

AGROMETEOROLOGICAL BULLETIN

July 2012
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



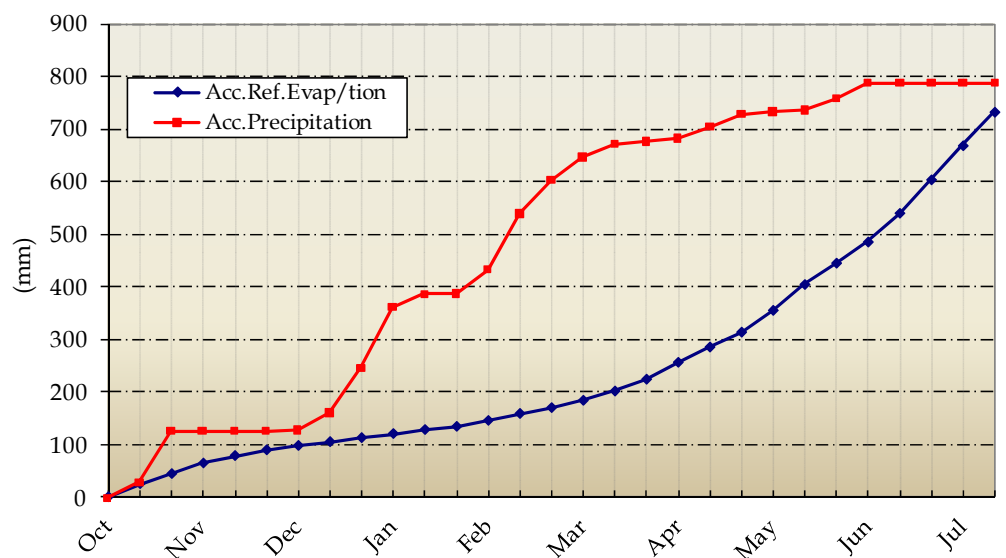
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1st 10-day period (1-10/07/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.8	35.0	34.4	34.6	36.0	36.8	36.0	37.0	39.0	39.0	36.3	33.4	32.4
	Min	19.0	18.2	17.2	16.0	18.0	18.8	20.0	20.0	25.2	22.4	19.5	17.2	16.9
Relative Humidity	Max	59	67	58	54	61	74	76	57	56	66	63	91	-
	Min	32	24	23	23	23	30	42	27	32	24	28	32	-
Soil Temperature at 10 cm	06 UTC	31.6	31.0	31.2	31.0	30.4	31.8	32.0	32.4	33.0	33.6	31.8	29.3	27.2
	12 UTC	37.0	36.6	36.4	36.6	45.0	36.0	37.2	38.0	38.2	45.0	38.6	34.3	33.2
Sunshine Duration		13.6	13.6	14.0	13.8	13.6	13.4	13.5	13.3	13.1	12.9	13.5	13.4	11.6
Precipitation														8.3
Evaporation		10.1	11.1	11.0	9.8	10.7	9.3	9.8	9.0	11.0	10.3	102.1	98.0	82.3
Growing Degrees	5	21.9	21.6	20.8	20.3	22.0	22.8	23.0	23.5	27.1	25.7	228.7	-	196.6
	10	16.9	16.6	15.8	15.3	17.0	17.8	18.0	18.5	22.1	20.7	178.7	-	146.6

1st 10-day period (1-10/07/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	64.0	59.4	56.1
Precipitation - Reference Evapotranspiration	-64.0	-59.4	-47.8
Number of Rainy Days	0.0	0.0	1.0
Number of Dry Days	41.0	23.0	-

