



AGROMETEOROLOGICAL BULLETIN

January 2018
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



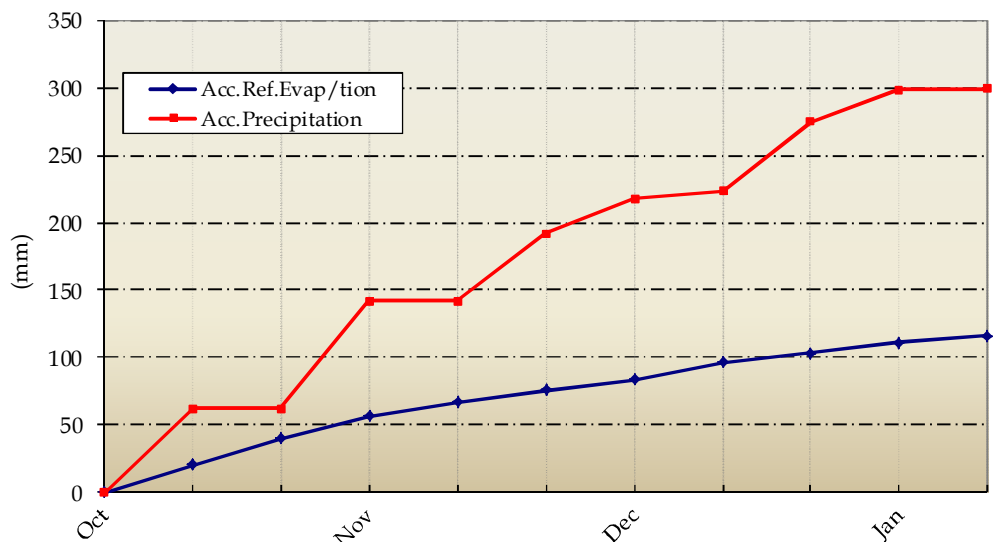
Hellenic National Meteorological Service
Division of Climatology-Applications
El. Venizelou Street 14, 16777
Helliniko, Athens

Web adresses of HNMS
www.emy.gr
www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
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1st 10-day period (1-10/01/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.0	16.0	12.4	9.6	11.8	13.0	13.4	13.0	10.8	10.4	12.4	5.0	8.9
	Min	3.8	5.0	4.2	1.8	-0.8	0.4	4.6	3.8	2.6	8.4	3.4	-4.3	1.5
Relative Humidity	Max	93	97	97	97	94	94	97	97	95	92	95	92	-
	Min	65	75	63	78	47	70	91	79	82	82	73	64	-
Soil Temperature at 10 cm	06 UTC	6.4	7.4	7.2	6.6	4.0	5.4	6.4	6.8	6.8	8.2	6.5	2.8	5.6
	12 UTC	13.6	9.0	7.6	7.4	7.0	7.0	8.4	8.4	8.4	8.6	8.5	3.6	6.6
Sunshine Duration		8.2	4.5	1.4	0.0	7.6	8.0	1.8	0.8	1.0	0.0	3.3	2.7	2.7
Precipitation					0.9							0.9	43.0	17.5
Evaporation		0.9	0.5	1.0	0.0	0.0	0.8	0.4	0.1	0.7	0.6	5.0	0.4	8.4
Growing Degrees	5	3.9	5.5	3.3	0.7	0.5	1.7	4.0	3.4	1.7	4.4	29.1	2.1	17.3
	10	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	2.8

1st 10-day period (1-10/01/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	5.5	6.0	7.7
Precipitation - Reference Evapotranspiration	-4.6	37.0	9.8
Number of Rainy Days	1.0	4.0	2.8
Number of Dry Days	4.0	0.0	-

