



AGROMETEOROLOGICAL BULLETIN

April 2019
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



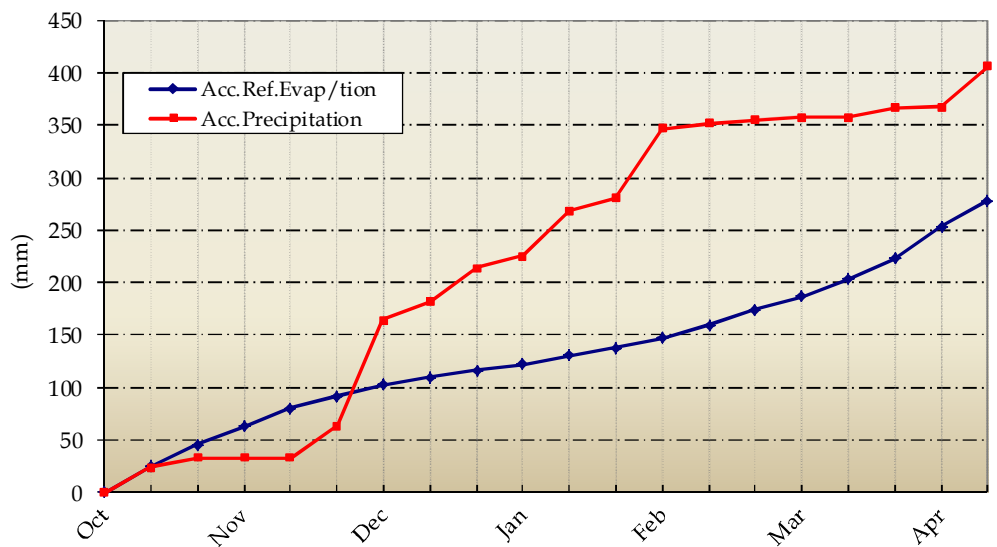
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www.emy.gr
www.hnms.gr
www.emy.gov.gr
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1st 10-day period (1-10/04/2019)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.4	19.4	16.6	16.8	17.0	16.4	14.0	18.4	16.0	14.0	16.4	20.0	16.7
	Min	0.8	4.0	3.2	6.0	2.2	6.0	9.2	11.6	12.0	9.8	6.5	8.3	6.5
Relative Humidity	Max	82	84	73	97	87	97	95	93	95	98	90	90	-
	Min	39	19	22	31	29	49	84	65	66	82	49	42	-
Soil Temperature at 10 cm	06 UTC	10.0	11.2	11.0	11.0	11.0	11.6	12.6	12.8	13.0	12.0	11.6	12.2	10.4
	12 UTC	16.4	16.6	16.6	16.2	16.4	14.8	13.0	15.6	15.4	14.0	15.5	16.0	13.5
Sunshine Duration		11.2	10.3	10.5	11.0	11.2	1.0	0.0	1.3	2.2	0.5	5.9	8.6	6.1
Precipitation								7.2	9.9	20.0	1.7	38.8	1.8	11.5
Evaporation		4.4	8.0	4.8	4.9	2.3	3.1	0.7	8.0	2.9	0.3	39.4	41.8	34.0
Growing Degrees	5	3.1	6.7	4.9	6.4	4.6	6.2	6.6	10.0	9.0	6.9	64.4	91.3	66.0
	10	0.0	1.7	0.0	1.4	0.0	1.2	1.6	5.0	4.0	1.9	16.8	41.3	21.0

1st 10-day period (1-10/04/2019)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	24.7	30.2	24.4
Precipitation - Reference Evapotranspiration	14.1	-28.4	-12.9
Number of Rainy Days	4.0	1.0	2.6
Number of Dry Days	10.0	9.0	-

