



AGROMETEOROLOGICAL BULLETIN

April 2017
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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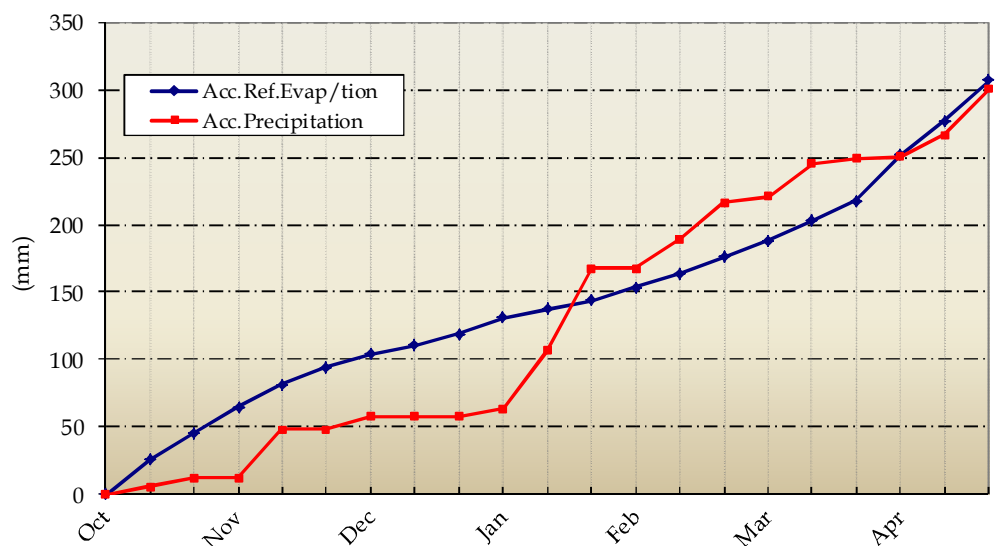
Web addresses of HNMS
www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr

Alexandroupoli

2nd 10-day period (11-20/04/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.6	22.4	19.6	21.8	22.4	19.6	18.2	13.8	18.2	18.0	19.2	22.4	16.6
	Min	2.4	4.0	4.4	9.4	10.2	7.4	9.8	6.4	5.4	8.4	6.8	10.7	7.0
Relative Humidity	Max	84	89	80	90	85	83	97	97	83	97	88	90	-
	Min	42	35	41	45	35	59	80	55	60	45	50	51	-
Soil Temperature at 10 cm	06 UTC	10.6	13.0	12.6	14.8	16.0	15.0	17.4	12.0	11.0	15.2	13.8	16.2	11.5
	12 UTC	17.6	18.0	19.6	21.4	20.0	22.0	18.4	16.0	15.0	18.6	18.7	21.8	14.7
Sunshine Duration		11.8	5.8	11.8	8.8	9.2	11.1	0.3	7.2	6.4	6.6	7.9	9.4	5.9
Precipitation								24.8	9.0			33.8	23.4	15.2
Evaporation		4.2	6.4	4.5	7.6	7.3	5.0	0.8	3.0	3.8	3.7	46.3	43.9	38.8
Growing Degrees	5	5.0	8.2	7.0	10.6	11.3	8.5	9.0	5.1	6.8	8.2	79.7	115.5	67.9
	10	0.0	3.2	2.0	5.6	6.3	3.5	4.0	0.1	1.8	3.2	29.7	65.5	22.8

2nd 10-day period (11-20/04/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	30.4	33.4	26.7
Precipitation - Reference Evapotranspiration	3.4	-10.0	-11.5
Number of Rainy Days	2.0	2.0	2.8
Number of Dry Days	7.0	15.0	-