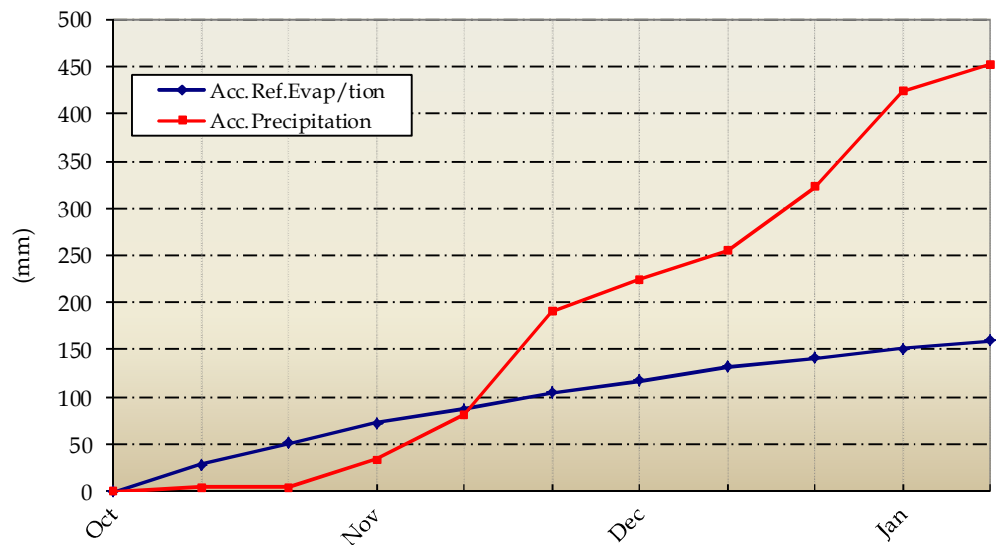
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/01/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.0	16.4	14.0	13.4	14.2	11.6	18.0	18.2	17.2	17.2	15.6	10.7	13.8
	Min	3.4	4.9	5.5	7.6	3.4	8.3	10.2	9.8	10.2	9.8	7.3	2.4	5.4
Relative Humidity	Max	81	89	91	89	87	90	90	88	89	90	88	86	-
	Min	56	52	58	57	53	54	58	51	66	53	56	52	-
Soil Temperature at 10 cm	06 UTC	8.8	10.8	10.6	10.6	9.0	10.4	11.2	11.4	11.9	11.6	10.6	-	8.9
	12 UTC	10.8	11.4	11.4	12.0	9.8	11.5	12.2	12.0	12.4	12.6	11.6	-	10.3
Sunshine Duration		5.1	3.3	5.2	3.8	6.1	7.3	4.0	1.6	0.5	1.0	3.8	2.7	4.5
Precipitation			3.2	4.9	20.9							29.0	26.4	38.0
Evaporation		2.8	0.3	4.7	2.2	1.0	3.0	2.0	1.0	2.0	0.7	19.7	32.0	17.8
Growing Degrees	5	4.7	5.7	4.8	5.5	3.8	5.0	9.1	9.0	8.7	8.5	64.7	25.7	46.8
	10	0.0	0.7	0.0	0.5	0.0	0.0	4.1	4.0	3.7	3.5	16.5	2.6	10.2

1st 10-day period (1-10/01/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	8.0	9.3	9.2
Precipitation - Reference Evapotranspiration	21.0	17.1	28.8
Number of Rainy Days	3.0	5.0	4.0
Number of Dry Days	2.0	6.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