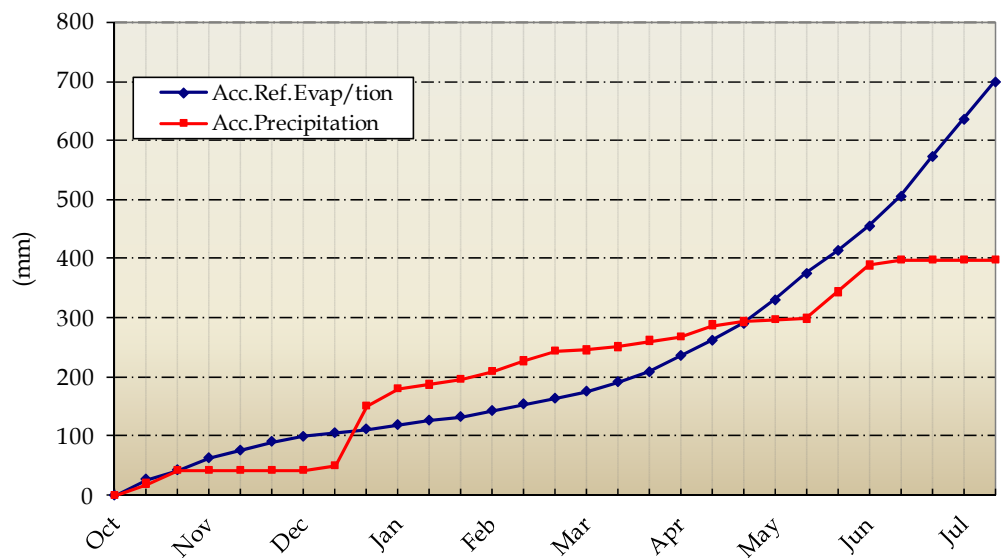
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.0	31.0	31.0	32.6	35.6	33.6	33.2	33.4	34.8	33.4	33.1	30.0	29.3
	Min	21.0	21.0	18.8	17.4	19.4	24.0	19.4	24.4	22.0	21.8	20.9	17.8	17.0
Relative Humidity	Max	62	67	63	73	66	68	71	69	75	75	69	84	-
	Min	24	23	28	23	26	36	33	41	46	43	32	41	-
Soil Temperature at 10 cm	06 UTC	27.2	27.4	27.2	27.2	28.2	29.6	28.4	29.2	29.6	29.8	28.4	24.4	23.7
	12 UTC	30.4	30.0	30.2	30.4	31.4	32.2	31.8	32.2	32.6	33.0	31.4	27.5	28.2
Sunshine Duration		13.0	12.9	13.0	12.8	12.4	11.1	12.6	11.3	12.4	9.4	12.1	11.2	10.3
Precipitation											0.0	0.0	10.7	12.1
Evaporation		13.8	11.2	9.7	8.4	6.9	13.3	8.2	8.4	9.7	8.8	98.4	81.1	85.9
Growing Degrees	5	21.5	21.0	19.9	20.0	22.5	23.8	21.3	23.9	23.4	22.6	219.9	189.3	181.3
	10	16.5	16.0	14.9	15.0	17.5	18.8	16.3	18.9	18.4	17.6	169.9	139.3	131.3

1st 10-day period (1-10/07/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	63.2	54.4	56.1
Precipitation - Reference Evapotranspiration	-63.2	-43.7	-44.0
Number of Rainy Days	0.0	1.0	2.2
Number of Dry Days	34.0	7.0	-

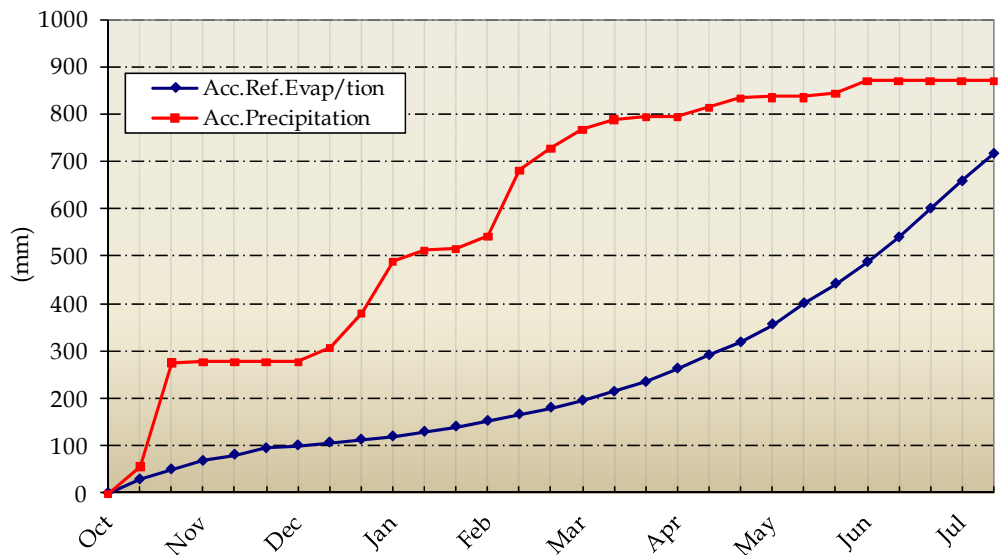
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.2	34.2	33.6	31.4	30.7	30.6	30.9	32.4	33.6	34.3	32.5	30.4	29.5
	Min	20.1	15.4	14.8	16.8	19.2	19.6	19.8	20.2	20.8	22.9	19.0	18.6	17.7
Relative Humidity	Max	62	77	83	86	86	88	89	87	86	82	83	91	-
	Min	26	18	24	25	44	47	47	46	38	43	36	39	-
Soil Temperature at 10 cm	06 UTC	27.8	26.8	26.4	27.4	28.0	28.2	28.6	29.0	29.6	30.4	28.2	26.7	26.9
	12 UTC	34.4	34.4	34.8	35.6	35.4	35.4	35.2	36.4	37.0	38.0	35.7	32.8	31.6
Sunshine Duration		12.6	13.2	13.2	12.9	12.7	12.7	11.9	12.2	12.1	12.6	12.6	12.7	12.0
Precipitation														0.7
Evaporation		9.4	13.0	8.0	11.0	6.1	8.6	7.3	6.4	7.0	9.3	86.1	84.8	75.0
Growing Degrees	5	21.7	19.8	19.2	19.1	20.0	20.1	20.4	21.3	22.2	23.6	207.3	194.7	186.1
	10	16.7	14.8	14.2	14.1	15.0	15.1	15.4	16.3	17.2	18.6	157.3	144.7	136.1