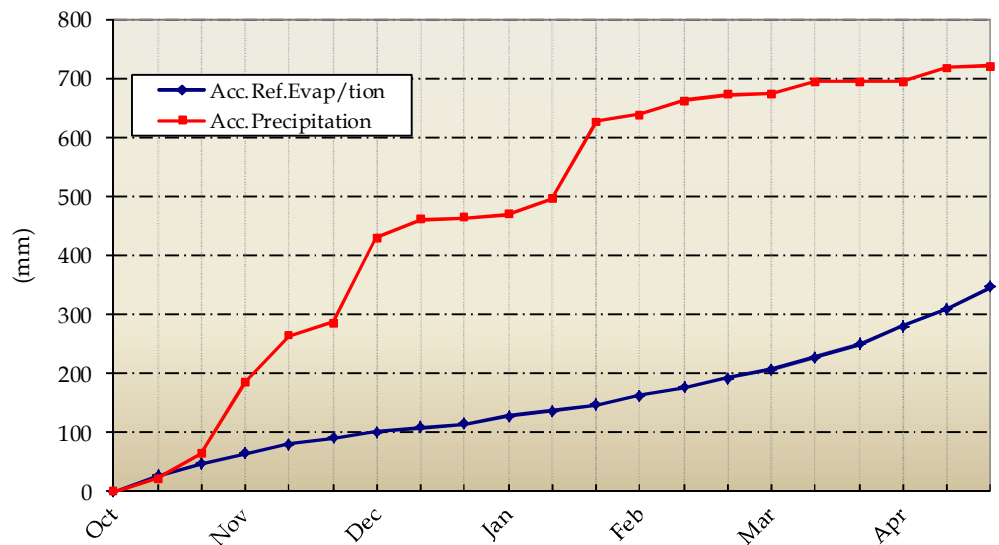
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.8	20.4	21.9	22.0	22.6	20.2	19.4	20.3	20.4	17.1	20.6	23.6	18.4
	Min	6.4	10.0	8.6	9.8	10.4	11.3	12.5	10.0	14.0	12.0	10.5	10.2	9.1
Relative Humidity	Max	80	88	90	90	89	89	88	86	87	79	87	88	-
	Min	37	51	38	42	48	55	65	45	61	22	46	40	-
Soil Temperature at 10 cm	06 UTC	15.0	15.0	17.0	16.8	14.4	17.5	18.0	17.0	18.4	18.0	16.7	-	13.7
	12 UTC	18.5	19.0	21.0	20.2	22.6	20.0	18.6	19.5	19.4	18.0	19.7	-	16.7
Sunshine Duration		7.7	11.1	11.0	11.3	10.7	10.7	5.9	10.6	11.2	9.3	10.0	10.0	7.2
Precipitation								3.6				3.6	0.7	25.7
Evaporation		3.0	0.5	4.5	3.0	7.0	1.4	3.6	2.0	0.0	9.0	34.0	45.0	37.7
Growing Degrees	5	9.1	10.2	10.3	10.9	11.5	10.8	11.0	10.2	12.2	9.6	105.6	118.9	87.1
	10	4.1	5.2	5.3	5.9	6.5	5.8	6.0	5.2	7.2	4.6	55.6	68.9	37.4

2nd 10-day period (11-20/04/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	36.2	35.6	28.0
Precipitation - Reference Evapotranspiration	-32.6	-34.9	-2.3
Number of Rainy Days	1.0	1.0	3.3
Number of Dry Days	10.0	0.0	-

