



AGROMETEOROLOGICAL BULLETIN

February 2016
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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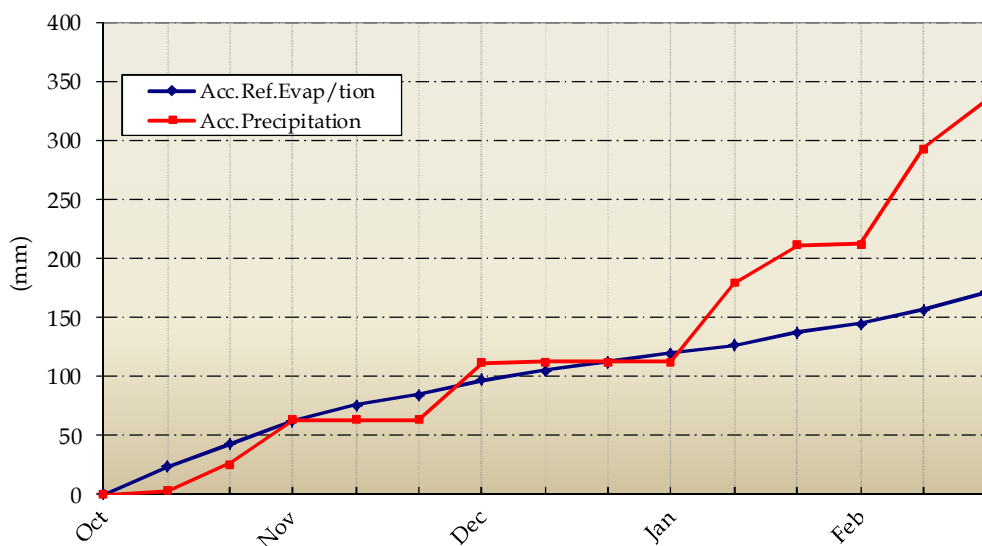
Web addresses of HNMS
www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr

Alexandroupoli

2nd 10-day period (11-20/02/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.8	17.0	16.2	17.4	18.8	20.6	19.8	16.6	11.8	10.8	16.6	7.9	10.0
	Min	11.6	9.2	13.2	11.2	14.6	11.8	9.6	10.2	7.2	7.4	10.6	-0.2	2.2
Relative Humidity	Max	90	95	91	95	91	90	91	85	94	83	90	75	-
	Min	36	67	77	80	70	51	48	57	73	68	63	37	-
Soil Temperature at 10 cm	06 UTC	10.4	10.2	12.4	11.4	13.0	11.0	11.2	11.4	10.4	9.6	11.1	3.7	4.8
	12 UTC	12.8	12.6	13.2	14.4	15.4	14.6	14.2	13.4	10.8	11.0	13.2	6.5	6.1
Sunshine Duration		7.0	3.3	1.8	7.0	5.3	2.0	0.0	6.1	0.4	0.0	3.3	6.2	3.7
Precipitation			1.8	8.5	22.0	0.0				10.2		42.5	0.0	18.4
Evaporation		2.3	1.7	6.0	3.0	1.7	1.7	1.1	4.4	2.6	1.4	25.9	7.2	10.5
Growing Degrees	5	9.2	8.1	9.7	9.3	11.7	11.2	9.7	8.4	4.5	4.1	85.9	7.8	23.6
	10	4.2	3.1	4.7	4.3	6.7	6.2	4.7	3.4	0.0	0.0	37.3	0.0	4.0

2nd 10-day period (11-20/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	14.8	15.8	12.3
Precipitation - Reference Evapotranspiration	27.7	-15.8	6.1
Number of Rainy Days	4.0	0.0	2.7
Number of Dry Days	6.0	12.0	-