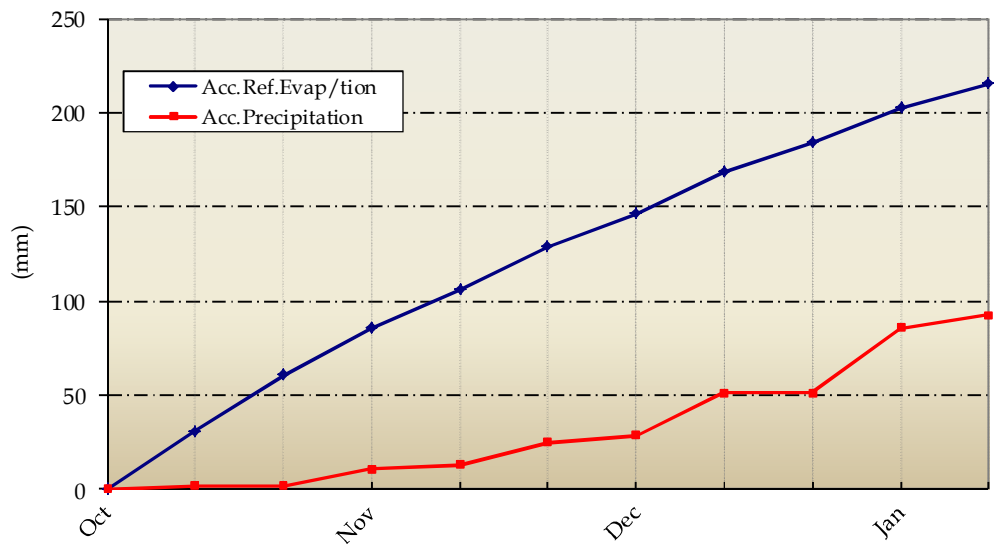


Iraklio

1st 10-day period (1-10/01/2018)		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	18.4	14.4	17.0	15.2	16.2	17.0	17.4	16.6	17.2	16.6	11.9	15.3
	Min	8.0	8.4	10.0	10.0	11.6	7.8	10.0	11.4	9.0	10.8	9.7	6.4	9.3
Relative Humidity	Max	91	91	92	90	85	92	92	97	95	92	92	88	-
	Min	43	62	73	70	62	69	73	74	77	71	67	60	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.0	3.0	1.8	1.8	7.3	7.9	5.5	7.6	6.0	3.3	5.2	3.8	4.0
Precipitation				0.8	5.8	0.2						6.8	78.0	27.8
Evaporation		2.3	2.4	0.9	3.0	2.7	0.3	0.3	2.0	1.2	0.8	15.9	7.7	23.8
Growing Degrees	5	7.3	8.4	7.2	8.5	8.4	7.0	8.5	9.4	7.8	9.0	81.5	44.0	73.0
	10	2.3	3.4	2.2	3.5	3.4	2.0	3.5	4.4	2.8	4.0	31.5	14.2	25.4

1st 10-day period (1-10/01/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	12.9	12.5	-
Precipitation - Reference Evapotranspiration	-6.1	65.5	27.8
Number of Rainy Days	3.0	7.0	4.3
Number of Dry Days	2.0	0.0	-

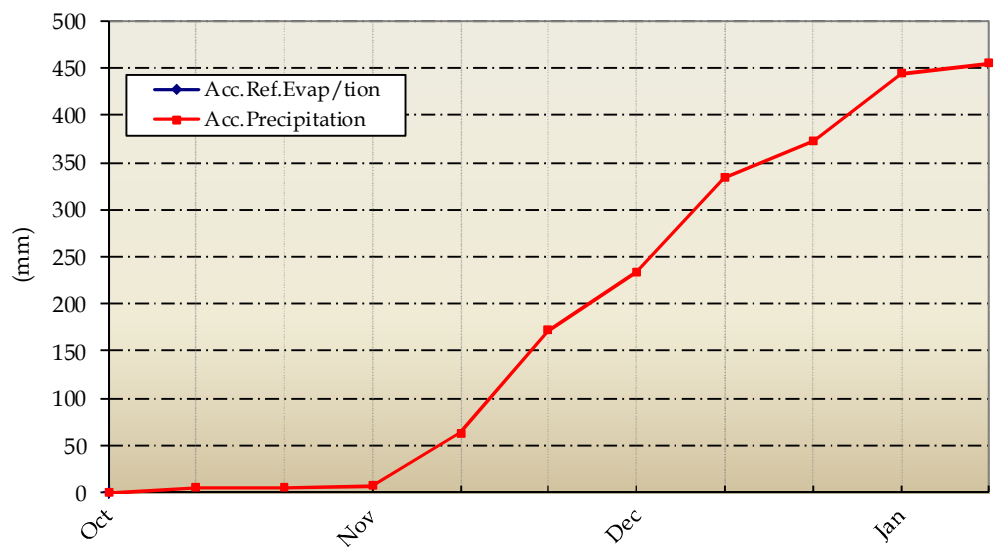
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/01/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	10.0	11.2	10.6	9.0	11.0	10.8	14.0	13.0	10.6	14.2	11.4	4.6	8.6
	Min	-3.4	3.2	1.0	2.8	-2.0	2.2	2.8	1.4	1.6	3.2	1.3	-4.8	0.3
Relative Humidity	Max	100	100	100	100	100	96	97	100	100	100	99	96	-
	Min	69	64	56	62	48	70	69	70	87	67	66	57	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	3.4
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	4.3
Sunshine Duration		3.6	3.2	5.6	3.7	5.6	0.0	3.6	1.7	1.0	2.1	3.0	3.4	2.9
Precipitation			5.1	2.0	4.0							11.1	37.2	36.2
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	0.6
Growing Degrees	5	0.0	2.2	0.8	0.9	0.0	1.5	3.4	2.2	1.1	3.7	15.8	1.4	11.8
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3

