0	8.6	11.8	11.2	10.6	14.0	11.0	14.2	3.8	9.8	9.7	8.9
Relative Humidity	Max	90	100	100	100	100	100	100	100	77	100	97	92	-
	Min	41	43	62	42	53	56	57	45	31	41	47	44	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	14.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	16.3
Sunshine Duration		7.6	8.3	5.3	5.6	5.6	0.8	4.3	5.0	7.2	7.2	5.7	5.6	5.3
Precipitation													28.1	37.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	30.1
Growing Degrees	5	11.3	10.1	10.6	13.6	12.4	11.7	13.8	12.1	13.3	8.1	116.9	110.5	98.7
	10	6.3	5.1	5.6	8.6	7.4	6.7	8.8	7.1	8.3	3.1	66.9	60.5	49.1

2nd 10-day period (11-20/10/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	15.0	18.6	17.6
Precipitation - Reference Evapotranspiration	-15.0	9.5	19.5
Number of Rainy Days	0.0	4.0	3.4
Number of Dry Days	13.0	0.0	-

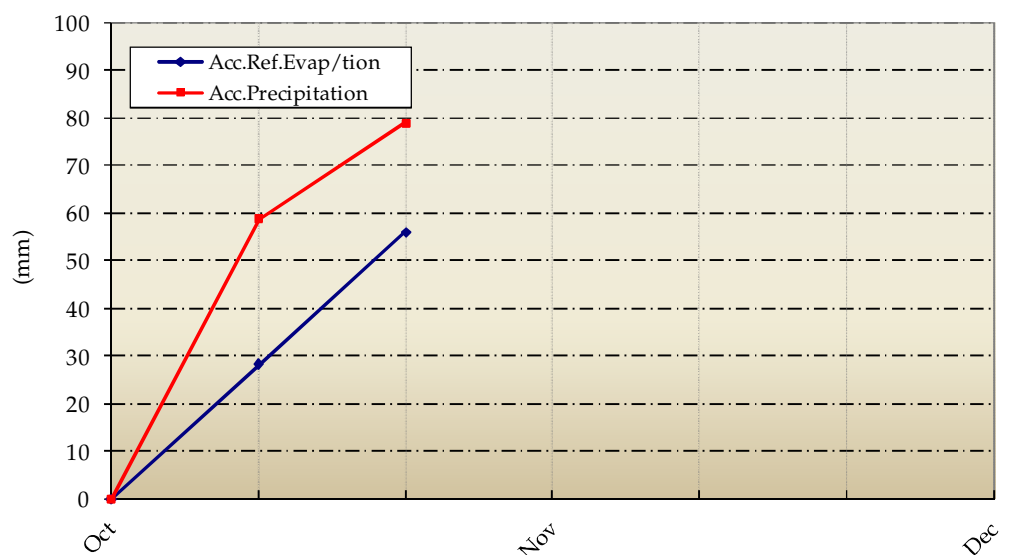
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/10/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.8	25.2	25.7	26.1	25.8	30.5	27.2	29.2	26.6	25.2	26.6	25.0	24.7
	Min	15.6	13.3	14.0	14.6	14.8	13.7	16.9	17.8	17.2	10.2	14.8	13.9	13.1
Relative Humidity	Max	94	93	93	92	94	93	92	92	94	78	92	93	-
	Min	53	49	53	58	54	39	55	46	29	25	46	51	-
Soil Temperature at 10 cm	06 UTC	21.2	20.6	20.4	20.6	20.6	20.6	20.6	21.2	20.8	19.6	20.6	-	18.6
	12 UTC	21.6	21.6	22.4	21.6	21.4	21.6	22.0	22.0	21.4	20.4	21.6	-	20.9
Sunshine Duration		9.3	9.6	9.5	8.7	8.1	6.7	6.4	9.6	8.8	9.9	8.7	8.3	6.8
Precipitation			0.1							20.0		20.1	17.8	24.4
Evaporation		-	-	-	-	-	-	-	-	-	-	-	38.0	39.0
Growing Degrees	5	15.2	14.3	14.9	15.4	15.3	17.1	17.1	18.5	16.9	12.7	157.2	144.9	138.6
	10	10.2	9.3	9.9	10.4	10.3	12.1	12.1	13.5	11.9	7.7	107.2	94.9	88.6

2nd 10-day period (11-20/10/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	27.8	25.8	24.3
Precipitation - Reference Evapotranspiration	-7.7	-8.0	0.1
Number of Rainy Days	2.0	2.0	2.7
Number of Dry Days	3.0	5.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

