

AGROMETEOROLOGICAL BULLETIN

February 2012
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



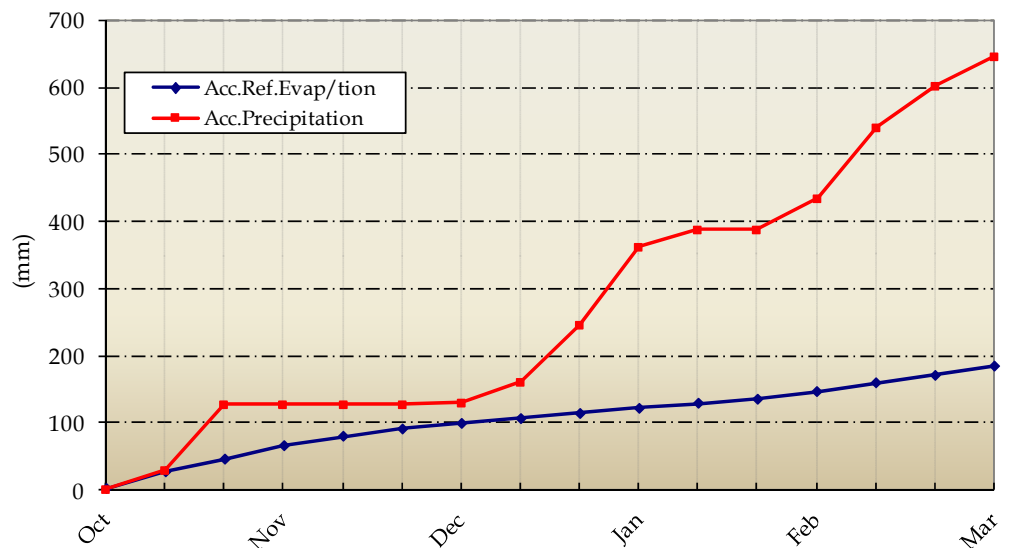
Hellenic National Meteorological Service
Division of Climatology-Applications
El. Venizelou Street 14, 16777
Helliniko, Athens

Web addresses of HNMS
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www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr

3rd 10-day period (21-29/02/2012)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.5	11.8	14.0	18.4	19.2	16.6	13.0	8.6	13.0	14.6	15.0	14.5
	Min	3.0	8.0	8.0	1.0	1.6	5.4	6.4	2.8	-2.0	3.8	6.4	3.6
Relative Humidity	Max	93	94	84	96	93	97	89	52	84	87	86	-
	Min	41	82	62	42	52	71	62	23	49	54	51	-
Soil Temperature at 10 cm	06 UTC	8.2	9.0	8.4	8.0	8.2	9.4	10.8	7.6	6.0	8.4	9.6	7.6
	12 UTC	9.4	9.0	9.0	9.0	9.8	11.2	10.2	8.2	6.2	9.1	11.2	10.5
Sunshine Duration		5.6	0.0	1.2	10.0	10.1	4.3	0.0	10.5	4.6	5.1	5.0	5.1
Precipitation			18.1	1.2				23.8			43.1	21.0	30.5
Evaporation		3.0	-	2.2	2.6	2.6	1.3	2.2	1.0	2.7	-	21.1	16.9
Growing Degrees	5	4.8	4.9	6.0	4.7	5.4	6.0	4.7	0.7	0.5	37.7	45.9	34.1
	10	0.0	0.0	1.0	0.0	0.4	1.0	0.0	0.0	0.0	2.4	7.4	6.4

3rd 10-day period (21-29/02/2012)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	13.9	15.4
Precipitation - Reference Evapotranspiration	29.2	5.6
Number of Rainy Days	3.0	2.0
Number of Dry Days	2.0	1.0