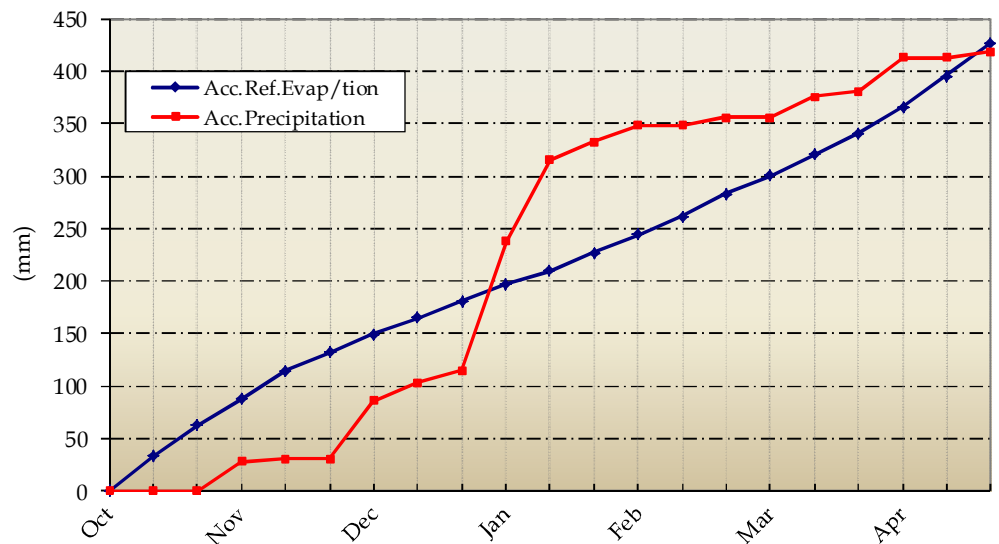
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2017)		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	16.8	17.8	20.0	20.4	20.4	22.0	19.8	24.2	27.2	20.6	24.0	19.9
	Min	11.4	11.8	13.6	11.2	12.4	12.2	13.6	13.0	13.0	18.2	13.0	14.2	12.0
Relative Humidity	Max	88	95	88	95	95	93	89	91	88	89	91	83	-
	Min	78	71	72	67	65	66	62	63	57	57	66	40	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		5.0	0.9	0.6	11.4	11.3	11.4	5.2	10.0	11.0	7.3	7.4	10.2	7.4
Precipitation			5.8	0.0				0.0				5.8	0.4	11.4
Evaporation		4.4	1.8	2.7	2.1	3.8	3.5	3.0	2.9	4.3	5.7	34.2	49.5	52.7
Growing Degrees	5	9.6	9.3	10.7	10.6	11.4	11.3	12.8	11.4	13.6	17.7	118.4	140.9	109.6
	10	4.6	4.3	5.7	5.6	6.4	6.3	7.8	6.4	8.6	12.7	68.4	90.9	59.7

2nd 10-day period (11-20/04/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	32.0	43.6	-
Precipitation - Reference Evapotranspiration	-26.2	-43.2	11.4
Number of Rainy Days	1.0	1.0	2.0
Number of Dry Days	11.0	13.0	-

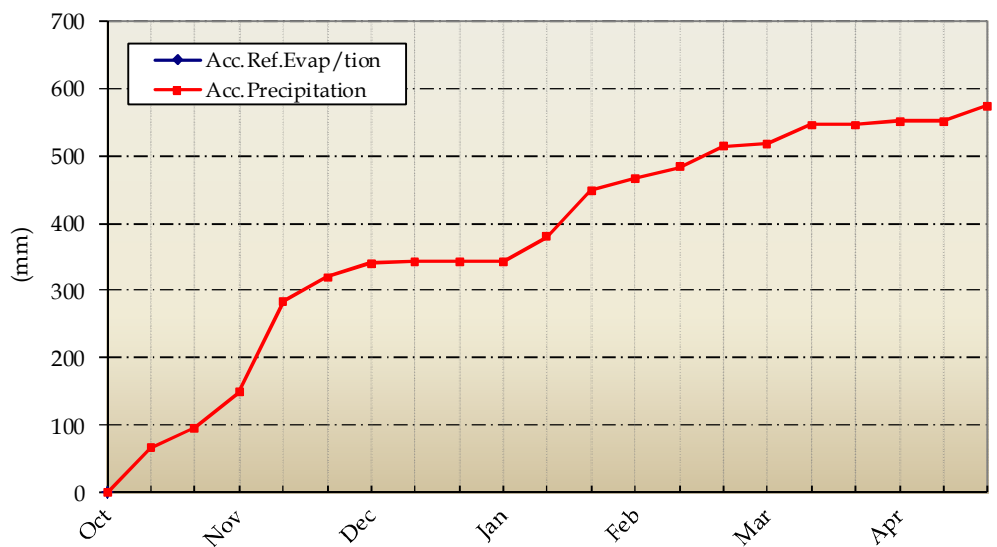
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.0	-	22.0	22.8	22.6	23.8	15.1	16.8	17.6	13.8	19.6	24.8	16.1
	Min	4.4	7.6	4.4	4.4	5.5	-	9.0	3.8	12.4	6.6	6.5	6.4	5.7
Relative Humidity	Max	97	100	100	97	-	97	100	94	88	-	97	96	-
	Min	30	40	42	32	-	59	75	43	66	-	48	29	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	10.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	12.9
Sunshine Duration		8.2	3.7	6.4	9.2	-	7.3	1.2	6.7	6.5	-	6.2	9.2	4.9
Precipitation		1.1				1.1		21.3			0.0	23.5	0.0	35.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	28.5
Growing Degrees	5	8.2	-	8.2	8.6	9.1	-	7.1	5.3	10.0	5.2	-	106.1	58.8
	10	3.2	-	3.2	3.6	4.1	-	2.1	0.3	5.0	0.2	-	56.1	15.8

