



AGROMETEOROLOGICAL BULLETIN

February 2016
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



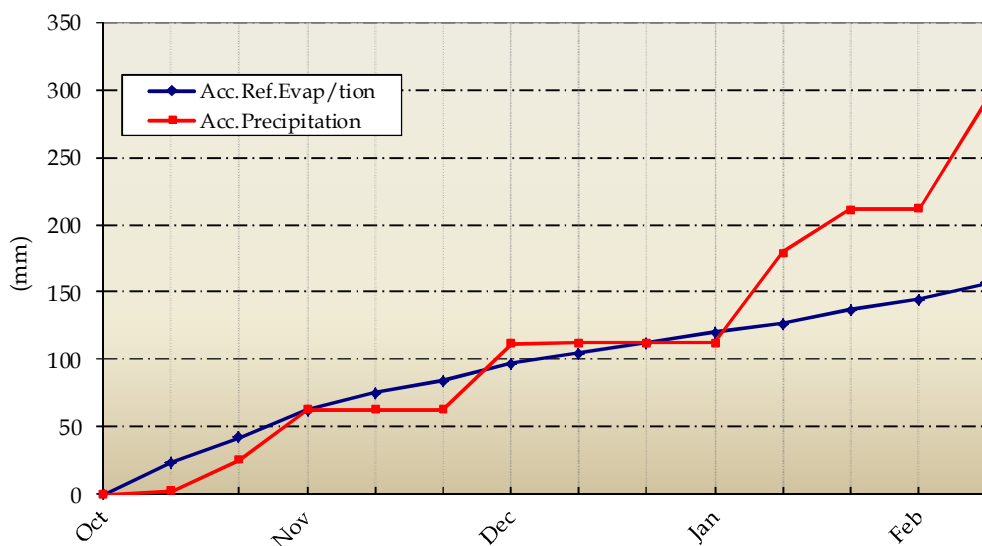
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1st 10-day period (1-10/02/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.2	15.8	18.0	15.6	14.0	7.8	7.4	8.4	11.2	14.6	12.8	12.1	9.1
	Min	7.6	3.4	7.4	10.6	2.8	2.8	-2.8	-4.0	0.0	7.4	3.5	5.7	0.8
Relative Humidity	Max	96	94	96	95	93	85	96	91	96	96	94	86	-
	Min	66	61	68	79	62	46	48	51	64	78	62	55	-
Soil Temperature at 10 cm	06 UTC	8.6	6.2	7.4	11.0	8.6	5.0	2.0	1.6	4.4	8.2	6.3	7.7	5.3
	12 UTC	11.0	10.6	11.6	12.4	6.6	7.0	5.7	5.4	7.0	9.6	8.7	10.0	6.6
Sunshine Duration		6.8	8.6	7.7	0.4	0.0	8.7	8.9	6.5	0.4	0.2	4.8	4.0	3.9
Precipitation					0.0	80.6						80.6	18.2	19.4
Evaporation		1.7	1.8	0.6	8.8	1.7	0.0	0.0	0.0	1.0	1.8	17.4	14.4	11.6
Growing Degrees	5	6.4	4.6	7.7	8.1	3.4	0.3	0.0	0.0	0.6	6.0	37.1	43.8	14.1
	10	1.4	0.0	2.7	3.1	0.0	0.0	0.0	0.0	0.0	1.0	8.2	12.5	1.4

1st 10-day period (1-10/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	11.9	13.4	10.9
Precipitation - Reference Evapotranspiration	68.7	4.8	8.5
Number of Rainy Days	1.0	6.0	2.5
Number of Dry Days	9.0	0.0	-