1st 10-day period (1-10/07/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	58.0	58.1	53.6
Precipitation - Reference Evapotranspiration	-58.0	-58.1	-52.9
Number of Rainy Days	0.0	0.0	0.3
Number of Dry Days	42.0	25.0	-

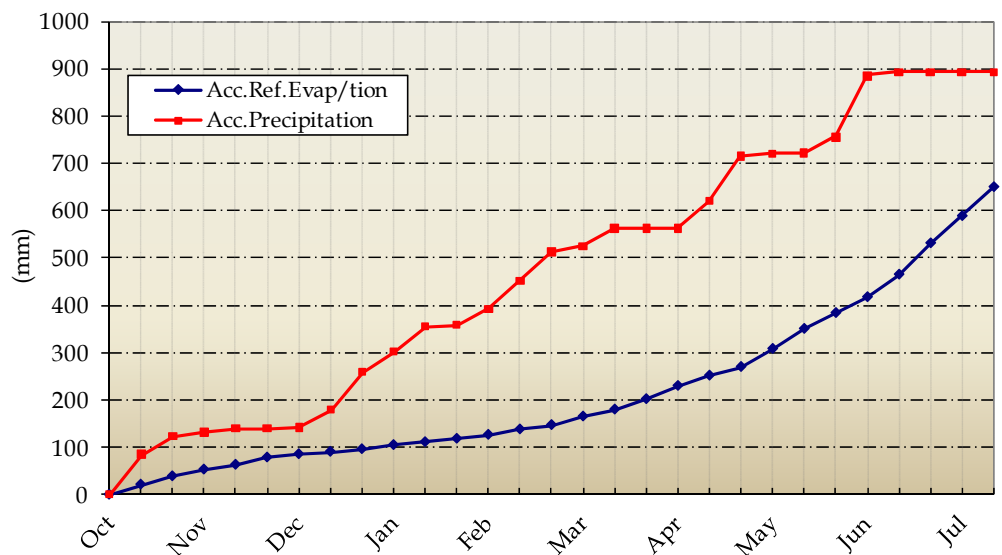
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.4	30.6	32.4	32.8	33.8	34.4	34.2	35.6	37.2	37.6	34.1	-	30.4
	Min	18.0	20.6	21.4	16.0	17.0	18.0	17.0	17.2	19.5	18.8	18.4	-	14.5
Relative Humidity	Max	60	50	79	80	80	73	73	66	79	75	72	-	-
	Min	36	29	28	34	33	27	23	29	26	19	28	-	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	22.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	27.2
Sunshine Duration		12.6	12.8	12.8	12.6	12.4	12.3	12.8	12.2	11.2	12.2	12.4	-	10.5
Precipitation													-	6.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	72.0
Growing Degrees	5	20.2	20.6	21.9	19.4	20.4	21.2	20.6	21.4	23.4	23.2	212.3	-	168.8
	10	15.2	15.6	16.9	14.4	15.4	16.2	15.6	16.4	18.4	18.2	162.3	-	120.3