2nd 10-day period (11-20/04/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	24.2
Precipitation - Reference Evapotranspiration	-	-	10.9
Number of Rainy Days	3.0	0.0	4.7
Number of Dry Days	14.0	10.0	-

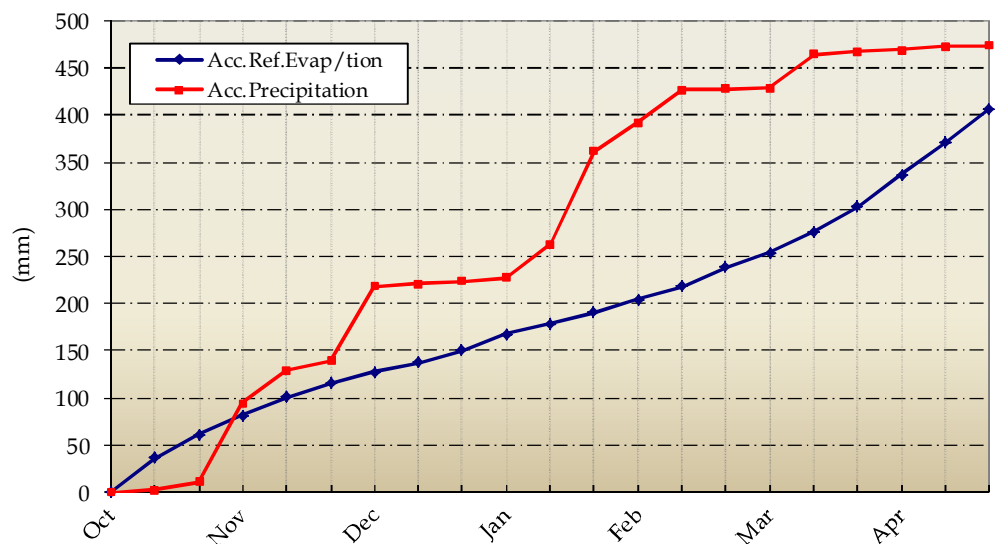
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.1	19.5	21.0	23.5	23.2	19.9	21.5	22.0	20.9	20.4	21.2	24.5	19.2
	Min	5.6	6.8	6.5	9.2	8.4	10.7	10.7	8.4	9.2	11.1	8.7	9.0	8.4
Relative Humidity	Max	91	92	92	92	93	92	93	92	93	93	92	89	-
	Min	34	42	46	37	51	59	47	43	56	33	45	34	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	16.7	13.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	18.7	16.9
Sunshine Duration		8.3	10.6	11.0	11.0	10.6	10.0	4.7	9.6	8.7	5.6	9.0	10.6	7.1
Precipitation								0.9			0.0	0.9	1.0	25.5
Evaporation		5.1	6.4	2.8	7.4	5.0	5.3	1.2	6.1	5.3	6.0	50.6	52.7	41.0
Growing Degrees	5	7.9	8.2	8.8	11.4	10.8	10.3	11.1	10.2	10.1	10.8	99.3	117.2	88.0
	10	2.9	3.2	3.8	6.4	5.8	5.3	6.1	5.2	5.1	5.8	49.3	67.2	38.2

2nd 10-day period (11-20/04/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	36.5	42.8	28.5
Precipitation - Reference Evapotranspiration	-35.6	-41.8	-3.0
Number of Rainy Days	1.0	1.0	4.1
Number of Dry Days	11.0	0.0	-

