



AGROMETEOROLOGICAL BULLETIN

March 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



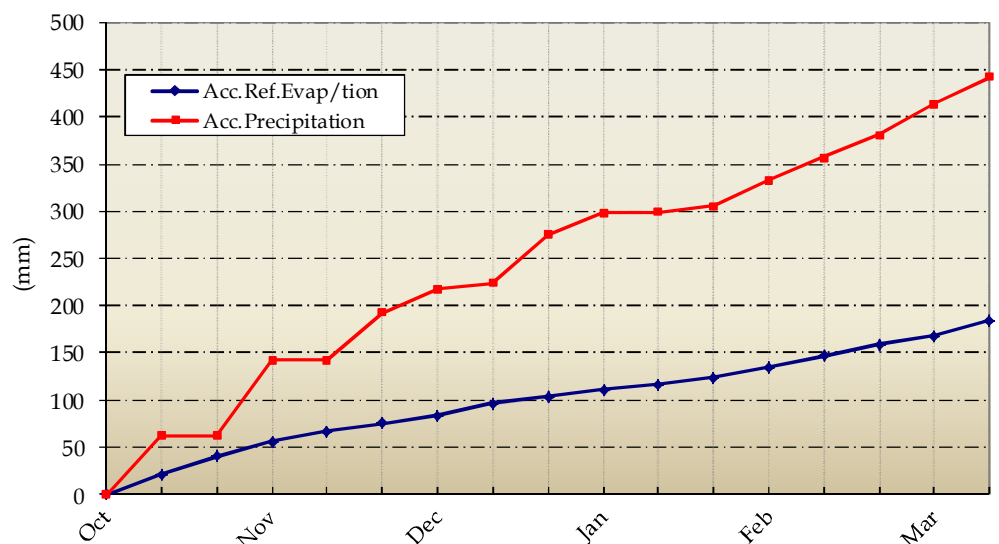
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www.emy.gr
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1st 10-day period (1-10/03/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	3.8	12.6	15.8	17.2	9.8	12.6	18.6	15.4	15.0	15.6	13.6	14.9	10.6
	Min	-4.2	2.8	11.2	8.6	4.6	7.2	11.0	9.2	4.8	3.2	5.8	6.7	2.2
Relative Humidity	Max	73	93	97	86	90	92	80	97	97	96	90	93	-
	Min	39	67	63	59	73	77	57	74	58	65	63	66	-
Soil Temperature at 10 cm	06 UTC	3.0	5.0	9.2	9.6	8.0	8.0	11.0	10.4	10.2	8.8	8.3	9.9	5.9
	12 UTC	4.8	6.6	12.2	12.6	9.0	9.6	13.2	11.4	12.4	13.0	10.5	13.0	8.0
Sunshine Duration		8.0	0.0	8.3	7.5	1.6	3.6	8.4	2.6	9.5	8.5	5.8	4.0	4.8
Precipitation			7.4	12.6	1.4		3.4		3.4	0.4		28.6	24.6	16.7
Evaporation		0.0	0.0	4.9	3.1	1.4	1.4	3.0	0.3	3.5	3.6	21.2	17.0	18.5
Growing Degrees	5	0.0	2.7	8.5	7.9	2.2	4.9	9.8	7.3	4.9	4.4	52.6	58.3	22.8
	10	0.0	0.0	3.5	2.9	0.0	0.0	4.8	2.3	0.0	0.0	13.5	10.6	2.2

1st 10-day period (1-10/03/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	16.4	14.5	16.2
Precipitation - Reference Evapotranspiration	12.2	10.1	0.5
Number of Rainy Days	6.0	4.0	2.2
Number of Dry Days	1.0	3.0	-

