



AGROMETEOROLOGICAL BULLETIN

February 2016
3rd 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



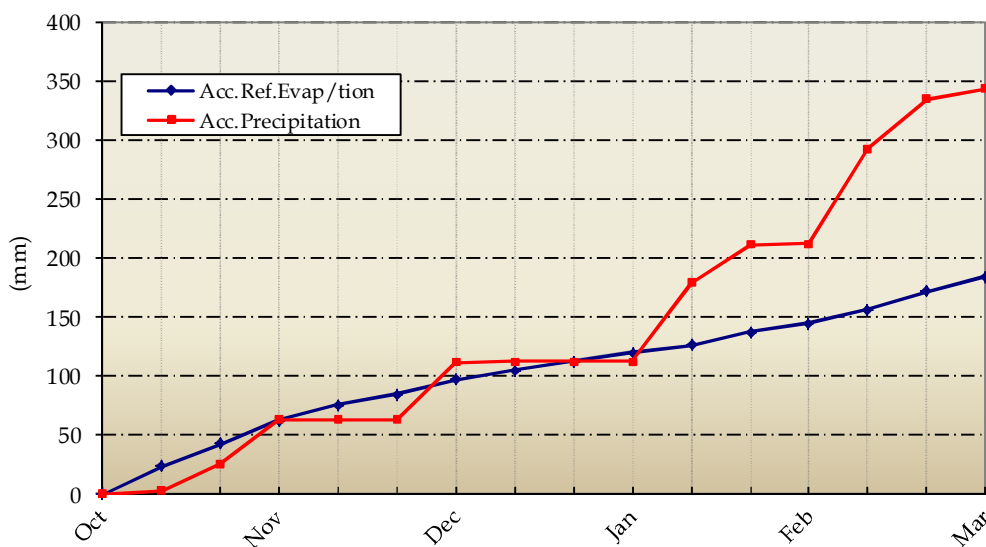
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3rd 10-day period (21-29/02/2016)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	12.0	14.8	15.8	17.4	14.4	15.6	16.0	14.2	17.0	15.2	13.6	9.7
	Min	4.2	3.4	6.4	11.4	9.2	8.6	7.0	9.8	6.6	7.4	5.6	1.6
Relative Humidity	Max	93	94	94	95	90	100	100	97	95	95	95	-
	Min	50	67	71	76	60	75	75	71	61	67	67	-
Soil Temperature at 10 cm	06 UTC	8.2	7.3	9.4	11.6	11.4	10.5	10.6	11.6	9.5	10.0	7.5	5.7
	12 UTC	11.6	12.0	13.6	13.5	12.4	13.0	12.6	12.4	13.6	12.7	10.6	7.3
Sunshine Duration		7.5	9.0	9.2	0.7	3.5	2.2	3.1	4.2	6.7	5.1	3.6	4.8
Precipitation		0.0			2.0	6.7					8.7	46.3	14.4
Evaporation		2.0	0.6	2.0	1.2	3.3	1.3	0.6	2.6	0.7	14.3	5.1	9.4
Growing Degrees	5	3.1	4.1	6.1	9.4	6.8	7.1	6.5	7.0	6.8	56.9	37.0	17.0
	10	0.0	0.0	1.1	4.4	1.8	2.1	1.5	2.0	1.8	14.7	6.5	2.5

3rd 10-day period (21-29/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	12.4	9.8	12.0
Precipitation - Reference Evapotranspiration	-3.7	36.5	2.4
Number of Rainy Days	2.0	5.0	1.9
Number of Dry Days	4.0	14.0	-