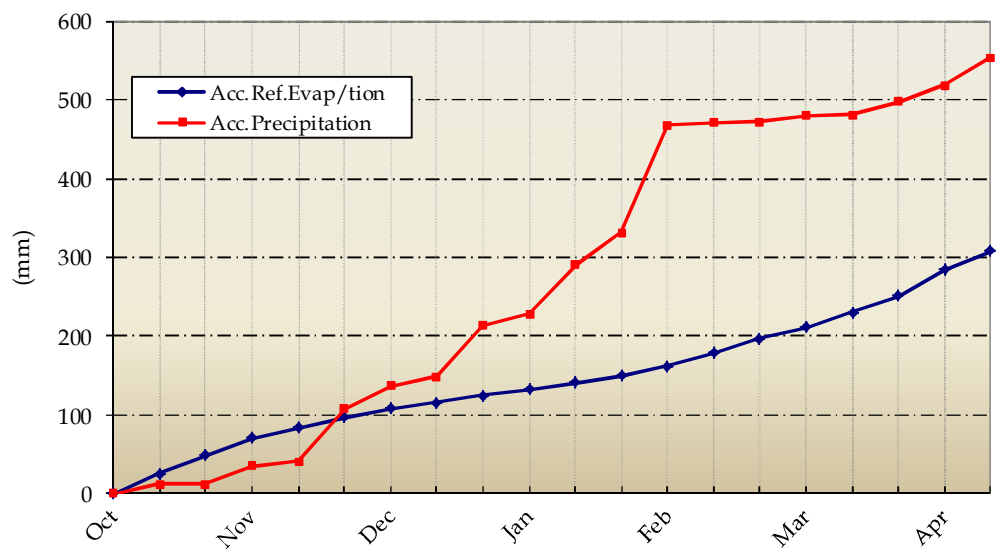
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/04/2019)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.4	22.4	20.7	19.6	19.8	19.8	16.8	18.0	15.8	18.7	19.1	20.9	18.6
	Min	3.8	5.8	5.8	11.2	11.8	12.0	13.0	11.9	10.4	12.4	9.8	9.2	8.6
Relative Humidity	Max	97	100	89	93	100	94	100	100	88	100	96	86	-
	Min	34	24	30	40	30	55	64	55	61	49	44	37	-
Soil Temperature at 10 cm	06 UTC	12.4	13.4	13.0	14.6	15.6	15.0	15.2	15.6	14.8	15.0	14.5	15.7	12.9
	12 UTC	16.2	15.2	15.6	17.0	18.8	19.0	16.4	15.8	15.6	16.2	16.6	18.4	15.7
Sunshine Duration		10.7	9.8	9.2	8.1	1.2	0.0	0.0	1.8	3.7	7.4	5.2	9.4	6.9
Precipitation						4.6	11.2	1.6	14.2	1.5	2.0	35.1		14.7
Evaporation		1.9	5.6	7.0	7.1	4.2	1.7	1.0	5.5	5.0	3.0	42.0	41.5	34.4
Growing Degrees	5	6.6	9.1	8.3	10.4	10.8	10.9	9.9	10.0	8.1	10.6	94.6	100.4	86.1
	10	1.6	4.1	3.3	5.4	5.8	5.9	4.9	5.0	3.1	5.6	44.6	50.4	36.7

1st 10-day period (1-10/04/2019)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	23.8	32.4	26.7
Precipitation - Reference Evapotranspiration	11.3	-32.4	-12.0
Number of Rainy Days	6.0	0.0	2.8
Number of Dry Days	7.0	13.0	-