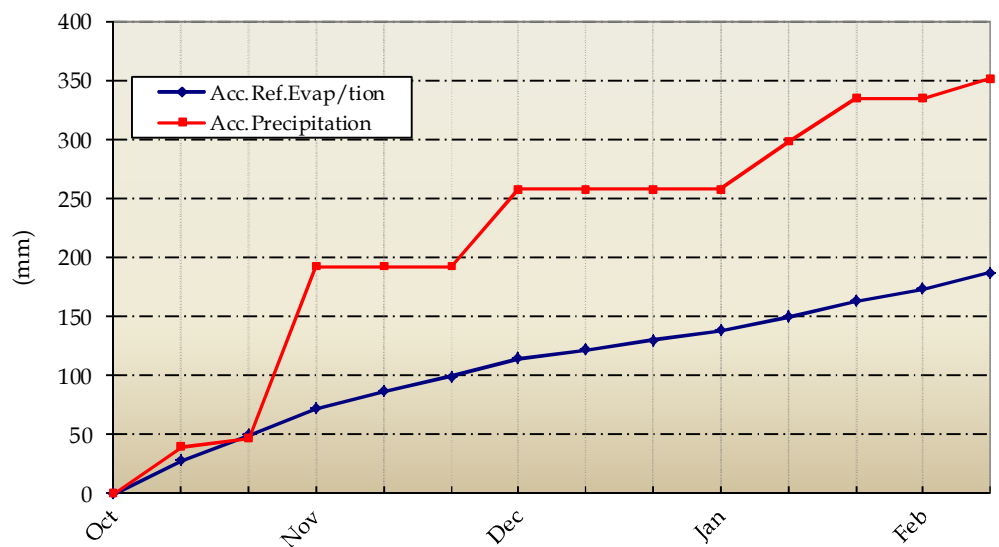
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/02/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.2	19.2	18.1	16.2	13.6	11.7	14.8	14.4	16.9	16.0	15.8	15.4	14.0
	Min	8.0	5.5	4.8	10.0	7.2	2.6	-0.8	4.9	5.0	9.9	5.7	7.7	4.8
Relative Humidity	Max	90	91	90	89	83	79	85	84	86	89	87	83	-
	Min	60	60	63	72	49	33	29	50	52	67	54	47	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	10.6	9.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	11.7	10.9
Sunshine Duration		8.1	8.8	8.3	0.0	2.9	9.1	9.1	4.3	8.3	1.0	6.0	4.2	5.2
Precipitation					6.5	6.0					4.6	17.1	64.8	28.0
Evaporation		1.0	4.0	1.0	7.0	1.0	1.0	2.0	2.0	1.0	1.6	21.6	26.9	19.1
Growing Degrees	5	7.6	7.4	6.5	8.1	5.4	2.2	2.0	4.7	6.0	8.0	57.6	65.8	44.7
	10	2.6	2.4	1.5	3.1	0.4	0.0	0.0	0.0	1.0	3.0	13.8	18.6	7.9

1st 10-day period (1-10/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	14.2	17.7	12.4
Precipitation - Reference Evapotranspiration	2.9	47.1	15.6
Number of Rainy Days	3.0	9.0	4.1
Number of Dry Days	14.0	0.0	-

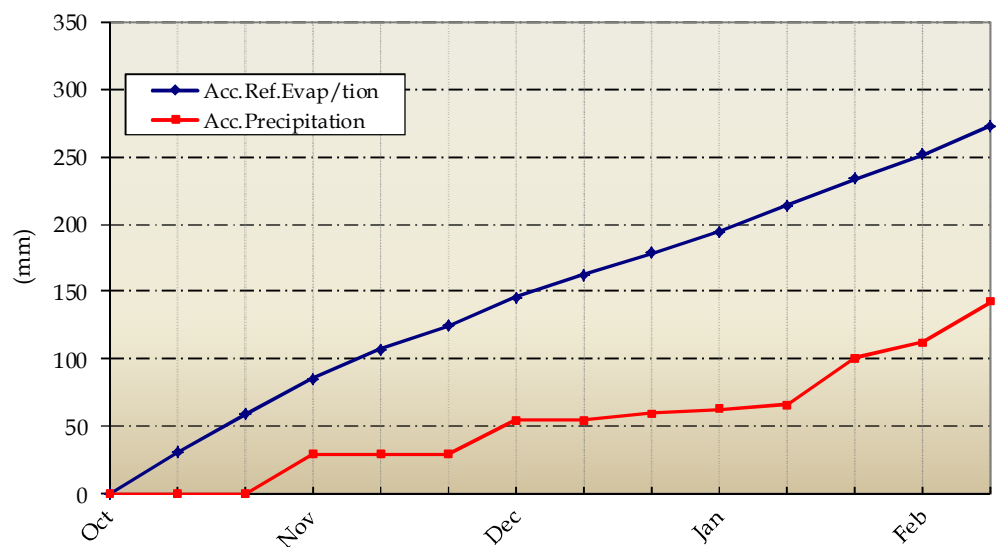
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/02/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.2	17.6	19.4	19.4	15.4	10.4	11.4	13.4	14.4	18.2	15.8	17.3	14.6
	Min	9.0	11.0	10.0	13.0	12.2	8.6	9.2	7.8	6.0	7.6	9.4	11.1	8.7
Relative Humidity	Max	89	92	89	77	94	73	55	90	90	85	83	77	-
	Min	50	66	48	56	56	47	47	51	61	53	54	47	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.1	8.7	8.5	5.1	6.2	1.4	7.3	7.0	7.2	5.5	6.5	4.9	4.3
Precipitation						10.4	19.5					29.9	14.7	22.4
Evaporation		3.2	1.2	2.1	3.1	4.6	4.2	3.2	1.2	1.6	1.8	26.2	26.8	29.3
Growing Degrees	5	8.6	9.3	9.7	11.2	8.8	4.5	5.3	5.6	5.2	7.9	76.1	92.0	66.4
	10	3.6	4.3	4.7	6.2	3.8	0.0	0.3	0.6	0.2	2.9	26.6	43.0	19.8