1st 10-day period (1-10/07/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	61.3	-	51.3
Precipitation - Reference Evapotranspiration	-61.3	-	-44.7
Number of Rainy Days	0.0	-	1.5
Number of Dry Days	35.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

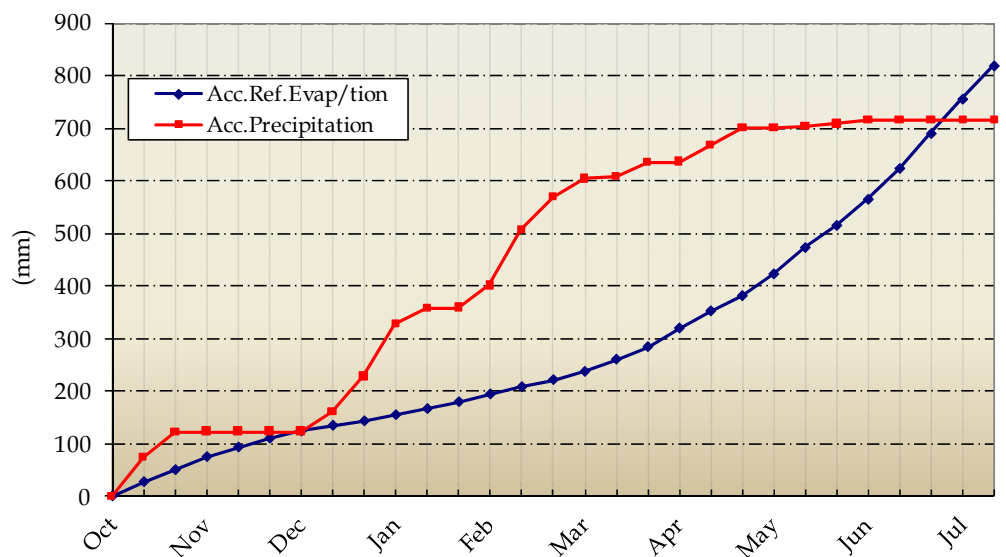


Kalamata

1st 10-day period (1-10/07/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.9	30.2	30.4	30.3	31.8	33.9	33.5	33.5	33.2	35.1	32.5	31.2	30.8
	Min	17.4	15.3	15.4	17.6	15.6	21.2	22.2	21.0	19.7	19.6	18.5	17.3	17.6
Relative Humidity	Max	87	91	82	81	84	82	79	82	87	85	84	89	-
	Min	27	38	33	31	31	27	30	34	34	36	32	35	-
Soil Temperature at 10 cm	06 UTC	25.6	25.4	25.6	25.6	25.6	26.2	26.8	27.0	27.0	27.0	26.2	24.1	25.3
	12 UTC	28.6	28.2	28.6	28.4	28.2	29.0	29.4	29.2	29.2	29.8	28.9	26.9	29.5
Sunshine Duration		12.4	12.5	12.7	12.5	12.4	12.0	11.9	12.6	11.2	11.9	12.2	12.6	11.4
Precipitation														1.0
Evaporation		15.2	7.0	-	7.8	8.8	9.6	11.4	-	3.2	11.2	-	77.8	89.7
Growing Degrees	5	20.2	17.8	17.9	19.0	18.7	22.6	22.9	22.3	21.5	22.4	204.9	192.6	191.7
	10	15.2	12.8	12.9	14.0	13.7	17.6	17.9	17.3	16.5	17.4	154.9	142.6	141.7

1st 10-day period (1-10/07/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	63.4	62.3	56.4
Precipitation - Reference Evapotranspiration	-63.4	-62.3	-55.4
Number of Rainy Days	0.0	0.0	0.3
Number of Dry Days	47.0	25.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

