

AGROMETEOROLOGICAL BULLETIN

April 2015
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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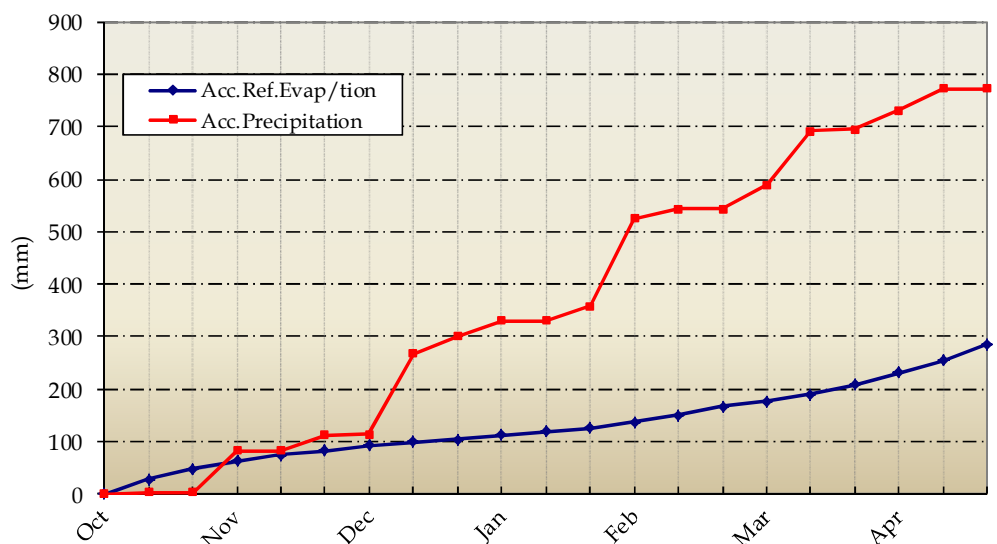
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www.emy.gov.gr
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Alexandroupoli

2nd 10-day period (11-20/04/2015)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.6	20.4	19.6	18.8	18.8	19.4	20.0	20.0	16.4	14.4	18.4	16.6	16.6
	Min	2.4	3.0	6.4	7.2	8.2	6.0	10.4	11.2	11.8	3.0	7.0	9.3	7.0
Relative Humidity	Max	88	65	83	94	92	85	89	95	83	93	87	92	-
	Min	43	40	45	55	34	44	55	63	52	39	47	57	-
Soil Temperature at 10 cm	06 UTC	8.2	10.0	12.0	13.0	13.0	13.0	14.4	15.5	15.8	10.4	12.5	13.4	11.5
	12 UTC	16.0	18.0	19.4	19.6	18.6	18.4	20.6	20.6	15.6	17.6	18.4	16.3	14.7
Sunshine Duration		11.5	11.5	10.7	5.7	9.9	12.5	12.0	9.9	0.0	12.1	9.6	6.4	5.9
Precipitation					0.2					0.1		0.3	33.1	15.2
Evaporation		3.0	4.8	3.9	0.9	6.0	3.4	5.2	4.4	1.1	2.5	35.2	32.5	38.8
Growing Degrees	5	4.5	6.7	8.0	8.0	8.5	7.7	10.2	10.6	9.1	3.7	77.0	79.5	67.9
	10	0.0	1.7	3.0	3.0	3.5	2.7	5.2	5.6	4.1	0.0	28.8	29.5	22.8

2nd 10-day period (11-20/04/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	31.2	26.8	26.7
Precipitation - Reference Evapotranspiration	-30.9	6.3	-11.5
Number of Rainy Days	2.0	7.0	2.8
Number of Dry Days	6.0	0.0	-