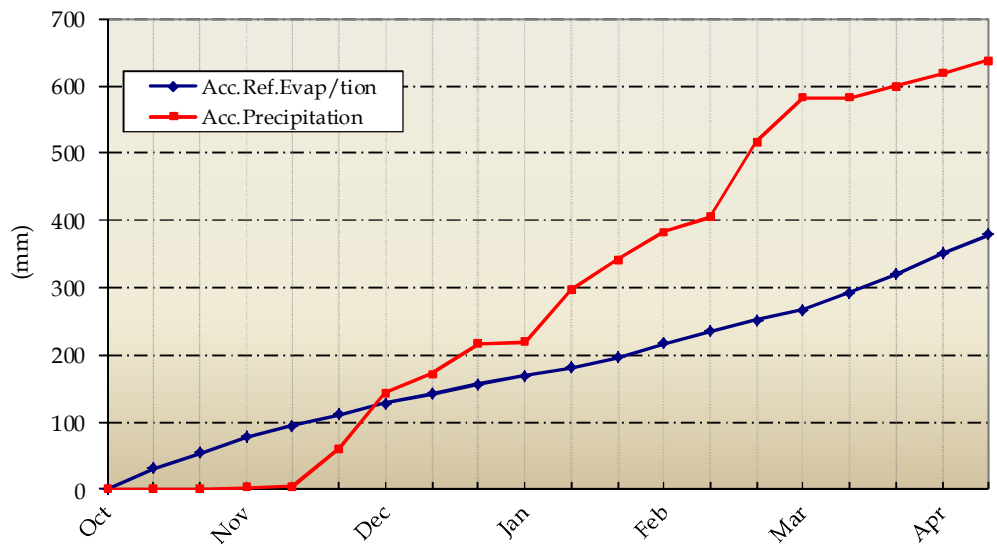
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/04/2019)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.4	17.2	17.0	17.2	17.2	19.0	18.2	20.6	18.8	19.8	18.1	20.0	19.4
	Min	12.2	11.6	9.8	10.2	10.6	12.4	14.0	12.6	11.0	11.4	11.6	11.7	11.6
Relative Humidity	Max	76	83	89	92	92	95	95	90	76	83	87	85	-
	Min	52	57	64	68	59	71	79	59	50	53	61	55	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		4.2	9.3	6.4	8.0	0.0	0.9	5.3	5.5	10.0	10.1	6.0	9.9	7.0
Precipitation		0.0				0.0	14.3	1.8	2.8			18.9	0.7	8.6
Evaporation		2.4	2.2	2.4	2.2	0.7	1.4	2.6	1.1	3.2	4.9	23.1	42.3	45.2
Growing Degrees	5	9.3	9.4	8.4	8.7	8.9	10.7	11.1	11.6	9.9	10.6	98.6	108.5	105.0
	10	4.3	4.4	3.4	3.7	3.9	5.7	6.1	6.6	4.9	5.6	48.6	58.5	55.0

1st 10-day period (1-10/04/2019)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	28.3	35.3	-
Precipitation - Reference Evapotranspiration	-9.4	-34.6	8.6
Number of Rainy Days	3.0	1.0	1.8
Number of Dry Days	5.0	8.0	-

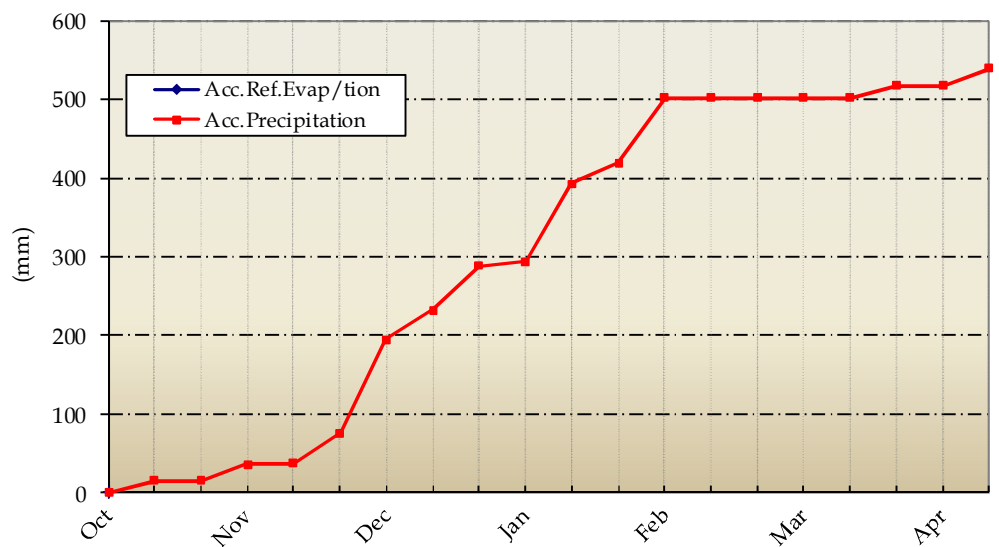
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/04/2019)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.6	20.6	19.0	16.0	16.0	17.6	17.4	15.4	12.4	12.4	16.9	20.6	16.8
	Min	2.0	2.8	4.0	7.0	11.0	10.0	3.4	8.0	8.4	9.4	6.6	5.3	5.4
Relative Humidity	Max	100	97	98	100	95	56	98	100	97	100	94	97	-
	Min	26	18	29	46	52	41	42	58	72	81	46	35	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	9.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	12.3
Sunshine Duration		9.3	9.3	6.9	2.9	0.4	7.6	3.9	4.6	2.1	0.0	4.7	7.0	5.1
Precipitation						2.4	0.1	0.3	13.4	2.2	2.9	21.3	12.2	25.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	24.5
Growing Degrees	5	7.3	6.7	6.5	6.5	8.5	8.8	5.4	6.7	5.4	5.9	67.7	79.3	60.9
	10	2.3	1.7	1.5	1.5	3.5	3.8	0.4	1.7	0.4	0.9	17.7	29.3	17.6