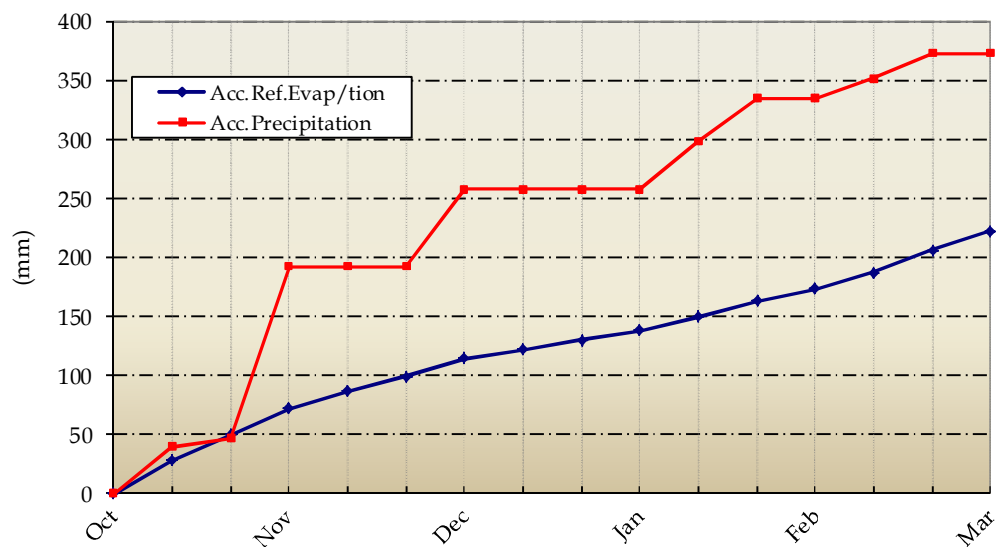
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-29/02/2016)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.4	17.0	19.8	17.2	17.0	18.2	18.8	22.4	20.0	18.4	14.2	14.1
	Min	4.7	5.0	6.0	11.0	6.3	8.6	8.2	5.7	9.2	7.2	7.5	5.3
Relative Humidity	Max	86	89	90	91	92	91	90	88	81	89	89	-
	Min	56	58	56	55	61	58	52	30	53	53	61	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	9.2	9.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	10.8	11.2
Sunshine Duration		9.9	9.3	8.6	1.5	9.4	7.3	8.6	8.8	0.0	7.0	3.3	5.7
Precipitation												110.5	22.1
Evaporation		1.5	1.0	1.5	1.0	1.0	1.0	4.5	1.3	2.4	15.2	13.8	19.2
Growing Degrees	5	5.1	6.0	7.9	9.1	6.7	8.4	8.5	9.1	9.6	70.3	46.9	39.2
	10	0.1	1.0	2.9	4.1	1.7	3.4	3.5	4.1	4.6	25.3	6.9	8.3

3rd 10-day period (21-29/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	16.4	12.1	12.9
Precipitation - Reference Evapotranspiration	-16.4	98.4	9.2
Number of Rainy Days	0.0	6.0	3.2
Number of Dry Days	9.0	11.0	-

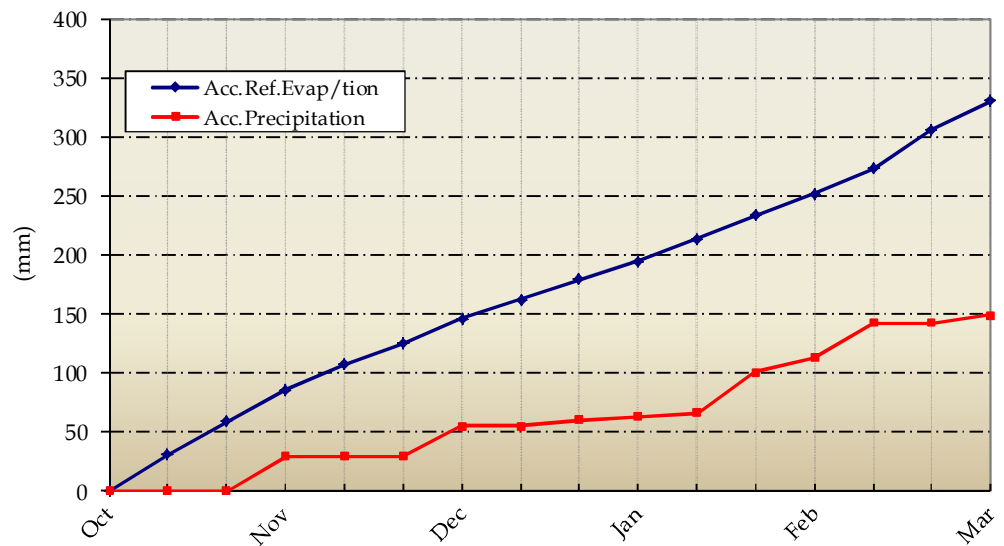
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-29/02/2016)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.4	18.2	18.4	19.0	17.6	17.4	18.8	20.4	23.0	18.7	16.9	14.9
	Min	12.4	12.8	11.0	11.4	10.6	12.0	10.0	10.6	15.4	11.8	10.3	8.9
Relative Humidity	Max	83	90	97	97	95	90	88	87	52	87	86	-
	Min	56	45	50	61	78	62	52	37	13	50	56	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		6.0	8.4	8.5	2.4	7.7	8.1	8.4	9.0	3.5	6.9	4.3	4.7
Precipitation		6.2									6.2	19.7	19.7
Evaporation		2.8	7.6	2.5	0.8	1.1	1.5	2.3	3.7	7.6	29.9	14.0	26.4
Growing Degrees	5	8.9	10.5	9.7	10.2	9.1	9.7	9.4	10.5	14.2	92.2	68.6	57.1
	10	3.9	5.5	4.7	5.2	4.1	4.7	4.4	5.5	9.2	47.2	28.6	18.9