1st 10-day period (1-10/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	21.3	25.8	-
Precipitation - Reference Evapotranspiration	8.6	-11.1	22.4
Number of Rainy Days	2.0	2.0	4.2
Number of Dry Days	8.0	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

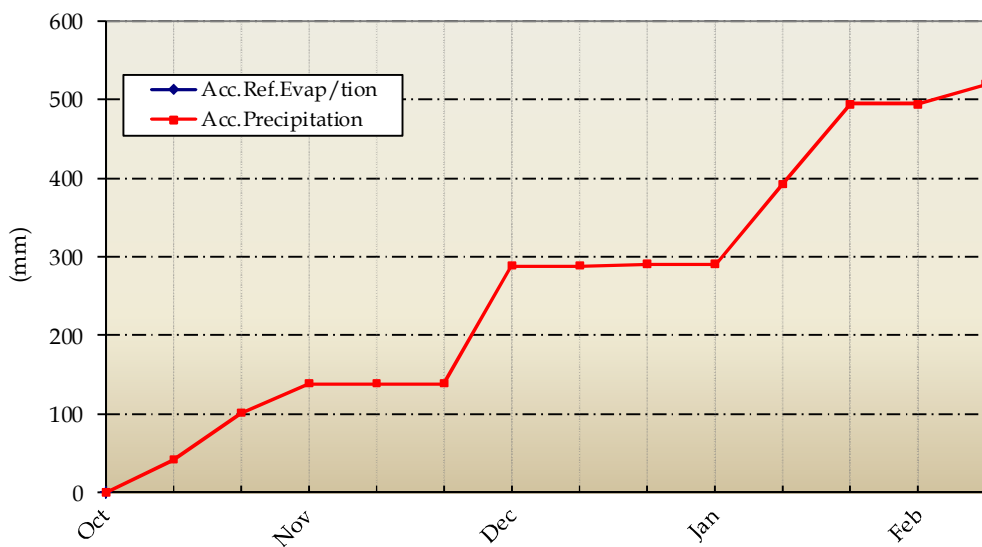


Ioannina

1st 10-day period (1-10/02/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.6	19.8	18.4	11.8	7.8	11.3	13.1	12.9	-	10.6	13.6	8.4	10.0
	Min	5.3	0.2	-1.5	7.1	3.4	0.7	-5.8	-4.4	-4.1	6.9	0.8	2.6	0.6
Relative Humidity	Max	97	100	100	100	98	-	100	100	100	100	99	97	-
	Min	54	34	33	76	32	16	26	26	71	87	46	55	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	4.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	5.1
Sunshine Duration		6.3	5.3	6.0	-	1.7	-	7.3	5.0	0.2	0.0	4.0	2.6	3.6
Precipitation					7.9	1.6				0.0	15.3	24.8	159.2	35.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	5.0
Growing Degrees	5	6.0	5.0	3.5	4.5	0.6	1.0	0.0	0.0	-	3.8	-	15.1	13.4
	10	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	-	1.3	0.3