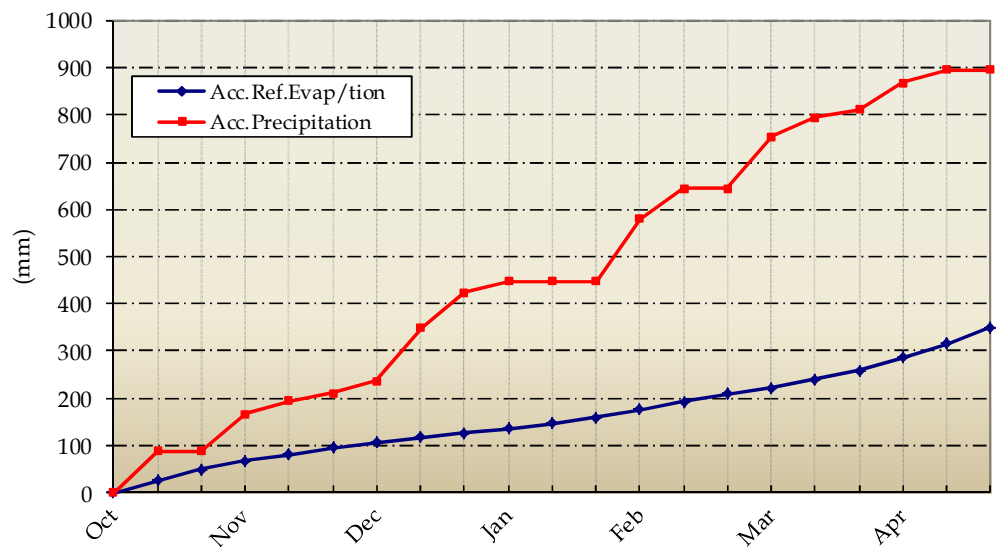
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2015)		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	17.8	18.9	20.8	20.4	20.9	20.4	24.2	21.4	19.6	20.2	17.9	18.4
	Min	4.1	6.7	7.2	8.0	10.7	10.4	10.6	8.4	10.1	13.3	9.0	8.8	9.1
Relative Humidity	Max	88	90	91	91	90	87	79	87	90	74	87	89	-
	Min	43	48	51	46	57	49	33	28	54	49	46	49	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	14.8	13.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	17.7	16.7
Sunshine Duration		11.6	11.2	11.3	10.8	10.4	12.1	11.3	11.5	6.3	10.3	10.7	7.0	7.2
Precipitation													27.3	25.7
Evaporation		4.2	4.8	11.6	7.4	6.0	8.1	3.9	3.0	4.0	3.0	56.0	-	37.7
Growing Degrees	5	6.0	7.3	8.1	9.4	10.6	10.7	10.5	11.3	10.8	11.5	95.9	83.2	87.1
	10	1.0	2.3	3.1	4.4	5.6	5.7	5.5	6.3	5.8	6.5	45.9	33.2	37.4

2nd 10-day period (11-20/04/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	34.5	28.3	28.0
Precipitation - Reference Evapotranspiration	-34.5	-1.0	-2.3
Number of Rainy Days	0.0	5.0	3.3
Number of Dry Days	13.0	4.0	-

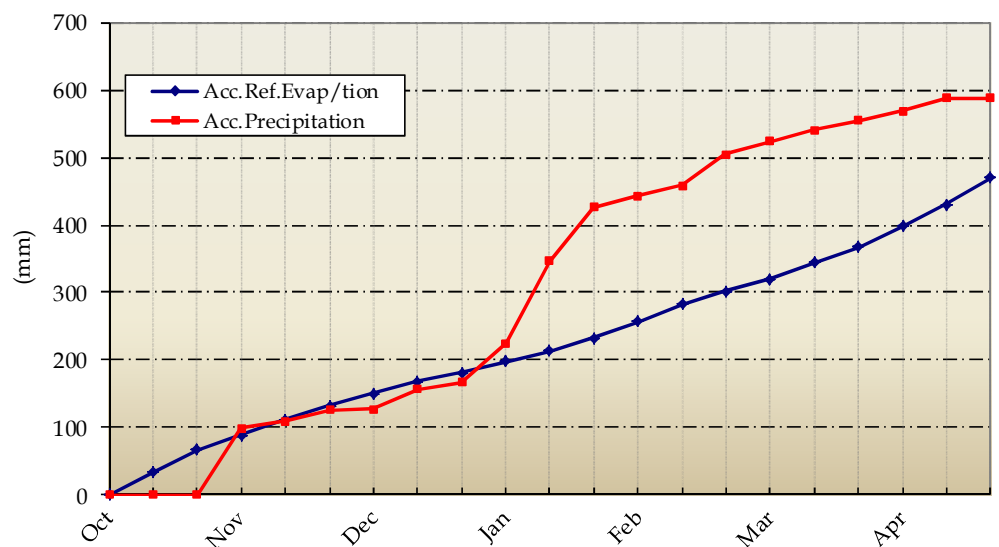
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2015)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.4	18.2	18.2	19.8	18.8	20.0	21.0	26.4	26.4	19.4	20.5	19.9	19.9
	Min	12.8	11.0	10.0	9.2	9.4	12.0	11.8	14.0	17.0	16.8	12.4	12.2	12.0
Relative Humidity	Max	64	84	92	90	100	92	85	77	91	91	87	84	-
	Min	35	51	61	41	48	62	48	28	27	63	46	54	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		9.6	11.7	11.0	11.6	9.9	11.2	11.8	11.0	7.1	4.6	10.0	8.8	7.4
Precipitation													0.3	11.4
Evaporation		7.5	0.5	3.9	3.5	0.8	3.7	3.2	7.6	3.3	4.9	38.9	30.8	52.7
Growing Degrees	5	9.6	9.6	9.1	9.5	9.1	11.0	11.4	15.2	16.7	13.1	114.3	110.8	109.6
	10	4.6	4.6	4.1	4.5	4.1	6.0	6.4	10.2	11.7	8.1	64.3	60.8	59.7