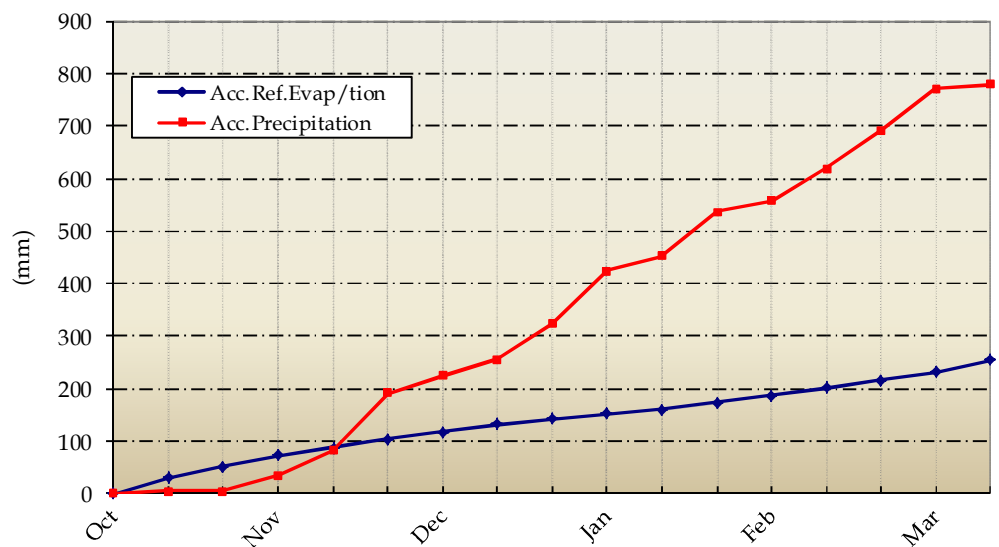
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/03/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.6	18.6	19.6	19.9	25.2	18.8	18.8	16.4	16.4	17.4	18.6	16.9	15.2
	Min	4.4	7.6	13.2	12.6	8.7	12.6	11.4	11.4	6.9	6.0	9.5	7.9	5.8
Relative Humidity	Max	83	88	89	89	88	89	90	88	86	87	88	89	-
	Min	38	53	55	44	32	38	49	44	47	39	44	52	-
Soil Temperature at 10 cm	06 UTC	10.4	11.4	12.8	12.0	12.4	14.5	14.2	14.8	13.1	12.8	12.8	11.7	10.0
	12 UTC	12.2	11.8	14.2	15.2	15.0	15.6	15.4	15.5	14.8	15.0	14.5	14.4	12.2
Sunshine Duration		5.1	0.9	0.0	7.0	5.2	4.2	7.9	8.1	4.3	10.0	5.3	5.6	6.1
Precipitation			0.6			0.3	2.6		3.6			7.1	21.1	26.8
Evaporation		3.0	0.6	1.4	3.0	1.9	3.0	2.6	2.0	3.0	7.0	27.5	22.2	25.2
Growing Degrees	5	4.5	8.1	11.4	11.3	12.0	10.7	10.1	8.9	6.7	6.7	90.3	74.4	55.6
	10	0.0	3.1	6.4	6.3	7.0	5.7	5.1	3.9	1.7	1.7	40.8	24.4	13.0

1st 10-day period (1-10/03/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	22.9	20.0	18.0
Precipitation - Reference Evapotranspiration	-15.8	1.1	8.8
Number of Rainy Days	4.0	4.0	3.2
Number of Dry Days	1.0	1.0	-