3rd 10-day period (21-29/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	23.8	17.3	-
Precipitation - Reference Evapotranspiration	-17.6	2.4	19.7
Number of Rainy Days	1.0	3.0	3.4
Number of Dry Days	14.0	3.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

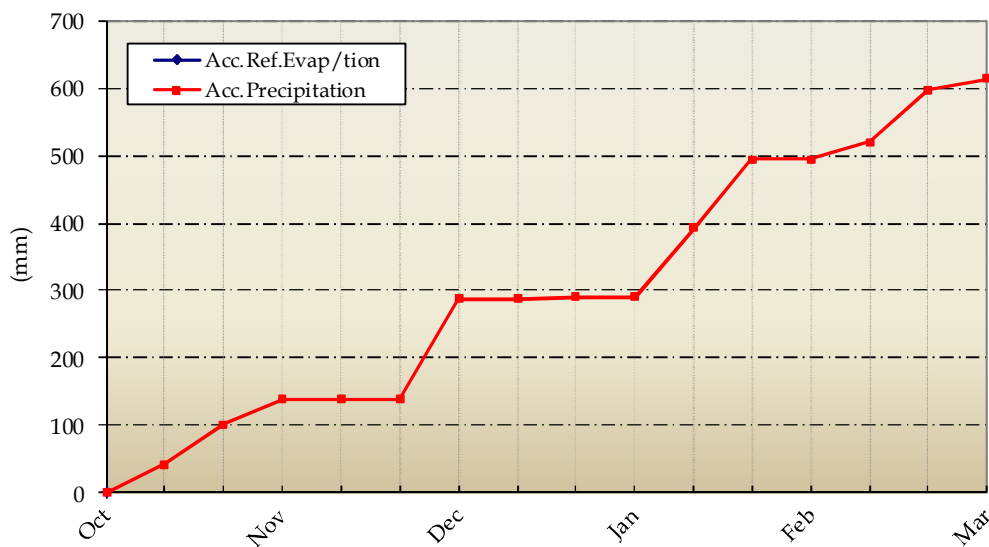


Ioannina

3rd 10-day period (21-29/02/2016)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.2	15.6	23.1	15.1	16.8	11.2	-	19.2	21.9	17.1	12.2	10.4
	Min	-1.0	-0.3	1.2	9.3	7.5	0.5	5.1	-	10.2	4.1	3.0	1.4
Relative Humidity	Max	99	100	100	100	100	100	-	100	98	100	100	-
	Min	37	40	29	61	40	68	-	27	29	41	59	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	4.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	5.7
Sunshine Duration		7.1	4.7	6.8	0.2	-	0.5	-	6.7	0.8	3.8	1.4	4.3
Precipitation		0.0		0.0	3.0		13.0			0.1	16.1	55.6	21.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	6.7
Growing Degrees	5	1.6	2.7	7.2	7.2	7.2	0.9	-	-	11.1	-	20.8	14.5
	10	0.0	0.0	2.2	2.2	2.2	0.0	-	-	6.1	-	0.4	1.1

3rd 10-day period (21-29/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	10.3
Precipitation - Reference Evapotranspiration	-	-	10.8
Number of Rainy Days	3.0	7.0	2.9
Number of Dry Days	3.0	12.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