1st 10-day period (1-10/04/2019)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	22.5
Precipitation - Reference Evapotranspiration	-	-	3.2
Number of Rainy Days	6.0	3.0	4.1
Number of Dry Days	20.0	4.0	-

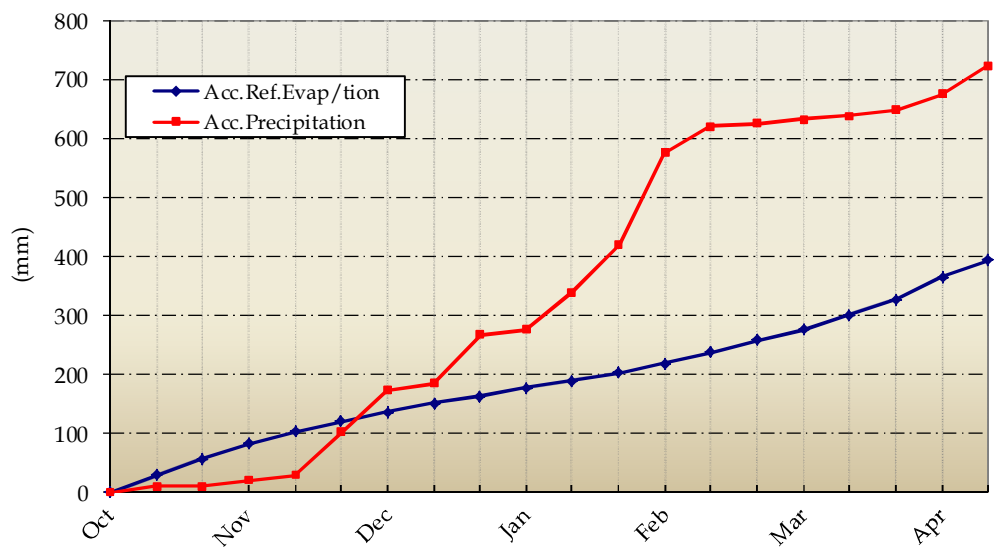
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/04/2019)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	18.8	20.4	19.6	17.7	18.0	19.8	18.6	18.2	17.9	20.8	19.0	22.0	19.3
	Min	4.1	0.0	5.9	9.2	10.2	12.1	11.2	9.2	8.6	10.9	8.1	7.6	8.0
Relative Humidity	Max	91	86	87	91	92	93	92	93	92	93	91	88	-
	Min	35	24	35	56	49	62	65	55	50	43	47	35	-
Soil Temperature at 10 cm	06 UTC	12.0	12.8	13.0	14.2	14.6	14.4	15.0	15.4	13.4	14.2	13.9	-	12.9
	12 UTC	14.4	15.2	15.0	15.0	15.6	16.0	16.6	16.2	15.0	16.0	15.5	-	15.8
Sunshine Duration		9.8	10.2	8.6	7.1	1.4	3.6	2.6	2.0	6.1	8.4	6.0	9.8	6.7
Precipitation						0.1	21.2	0.9	18.8	3.1	4.6	48.7	3.7	16.3
Evaporation		3.4	4.6	5.2	4.8	0.2	2.3	0.0	0.0	0.4	3.8	24.7	42.0	37.8
Growing Degrees	5	6.5	5.2	7.8	8.5	9.1	11.0	9.9	8.7	8.3	10.9	85.6	97.7	86.4
	10	1.5	0.2	2.8	3.5	4.1	6.0	4.9	3.7	3.3	5.9	35.6	47.7	36.8

1st 10-day period (1-10/04/2019)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	27.9	37.4	28.3
Precipitation - Reference Evapotranspiration	20.8	-33.7	-12.0
Number of Rainy Days	6.0	1.0	2.8
Number of Dry Days	6.0	9.0	-