2nd 10-day period (11-20/04/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	39.5	35.6	-
Precipitation - Reference Evapotranspiration	-39.5	-35.3	11.4
Number of Rainy Days	0.0	1.0	2.0
Number of Dry Days	10.0	5.0	-

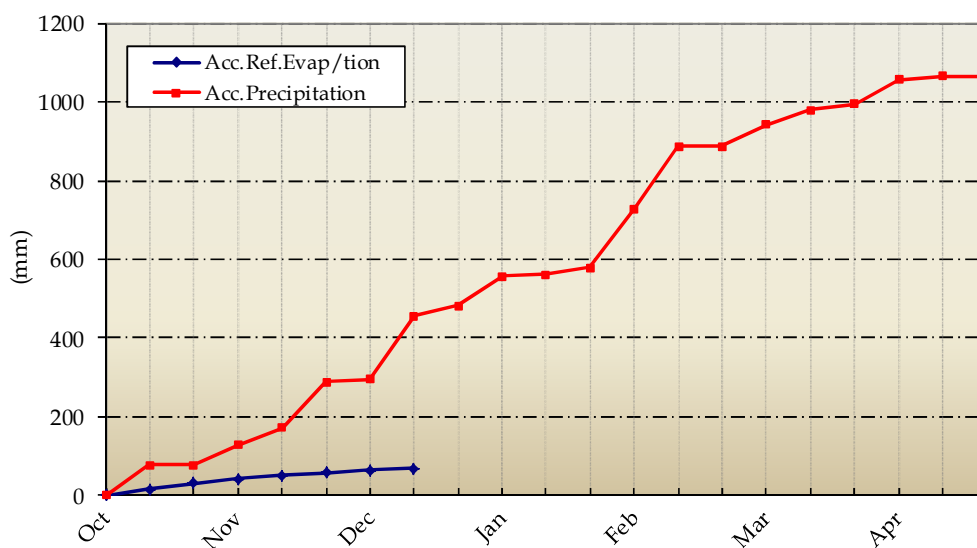
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2015)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.0	20.2	19.6	22.4	22.1	22.3	22.5	23.1	21.6	20.5	21.3	14.6	16.1
	Min	-0.4	1.4	3.9	2.0	5.4	4.4	3.8	6.7	3.8	8.4	3.9	3.4	5.7
Relative Humidity	Max	100	100	100	100	100	100	100	97	100	100	100	97	-
	Min	24	31	17	24	28	36	35	25	40	26	29	47	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	10.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	12.9
Sunshine Duration		11.3	8.2	4.9	7.2	7.6	10.3	9.1	10.5	6.9	8.9	8.5	4.5	4.9
Precipitation											0.0	0.0	43.6	35.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	28.5
Growing Degrees	5	4.3	5.8	6.8	7.2	8.8	8.4	8.2	9.9	7.7	9.5	76.4	40.2	58.8
	10	0.0	0.8	1.8	2.2	3.8	3.4	3.2	4.9	2.7	4.5	27.1	6.3	15.8