1st 10-day period (1-10/01/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	6.1
Precipitation - Reference Evapotranspiration	-	-	30.1
Number of Rainy Days	3.0	5.0	4.0
Number of Dry Days	3.0	28.0	-

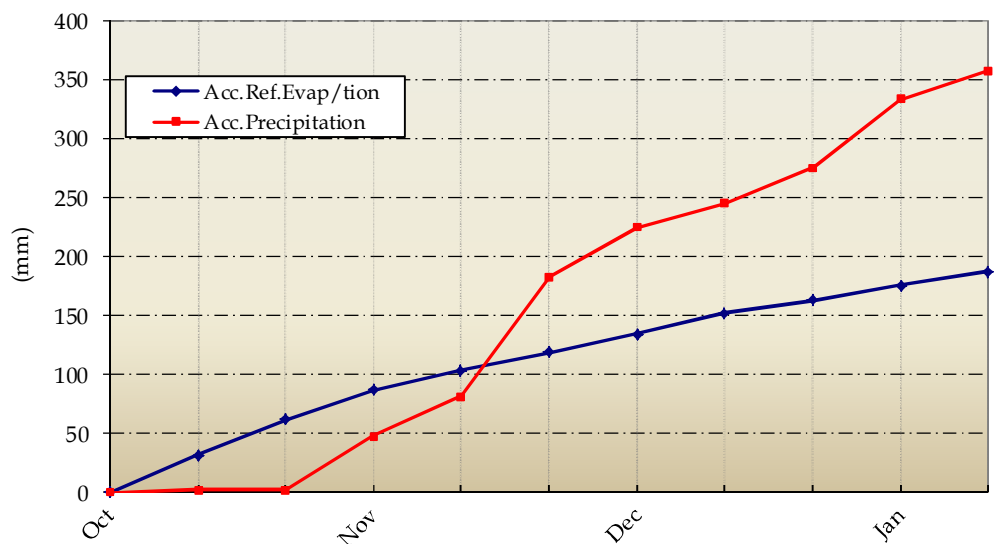
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/01/2018)		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	18.3	16.5	15.7	16.5	18.1	18.8	18.2	17.4	17.7	17.4	11.6	14.7
	Min	2.4	7.7	5.4	5.5	2.1	5.0	10.8	8.2	9.6	9.9	6.7	1.7	5.3
Relative Humidity	Max	80	89	93	93	91	92	92	92	91	93	91	92	-
	Min	42	46	47	52	33	54	57	53	64	48	50	47	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	9.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	10.4
Sunshine Duration		7.5	5.7	7.7	4.3	4.3	6.1	5.3	4.4	1.4	1.9	4.9	4.4	4.5
Precipitation			1.6	2.7	19.8							24.1	35.6	30.6
Evaporation		2.1	0.2	0.7	0.1	1.0	3.0	2.1	1.9	1.4	0.3	12.8	12.7	22.0
Growing Degrees	5	4.8	8.0	6.0	5.6	4.3	6.6	9.8	8.2	8.5	8.8	70.5	22.3	49.2
	10	0.0	3.0	1.0	0.6	0.0	1.6	4.8	3.2	3.5	3.8	21.4	0.9	10.6

1st 10-day period (1-10/01/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	11.8	10.6	11.0
Precipitation - Reference Evapotranspiration	12.3	25.0	19.6
Number of Rainy Days	3.0	5.0	4.0
Number of Dry Days	2.0	3.0	-