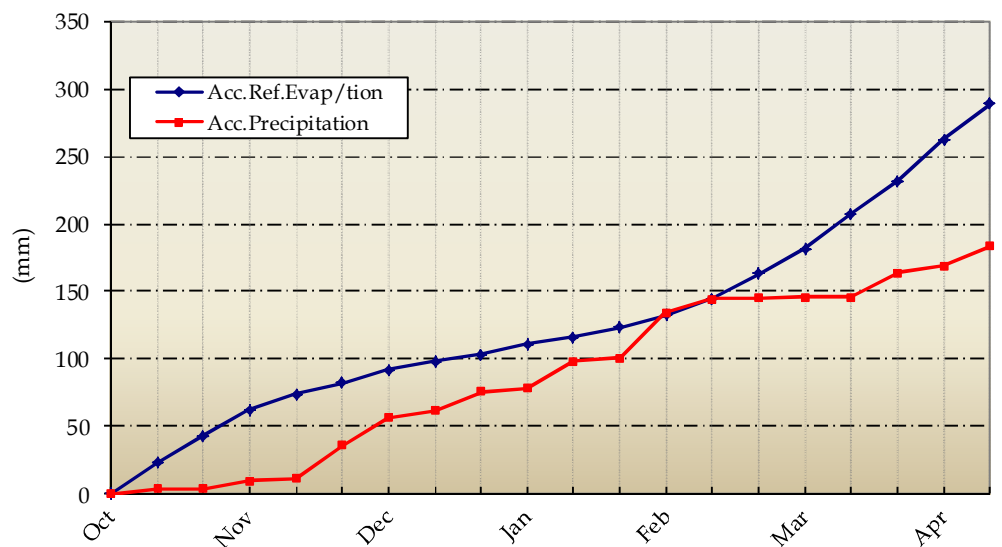
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/04/2019)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.2	20.4	17.7	17.4	16.8	14.4	20.4	16.0	17.6	20.6	18.2	22.2	19.4
	Min	6.0	1.9	4.3	3.3	7.6	11.4	8.5	11.4	9.3	10.5	7.4	7.3	5.6
Relative Humidity	Max	90	92	88	93	88	92	96	99	97	97	93	89	-
	Min	33	31	48	44	55	61	42	58	51	47	47	34	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	11.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	13.1
Sunshine Duration		10.7	9.7	8.6	10.2	0.0	0.0	8.2	0.4	0.0	4.2	5.2	8.1	6.6
Precipitation							2.4		8.8	3.1	0.6	14.9	0.2	12.2
Evaporation		5.1	6.5	5.5	5.0	2.6	1.9	4.4	1.5	2.0	2.4	36.9	52.0	32.3
Growing Degrees	5	8.6	6.2	6.0	5.4	7.2	7.9	9.5	8.7	8.5	10.6	78.4	97.5	75.0
	10	3.6	1.2	1.0	0.4	2.2	2.9	4.5	3.7	3.5	5.6	28.4	47.5	27.5

1st 10-day period (1-10/04/2019)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	26.2	33.2	26.4
Precipitation - Reference Evapotranspiration	-11.3	-33.0	-14.2
Number of Rainy Days	4.0	1.0	2.6
Number of Dry Days	8.0	10.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