2nd 10-day period (11-20/04/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	19.6	24.2
Precipitation - Reference Evapotranspiration	-	24.0	10.9
Number of Rainy Days	0.0	6.0	4.7
Number of Dry Days	13.0	0.0	-

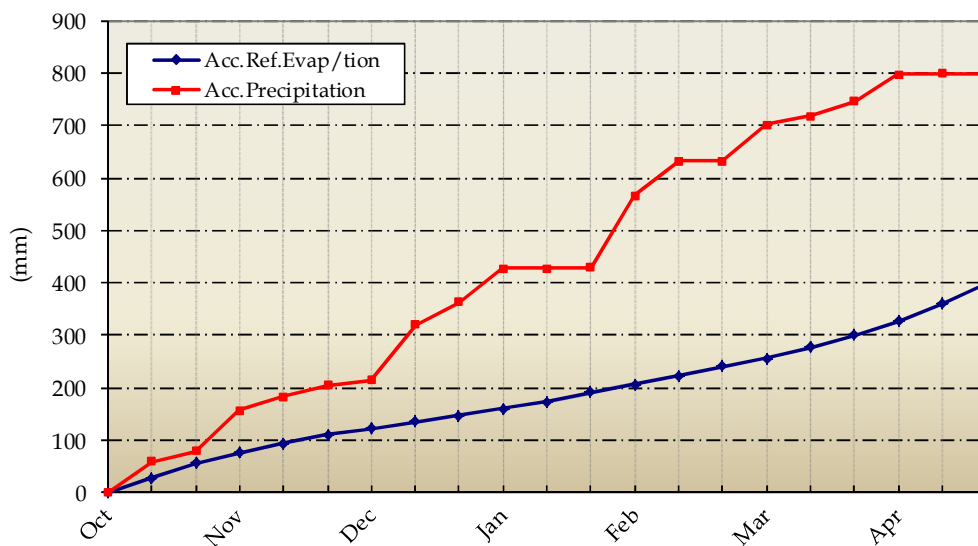
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/04/2015)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.3	20.8	20.5	24.6	22.0	20.2	23.9	22.8	22.9	20.5	22.0	19.3	19.2
	Min	2.3	6.6	7.0	6.9	11.0	7.9	8.7	6.3	8.9	9.6	7.5	6.7	8.4
Relative Humidity	Max	87	91	92	93	92	93	94	94	95	95	93	93	-
	Min	20	33	42	28	44	48	28	35	46	60	38	44	-
Soil Temperature at 10 cm	06 UTC	12.4	13.6	14.0	14.6	15.4	15.4	15.2	15.4	16.0	16.0	14.8	15.1	13.9
	12 UTC	13.6	14.6	15.5	16.0	16.4	16.6	17.0	16.8	17.2	17.4	16.1	16.1	16.9
Sunshine Duration		11.7	11.5	10.8	9.2	8.1	11.8	11.8	12.7	4.4	9.2	10.1	6.4	7.1
Precipitation										0.0		0.0	17.6	25.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	41.0
Growing Degrees	5	6.8	8.7	8.8	10.8	11.5	9.1	11.3	9.6	10.9	10.1	97.4	79.8	88.0
	10	1.8	3.7	3.8	5.8	6.5	4.1	6.3	4.6	5.9	5.1	47.4	29.8	38.2

2nd 10-day period (11-20/04/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	38.8	29.5	28.5
Precipitation - Reference Evapotranspiration	-38.8	-11.9	-3.0
Number of Rainy Days	0.0	4.0	4.1
Number of Dry Days	12.0	5.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