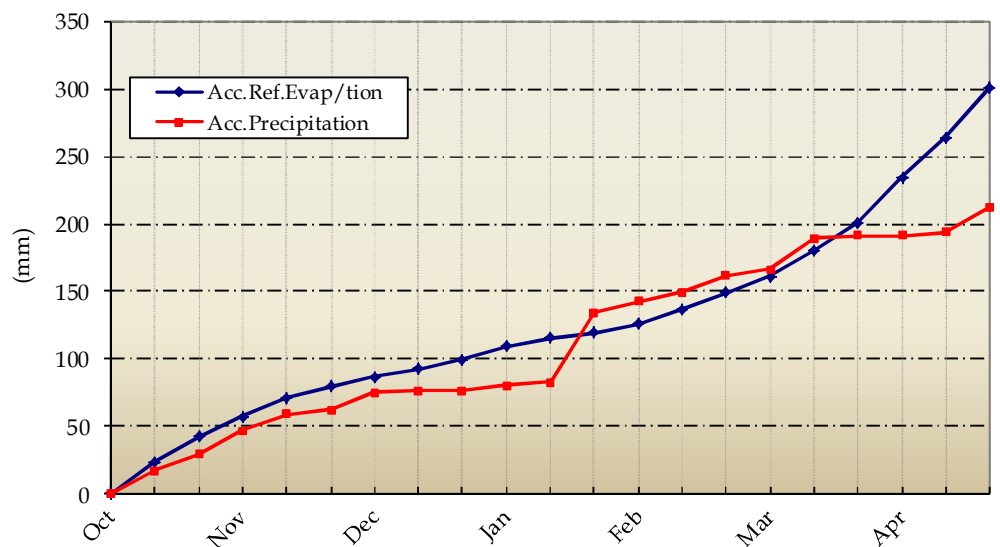
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	22.4	23.2	24.6	25.6	25.6	25.2	17.6	19.0	22.3	19.3	22.5	27.4	19.0
	Min	3.6	5.9	6.5	9.3	8.0	7.3	7.7	8.7	10.0	9.6	7.7	9.0	6.4
Relative Humidity	Max	100	100	100	100	100	100	100	92	100	75	97	95	-
	Min	31	30	31	26	32	25	63	37	34	14	32	27	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	16.5	12.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	17.1	14.4
Sunshine Duration		10.9	9.9	10.8	9.5	10.4	9.9	1.8	11.5	6.7	10.9	9.2	9.8	6.4
Precipitation						0.0	0.4	9.1	9.1			18.6		13.6
Evaporation		8.2	5.1	5.2	6.0	5.9	6.4	0.0	6.1	3.8	7.4	54.1	63.3	36.9
Growing Degrees	5	8.0	9.6	10.6	12.5	11.8	11.3	7.7	8.9	11.2	9.5	100.7	132.2	77.0
	10	3.0	4.6	5.6	7.5	6.8	6.3	2.7	3.9	6.2	4.5	50.7	82.2	28.8

2nd 10-day period (11-20/04/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	37.0	41.1	28.6
Precipitation - Reference Evapotranspiration	-18.4	-41.1	-15.0
Number of Rainy Days	3.0	0.0	3.4
Number of Dry Days	8.0	10.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