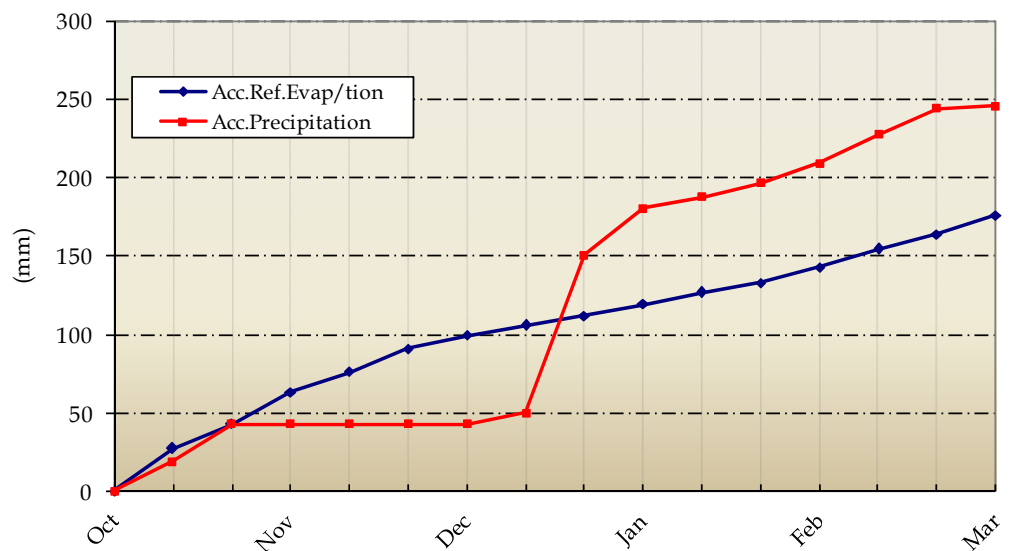
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-29/02/2012)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	12.8	12.0	8.6	11.0	14.8	14.0	10.0	4.8	1.4	9.9	5.5	9.7
	Min	1.8	2.6	1.2	-3.4	0.6	4.4	4.0	-0.6	-5.6	0.6	1.3	1.6
Relative Humidity	Max	93	97	89	93	92	88	97	87	96	92	87	-
	Min	50	54	64	64	60	47	59	31	78	56	62	-
Soil Temperature at 10 cm	06 UTC	5.0	5.6	5.6	3.0	5.0	6.8	7.2	4.8	3.6	5.2	4.6	5.7
	12 UTC	6.6	6.6	6.8	5.6	7.4	8.2	7.2	6.2	3.2	6.4	4.7	7.3
Sunshine Duration		7.4	4.2	7.8	5.0	9.7	3.2	0.0	8.9	0.0	5.1	0.9	4.8
Precipitation							0.7	0.7		0.6	2.0	6.3	14.4
Evaporation		0.7	2.8	0.0	0.0	2.0	0.0	0.0	0.0	0.0	5.5	4.1	9.4
Growing Degrees	5	2.3	2.3	0.0	0.0	2.7	4.2	2.0	0.0	0.0	13.5	2.1	17.0
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5

3rd 10-day period (21-29/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	11.9	8.5	12.0
Precipitation - Reference Evapotranspiration	-9.9	-2.2	2.4
Number of Rainy Days	3.0	1.0	1.9
Number of Dry Days	9.0	2.0	-

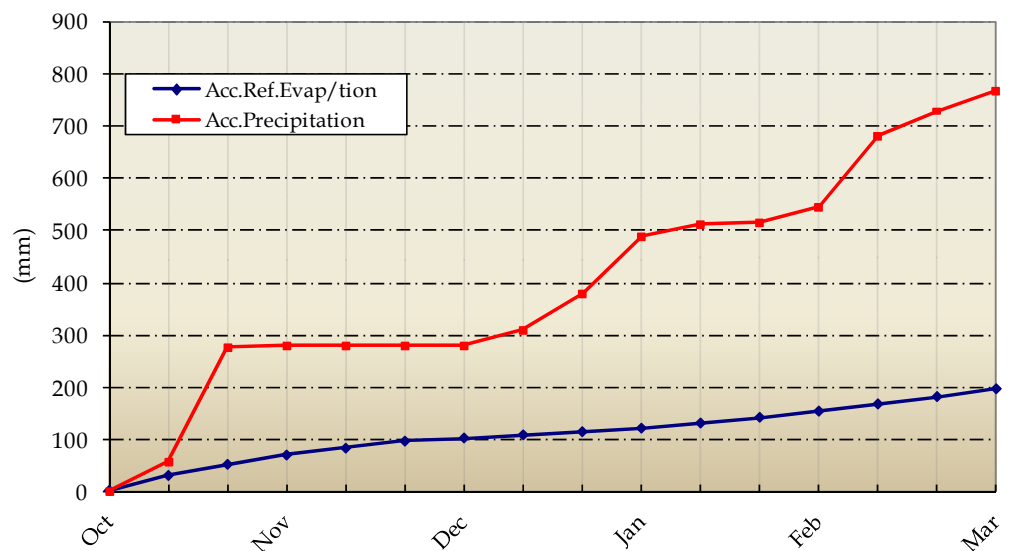
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