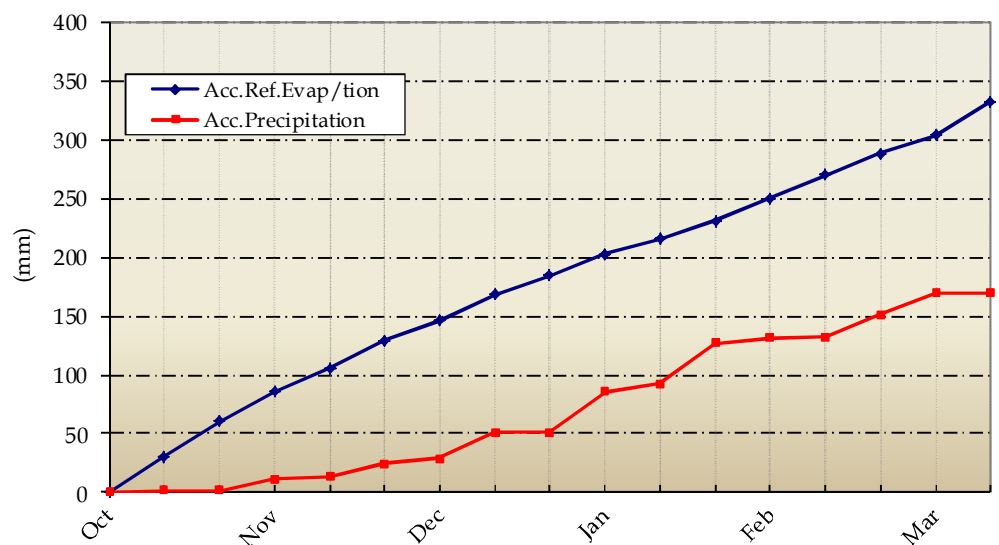
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/03/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.2	21.2	20.6	25.8	24.6	22.0	26.6	20.4	16.4	17.2	21.1	17.4	15.6
	Min	9.6	10.2	16.6	14.0	18.0	12.0	17.0	12.4	10.0	9.4	12.9	10.2	8.9
Relative Humidity	Max	89	79	88	76	84	87	82	78	87	87	84	94	-
	Min	65	48	60	45	25	32	38	46	55	63	48	79	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.7	7.1	5.1	2.0	3.2	8.2	1.2	8.8	3.4	8.9	5.7	7.0	5.3
Precipitation													20.0	20.8
Evaporation		0.4	5.9	2.6	3.8	4.3	6.5	4.1	3.2	3.8	2.7	37.3	19.8	33.2
Growing Degrees	5	7.9	10.7	13.6	14.9	16.3	12.0	16.8	11.4	8.2	8.3	120.1	87.7	72.7
	10	2.9	5.7	8.6	9.9	11.3	7.0	11.8	6.4	3.2	3.3	70.1	37.7	25.3

1st 10-day period (1-10/03/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	28.6	19.7	-
Precipitation - Reference Evapotranspiration	-28.6	0.3	20.8
Number of Rainy Days	0.0	3.0	3.3
Number of Dry Days	12.0	21.0	-

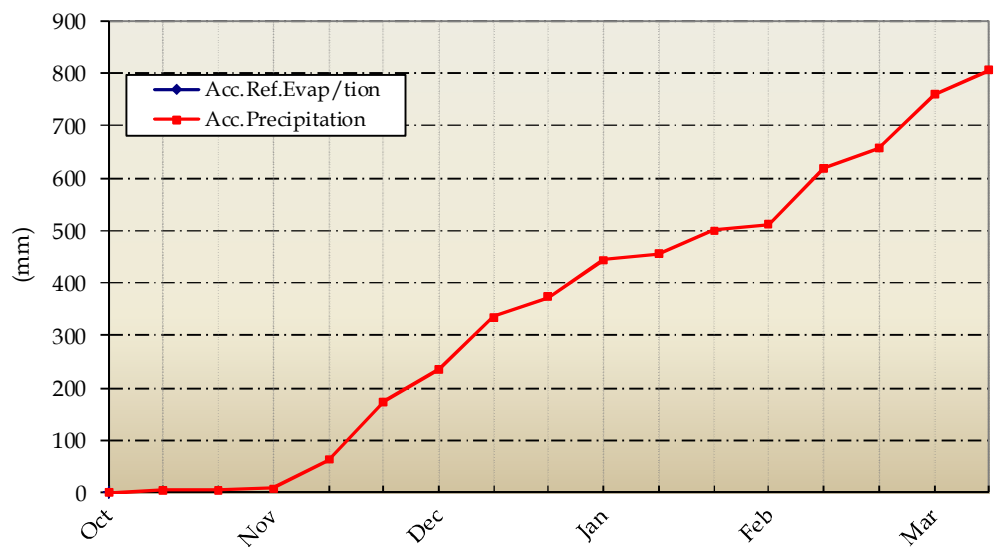
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/03/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	4.0	10.2	14.6	18.0	16.8	14.8	14.2	14.6	14.8	17.4	13.9	15.0	12.2
	Min	-2.0	3.6	6.5	8.0	5.4	9.8	8.4	7.4	1.5	0.4	4.9	2.1	1.7
Relative Humidity	Max	98	97	100	95	97	100	100	100	97	86	97	98	-
	Min	78	76	44	44	47	66	60	62	33	33	54	51	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	5.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	7.3
Sunshine Duration		0.0	0.0	3.7	7.0	2.7	2.1	6.7	7.4	6.0	9.1	4.5	3.6	4.6
Precipitation		0.0	5.1	1.3	7.3	2.0	14.1	2.4	15.1			47.3	27.7	27.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	14.8
Growing Degrees	5	0.0	1.9	5.6	8.0	6.1	7.3	6.3	6.0	3.2	3.9	48.2	-	25.1
	10	0.0	0.0	0.6	3.0	1.1	2.3	1.3	1.0	0.0	0.0	9.3	-	2.0