1st 10-day period (1-10/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	9.3
Precipitation - Reference Evapotranspiration	-	-	26.5
Number of Rainy Days	3.0	8.0	3.5
Number of Dry Days	16.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

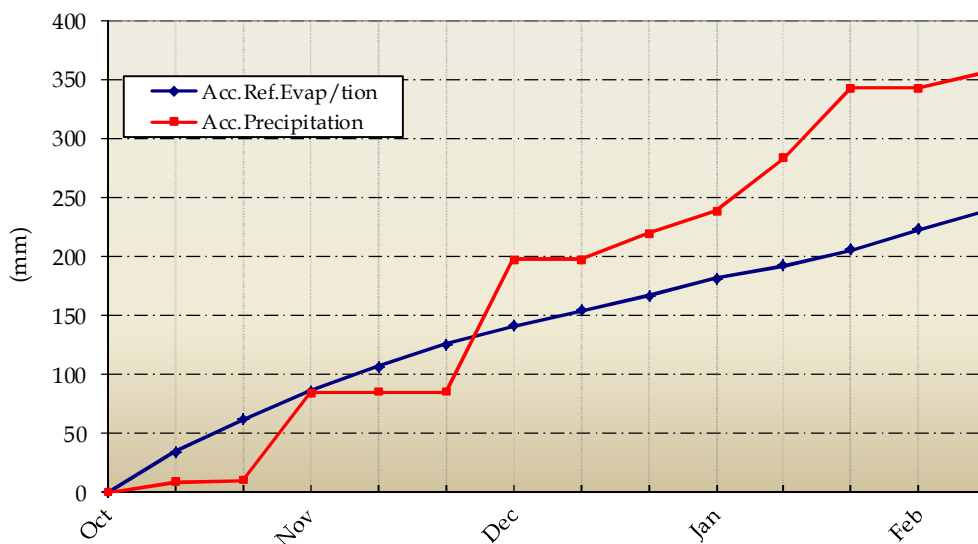


Kalamata

1st 10-day period (1-10/02/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.6	21.2	19.2	15.8	14.2	15.0	15.3	16.5	17.9	18.0	17.3	15.0	14.9
	Min	6.2	4.6	6.4	7.4	7.2	3.4	0.7	2.5	3.7	5.0	4.7	7.9	4.8
Relative Humidity	Max	93	94	93	93	94	79	89	92	93	94	91	89	-
	Min	48	40	46	77	46	27	41	47	44	53	47	50	-
Soil Temperature at 10 cm	06 UTC	11.2	10.8	10.8	11.6	11.6	9.4	9.8	9.8	10.2	11.0	10.6	11.5	9.7
	12 UTC	12.0	12.6	12.0	12.0	12.0	11.0	11.4	10.6	11.0	11.6	11.6	11.7	11.0
Sunshine Duration		5.9	8.4	8.9	0.0	4.1	9.0	8.7	6.9	8.8	0.0	6.1	3.7	5.1
Precipitation					2.6	9.6					1.6	13.8	66.4	28.3
Evaporation		1.0	1.6	2.6	0.0	3.3	5.0	1.8	1.2	2.4	1.2	20.1	-	24.5
Growing Degrees	5	7.9	7.9	7.8	6.6	5.7	4.2	3.0	4.5	5.8	6.5	59.9	64.3	48.9
	10	2.9	2.9	2.8	1.6	0.7	0.0	0.0	0.0	0.8	1.5	13.2	20.6	8.7

1st 10-day period (1-10/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	16.2	16.1	14.4
Precipitation - Reference Evapotranspiration	-2.4	50.3	13.9
Number of Rainy Days	3.0	8.0	4.1
Number of Dry Days	12.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