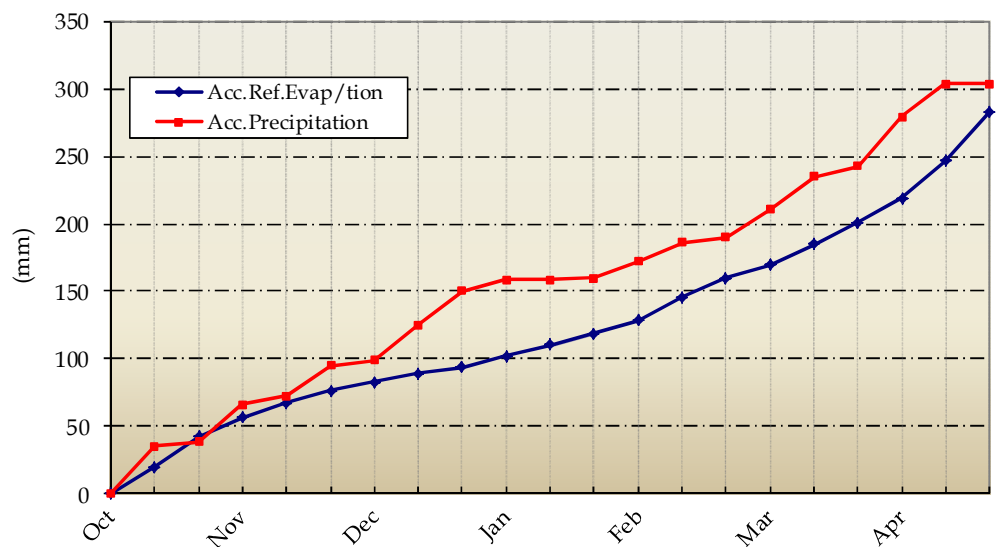


Larisa

2nd 10-day period (11-20/04/2015)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	20.4	24.0	24.0	24.0	20.1	24.0	26.2	26.6	21.6	15.0	22.6	19.9	19.0
	Min	0.9	1.8	5.1	5.6	10.6	4.0	5.5	7.6	7.6	9.7	5.8	4.3	6.4
Relative Humidity	Max	100	100	100	99	92	100	98	79	98	100	97	98	-
	Min	30	29	25	27	24	27	23	19	42	63	31	32	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	12.8
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	14.4
Sunshine Duration		12.0	10.5	10.5	7.1	9.8	11.8	11.4	10.8	5.5	2.3	9.2	8.1	6.4
Precipitation					0.0					0.0	0.0	0.0	5.7	13.6
Evaporation		1.1	6.8	5.2	4.8	6.2	5.7	6.9	10.0	5.7	1.7	54.1	-	36.9
Growing Degrees	5	5.7	7.9	9.6	9.8	10.4	9.0	10.9	12.1	9.6	7.4	92.2	71.2	77.0
	10	0.7	2.9	4.6	4.8	5.4	4.0	5.9	7.1	4.6	2.4	42.2	23.0	28.8

2nd 10-day period (11-20/04/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	36.8	32.0	28.6
Precipitation - Reference Evapotranspiration	-36.8	-26.3	-15.0
Number of Rainy Days	0.0	3.0	3.4
Number of Dry Days	11.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