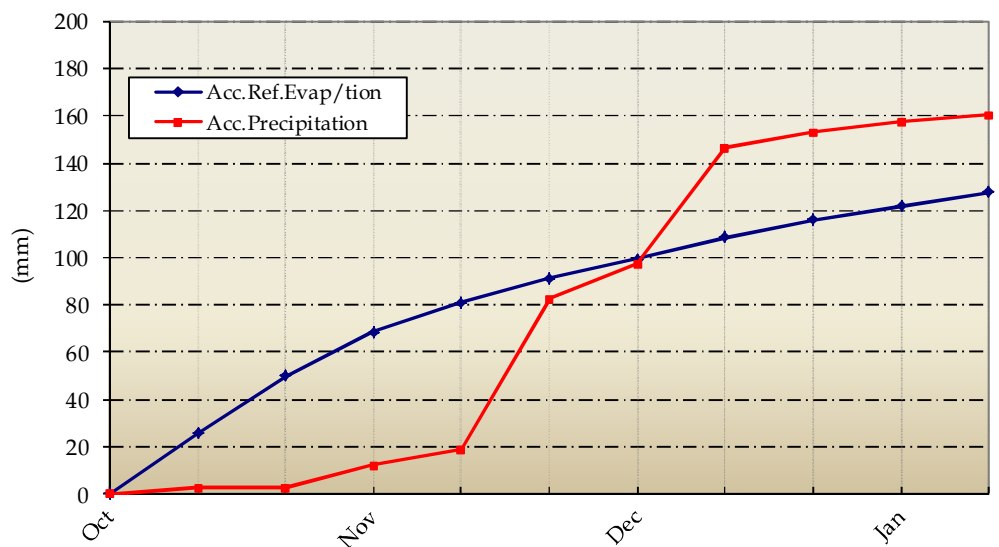
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/01/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.2	15.8	14.2	10.5	12.8	13.6	14.0	10.5	10.2	9.0	12.4	5.9	9.7
	Min	-2.2	1.4	6.2	2.0	-2.0	-1.8	-1.6	1.0	5.2	7.4	1.6	-5.7	0.5
Relative Humidity	Max	99	97	94	97	100	100	100	100	100	100	99	95	-
	Min	50	44	42	66	49	58	57	88	93	97	64	49	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	4.6	5.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	4.5	5.9
Sunshine Duration		6.1	4.6	7.0	2.8	7.0	6.9	5.9	0.0	0.0	0.0	4.0	3.5	3.9
Precipitation				0.0	2.8						0.0	2.8	2.3	11.6
Evaporation		0.1	1.0	1.2	0.0	0.0	0.2	1.6	0.6	0.5	0.0	5.2	2.4	5.2
Growing Degrees	5	0.5	3.6	5.2	1.3	0.4	0.9	1.2	0.8	2.7	3.2	19.7	0.8	13.7
	10	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	1.0

1st 10-day period (1-10/01/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	5.8	6.9	6.2
Precipitation - Reference Evapotranspiration	-3.0	-4.6	5.4
Number of Rainy Days	1.0	2.0	2.5
Number of Dry Days	6.0	7.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