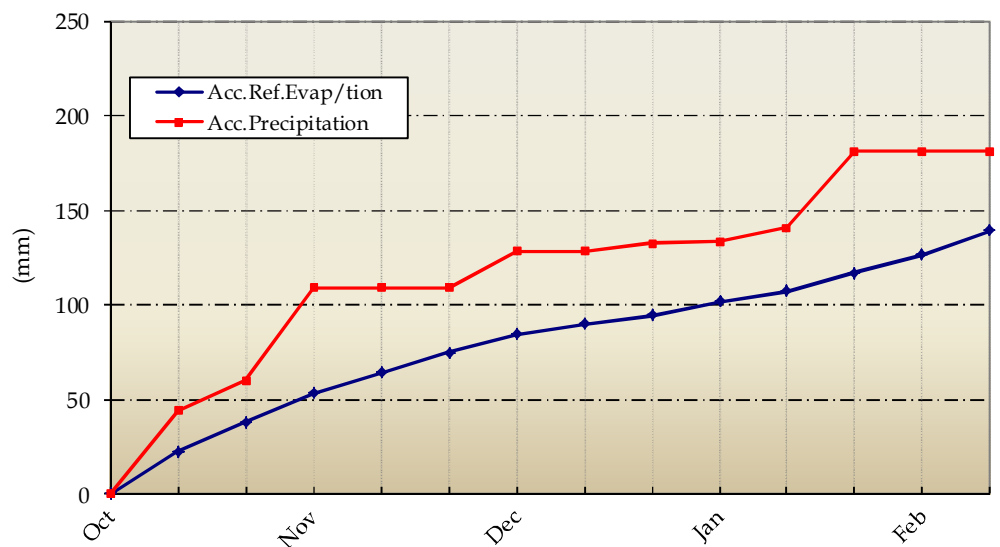


Larisa

1st 10-day period (1-10/02/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.6	21.0	22.2	16.8	14.0	11.7	12.4	11.4	13.8	17.0	16.1	13.5	11.2
	Min	4.0	2.5	2.8	5.4	5.8	0.8	-4.0	-1.2	-2.8	1.2	1.4	3.3	0.4
Relative Humidity	Max	100	100	100	100	82	83	100	100	100	100	96	92	-
	Min	34	39	35	56	42	24	32	53	49	44	41	41	-
Soil Temperature at 10 cm	06 UTC	8.2	8.6	8.2	9.2	9.2	8.4	7.8	8.6	6.2	7.8	8.2	-	6.1
	12 UTC	8.2	8.6	8.8	9.0	9.2	8.0	7.4	7.2	6.2	7.6	8.0	-	6.8
Sunshine Duration		7.7	7.9	7.6	0.4	0.0	8.1	7.6	3.8	4.9	0.6	4.9	5.3	4.3
Precipitation						0.0						0.0	14.2	9.7
Evaporation		3.2	1.5	2.4	1.0	0.7	0.0	0.0	3.6	1.2	0.6	14.2	19.2	6.9
Growing Degrees	5	7.3	6.8	7.5	6.1	4.9	1.3	0.0	0.1	0.5	4.1	38.5	36.4	16.7
	10	2.3	1.8	2.5	1.1	0.0	0.0	0.0	0.0	0.0	0.0	7.7	4.3	0.7

1st 10-day period (1-10/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	12.9	17.9	9.6
Precipitation - Reference Evapotranspiration	-12.9	-3.7	0.1
Number of Rainy Days	0.0	4.0	2.8
Number of Dry Days	21.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