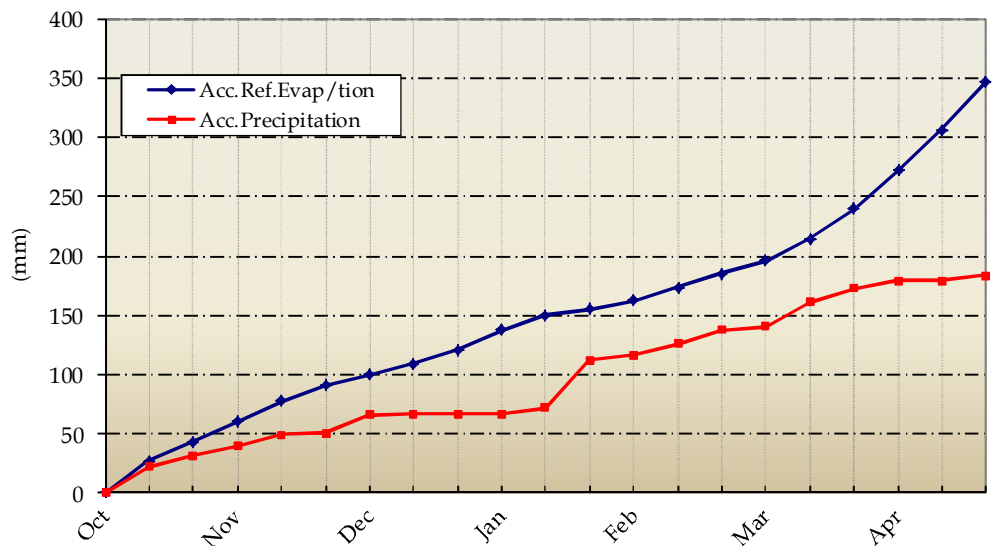


Mikra

2nd 10-day period (11-20/04/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.6	22.8	22.4	24.6	24.4	23.6	18.6	19.2	21.7	19.0	21.7	24.7	18.2
	Min	5.0	6.4	8.6	7.7	12.2	12.0	12.6	10.4	12.8	10.8	9.8	10.8	7.7
Relative Humidity	Max	81	87	89	88	93	96	95	62	90	65	85	81	-
	Min	36	32	40	26	36	36	41	23	37	23	33	33	-
Soil Temperature at 10 cm	06 UTC	14.2	14.6	15.2	15.5	17.4	17.5	17.4	13.8	15.8	16.2	15.8	16.5	12.6
	12 UTC	17.4	17.0	19.6	20.4	21.4	21.4	17.0	18.7	19.5	19.0	19.1	21.6	16.4
Sunshine Duration		11.4	5.3	10.7	9.9	10.4	10.8	0.5	10.3	9.9	9.1	8.8	9.8	6.1
Precipitation							2.2	2.0	0.0			4.2	1.1	14.5
Evaporation		5.6	3.9	6.6	8.4	4.2	8.2	2.1	7.7	6.6	7.4	60.7	72.0	39.8
Growing Degrees	5	7.8	9.6	10.5	11.2	13.3	12.8	10.6	9.8	12.3	9.9	107.7	127.5	79.5
	10	2.8	4.6	5.5	6.2	8.3	7.8	5.6	4.8	7.3	4.9	57.7	77.5	31.0

2nd 10-day period (11-20/04/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	40.4	47.3	29.0
Precipitation - Reference Evapotranspiration	-36.2	-46.2	-14.5
Number of Rainy Days	2.0	1.0	3.4
Number of Dry Days	15.0	14.0	-

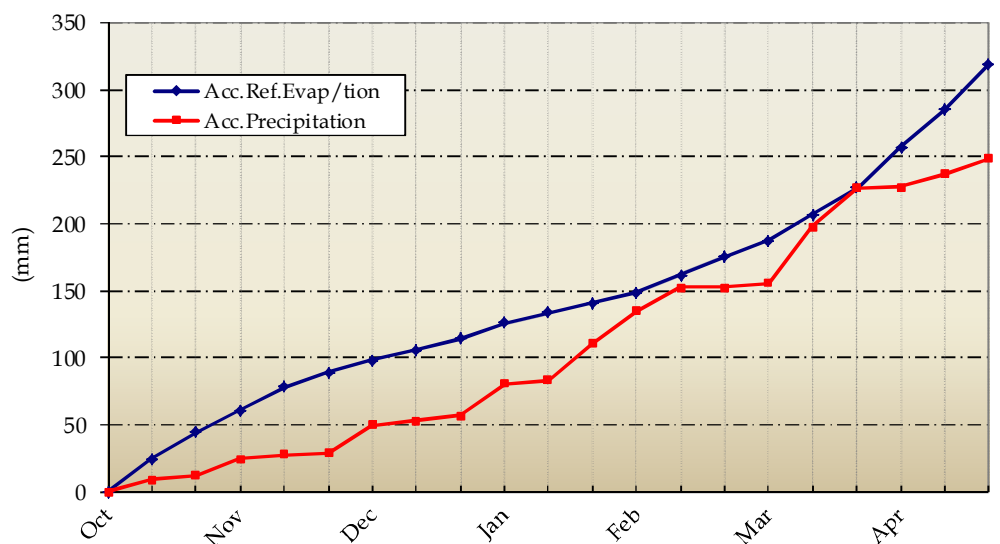
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.2	20.5	22.3	23.6	25.4	24.6	21.6	19.4	22.1	21.0	22.1	26.6	18.6
	Min	5.2	3.6	6.8	9.4	8.7	9.1	9.8	8.5	7.6	13.7	8.2	9.7	7.2
Relative Humidity	Max	82	93	78	86	82	93	100	100	100	80	89	83	-
	Min	20	24	27	34	26	23	39	46	40	21	30	24	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.7	10.6	12.0	10.7	11.5	9.4	3.0	9.4	9.5	9.8	9.5	9.5	
Precipitation								11.2				11.2		10.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	57.7	
Growing Degrees	5	7.7	7.1	9.6	11.5	12.1	11.9	10.7	9.0	9.9	12.4	101.6	131.1	
	10	2.7	2.1	4.6	6.5	7.1	6.9	5.7	4.0	4.9	7.4	51.6	81.1	