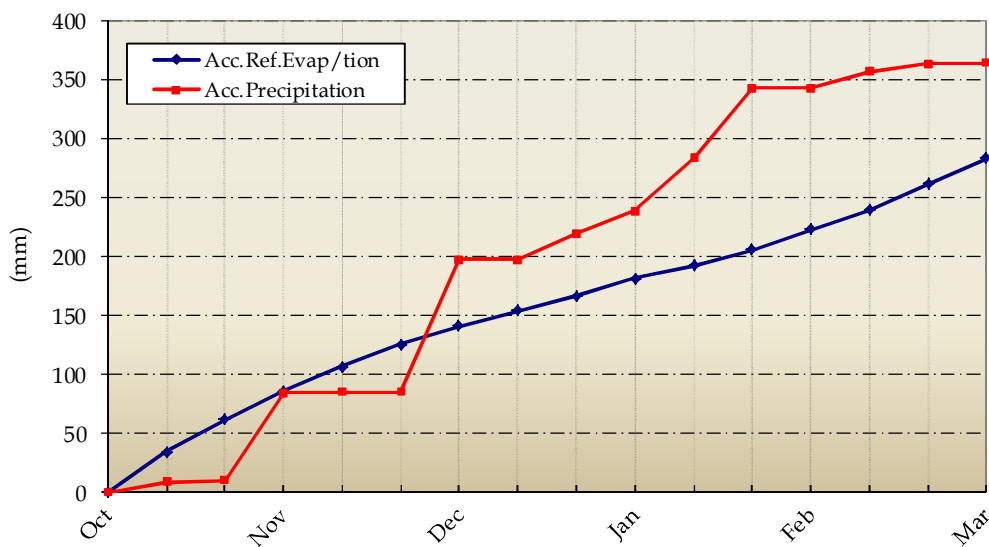


Kalamata

3rd 10-day period (21-29/02/2016)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.6	18.8	19.2	19.0	20.0	18.6	19.6	21.3	23.8	19.8	15.9	14.8
	Min	5.8	8.8	8.0	12.2	7.4	6.6	6.3	5.6	10.7	7.9	6.4	5.1
Relative Humidity	Max	85	85	91	91	92	93	94	93	77	89	93	-
	Min	34	39	53	51	36	53	47	39	39	43	52	-
Soil Temperature at 10 cm	06 UTC	13.0	12.4	12.8	13.6	12.8	13.0	13.0	12.6	13.2	12.9	10.3	9.6
	12 UTC	13.0	13.8	14.4	14.4	14.0	14.2	14.8	13.6	14.0	14.0	10.8	11.1
Sunshine Duration		10.0	9.8	9.4	2.7	9.7	8.6	9.5	9.4	1.2	7.8	2.0	5.3
Precipitation		0.5			0.3						0.8	69.5	28.6
Evaporation		2.6	1.4	4.1	1.6	3.2	3.7	3.3	1.8	2.2	23.9	-	20.1
Growing Degrees	5	6.7	8.8	8.6	10.6	8.7	7.6	8.0	8.5	12.3	79.7	49.5	40.8
	10	1.7	3.8	3.6	5.6	3.7	2.6	3.0	3.5	7.3	34.7	11.3	8.0

3rd 10-day period (21-29/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	21.8	14.1	13.5
Precipitation - Reference Evapotranspiration	-21.0	55.4	15.1
Number of Rainy Days	2.0	7.0	3.3
Number of Dry Days	0.0	11.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