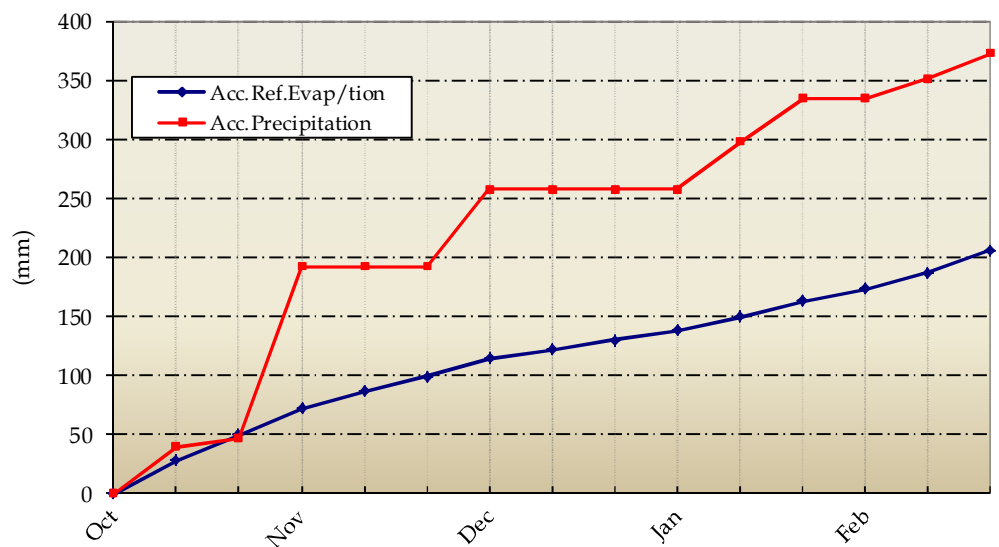
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/02/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.9	17.5	16.2	18.2	22.2	25.0	25.2	20.4	17.0	17.5	19.7	12.2	14.5
	Min	7.4	13.9	13.3	14.6	14.6	10.0	9.0	11.0	8.9	6.5	10.9	-0.4	6.2
Relative Humidity	Max	83	91	91	90	77	80	86	90	91	90	87	80	-
	Min	49	74	82	73	36	27	47	31	31	52	50	35	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	6.2	9.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	9.3	11.0
Sunshine Duration		8.0	2.2	0.0	0.6	2.0	7.8	0.0	1.2	7.1	8.8	3.8	9.5	4.8
Precipitation			5.4	13.7	0.1					0.1	1.6	20.9		37.6
Evaporation		1.0	0.4	0.3	9.0	0.7	5.8	2.5	0.7	1.2	3.8	25.4	33.0	21.3
Growing Degrees	5	7.7	10.7	9.8	11.4	13.4	12.5	12.1	10.7	8.0	7.0	103.2	14.7	54.0
	10	2.7	5.7	4.8	6.4	8.4	7.5	7.1	5.7	3.0	2.0	53.2	0.0	13.3

2nd 10-day period (11-20/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	18.8	16.3	14.2
Precipitation - Reference Evapotranspiration	2.1	-16.3	23.4
Number of Rainy Days	5.0	0.0	5.1
Number of Dry Days	1.0	10.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