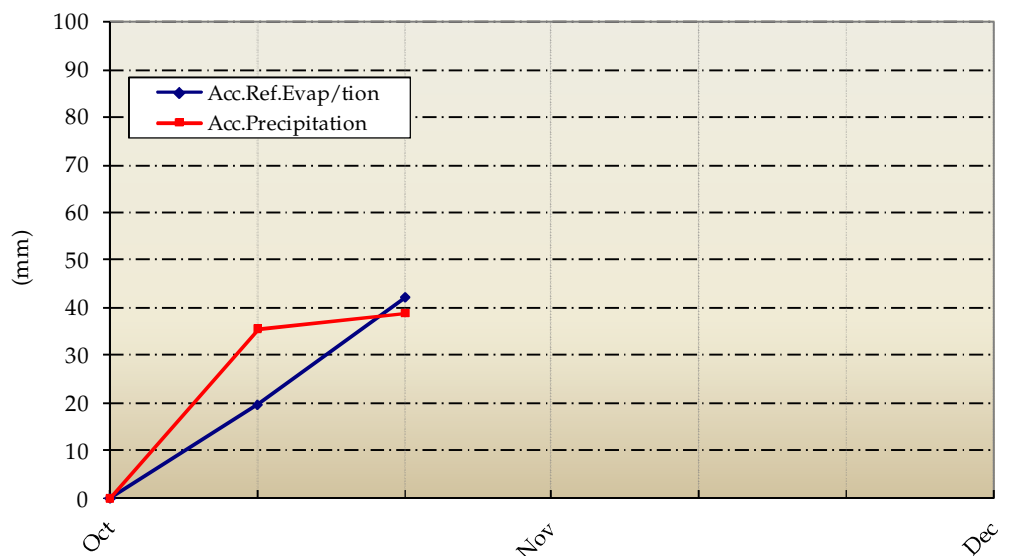


Larisa

2nd 10-day period (11-20/10/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.0	25.4	24.5	25.9	26.9	26.5	29.3	29.0	22.8	22.2	25.8	24.7	23.0
	Min	10.2	9.8	10.9	11.6	13.2	16.4	17.8	15.4	13.0	7.3	12.6	12.4	10.1
Relative Humidity	Max	100	100	100	100	100	100	75	93	100	100	97	88	-
	Min	31	37	46	47	49	48	30	29	37	42	40	37	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	17.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	18.6
Sunshine Duration		7.6	7.6	7.5	8.1	5.9	2.2	4.0	8.3	0.4	7.2	5.9	5.5	5.6
Precipitation										3.3		3.3	4.2	14.1
Evaporation		4.1	5.5	2.3	3.2	2.5	0.9	4.0	10.0	1.7	1.7	35.9	36.3	31.3
Growing Degrees	5	12.6	12.6	12.7	13.8	15.1	16.5	18.6	17.2	12.9	9.8	141.6	135.9	115.6
	10	7.6	7.6	7.7	8.8	10.1	11.5	13.6	12.2	7.9	4.8	91.6	85.9	65.8

2nd 10-day period (11-20/10/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	22.5	22.9	20.6
Precipitation - Reference Evapotranspiration	-19.2	-18.7	-6.5
Number of Rainy Days	1.0	2.0	2.4
Number of Dry Days	11.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