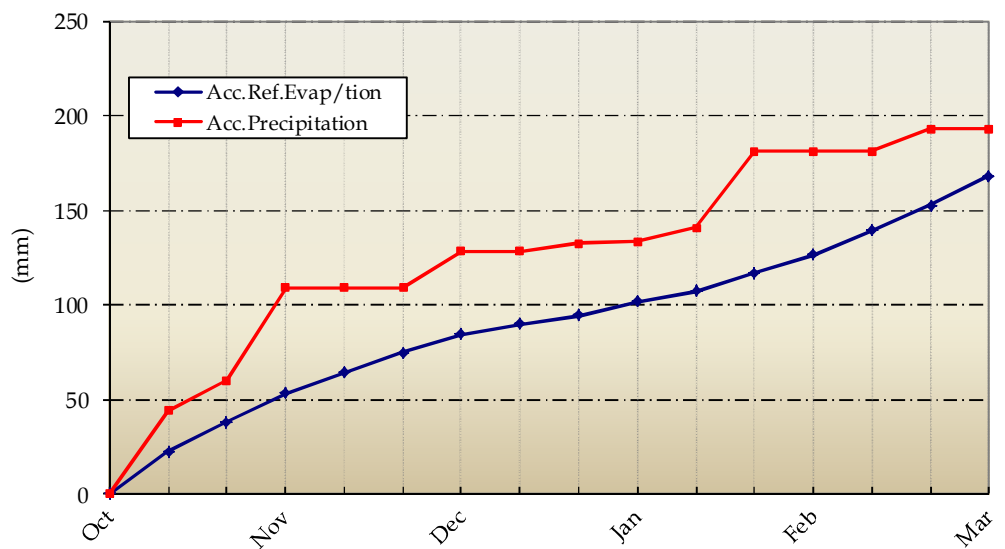


Larisa

3rd 10-day period (21-29/02/2016)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.7	19.2	21.2	16.0	17.4	18.6	19.1	17.8	17.0	18.1	13.3	11.9
	Min	2.6	1.7	3.4	9.8	4.0	7.6	2.7	3.4	7.9	4.8	4.2	1.7
Relative Humidity	Max	100	100	100	100	100	100	100	100	100	100	100	-
	Min	35	43	44	83	52	48	40	56	69	52	64	-
Soil Temperature at 10 cm	06 UTC	11.0	11.0	11.0	11.8	11.6	12.2	12.2	12.2	12.2	11.7	-	7.0
	12 UTC	11.2	11.0	11.0	11.8	11.6	12.0	12.2	12.0	12.2	11.7	-	7.7
Sunshine Duration		9.4	10.6	7.8	0.0	8.2	6.2	7.4	8.0	0.1	6.4	2.2	4.6
Precipitation		0.1						0.1			0.2	20.8	13.4
Evaporation		3.0	2.0	5.2	0.2	2.6	4.3	0.3	2.8	2.3	22.7	15.5	9.6
Growing Degrees	5	4.7	5.5	7.3	7.9	5.7	8.1	5.9	5.6	7.5	58.1	30.1	20.2
	10	0.0	0.5	2.3	2.9	0.7	3.1	0.9	0.6	2.5	13.4	4.0	2.5

3rd 10-day period (21-29/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	15.7	9.1	11.5
Precipitation - Reference Evapotranspiration	-15.5	11.7	1.9
Number of Rainy Days	2.0	7.0	2.6
Number of Dry Days	0.0	4.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