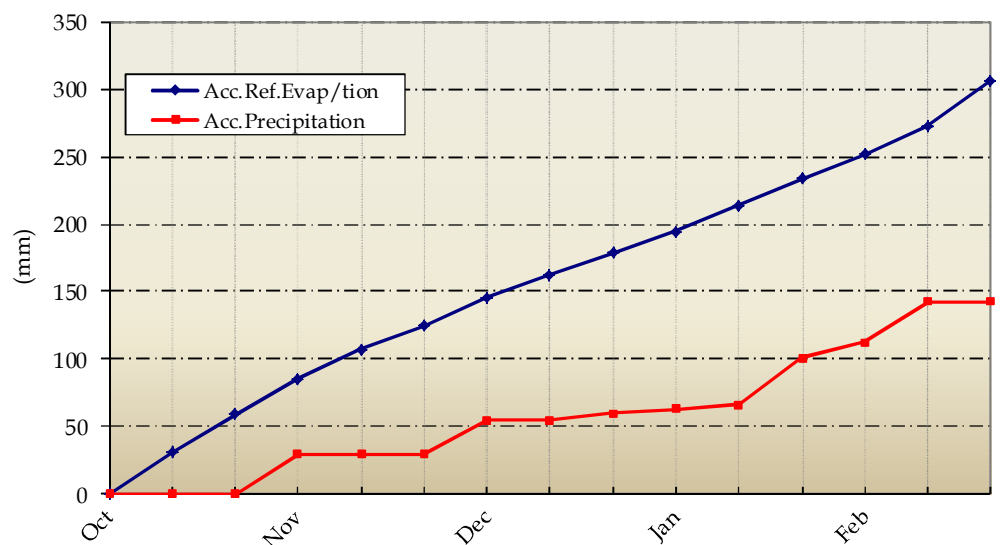


Iraklio

2nd 10-day period (11-20/02/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.4	22.0	21.0	23.2	28.2	27.8	20.6	26.0	19.4	18.2	22.8	10.5	15.9
	Min	15.8	12.4	17.0	17.0	18.8	18.4	16.0	15.8	14.6	10.4	15.6	7.0	9.3
Relative Humidity	Max	81	83	70	70	49	46	77	71	85	89	72	82	-
	Min	52	44	45	38	20	20	35	26	65	54	40	54	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		5.9	8.3	5.4	4.2	8.0	8.4	4.1	4.5	5.8	8.4	6.3	2.4	4.8
Precipitation													46.2	20.7
Evaporation		2.0	3.5	5.8	3.4	6.7	8.0	4.1	5.9	1.1	2.9	43.4	20.8	30.3
Growing Degrees	5	13.6	12.2	14.0	15.1	18.5	18.1	13.3	15.9	12.0	9.3	142.0	37.6	75.8
	10	8.6	7.2	9.0	10.1	13.5	13.1	8.3	10.9	7.0	4.3	92.0	1.9	27.6

2nd 10-day period (11-20/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	33.1	19.8	-
Precipitation - Reference Evapotranspiration	-33.1	26.4	20.7
Number of Rainy Days	0.0	9.0	4.0
Number of Dry Days	14.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

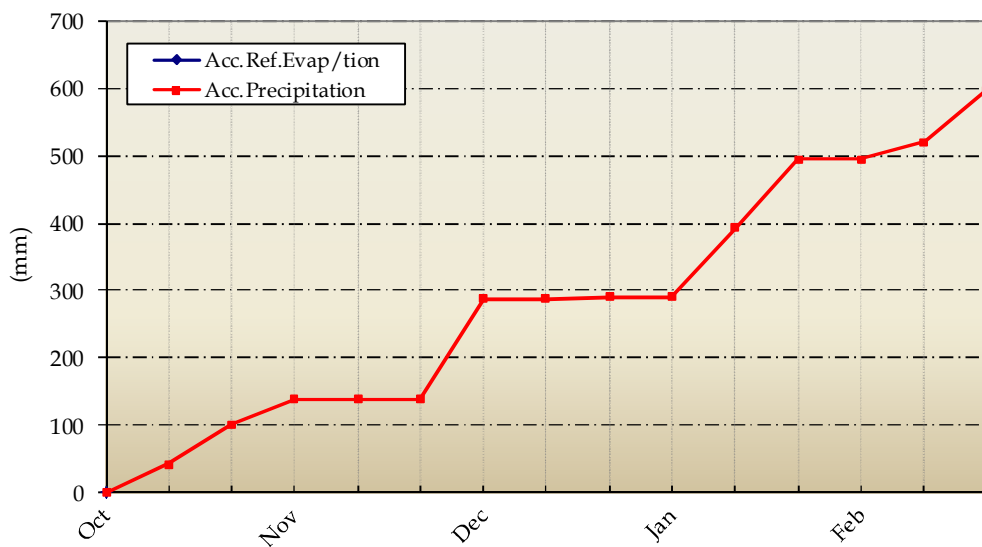


Ioannina

2nd 10-day period (11-20/02/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	11.7	13.0	13.5	14.0	19.9	20.8	22.2	-	15.8	11.2	15.8	11.6	10.3
	Min	1.6	5.3	8.7	7.1	11.1	9.3	7.4	9.2	9.0	0.8	7.0	-4.2	1.8
Relative Humidity	Max	100	100	100	100	94	79	95	100	100	100	97	87	-
	Min	32	83	83	91	47	24	25	33	54	76	55	21	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	4.4
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	5.4
Sunshine Duration		-	0.5	-	0.0	2.6	0.0	2.5	-	3.3	-	1.5	5.3	3.3
Precipitation		13.5	7.4	15.2	16.5	15.0	0.0	0.0	3.4	5.0	1.9	77.9	-	46.4
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	11.3
Growing Degrees	5	1.7	4.2	6.1	5.6	10.5	10.1	9.8	-	7.4	1.0	-	0.9	18.2
	10	0.0	0.0	1.1	0.6	5.5	5.1	4.8	-	2.4	0.0	-	0.0	1.8

2nd 10-day period (11-20/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	11.4
Precipitation - Reference Evapotranspiration	-	-	35.0
Number of Rainy Days	8.0	0.0	5.0
Number of Dry Days	0.0	11.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