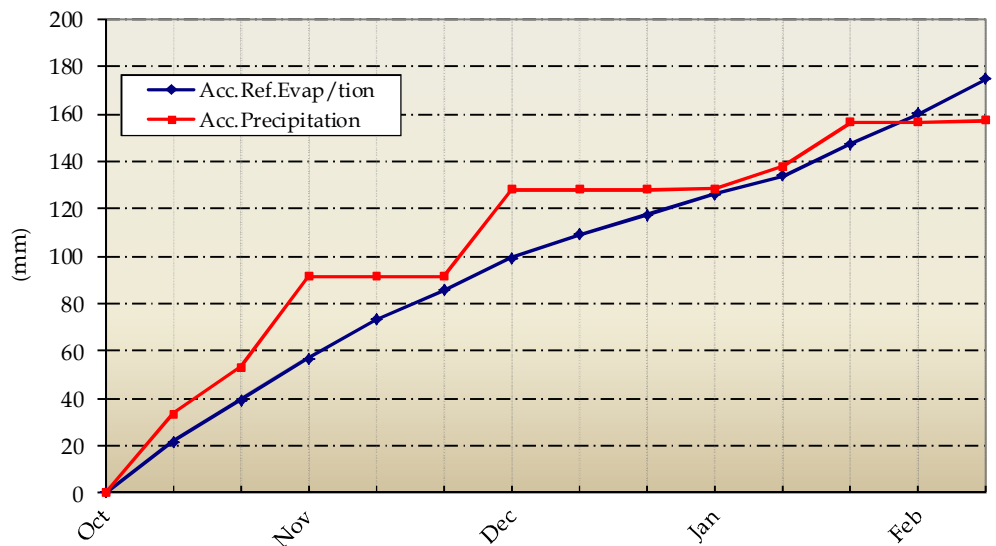


Mikra

1st 10-day period (1-10/02/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.0	17.6	14.6	12.5	11.8	11.2	11.2	11.2	12.9	16.4	13.6	11.9	10.3
	Min	3.0	5.8	5.0	6.2	5.4	4.6	-0.4	4.2	3.4	7.0	4.4	3.7	1.6
Relative Humidity	Max	92	89	94	96	73	71	89	90	94	91	88	87	-
	Min	47	45	67	65	48	34	53	58	63	48	53	52	-
Soil Temperature at 10 cm	06 UTC	7.0	8.6	8.6	10.6	8.4	5.8	5.0	6.8	6.8	8.6	7.6	7.3	5.6
	12 UTC	9.8	10.6	10.6	10.6	7.8	7.2	6.8	8.0	8.6	9.8	9.0	9.1	7.1
Sunshine Duration		8.5	8.8	8.4	0.0	0.0	8.6	7.8	0.2	4.8	0.0	4.7	4.8	4.3
Precipitation						0.8						0.8	7.4	10.5
Evaporation		0.4	3.0	1.2	0.2	0.9	1.5	1.8	0.2	0.8	3.6	13.6	12.4	12.4
Growing Degrees	5	5.0	6.7	4.8	4.4	3.6	2.9	0.4	2.7	3.2	6.7	40.3	31.4	17.2
	10	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	3.4	4.3	0.8

1st 10-day period (1-10/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	14.6	15.1	11.4
Precipitation - Reference Evapotranspiration	-13.8	-7.7	-0.9
Number of Rainy Days	1.0	5.0	2.6
Number of Dry Days	17.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

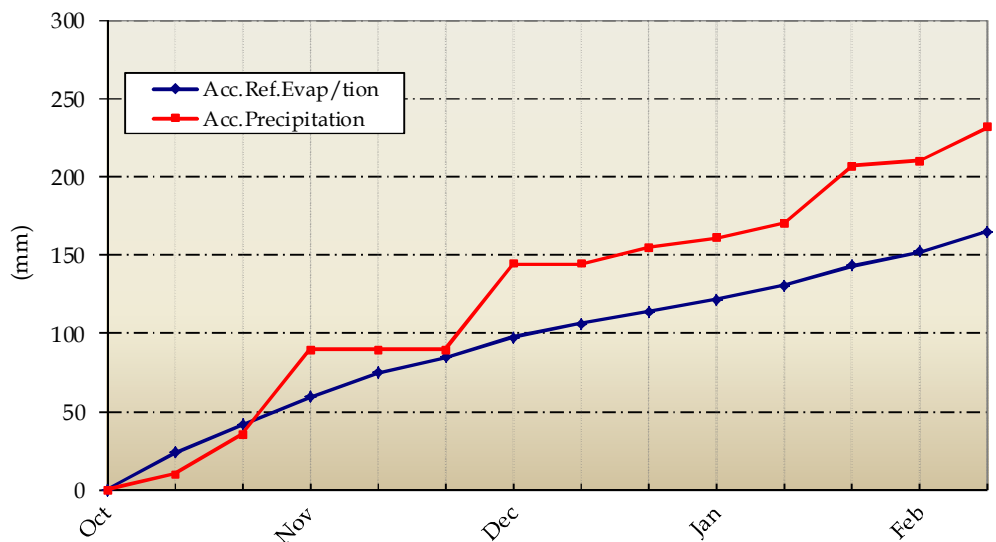


Tanagra

1st 10-day period (1-10/02/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.7	21.7	22.4	16.8	8.0	9.4	11.1	10.7	14.8	15.0	14.9	14.3	12.0
	Min	6.1	5.3	6.0	10.2	8.0	3.6	-0.4	0.0	0.4	5.4	4.5	6.9	2.6
Relative Humidity	Max	96	98	95	97	99	98	99	100	100	82	96	89	-
	Min	36	32	25	52	79	41	46	56	58	53	48	42	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.4	8.4	8.2	0.3	0.0	4.8	7.1	5.6	8.3	0.0	5.1	4.5	
Precipitation						10.8	10.8					21.6	20.8	16.3
Evaporation		2.5	3.0	4.0	2.0	1.0	2.0	1.6	0.8	1.7	3.0	21.6	32.9	
Growing Degrees	5	7.4	8.5	9.2	8.5	3.0	1.5	0.4	0.4	2.6	5.2	46.6	59.2	
	10	2.4	3.5	4.2	3.5	0.0	0.0	0.0	0.0	0.0	0.2	13.8	19.7	