3rd 10-day period (21-29/02/2012)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.9	12.4	12.6	15.6	17.8	16.0	13.2	9.6	11.9	13.9	15.4	14.1
	Min	3.4	8.1	8.5	3.9	6.2	7.8	6.2	3.0	-0.8	5.1	7.1	5.3
Relative Humidity	Max	88	90	91	91	91	91	89	72	84	87	90	-
	Min	45	81	73	48	54	65	57	29	44	55	52	-
Soil Temperature at 10 cm	06 UTC	8.4	10.0	9.6	8.6	9.4	10.6	11.9	6.4	5.6	8.9	11.0	9.0
	12 UTC	11.4	10.2	10.2	11.8	13.2	12.4	11.6	9.8	7.6	10.9	12.8	11.2
Sunshine Duration		4.1	0.0	0.0	9.0	9.5	4.0	0.0	9.5	3.5	4.4	3.3	5.7
Precipitation			11.0	6.0				20.9		0.3	38.2	21.8	22.1
Evaporation		0.8	3.1	0.1	-	1.2	-	-	0.2	3.1	-	16.6	19.2
Growing Degrees	5	4.7	5.3	5.6	4.8	7.0	6.9	4.7	1.3	0.6	40.7	50.0	39.2
	10	0.0	0.3	0.6	0.0	2.0	1.9	0.0	0.0	0.0	4.7	10.9	8.3

3rd 10-day period (21-29/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	15.0	12.3	12.9
Precipitation - Reference Evapotranspiration	23.2	9.5	9.2
Number of Rainy Days	4.0	4.0	3.2
Number of Dry Days	2.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

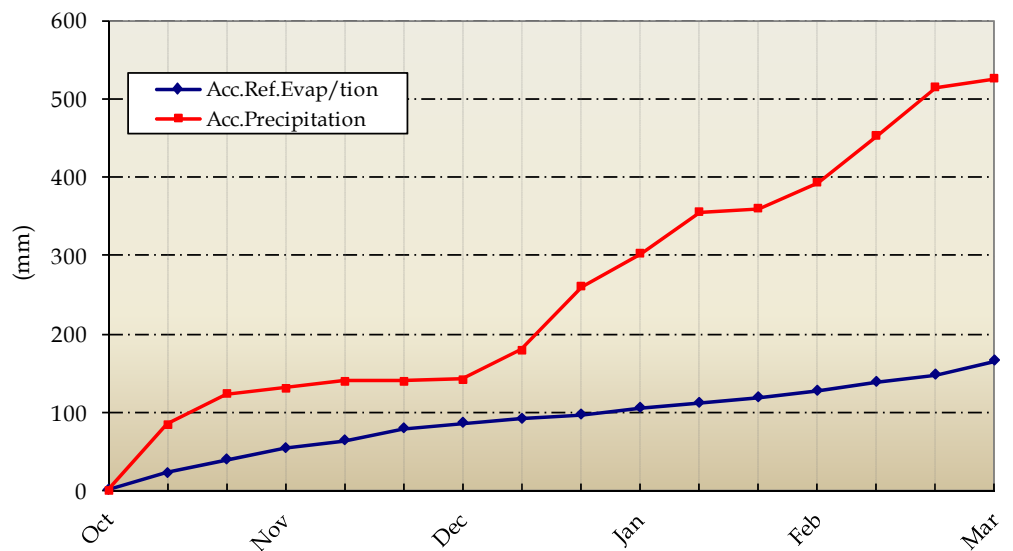


Ioannina

3rd 10-day period (21-29/02/2012)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.4	11.6	14.0	16.6	19.6	15.4	10.4	5.4	9.0	12.8	-	10.4
	Min	1.4	8.5	8.5	-0.6	-0.6	4.0	2.4	-3.0	-3.0	2.0	-	1.4
Relative Humidity	Max	96	48	83	92	92	93	64	65	96	81	-	-
	Min	43	39	35	21	29	52	36	-	56	39	-	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	4.5
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	5.7
Sunshine Duration		5.7	0.0	7.1	6.8	7.7	2.6	0.0	7.8	3.0	4.5	-	4.3
Precipitation								9.6		2.5	12.1	-	21.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	6.7
Growing Degrees	5	2.4	5.1	6.3	3.0	4.5	4.7	1.4	0.0	0.0	27.3	-	14.5
	10	0.0	0.1	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.3	-	1.1

3rd 10-day period (21-29/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	18.0	-	10.3
Precipitation - Reference Evapotranspiration	-5.9	-	10.8
Number of Rainy Days	2.0	-	2.9
Number of Dry Days	6.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