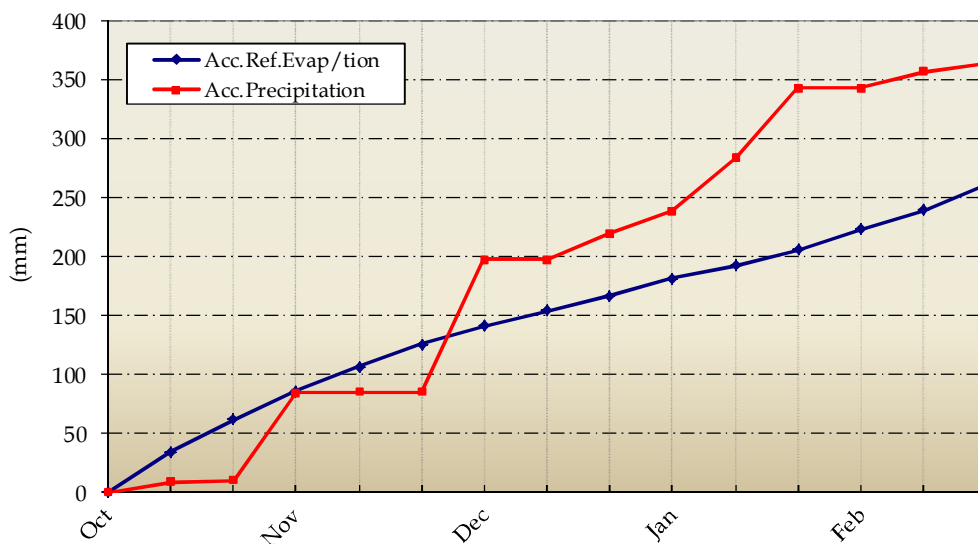


Kalamata

2nd 10-day period (11-20/02/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.4	19.0	17.3	19.2	22.8	23.6	26.0	22.1	20.2	19.6	20.9	12.9	15.1
	Min	8.3	12.1	13.4	13.4	10.8	7.8	9.4	12.4	11.4	8.8	10.8	1.2	5.9
Relative Humidity	Max	94	92	91	93	94	79	78	84	93	85	88	79	-
	Min	43	66	73	69	39	34	22	37	52	40	48	32	-
Soil Temperature at 10 cm	06 UTC	12.0	12.8	13.6	13.6	13.4	13.2	13.0	13.8	14.2	13.4	13.3	7.9	9.6
	12 UTC	12.5	13.6	13.4	14.6	14.4	14.6	14.0	14.6	14.8	14.0	14.0	8.7	10.9
Sunshine Duration		8.3	3.0	0.0	0.6	6.8	9.5	3.3	1.2	7.4	8.0	4.8	8.5	4.5
Precipitation		4.6	0.9	0.2					0.3	0.0	0.8	6.8		43.8
Evaporation		0.5	2.1	1.4	1.8	1.4	3.8	1.8	3.8	4.2	3.7	24.5	-	26.5
Growing Degrees	5	8.9	10.6	10.4	11.3	11.8	10.7	12.7	12.3	10.8	9.2	108.5	21.3	55.5
	10	3.9	5.6	5.4	6.3	6.8	5.7	7.7	7.3	5.8	4.2	58.5	0.1	12.8

2nd 10-day period (11-20/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	22.0	19.5	15.6
Precipitation - Reference Evapotranspiration	-15.2	-19.5	28.2
Number of Rainy Days	5.0	0.0	5.2
Number of Dry Days	0.0	10.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