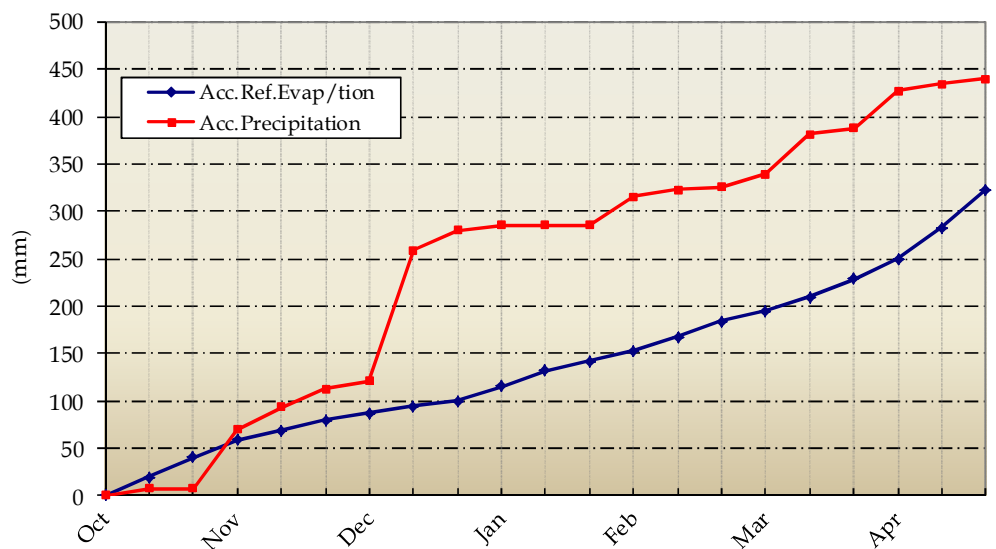


Mikra

2nd 10-day period (11-20/04/2015)		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	23.6	23.6	22.2	20.4	22.8	24.7	26.3	15.4	17.0	21.5	18.2	18.2
	Min	2.7	4.0	10.0	8.5	13.4	6.2	7.2	11.8	12.3	9.8	8.6	8.0	7.7
Relative Humidity	Max	79	78	83	87	74	79	81	73	93	93	82	83	-
	Min	25	20	33	33	17	28	30	18	46	41	29	40	-
Soil Temperature at 10 cm	06 UTC	10.8	11.6	4.4	15.0	14.6	14.2	15.0	16.4	16.8	14.6	13.3	13.9	12.6
	12 UTC	16.2	17.2	19.2	18.8	18.8	19.0	20.0	21.2	18.0	17.6	18.6	15.9	16.4
Sunshine Duration		11.6	10.5	9.6	9.8	11.8	11.9	11.5	11.0	4.1	7.7	10.0	7.1	6.1
Precipitation					0.0					1.2	4.0	5.2	12.2	14.5
Evaporation		3.4	4.6	5.9	7.1	2.9	9.7	5.8	8.5	8.3	0.1	56.3	-	39.8
Growing Degrees	5	6.1	8.8	11.8	10.4	11.9	9.5	11.0	14.1	8.9	8.4	100.7	81.1	79.5
	10	1.1	3.8	6.8	5.4	6.9	4.5	6.0	9.1	3.9	3.4	50.7	31.1	31.0

2nd 10-day period (11-20/04/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	41.0	31.7	29.0
Precipitation - Reference Evapotranspiration	-35.8	-19.5	-14.5
Number of Rainy Days	2.0	3.0	3.4
Number of Dry Days	10.0	5.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

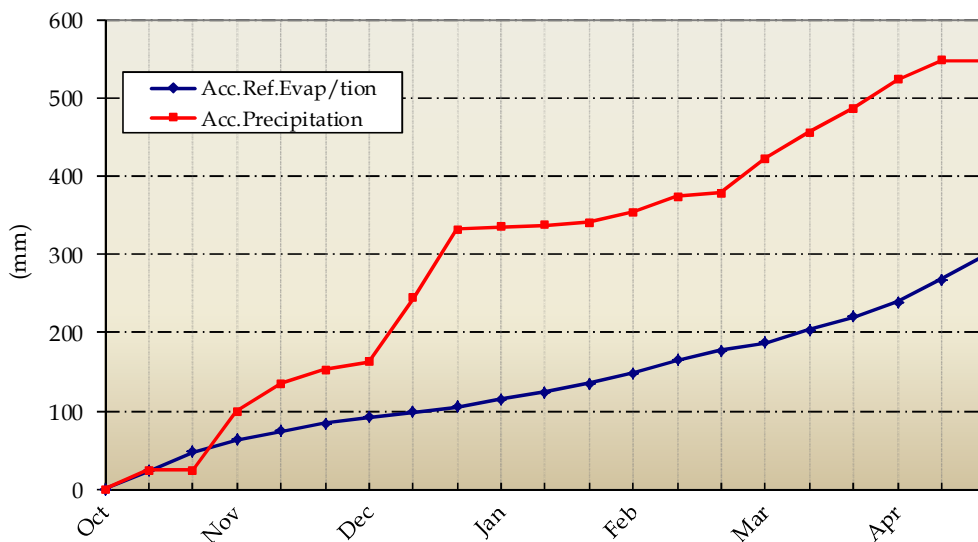


Tanagra

2nd 10-day period (11-20/04/2015)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	19.3	22.8	23.0	23.0	18.8	20.6	24.8	24.8	21.0	15.8	21.4	19.1	18.6
	Min	1.0	3.8	6.4	8.1	9.4	5.5	9.4	10.4	7.9	10.4	7.2	6.7	7.2
Relative Humidity	Max	83	95	97	83	89	87	95	98	99	95	92	91	-
	Min	26	28	25	31	41	28	24	23	42	61	33	38	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		11.9	11.5	10.9	9.0	9.8	12.4	11.5	3.6	8.0	0.8	8.9	-	-
Precipitation										0.0	0.5	0.5	7.6	10.8
Evaporation		4.0	4.0	4.5	8.0	3.5	4.5	7.5	7.0	3.0	1.5	47.5	-	-
Growing Degrees	5	5.2	8.3	9.7	10.6	9.1	8.1	12.1	12.6	9.5	8.1	93.1	-	-
	10	0.2	3.3	4.7	5.6	4.1	3.1	7.1	7.6	4.5	3.1	43.1	-	-