1st 10-day period (1-10/03/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	15.2
Precipitation - Reference Evapotranspiration	-	-	12.1
Number of Rainy Days	7.0	4.0	3.5
Number of Dry Days	1.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

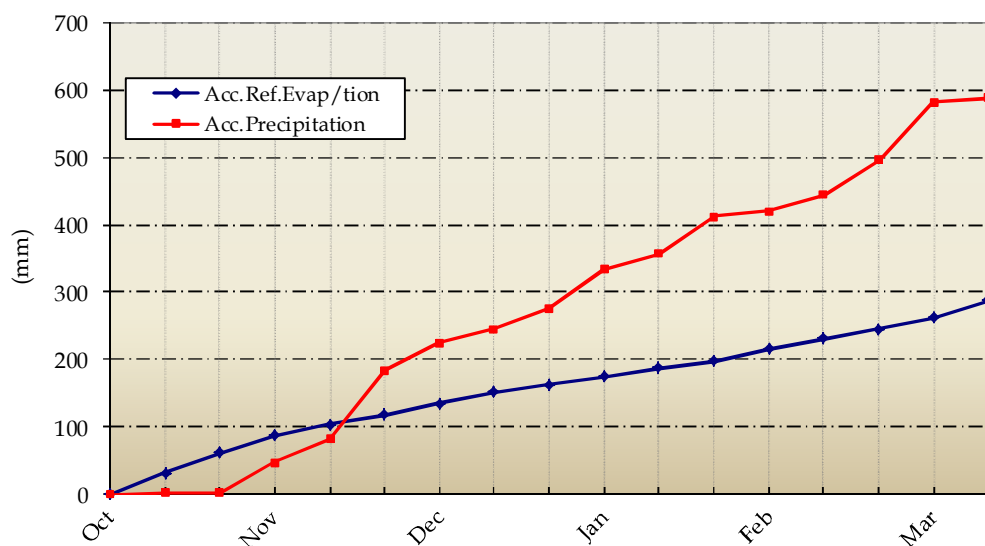


Kalamata

1st 10-day period (1-10/03/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.8	18.3	23.2	23.3	21.8	18.6	22.0	19.0	18.8	20.3	20.1	18.2	16.0
	Min	4.0	7.5	10.3	10.2	9.0	13.4	12.8	10.2	7.5	6.4	9.1	6.5	5.6
Relative Humidity	Max	88	92	93	93	92	86	91	89	74	83	88	93	-
	Min	44	69	28	32	44	54	44	42	35	33	42	48	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	10.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	12.1
Sunshine Duration		6.9	2.2	7.7	7.9	6.1	5.0	8.8	7.5	5.8	10.5	6.8	6.3	5.8
Precipitation			4.3			0.2	2.0		0.0			6.5	35.7	26.1
Evaporation		3.6	0.1	4.2	3.4	0.2	6.0	4.4	2.2	5.2	3.2	32.5	25.2	29.9
Growing Degrees	5	4.9	7.9	11.8	11.8	10.4	11.0	12.4	9.6	8.2	8.4	96.2	73.6	58.2
	10	0.0	2.9	6.8	6.8	5.4	6.0	7.4	4.6	3.2	3.4	46.3	23.6	14.6

1st 10-day period (1-10/03/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	25.8	22.7	18.8
Precipitation - Reference Evapotranspiration	-19.3	13.0	7.3
Number of Rainy Days	3.0	5.0	3.2
Number of Dry Days	1.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