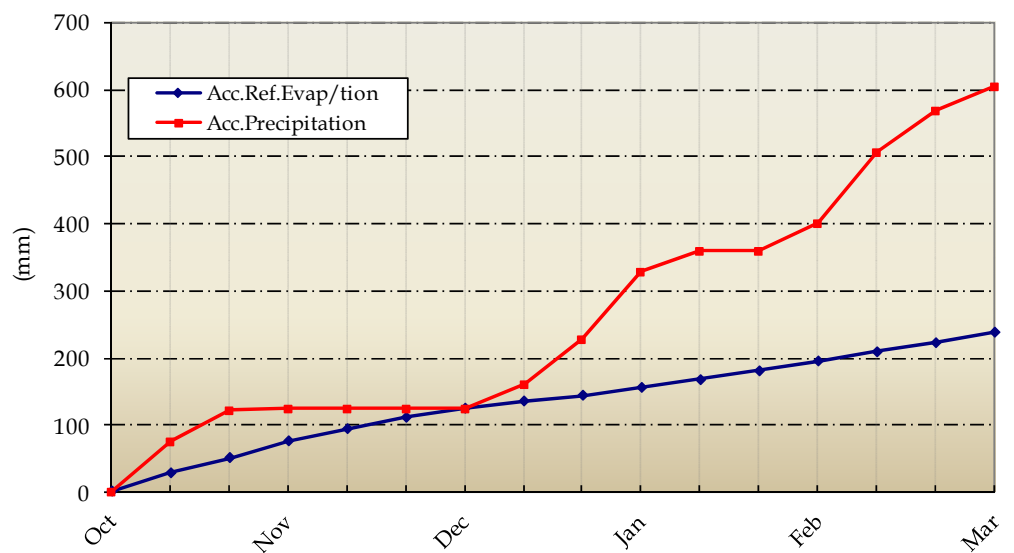


Kalamata

3rd 10-day period (21-29/02/2012)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.0	13.8	14.4	17.6	17.2	16.6	13.6	12.4	11.2	14.6	15.9	14.8
	Min	4.2	8.4	10.8	7.2	4.6	4.6	7.0	4.0	-1.2	5.5	7.0	5.1
Relative Humidity	Max	97	95	88	89	97	97	95	97	92	94	91	-
	Min	55	50	59	50	42	66	48	39	49	51	50	-
Soil Temperature at 10 cm	06 UTC	8.2	9.6	10.0	10.0	10.0	10.0	11.4	9.2	7.8	9.6	11.6	9.6
	12 UTC	9.8	10.2	10.6	11.6	11.6	11.4	12.0	10.6	8.6	10.7	12.6	11.1
Sunshine Duration		2.3	0.0	1.8	10.2	12.0	0.1	0.0	10.4	1.2	4.2	4.6	5.3
Precipitation			8.5	2.5				24.1		0.0	35.1	41.9	28.6
Evaporation		1.1	1.6	0.9	3.8	3.6	2.3	0.2	0.2	2.8	16.5	22.7	20.1
Growing Degrees	5	4.6	6.1	7.6	7.4	5.9	5.6	5.3	3.2	0.0	45.7	51.6	40.8
	10	0.0	1.1	2.6	2.4	0.9	0.6	0.3	0.0	0.0	7.9	12.9	8.0

3rd 10-day period (21-29/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	15.7	15.1	13.5
Precipitation - Reference Evapotranspiration	19.4	26.8	15.1
Number of Rainy Days	3.0	5.0	3.3
Number of Dry Days	1.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