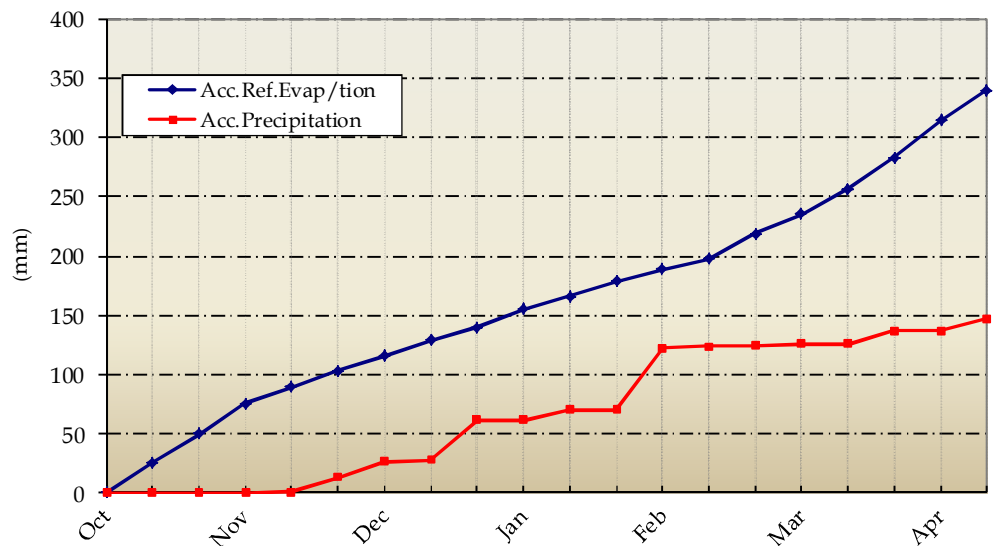


Mikra

1st 10-day period (1-10/04/2019)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.0	20.6	16.6	16.6	16.2	15.8	17.2	15.6	16.6	19.0	17.4	21.2	18.4
	Min	6.0	6.8	9.2	5.0	6.4	10.0	12.0	9.0	10.4	11.0	8.6	8.3	7.0
Relative Humidity	Max	76	79	74	81	83	83	92	95	95	95	85	80	-
	Min	31	30	37	45	39	61	52	72	68	56	49	35	-
Soil Temperature at 10 cm	06 UTC	11.8	12.5	13.4	12.2	12.2	13.2	14.0	13.5	13.0	14.0	13.0	13.6	11.4
	12 UTC	15.0	16.0	16.0	15.0	14.8	15.2	16.6	15.0	14.0	16.6	15.4	14.8	15.3
Sunshine Duration		10.9	10.6	8.8	10.6	0.0	0.0	3.1	0.2	1.2	5.3	5.1	8.7	6.4
Precipitation							0.1		6.4	3.6	0.1	10.2	1.7	12.7
Evaporation		-	-	-	-	-	-	-	-	-	-	-	46.9	39.9
Growing Degrees	5	8.0	8.7	7.9	5.8	6.3	7.9	9.6	7.3	8.5	10.0	80.0	97.4	77.2
	10	3.0	3.7	2.9	0.8	1.3	2.9	4.6	2.3	3.5	5.0	30.0	47.4	28.9

1st 10-day period (1-10/04/2019)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	25.7	34.4	26.8
Precipitation - Reference Evapotranspiration	-15.5	-32.7	-14.1
Number of Rainy Days	4.0	2.0	2.5
Number of Dry Days	23.0	9.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

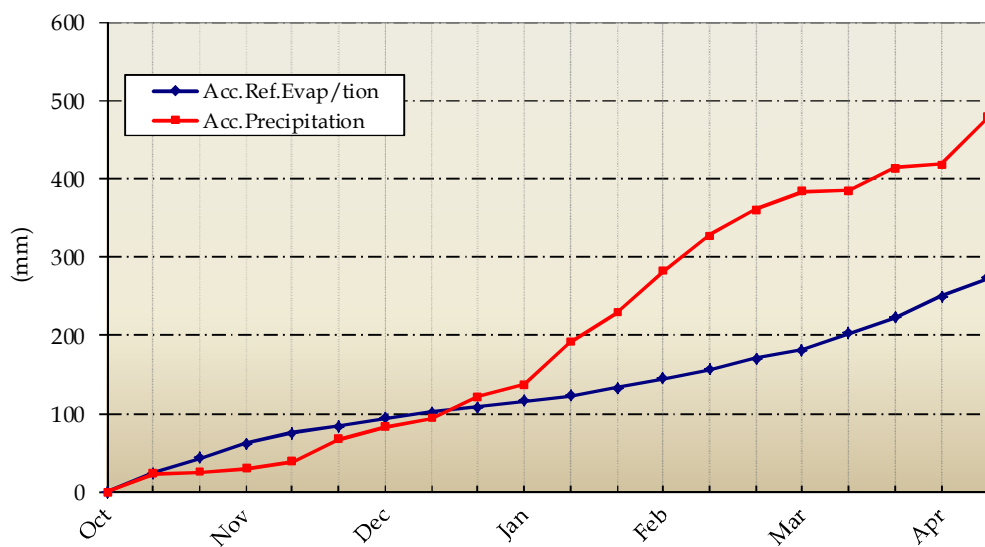


Tanagra

1st 10-day period (1-10/04/2019)		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	17.7	15.5	16.3	15.8	13.4	19.1	14.6	16.3	19.1	16.5	21.2	18.6
	Min	4.8	5.4	6.3	2.6	4.6	11.7	9.0	9.2	8.5	11.0	7.3	7.9	6.4
Relative Humidity	Max	77	82	80	97	97	100	98	100	96	96	92	87	-
	Min	34	41	38	38	48	87	50	88	53	45	52	34	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		10.9	10.9	8.3	9.4	0.6	0.0	8.0	0.0	1.0	4.6	5.4	9.6	
Precipitation							25.9		35.0	0.0	0.1	61.0		8.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	6.0	6.6	5.9	4.5	5.2	7.6	9.1	6.9	7.4	10.1	69.1	95.9	
	10	1.0	1.6	0.9	0.0	0.2	2.6	4.1	1.9	2.4	5.1	19.6	45.9	