2nd 10-day period (11-20/04/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	31.9	-	-
Precipitation - Reference Evapotranspiration	-31.4	-	-
Number of Rainy Days	1.0	-	-
Number of Dry Days	10.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

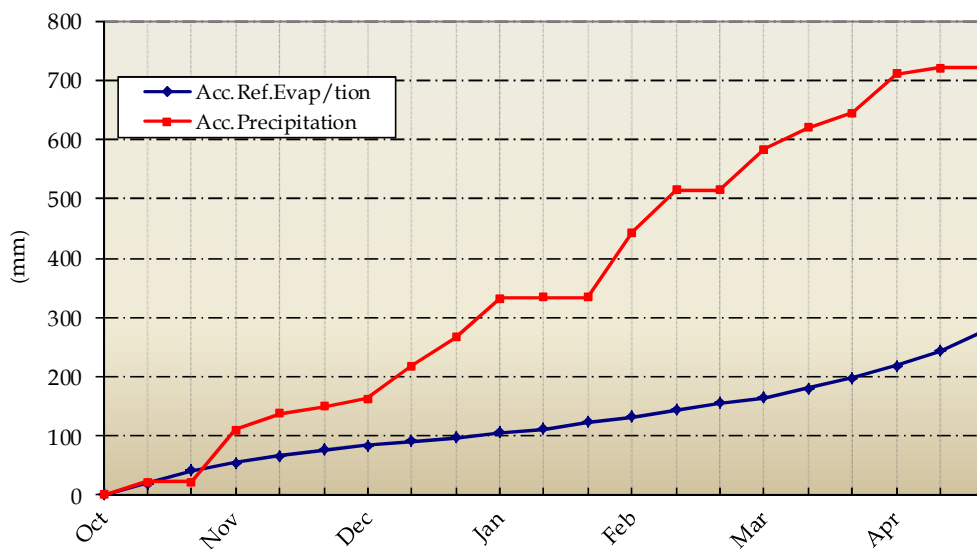


Tripoli

2nd 10-day period (11-20/04/2015)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.5	20.0	19.5	20.4	17.9	19.9	21.6	21.5	24.0	18.7	20.1	14.9	16.3
	Min	-2.4	0.2	1.8	2.0	5.3	2.2	3.9	6.6	4.8	5.2	3.0	3.1	4.8
Relative Humidity	Max	99	100	100	100	100	100	100	95	100	100	99	89	-
	Min	21	14	15	27	42	28	17	22	18	50	25	56	-
Soil Temperature at 10 cm	06 UTC	7.2	8.6	10.2	10.8	11.6	10.8	11.8	12.4	13.0	12.8	10.9	10.2	10.9
	12 UTC	-	-	-	15.2	14.8	16.4	-	-	-	16.4	15.7	15.6	12.7
Sunshine Duration		10.5	11.6	10.1	7.1	5.2	10.8	11.5	10.3	6.1	7.6	9.1	6.7	6.7
Precipitation					0.8	0.7				0.1		1.6	12.2	30.8
Evaporation		3.3	4.0	6.0	1.6	2.2	3.4	6.1	6.5	3.1	3.8	40.0	23.9	29.8
Growing Degrees	5	2.6	5.1	5.7	6.2	6.6	6.1	7.8	9.1	9.4	7.0	65.3	40.1	55.6
	10	0.0	0.1	0.7	1.2	1.6	1.1	2.8	4.1	4.4	2.0	17.8	4.0	14.5

2nd 10-day period (11-20/04/2015)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	32.4	25.0	28.5
Precipitation - Reference Evapotranspiration	-30.8	-12.8	2.3
Number of Rainy Days	3.0	6.0	4.5
Number of Dry Days	5.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration





◆ List of Symbols and Abbreviations

Reference Evapotranspiration ET_0 (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.

Mesurements 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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