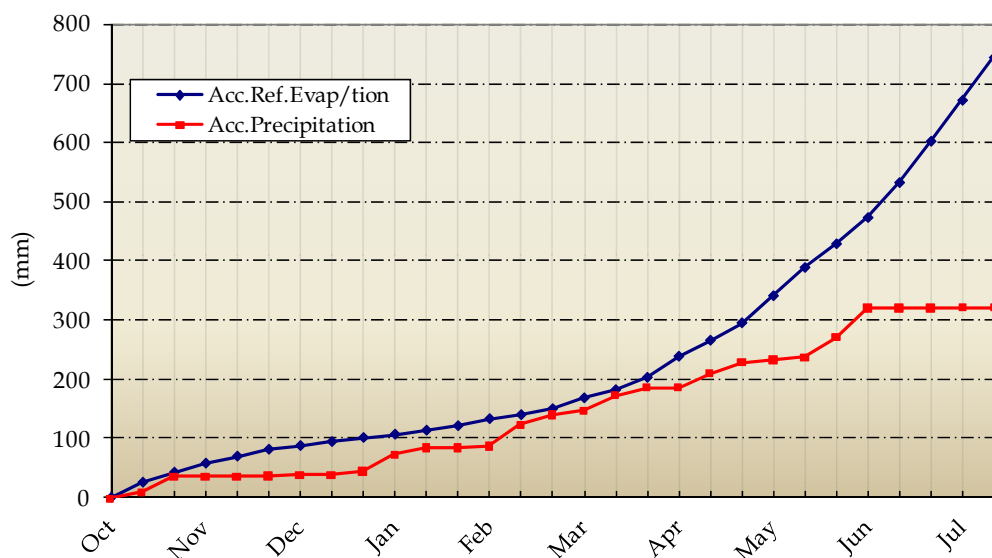


Larisa

1st 10-day period (1-10/07/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	32.4	31.0	32.6	34.8	37.6	37.8	37.1	38.2	38.6	39.4	36.0	33.5	32.9
	Min	19.0	22.0	17.4	15.2	15.0	18.1	21.4	20.4	21.2	21.2	19.1	18.0	17.5
Relative Humidity	Max	61	65	62	65	57	56	65	71	61	69	63	74	-
	Min	27	25	16	12	12	17	23	16	20	19	19	25	-
Soil Temperature at 10 cm	06 UTC	26.8	27.0	26.6	26.0	26.0	27.0	28.0	28.0	28.6	28.6	27.3	26.3	26.1
	12 UTC	28.6	28.4	29.6	28.2	28.2	28.4	29.2	30.0	30.4	31.2	29.2	29.1	28.7
Sunshine Duration		12.4	13.2	13.3	13.2	13.1	12.8	11.0	13.0	13.1	12.9	12.8	11.1	10.7
Precipitation								0.0				0.0		5.5
Evaporation		10.1	12.9	12.8	12.2	11.2	9.5	10.6	11.1	13.1	10.4	113.9	102.0	95.9
Growing Degrees	5	20.7	21.5	20.0	20.0	21.3	23.0	24.3	24.3	24.9	25.3	225.2	207.4	202.1
	10	15.7	16.5	15.0	15.0	16.3	18.0	19.3	19.3	19.9	20.3	175.2	157.4	152.1

1st 10-day period (1-10/07/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	72.4	63.9	62.4
Precipitation - Reference Evapotranspiration	-72.4	-63.9	-56.9
Number of Rainy Days	0.0	0.0	1.4
Number of Dry Days	15.0	24.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