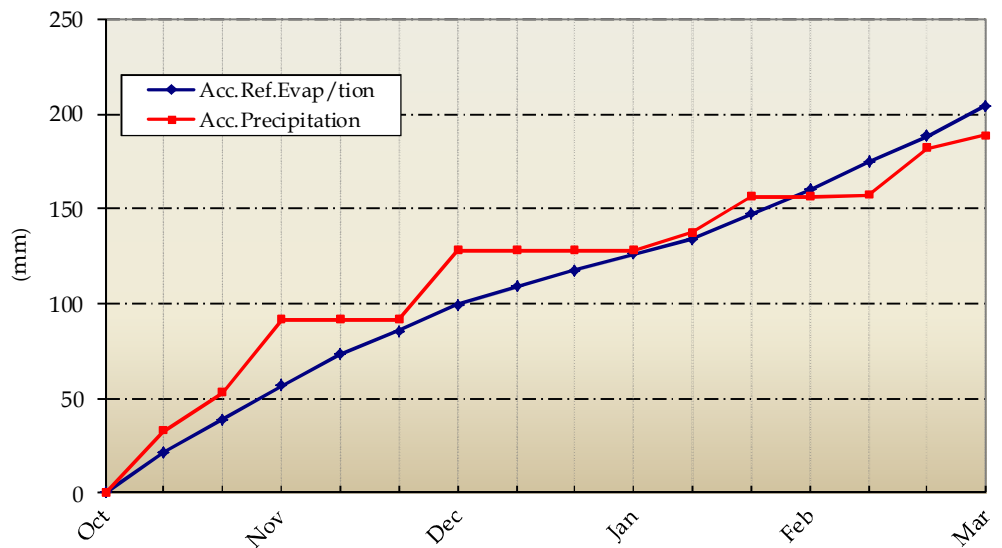


Mikra

3rd 10-day period (21-29/02/2016)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.6	15.8	16.4	13.6	16.6	17.4	17.2	18.2	17.6	16.5	13.6	11.1
	Min	7.6	4.2	5.2	11.1	3.9	10.8	6.5	5.2	9.2	7.1	6.2	2.8
Relative Humidity	Max	82	92	94	95	91	92	94	91	82	90	92	-
	Min	37	47	58	59	55	52	45	46	43	49	62	-
Soil Temperature at 10 cm	06 UTC	9.4	9.2	10.4	12.3	10.2	12.3	11.4	11.0	11.8	10.9	8.3	6.7
	12 UTC	11.6	11.6	12.2	12.9	12.4	13.4	13.6	14.2	13.6	12.8	10.3	9.0
Sunshine Duration		8.5	7.2	9.8	0.0	9.3	4.6	6.6	6.2	1.4	6.0	3.0	4.4
Precipitation		5.4			1.2		0.3	0.0			6.9	13.4	13.2
Evaporation		2.1	1.2	3.8	1.0	1.5	0.3	5.7	0.2	1.4	17.2	10.3	13.2
Growing Degrees	5	6.6	5.0	5.8	7.4	5.3	9.1	6.9	6.7	8.4	61.1	39.4	21.0
	10	1.6	0.0	0.8	2.4	0.3	4.1	1.9	1.7	3.4	16.1	6.3	2.4

3rd 10-day period (21-29/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	16.2	10.6	11.8
Precipitation - Reference Evapotranspiration	-9.3	2.8	1.4
Number of Rainy Days	3.0	7.0	2.4
Number of Dry Days	0.0	3.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

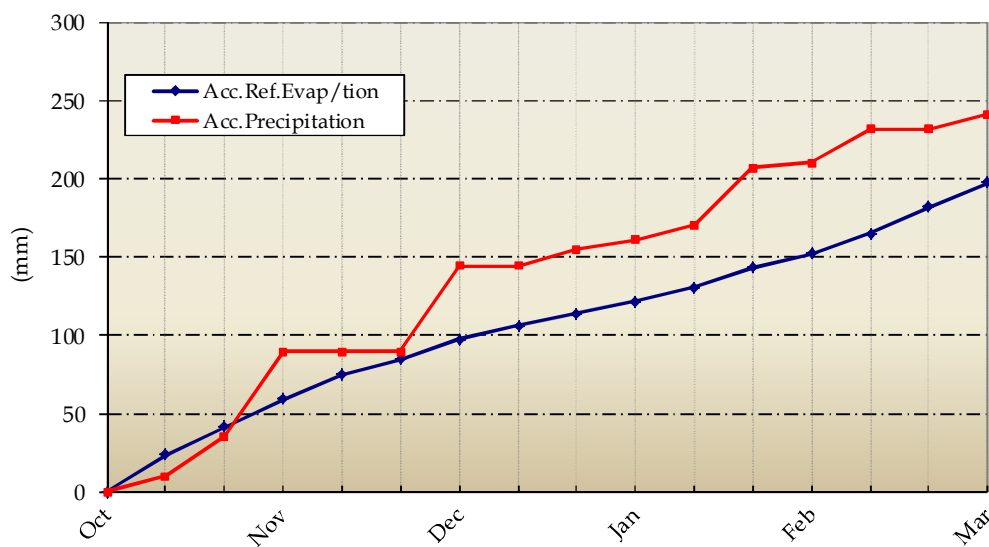


Tanagra

3rd 10-day period (21-29/02/2016)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.4	20.2	20.2	19.5	18.0	19.1	18.4	18.6	20.8	19.0	14.0	12.6
	Min	7.9	4.8	5.6	9.5	6.0	5.2	4.8	3.4	8.0	6.1	4.4	3.5
Relative Humidity	Max	93	95	99	100	100	100	100	99	84	97	100	-
	Min	34	41	50	46	55	43	36	43	48	44	60	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		8.4	7.7	8.3	0.7	8.1	6.1	7.5	8.8	7.2	7.0	2.8	-
Precipitation		8.7			0.9						9.6	44.2	17.9
Evaporation		1.9	2.1	2.0	1.7	2.3	3.0	2.0	2.7	3.8	21.5	-	-
Growing Degrees	5	7.2	7.5	7.9	9.5	7.0	7.2	6.6	6.0	9.4	68.2	33.6	-
	10	2.2	2.5	2.9	4.5	2.0	2.2	1.6	1.0	4.4	23.2	3.3	-