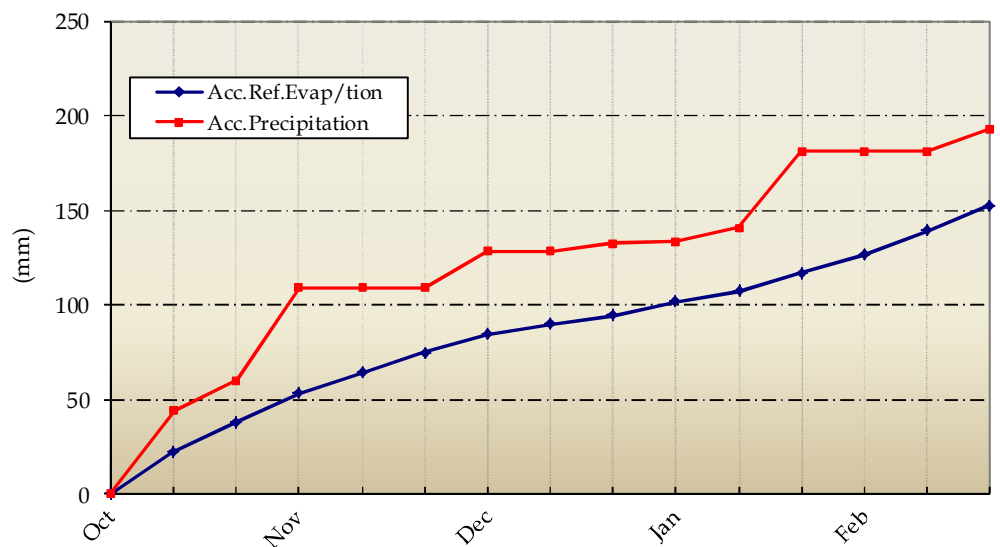


Larisa

2nd 10-day period (11-20/02/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.8	13.5	18.6	20.0	24.5	19.6	15.9	15.8	21.4	16.3	18.3	10.1	12.1
	Min	7.5	3.8	7.0	7.0	11.8	7.4	7.2	10.0	7.0	3.6	7.2	-2.8	1.9
Relative Humidity	Max	100	100	100	100	100	100	100	100	100	100	100	89	-
	Min	26	85	64	58	49	55	100	70	45	59	61	35	-
Soil Temperature at 10 cm	06 UTC	8.6	9.2	9.6	10.0	10.8	11.6	11.6	11.4	11.6	11.8	10.6	-	6.7
	12 UTC	8.8	9.1	-	10.0	-	11.0	11.4	11.4	11.8	11.6	10.6	-	7.2
Sunshine Duration		5.4	1.1	2.9	1.8	6.9	0.7	0.0	1.3	7.8	2.9	3.1	7.2	4.0
Precipitation			10.7		0.0				0.0	1.2	0.1	12.0	3.9	12.7
Evaporation		1.5	-	-	3.9	3.6	0.0	0.2	0.1	3.3	0.6	-	3.3	10.0
Growing Degrees	5	7.7	3.7	7.8	8.5	13.2	8.5	6.6	7.9	9.2	5.0	77.9	0.0	25.9
	10	2.7	0.0	2.8	3.5	8.2	3.5	1.6	2.9	4.2	0.0	29.3	0.0	3.3

2nd 10-day period (11-20/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	13.1	14.1	12.0
Precipitation - Reference Evapotranspiration	-1.1	-10.2	0.7
Number of Rainy Days	3.0	1.0	3.6
Number of Dry Days	22.0	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