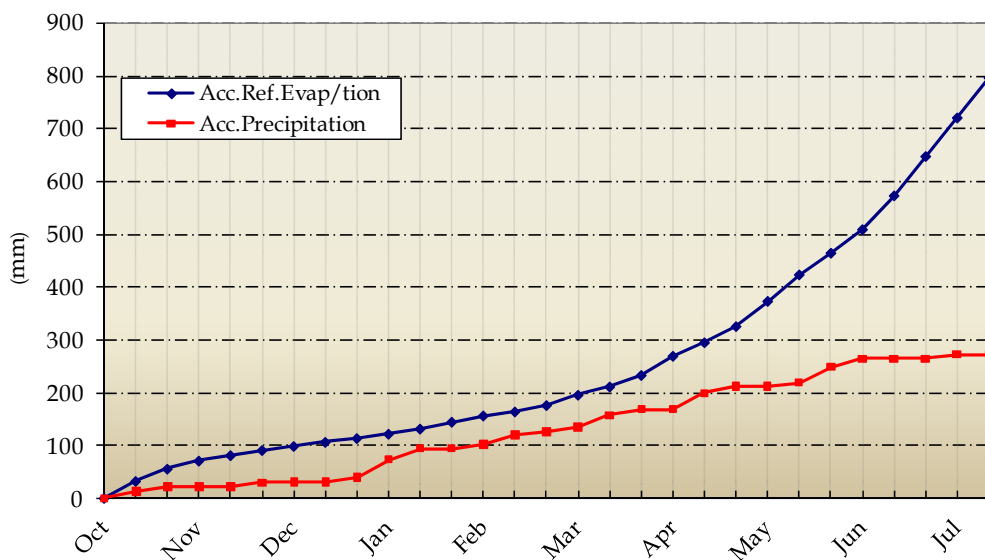


Mikra

1st 10-day period (1-10/07/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	31.9	30.6	31.4	33.4	36.2	34.8	35.0	36.0	36.4	37.1	34.3	-	31.1
	Min	21.2	23.6	18.8	17.6	18.8	20.4	22.6	21.2	23.4	23.8	21.1	-	18.5
Relative Humidity	Max	67	68	66	59	61	59	69	72	63	70	65	-	-
	Min	31	28	23	19	13	25	27	24	26	23	24	-	-
Soil Temperature at 10 cm	06 UTC	29.0	29.4	28.6	28.2	28.0	29.4	30.2	30.4	30.8	31.4	29.5	-	26.2
	12 UTC	32.8	33.0	33.0	33.6	33.6	34.0	34.0	34.4	34.6	34.4	33.7	-	30.9
Sunshine Duration		12.2	13.7	13.8	14.0	13.7	12.7	11.7	13.3	13.7	13.0	13.2	-	10.7
Precipitation													-	8.7
Evaporation		8.6	12.2	5.0	14.2	14.2	10.4	9.8	13.0	12.2	8.7	108.3	-	95.7
Growing Degrees	5	21.6	22.1	20.1	20.5	22.5	22.6	23.8	23.6	24.9	25.5	227.1	-	198.0
	10	16.6	17.1	15.1	15.5	17.5	17.6	18.8	18.6	19.9	20.5	177.1	-	148.0

1st 10-day period (1-10/07/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	75.6	-	61.2
Precipitation - Reference Evapotranspiration	-75.6	-	-52.5
Number of Rainy Days	0.0	-	1.7
Number of Dry Days	15.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

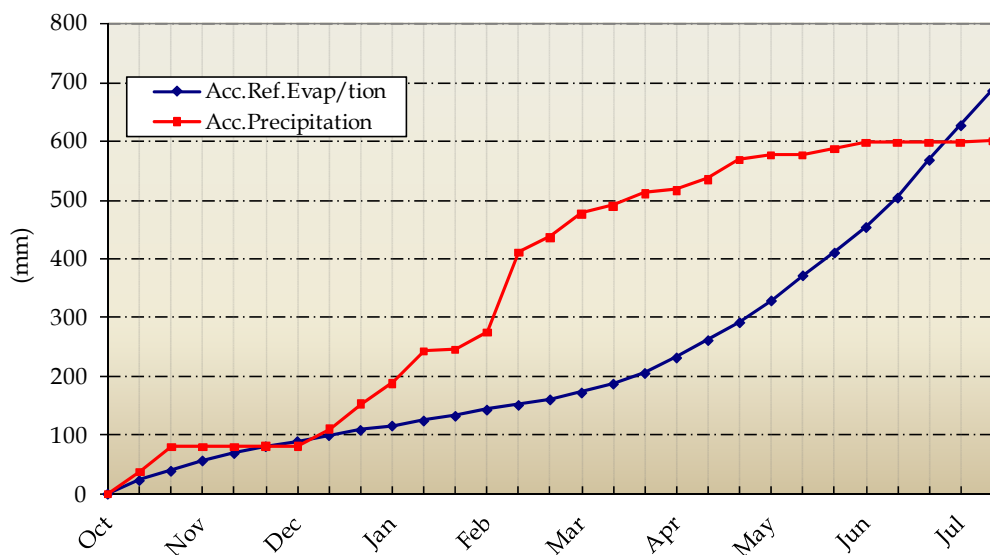


Tripoli

1st 10-day period (1-10/07/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.3	29.6	30.8	32.5	33.1	34.2	33.7	35.3	36.1	37.2	33.3	30.8	30.2
	Min	20.4	17.3	15.7	10.4	11.2	13.9	16.3	15.6	16.0	16.7	15.4	13.1	13.4
Relative Humidity	Max	47	50	51	72	78	74	78	80	77	81	69	84	-
	Min	21	18	16	10	12	14	20	17	17	15	16	26	-
Soil Temperature at 10 cm	06 UTC	-	-	25.8	25.8	-	-	-	-	-	-	-	25.2	25.0
	12 UTC	-	-	32.4	32.6	-	-	-	-	-	-	-	32.4	28.1
Sunshine Duration		-	13.4	13.5	-	-	-	-	-	-	-	-	13.1	10.6
Precipitation								0.0			2.4	2.4		7.1
Evaporation		-	-	9.6	-	-	-	-	-	-	-	-	80.4	64.6
Growing Degrees	5	20.4	18.5	18.3	16.5	17.2	19.1	20.0	20.5	21.1	22.0	193.2	169.2	167.9
	10	15.4	13.5	13.3	11.5	12.2	14.1	15.0	15.5	16.1	17.0	143.2	119.2	117.9