3rd 10-day period (21-29/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	15.9	9.8	
Precipitation - Reference Evapotranspiration	-6.3	34.4	17.9
Number of Rainy Days	2.0	6.0	3.5
Number of Dry Days	9.0	4.0	-

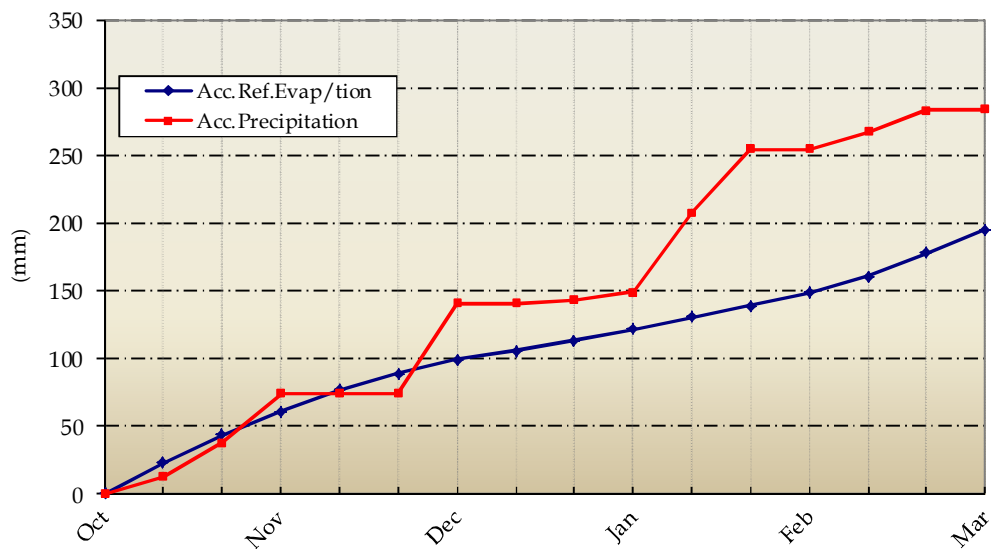
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-29/02/2016)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.0	21.8	23.7	16.0	17.5	15.3	16.2	14.3	15.6	17.4	11.5	10.1
	Min	1.2	0.1	2.3	8.6	0.4	2.0	3.1	-0.2	7.3	2.8	1.2	1.0
Relative Humidity	Max	100	100	100	99	100	100	100	100	99	100	100	-
	Min	25	30	26	33	45	39	39	54	64	39	58	-
Soil Temperature at 10 cm	06 UTC	6.6	6.4	7.8	9.8	7.2	8.2	8.2	7.6	9.4	7.9	5.5	5.0
	12 UTC	-	10.4	12.8	12.2	12.2	12.6	-	-	12.8	12.2	7.6	6.2
Sunshine Duration		9.7	9.4	9.2	2.8	9.1	8.7	9.6	8.6	5.1	8.0	2.7	5.1
Precipitation		0.0			0.4			0.0			0.4	68.1	27.0
Evaporation		1.7	1.1	3.1	1.0	2.2	2.1	1.9	1.9	2.2	17.2	-	9.7
Growing Degrees	5	3.6	6.0	8.0	7.3	4.0	3.7	4.7	2.1	6.5	45.6	13.3	14.5
	10	0.0	1.0	3.0	2.3	0.0	0.0	0.0	0.0	1.5	7.7	0.0	1.4

3rd 10-day period (21-29/02/2016)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	17.1	9.1	12.6
Precipitation - Reference Evapotranspiration	-16.7	59.0	14.4
Number of Rainy Days	1.0	7.0	3.2
Number of Dry Days	3.0	11.0	-

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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ΕΘΝΙΚΗ
ΜΕΤΕΩΡΟΛΟΓΙΚΗ
ΥΠΗΡΕΣΙΑ

HELLENIC NATIONAL METEOROLOGICAL SERVICE

Division of Climatology-Applications

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