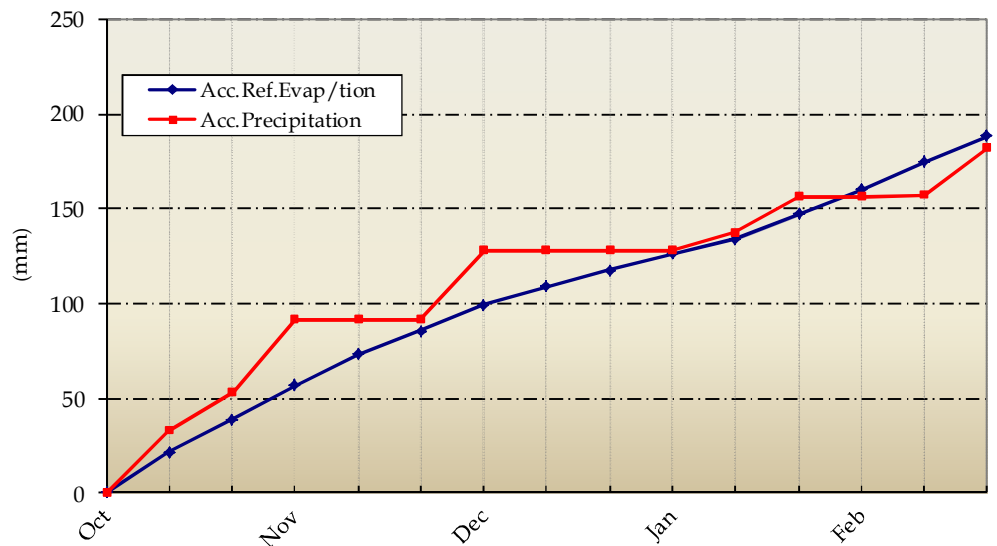


Mikra

2nd 10-day period (11-20/02/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.0	15.4	18.2	14.0	22.9	16.0	16.4	16.2	18.0	15.2	16.8	9.7	11.2
	Min	10.6	3.2	8.4	6.9	11.4	9.0	9.8	10.6	11.1	9.6	9.1	-1.6	2.9
Relative Humidity	Max	84	94	97	97	93	95	97	95	95	93	94	79	-
	Min	24	62	53	75	39	81	75	61	52	68	59	33	-
Soil Temperature at 10 cm	06 UTC	9.6	8.6	9.8	9.4	11.6	11.8	11.9	12.2	12.4	12.8	11.0	3.6	5.9
	12 UTC	11.0	10.2	11.4	11.2	13.8	13.2	13.0	13.2	13.8	13.2	12.4	5.8	7.7
Sunshine Duration		5.0	2.9	1.6	1.6	7.0	0.0	0.2	1.9	8.5	0.8	3.0	8.2	3.8
Precipitation			1.2	6.1	0.0					5.0	12.1	24.4	3.0	15.0
Evaporation		1.8	0.9	0.4	0.6	2.2	1.8	1.6	0.2	0.6	6.2	16.3	2.0	14.7
Growing Degrees	5	8.3	4.3	8.3	5.5	12.2	7.5	8.1	8.4	9.6	7.4	79.5	1.4	26.4
	10	3.3	0.0	3.3	0.5	7.2	2.5	3.1	3.4	4.6	2.4	30.2	0.0	3.8

2nd 10-day period (11-20/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	13.3	16.0	13.1
Precipitation - Reference Evapotranspiration	11.1	-13.0	1.9
Number of Rainy Days	4.0	2.0	3.4
Number of Dry Days	6.0	7.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

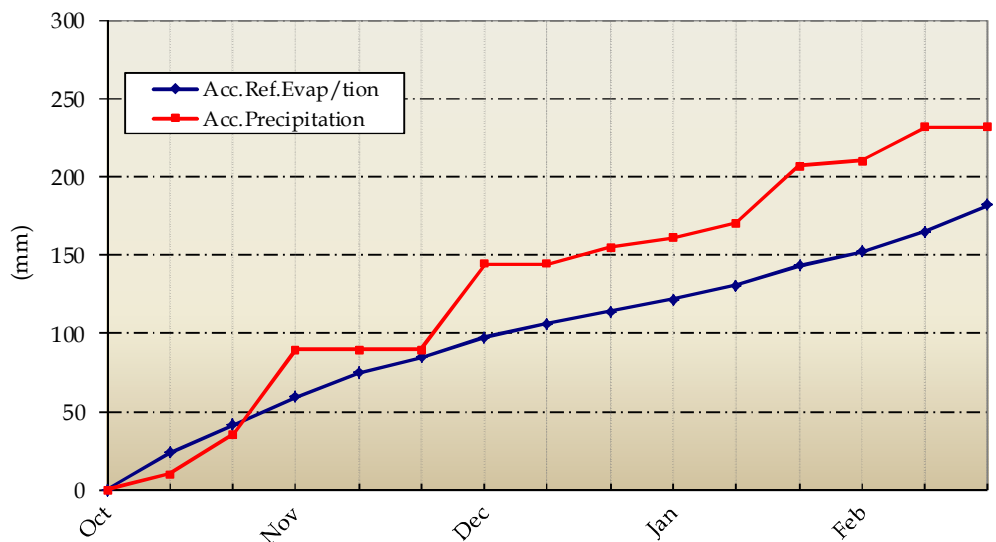


Tanagra

2nd 10-day period (11-20/02/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.4	18.9	18.4	22.2	21.9	23.1	17.2	17.5	20.6	17.2	19.6	7.9	13.2
	Min	10.4	9.4	12.0	12.4	12.3	11.6	7.0	8.5	10.7	5.0	9.9	1.2	4.1
Relative Humidity	Max	76	72	78	80	84	95	97	99	98	99	88	88	-
	Min	27	47	50	48	40	33	64	65	48	56	48	49	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.3	0.9	2.9	3.5	4.2	5.3	0.0	3.6	8.4	7.7	4.5	2.8	
Precipitation		0.1										0.1	4.0	15.6
Evaporation		5.0	3.7	3.5	2.8	3.5	0.8	1.0	1.2	2.5	3.0	27.0	-	
Growing Degrees	5	9.9	9.2	10.2	12.3	12.1	12.4	7.1	8.0	10.7	6.1	97.9	4.9	
	10	4.9	4.2	5.2	7.3	7.1	7.4	2.1	3.0	5.7	1.1	47.9	0.0	