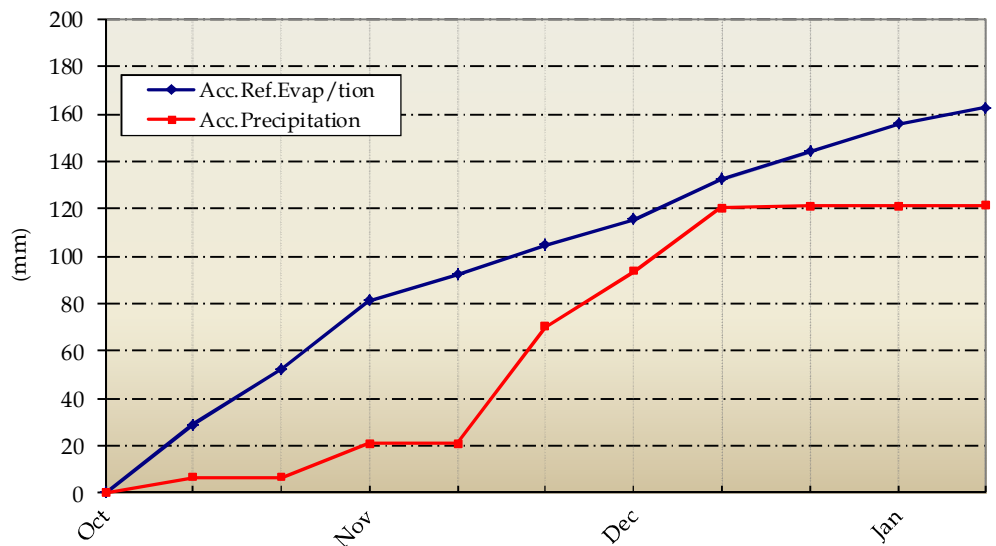


Mikra

1st 10-day period (1-10/01/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	11.9	13.3	12.5	10.8	12.0	12.2	12.7	10.6	10.0	10.4	11.6	4.3	9.2
	Min	-1.0	4.0	5.4	2.4	-0.4	0.6	5.3	5.6	4.4	8.0	3.4	-4.4	1.5
Relative Humidity	Max	77	80	66	75	76	79	86	89	93	91	81	79	-
	Min	41	61	39	46	44	54	61	75	82	84	59	46	-
Soil Temperature at 10 cm	06 UTC	5.8	6.5	7.3	7.0	6.0	5.3	7.4	9.2	8.0	9.0	7.2	3.0	4.9
	12 UTC	7.4	7.2	8.0	7.6	7.0	6.8	8.0	9.6	8.8	9.4	8.0	3.1	6.2
Sunshine Duration		7.0	7.3	7.4	3.6	7.6	8.0	4.3	0.0	0.0	0.0	4.5	4.2	3.7
Precipitation			0.0		0.3							0.3	4.7	14.1
Evaporation		0.0	1.0	2.7	1.0	2.5	1.1	0.5	0.1	0.4	0.3	9.6	0.3	8.7
Growing Degrees	5	0.5	3.7	4.0	1.6	0.8	1.4	4.0	3.1	2.2	4.2	25.4	1.4	16.0
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6

1st 10-day period (1-10/01/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	7.0	11.8	8.8
Precipitation - Reference Evapotranspiration	-6.7	-7.1	5.3
Number of Rainy Days	1.0	2.0	2.6
Number of Dry Days	6.0	31.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