1st 10-day period (1-10/04/2019)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	23.7	32.8	
Precipitation - Reference Evapotranspiration	37.3	-32.8	8.6
Number of Rainy Days	3.0	0.0	2.9
Number of Dry Days	8.0	13.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

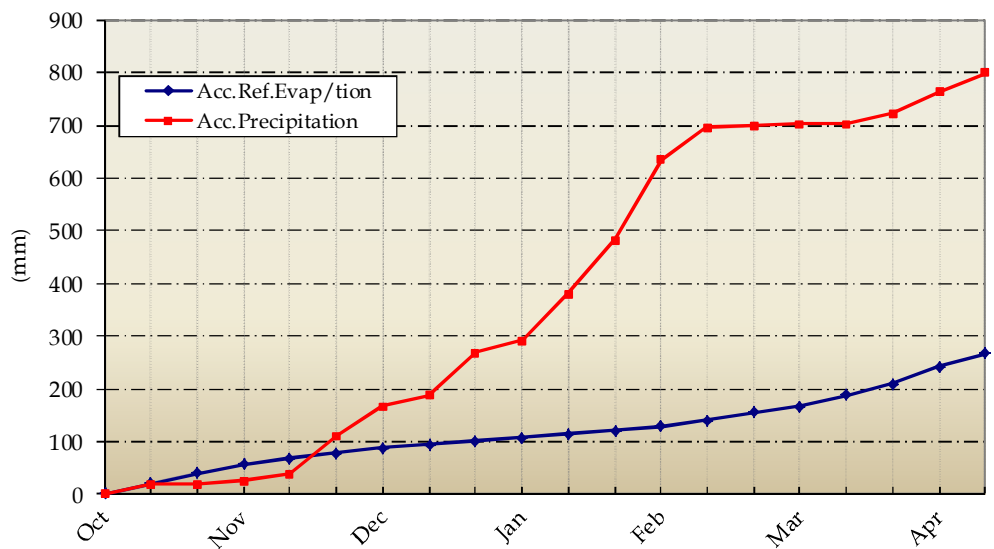


Tripoli

1st 10-day period (1-10/04/2019)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.8	15.8	16.2	15.3	12.7	14.1	16.6	13.4	12.3	15.3	14.8	19.7	17.1
	Min	-0.6	5.3	5.9	4.3	6.4	8.9	6.0	7.7	6.9	8.2	5.9	3.7	4.3
Relative Humidity	Max	91	54	88	99	100	98	99	97	85	86	90	96	-
	Min	29	25	26	46	62	70	61	59	56	48	48	29	-
Soil Temperature at 10 cm	06 UTC	7.4	9.2	9.8	10.4	11.0	11.2	11.0	12.0	10.2	10.8	10.3	11.6	9.5
	12 UTC	13.2	13.4	14.0	-	-	-	-	13.2	11.8	14.2	13.3	15.2	11.3
Sunshine Duration		10.7	10.9	8.9	6.2	2.3	3.1	1.7	1.9	4.3	10.3	6.0	9.0	6.6
Precipitation					1.6	5.9	11.9	6.4	5.4	4.2	0.7	36.1	13.7	17.3
Evaporation		4.0	6.0	3.3	1.7	0.4	1.1	1.8	1.7	0.6	3.0	23.6	35.3	26.4
Growing Degrees	5	3.1	5.6	6.1	4.8	4.6	6.5	6.3	5.6	4.6	6.8	53.8	67.1	57.4
	10	0.0	0.6	1.1	0.0	0.0	1.5	1.3	0.6	0.0	1.8	6.7	18.3	16.1

1st 10-day period (1-10/04/2019)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	24.7	30.0	26.6
Precipitation - Reference Evapotranspiration	11.4	-16.3	-9.3
Number of Rainy Days	7.0	2.0	3.3
Number of Dry Days	5.0	8.0	-

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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