2nd 10-day period (11-20/04/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	34.5	36.4	
Precipitation - Reference Evapotranspiration	-23.3	-36.4	10.8
Number of Rainy Days	1.0	0.0	3.9
Number of Dry Days	8.0	10.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

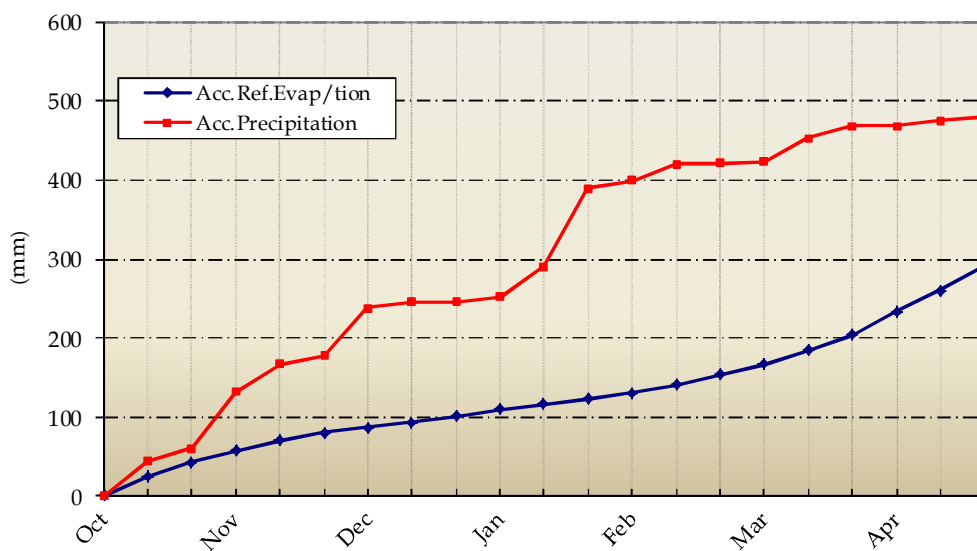


Tripoli

2nd 10-day period (11-20/04/2017)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.1	20.9	22.3	22.5	21.6	14.8	17.0	18.2	17.9	15.6	19.0	26.1	16.3
	Min	3.8	-0.1	1.6	3.5	2.7	3.0	5.2	3.8	6.9	9.8	4.0	5.4	4.8
Relative Humidity	Max	90	100	100	100	100	100	100	100	100	88	98	94	-
	Min	24	23	22	28	31	28	52	34	46	17	30	18	-
Soil Temperature at 10 cm	06 UTC	11.0	10.8	11.8	12.4	12.4	13.4	14.4	11.8	-	-	12.2	15.1	10.9
	12 UTC	17.2	17.8	19.2	-	-	-	-	17.8	-	-	18.0	21.7	12.7
Sunshine Duration		9.7	11.4	8.7	6.8	9.7	10.6	4.0	11.7	10.5	8.7	9.2	10.5	6.7
Precipitation					0.9			3.0	0.2			4.1		30.8
Evaporation		3.9	6.2	3.1	2.9	5.2	4.1	3.5	-	-	-	-	54.5	29.8
Growing Degrees	5	6.5	5.4	7.0	8.0	7.2	3.9	6.1	6.0	7.4	7.7	65.1	107.1	55.6
	10	1.5	0.4	2.0	3.0	2.2	0.0	1.1	1.0	2.4	2.7	16.2	57.1	14.5

2nd 10-day period (11-20/04/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	32.4	39.2	28.5
Precipitation - Reference Evapotranspiration	-28.3	-39.2	2.3
Number of Rainy Days	3.0	0.0	4.5
Number of Dry Days	7.0	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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