1st 10-day period (1-10/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	12.6	16.9	
Precipitation - Reference Evapotranspiration	9.0	3.9	16.3
Number of Rainy Days	2.0	4.0	4.1
Number of Dry Days	10.0	4.0	-

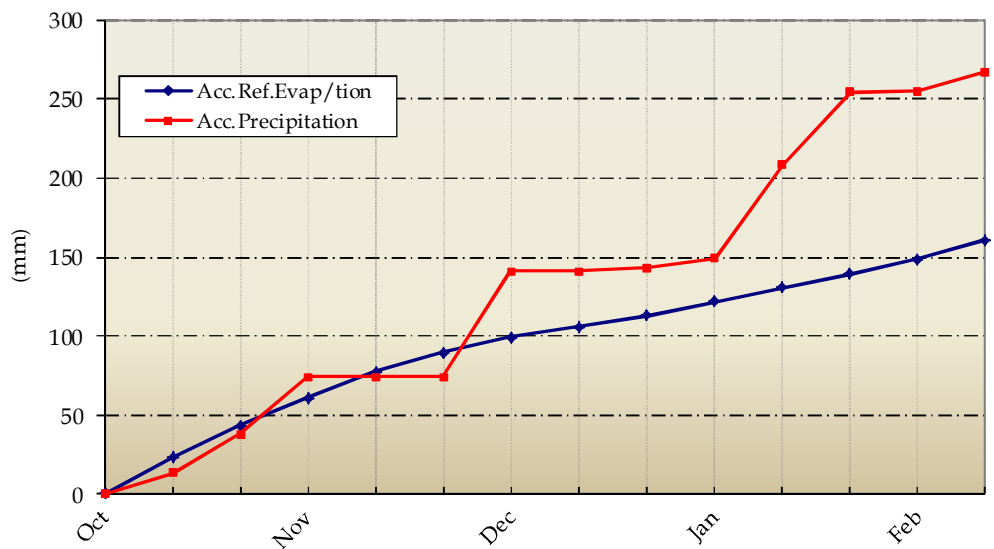
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/02/2016)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.3	20.0	20.0	11.6	9.2	8.6	11.5	13.5	14.3	11.5	13.6	10.0	10.0
	Min	5.2	-1.2	0.3	6.9	0.9	0.2	-6.0	-3.4	-3.5	1.7	0.1	2.8	0.4
Relative Humidity	Max	100	100	100	100	100	100	100	100	100	100	100	100	-
	Min	46	30	28	72	62	34	31	47	48	65	46	56	-
Soil Temperature at 10 cm	06 UTC	5.6	4.6	5.0	7.6	7.2	4.4	2.6	2.8	3.6	5.6	4.9	5.9	5.0
	12 UTC	9.2	9.2	9.2	8.6	8.4	-	-	6.6	7.6	7.6	8.3	7.1	5.8
Sunshine Duration		9.1	7.7	8.9	0.0	1.3	8.5	7.7	7.1	6.3	0.5	5.7	3.6	4.9
Precipitation					0.0	9.8					2.7	12.5	71.2	26.5
Evaporation		1.2	1.0	1.7	0.4	0.0	9.9	9.9	0.0	0.9	0.2	25.2	-	8.6
Growing Degrees	5	5.8	4.4	5.2	4.3	0.1	0.0	0.0	0.1	0.4	1.6	21.7	21.7	13.4
	10	0.8	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.7	0.4

1st 10-day period (1-10/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	12.3	11.1	11.6
Precipitation - Reference Evapotranspiration	0.2	60.1	14.9
Number of Rainy Days	2.0	9.0	4.1
Number of Dry Days	14.0	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_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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