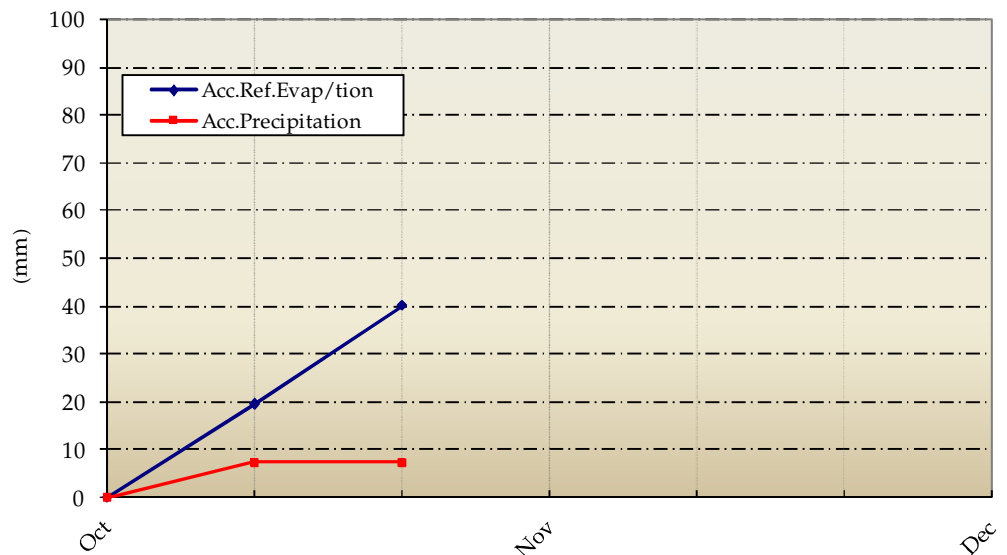


Mikra

2nd 10-day period (11-20/10/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	24.0	22.9	22.8	22.2	22.6	22.1	28.3	24.2	21.2	21.0	23.1	22.4	21.6
	Min	12.7	13.2	13.0	12.9	14.3	16.8	16.2	14.8	15.0	11.6	14.0	15.1	11.6
Relative Humidity	Max	90	91	92	92	93	92	85	80	80	88	88	80	-
	Min	52	58	55	63	66	73	34	36	47	45	53	51	-
Soil Temperature at 10 cm	06 UTC	18.4	18.2	18.2	18.1	18.8	19.4	18.8	19.2	18.8	17.2	18.5	18.5	16.5
	12 UTC	21.8	21.6	21.6	21.6	21.2	21.2	22.0	24.0	21.4	19.4	21.6	21.1	19.4
Sunshine Duration		9.7	8.9	6.6	6.0	2.2	0.2	4.6	6.7	5.4	9.0	5.9	4.5	5.3
Precipitation													4.3	13.0
Evaporation		6.3	1.8	3.6	1.9	2.7	0.2	0.8	9.0	2.5	2.9	31.7	37.4	31.8
Growing Degrees	5	13.4	13.1	12.9	12.6	13.5	14.5	17.3	14.5	13.1	11.3	135.9	137.5	116.2
	10	8.4	8.1	7.9	7.6	8.5	9.5	12.3	9.5	8.1	6.3	85.9	87.5	66.2

2nd 10-day period (11-20/10/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	20.7	26.4	20.4
Precipitation - Reference Evapotranspiration	-20.7	-22.1	-7.4
Number of Rainy Days	0.0	1.0	2.0
Number of Dry Days	12.0	7.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