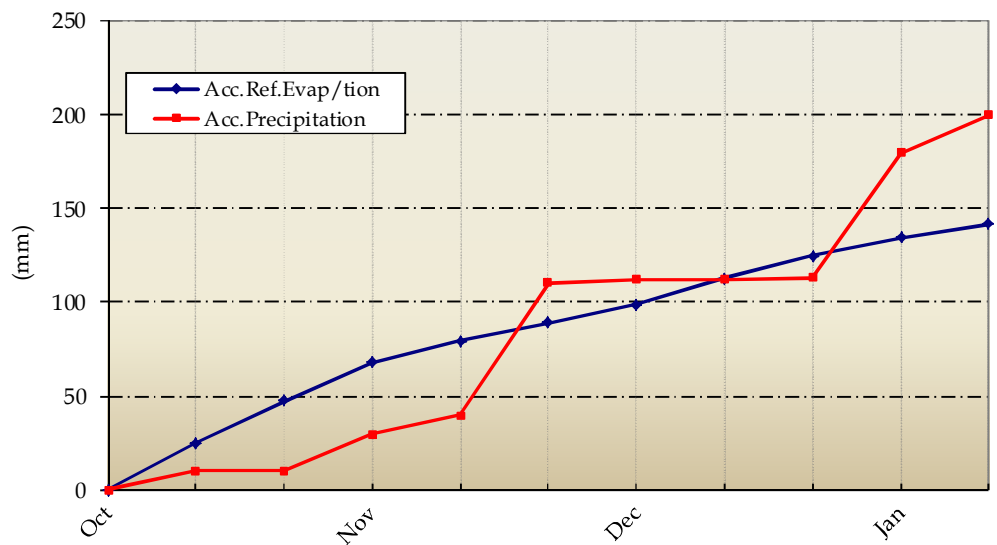


Tanagra

1st 10-day period (1-10/01/2018)		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	17.4	12.8	8.9	14.8	14.8	16.8	13.1	14.6	12.6	14.3	7.4	12.2
	Min	0.0	7.0	7.6	3.1	0.2	1.5	2.6	4.2	7.3	9.4	4.3	-0.9	3.9
Relative Humidity	Max	99	98	99	100	98	100	100	100	100	99	99	95	-
	Min	36	30	48	49	33	55	62	90	68	79	55	57	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		7.2	5.5	5.2	0.0	7.5	7.5	4.1	0.1	2.1	2.0	4.1	3.6	
Precipitation				4.2	16.3							20.5	2.3	18.0
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	3.6	7.2	5.2	1.0	2.5	3.2	4.7	3.7	6.0	6.0	43.0	16.0	
	10	0.0	2.2	0.2	0.0	0.0	0.0	0.0	0.0	1.0	1.0	4.4	1.6	

1st 10-day period (1-10/01/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	7.5	7.8	
Precipitation - Reference Evapotranspiration	13.0	-5.5	18.0
Number of Rainy Days	2.0	3.0	4.4
Number of Dry Days	4.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

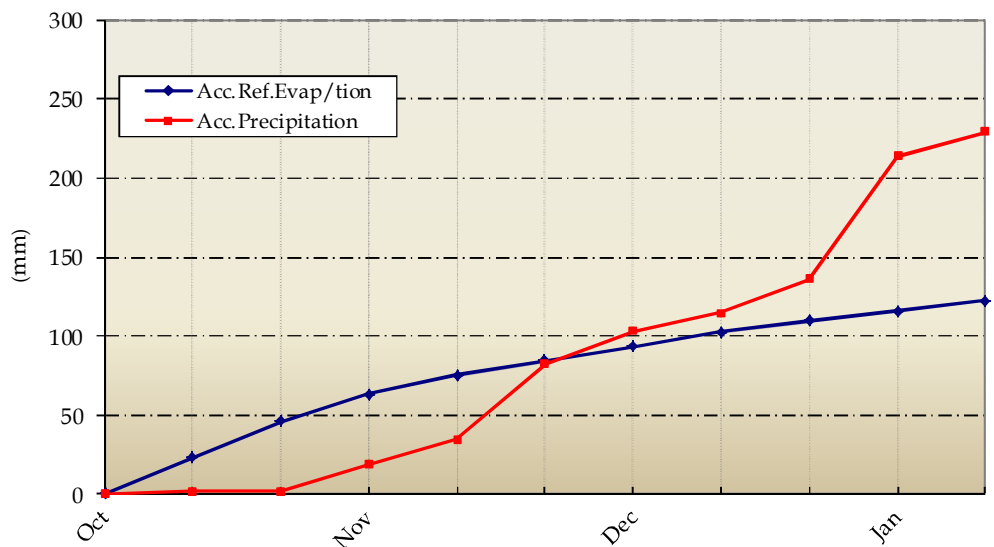


Tripoli

1st 10-day period (1-10/01/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.5	12.6	11.4	11.6	14.2	15.5	15.1	14.6	12.6	10.5	13.4	6.3	12.2
	Min	-3.5	3.0	2.5	4.5	-2.7	-1.3	1.9	1.8	0.1	6.4	1.3	-3.5	3.9
Relative Humidity	Max	99	100	100	100	100	100	100	100	100	100	100	100	-
	Min	32	48	49	46	26	54	58	59	63	74	51	55	-
Soil Temperature at 10 cm	06 UTC	2.6	5.0	5.4	5.4	3.8	3.8	5.4	5.6	5.2	6.8	4.9	2.5	
	12 UTC	-	6.4	7.8	7.2	5.8	-	-	7.2	6.4	8.0	7.0	2.8	
Sunshine Duration		6.9	6.0	6.0	6.3	6.8	7.2	5.1	3.9	0.9	1.1	5.0	3.7	
Precipitation			0.7	6.1	8.1							14.9	38.3	18.0
Evaporation		0.0	1.4	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.1	2.5	0.9	
Growing Degrees	5	1.0	2.8	2.0	3.1	0.8	2.1	3.5	3.2	1.4	3.5	23.2	3.7	
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

1st 10-day period (1-10/01/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	7.0	6.3	
Precipitation - Reference Evapotranspiration	7.9	32.0	18.0
Number of Rainy Days	3.0	5.0	4.4
Number of Dry Days	2.0	4.0	-

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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