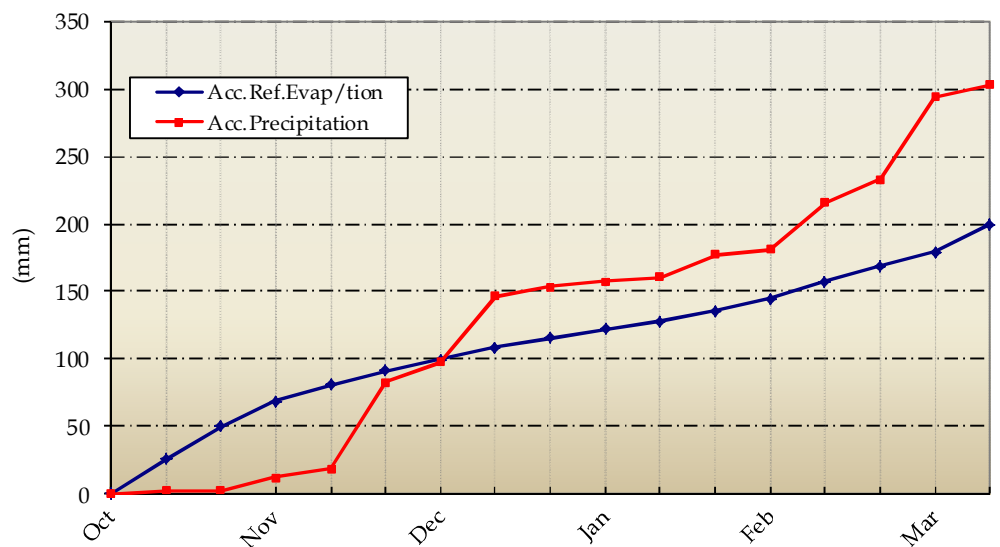


Larisa

1st 10-day period (1-10/03/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	6.4	11.2	19.5	22.0	14.6	19.4	20.4	19.8	16.8	20.0	17.0	17.2	13.6
	Min	-1.8	3.2	1.4	6.3	9.6	6.6	7.6	7.0	2.6	0.6	4.3	5.3	2.4
Relative Humidity	Max	83	96	100	88	97	98	83	94	90	90	92	98	-
	Min	42	66	30	33	78	55	28	27	36	35	43	47	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	7.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	8.9
Sunshine Duration		0.0	0.8	5.7	8.3	0.0	7.7	9.2	8.4	5.7	9.3	5.5	5.2	4.9
Precipitation						2.5	6.6		0.1			9.2	23.0	10.9
Evaporation		0.6	0.8	2.5	2.5	1.6	4.3	5.0	6.6	2.3	3.1	29.3	23.2	18.9
Growing Degrees	5	0.0	2.2	5.5	9.2	7.1	8.0	9.0	8.4	4.7	5.3	59.3	62.6	34.4
	10	0.0	0.0	0.5	4.2	2.1	3.0	4.0	3.4	0.0	0.3	17.4	12.6	4.1

1st 10-day period (1-10/03/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	20.6	19.6	17.1
Precipitation - Reference Evapotranspiration	-11.4	3.4	-6.2
Number of Rainy Days	3.0	5.0	3.2
Number of Dry Days	4.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