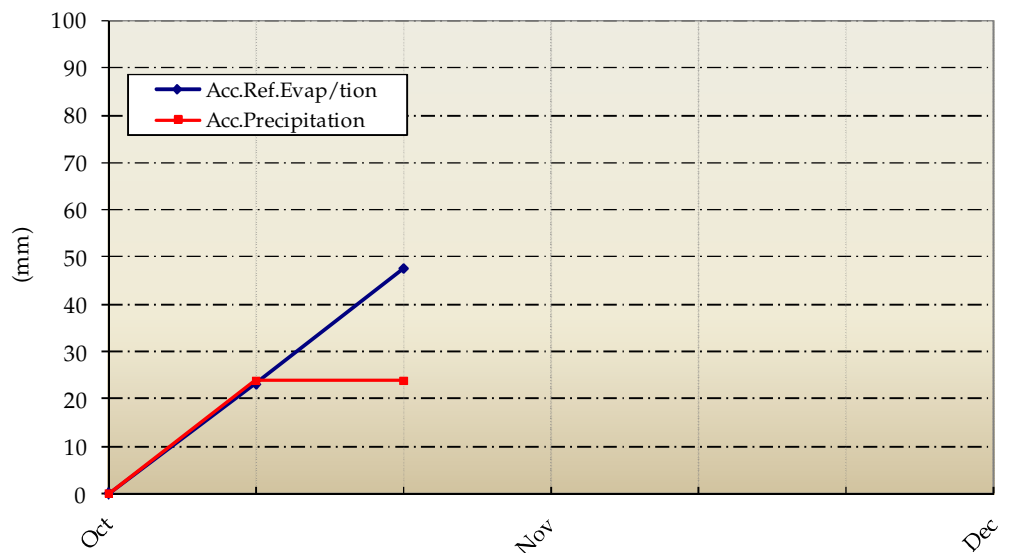


Tanagra

2nd 10-day period (11-20/10/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	23.0	23.8	24.1	25.0	26.0	31.6	29.5	28.6	20.2	22.4	25.4	24.3	22.8
	Min	12.8	11.0	11.8	12.4	12.9	17.0	18.6	18.2	17.8	9.0	14.2	13.5	12.0
Relative Humidity	Max	91	94	98	98	100	95	74	68	80	85	88	90	-
	Min	37	41	45	33	53	21	27	32	38	32	36	41	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		10.1	8.9	9.0	8.4	7.9	3.5	3.7	9.5	7.1	8.8	7.7	-	-
Precipitation													5.8	11.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	12.9	12.4	13.0	13.7	14.5	19.3	19.1	18.4	14.0	10.7	147.9	-	-
	10	7.9	7.4	8.0	8.7	9.5	14.3	14.1	13.4	9.0	5.7	97.9	-	-

2nd 10-day period (11-20/10/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	24.5	-	-
Precipitation - Reference Evapotranspiration	-24.5	-	11.3
Number of Rainy Days	0.0	-	2.5
Number of Dry Days	13.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

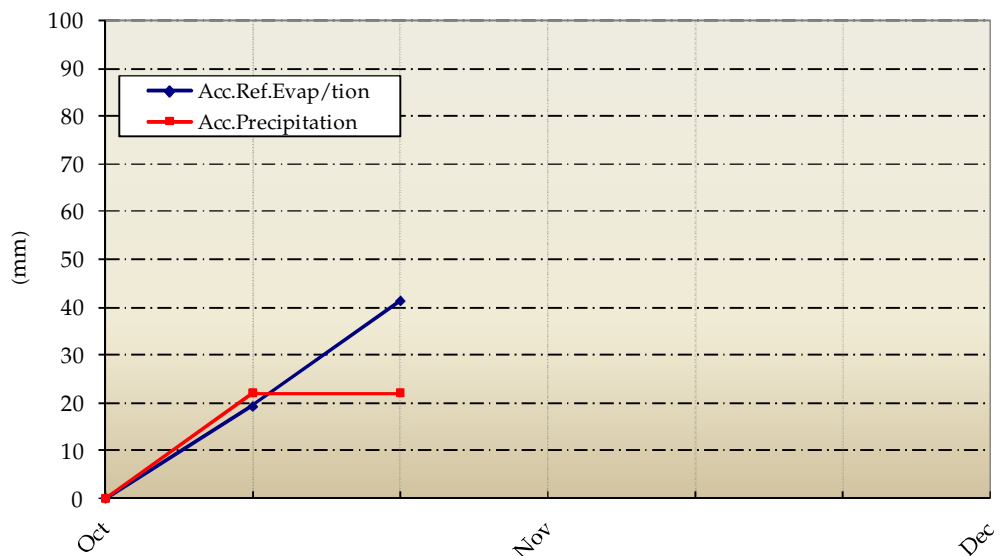


Tripoli

2nd 10-day period (11-20/10/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.9	24.2	24.2	24.6	27.8	27.6	24.3	27.9	19.8	22.7	24.6	23.4	21.3
	Min	5.4	5.3	6.1	9.2	10.3	11.4	15.4	11.5	12.6	2.0	8.9	8.4	8.2
Relative Humidity	Max	100	100	100	100	100	96	91	100	98	100	98	92	-
	Min	31	28	36	41	32	20	42	28	42	16	32	46	-
Soil Temperature at 10 cm	06 UTC	14.2	-	14.2	15.6	16.4	16.6	17.8	16.8	18.4	13.4	15.9	14.5	15.5
	12 UTC	-	-	19.4	19.6	20.8	21.0	20.2	-	-	18.0	19.8	19.0	17.2
Sunshine Duration		-	-	8.6	6.4	7.7	6.2	1.1	8.6	8.1	9.2	7.0	7.8	6.8
Precipitation													21.3	15.9
Evaporation		-	-	4.0	0.2	1.6	4.5	2.4	3.8	3.0	3.0	-	22.7	28.1
Growing Degrees	5	9.2	9.8	10.2	11.9	14.1	14.5	14.9	14.7	11.2	7.4	117.6	108.9	97.5
	10	4.2	4.8	5.2	6.9	9.1	9.5	9.9	9.7	6.2	2.4	67.6	58.9	48.2

2nd 10-day period (11-20/10/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	22.0	20.6	21.4
Precipitation - Reference Evapotranspiration	-22.0	0.7	-5.5
Number of Rainy Days	0.0	2.0	2.7
Number of Dry Days	12.0	5.0	-

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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