1st 10-day period (1-10/07/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	59.1	56.8	53.2
Precipitation - Reference Evapotranspiration	-56.7	-56.8	-46.1
Number of Rainy Days	1.0	0.0	1.3
Number of Dry Days	38.0	24.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

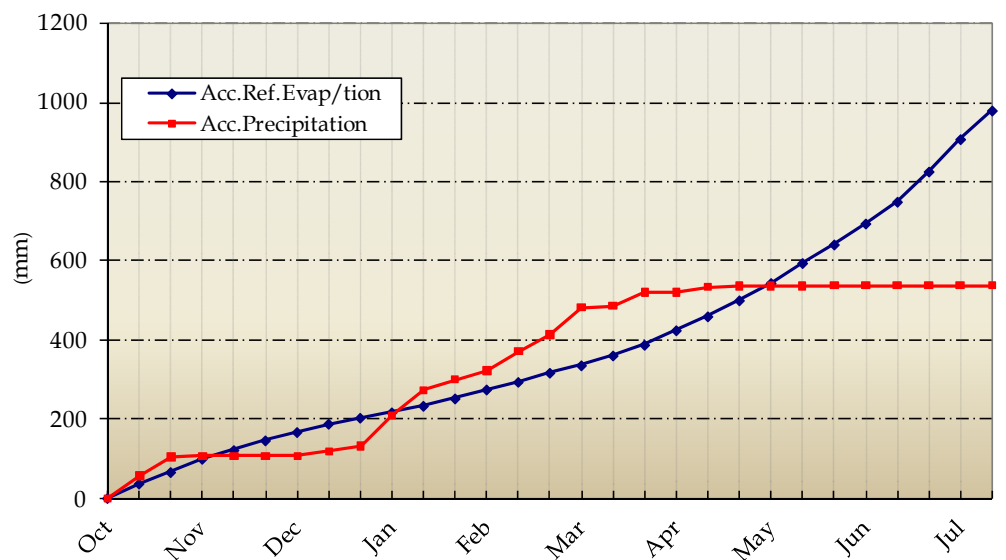


Tympaki

1st 10-day period (1-10/07/2012)		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	29.4	31.8	32.0	29.0	36.4	36.6	35.8	37.6	37.0	34.0	30.6	31.1
	Min	19.6	18.2	21.0	18.0	18.4	20.2	20.6	22.8	25.4	22.6	20.7	20.0	19.8
Relative Humidity	Max	97	99	98	99	99	100	99	100	100	90	98	77	-
	Min	39	56	56	45	50	17	43	43	36	32	42	33	-
Soil Temperature at 10 cm	06 UTC	29.2	29.0	29.4	28.8	29.0	30.0	30.8	31.6	32.2	31.8	30.2	30.0	31.0
	12 UTC	35.8	33.8	35.8	35.0	35.2	36.8	36.4	37.4	36.8	37.6	36.1	35.7	35.6
Sunshine Duration		13.1	13.1	13.1	13.5	13.6	13.3	13.4	13.0	13.3	13.3	13.3	13.1	12.4
Precipitation														0.0
Evaporation		16.4	12.8	13.0	12.3	10.1	14.4	17.2	16.3	17.8	14.3	144.6	101.7	112.2
Growing Degrees	5	22.0	18.8	21.4	20.0	18.7	23.3	23.6	24.3	26.5	24.8	223.4	203.1	204.6
	10	17.0	13.8	16.4	15.0	13.7	18.3	18.6	19.3	21.5	19.8	173.4	153.1	154.6

1st 10-day period (1-10/07/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	72.2	68.7	62.1
Precipitation - Reference Evapotranspiration	-72.2	-68.7	-62.1
Number of Rainy Days	0.0	0.0	0.0
Number of Dry Days	54.0	43.0	-

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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