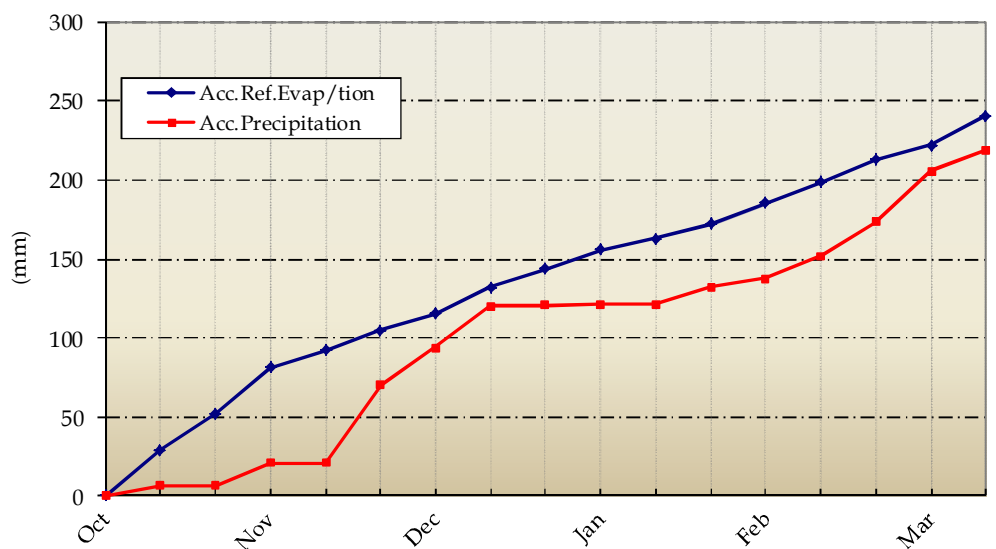


Mikra

1st 10-day period (1-10/03/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	5.0	8.4	18.6	22.0	22.0	14.2	21.0	16.9	17.0	17.9	16.3	15.6	12.6
	Min	-2.7	4.2	6.7	10.9	10.0	9.6	8.1	8.4	8.0	3.1	6.6	7.4	3.4
Relative Humidity	Max	74	90	93	74	93	93	92	74	72	79	83	91	-
	Min	45	61	27	25	64	75	28	43	32	35	44	52	-
Soil Temperature at 10 cm	06 UTC	4.8	6.2	7.8	10.2	11.2	10.8	11.0	11.6	11.3	10.0	9.5	10.5	7.2
	12 UTC	6.4	7.0	10.0	12.0	11.2	12.0	13.0	13.0	13.0	11.5	10.9	11.9	9.8
Sunshine Duration		2.0	0.0	7.1	9.4	0.0	1.5	9.8	8.4	8.3	10.0	5.6	4.8	4.9
Precipitation				1.9		5.8	5.5		0.0			13.2	20.4	13.0
Evaporation		0.5	0.4	1.4	3.4	1.3	1.0	4.0	5.0	3.1	2.9	23.0	22.0	22.1
Growing Degrees	5	0.0	1.3	7.7	11.5	11.0	6.9	9.6	7.7	7.5	5.5	68.5	65.1	33.9
	10	0.0	0.0	2.7	6.5	6.0	1.9	4.6	2.7	2.5	0.5	27.2	15.6	4.3

1st 10-day period (1-10/03/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	18.4	17.9	17.6
Precipitation - Reference Evapotranspiration	-5.2	2.5	-4.6
Number of Rainy Days	3.0	5.0	3.2
Number of Dry Days	2.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

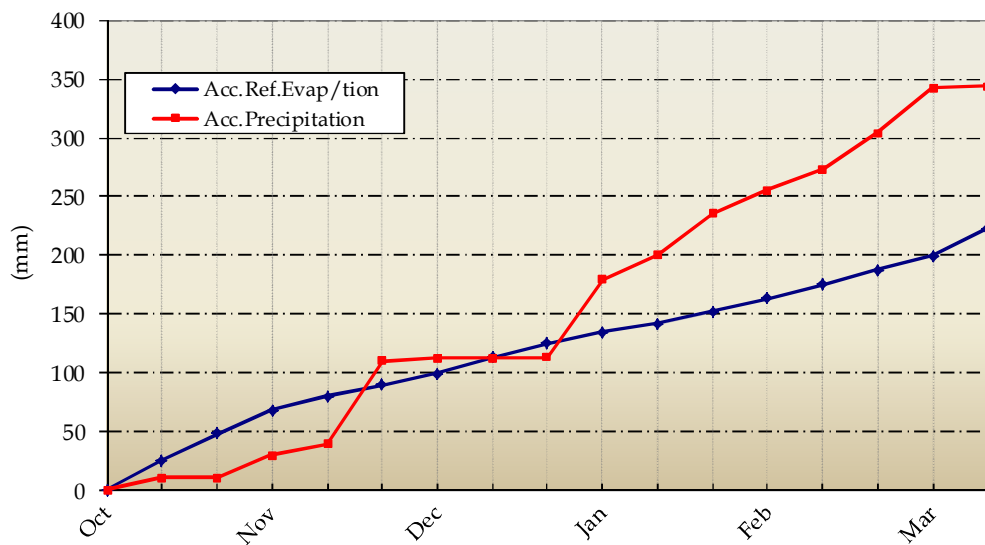


Tanagra

1st 10-day period (1-10/03/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	10.5	15.4	21.3	21.1	16.6	20.7	21.4	17.8	16.0	19.2	18.0	16.9	13.1
	Min	1.0	7.0	14.0	12.0	6.8	10.8	14.3	12.7	3.1	1.2	8.3	6.2	3.8
Relative Humidity	Max	81	79	61	85	99	100	63	74	82	100	82	96	-
	Min	54	61	23	26	70	37	30	34	34	30	40	46	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		5.4	0.2	6.5	7.9	2.7	8.6	9.0	8.1	3.7	10.1	6.2	5.8	
Precipitation						0.0	1.1		0.7			1.8	42.0	19.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	0.8	6.2	12.7	11.6	6.7	10.8	12.9	10.3	4.6	5.2	81.5	65.5	
	10	0.0	1.2	7.7	6.6	1.7	5.8	7.9	5.3	0.0	0.2	36.2	15.5	