2nd 10-day period (11-20/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	16.9	12.3	
Precipitation - Reference Evapotranspiration	-16.8	-8.3	15.6
Number of Rainy Days	1.0	4.0	4.8
Number of Dry Days	4.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

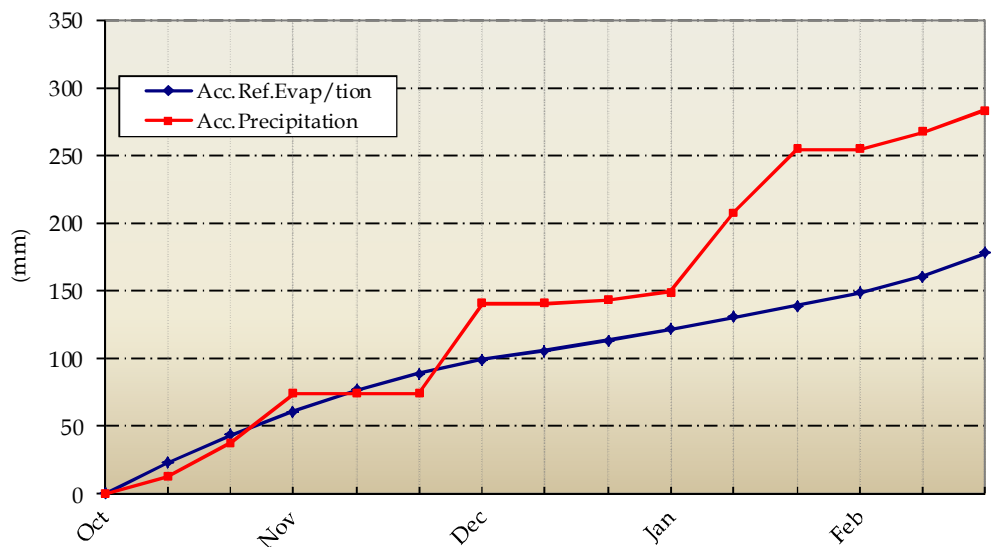


Tripoli

2nd 10-day period (11-20/02/2016)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.2	14.6	14.2	14.0	22.0	21.0	21.4	16.7	18.5	16.6	17.3	7.4	10.2
	Min	7.7	9.1	10.0	10.9	7.0	3.6	3.4	9.1	6.7	0.0	6.8	-4.5	1.7
Relative Humidity	Max	97	96	98	100	100	89	97	97	100	100	97	92	-
	Min	43	56	56	88	30	27	30	44	47	40	46	40	-
Soil Temperature at 10 cm	06 UTC	7.4	8.4	9.4	10.4	9.2	8.4	8.2	10.2	9.4	7.4	8.8	2.4	4.8
	12 UTC	10.2	11.2	-	-	13.6	13.2	11.8	11.6	13.4	-	12.1	4.0	5.7
Sunshine Duration		9.3	5.3	1.5	0.0	8.9	9.2	5.4	2.0	9.4	8.7	6.0	6.5	4.3
Precipitation		8.0	2.4	1.1	1.8				0.0	0.6	2.2	16.1	0.0	39.0
Evaporation		1.4	3.2	0.3	0.2	2.6	7.8	0.8	0.6	1.8	1.9	20.6	0.0	11.0
Growing Degrees	5	6.0	6.9	7.1	7.5	9.5	7.3	7.4	7.9	7.6	3.3	70.4	0.0	17.8
	10	1.0	1.9	2.1	2.5	4.5	2.3	2.4	2.9	2.6	0.0	22.1	0.0	1.6

2nd 10-day period (11-20/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	17.0	12.1	12.8
Precipitation - Reference Evapotranspiration	-0.9	-12.1	26.2
Number of Rainy Days	6.0	0.0	4.9
Number of Dry Days	0.0	10.0	-

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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