1st 10-day period (1-10/03/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	23.2	19.3	
Precipitation - Reference Evapotranspiration	-21.4	22.7	19.5
Number of Rainy Days	2.0	4.0	4.7
Number of Dry Days	5.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

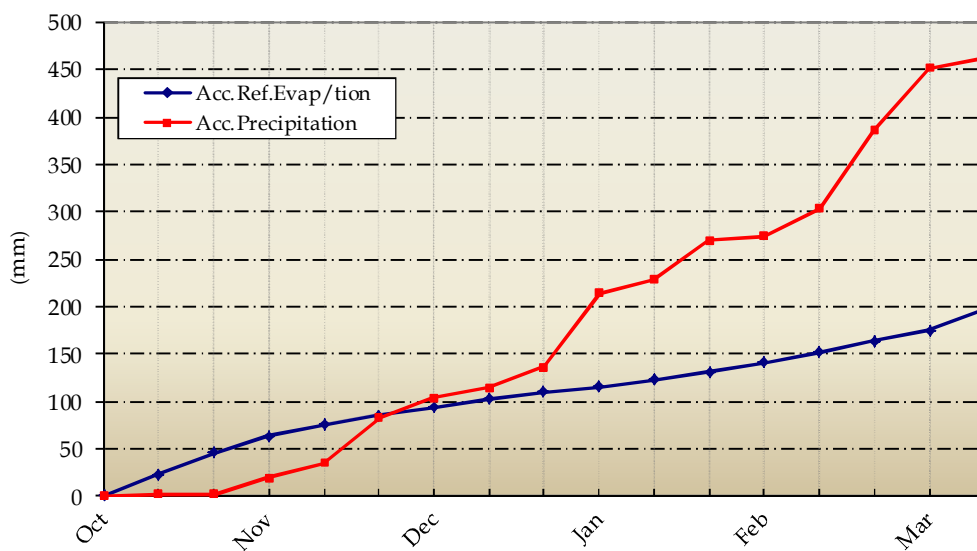


Tripoli

1st 10-day period (1-10/03/2018)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.3	12.6	17.8	19.5	15.9	16.4	17.1	13.1	16.2	18.5	16.1	15.1	11.8
	Min	-0.7	5.5	8.9	10.1	4.2	10.1	10.3	7.5	-0.9	-0.1	5.5	1.7	1.3
Relative Humidity	Max	94	94	93	75	98	86	85	85	100	98	91	100	-
	Min	45	69	21	14	51	46	24	34	17	21	34	42	-
Soil Temperature at 10 cm	06 UTC	6.2	8.2	8.8	9.6	9.0	10.4	11.2	10.2	7.6	8.4	9.0	7.6	6.2
	12 UTC	9.4	9.6	-	-	11.8	12.8	12.8	11.2	11.2	-	11.3	10.4	7.4
Sunshine Duration		5.9	0.8	7.7	9.2	6.0	5.6	9.7	8.9	7.3	9.2	7.0	6.0	5.4
Precipitation			1.5			4.2	1.2	0.1	4.0			11.0	29.2	26.7
Evaporation		1.6	0.3	3.8	3.3	2.1	2.9	3.9	2.8	3.3	-	-	18.8	15.8
Growing Degrees	5	1.8	4.1	8.4	9.8	5.1	8.3	8.7	5.3	2.7	4.2	58.2	34.3	22.7
	10	0.0	0.0	3.4	4.8	0.1	3.3	3.7	0.3	0.0	0.0	15.5	0.3	1.9

1st 10-day period (1-10/03/2018)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	22.0	18.1	17.7
Precipitation - Reference Evapotranspiration	-11.0	11.1	9.0
Number of Rainy Days	5.0	4.0	3.4
Number of Dry Days	1.0	3.0	-

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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