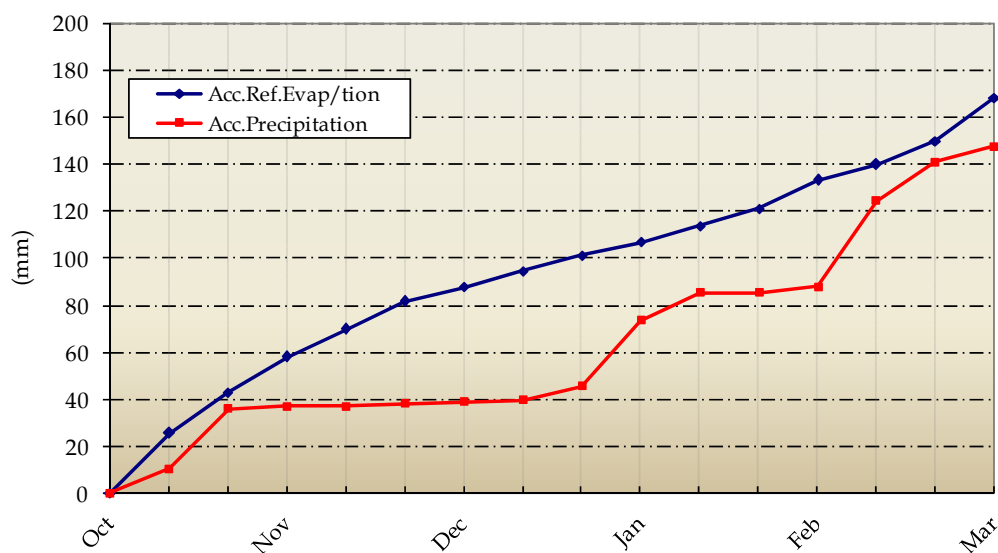


Larisa

3rd 10-day period (21-29/02/2012)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	14.4	10.6	13.6	18.0	21.6	16.4	10.4	7.0	13.0	13.9	9.2	11.9
	Min	6.8	7.2	5.0	-1.4	0.6	7.4	5.4	0.2	-3.8	3.0	6.2	1.7
Relative Humidity	Max	85	94	94	96	88	80	76	70	72	84	91	-
	Min	49	56	40	38	27	31	36	20	33	37	71	-
Soil Temperature at 10 cm	06 UTC	7.0	7.6	7.0	4.0	7.0	8.6	6.8	4.6	5.0	6.4	7.5	7.0
	12 UTC	7.0	8.0	8.0	7.8	8.2	8.4	7.8	6.2	6.2	7.5	8.6	7.7
Sunshine Duration		4.3	4.3	3.3	8.7	9.2	0.5	0.0	8.0	4.2	4.7	0.6	4.6
Precipitation			0.5				0.0	6.2			6.7	5.7	13.4
Evaporation		2.2	1.5	4.0	3.6	4.6	0.2	5.5	1.3	3.8	26.7	7.0	9.6
Growing Degrees	5	5.6	3.9	4.3	3.3	6.1	6.9	2.9	0.0	0.0	33.0	21.5	20.2
	10	0.6	0.0	0.0	0.0	1.1	1.9	0.0	0.0	0.0	3.6	0.0	2.5

3rd 10-day period (21-29/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	18.3	8.5	11.5
Precipitation - Reference Evapotranspiration	-11.6	-2.8	1.9
Number of Rainy Days	2.0	2.0	2.6
Number of Dry Days	7.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

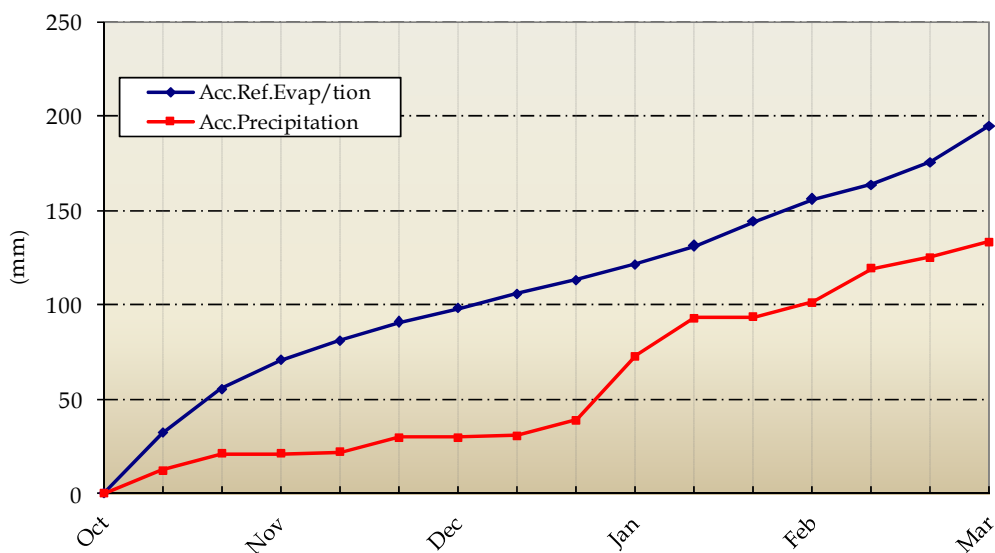


Mikra

3rd 10-day period (21-29/02/2012)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	12.0	11.8	13.0	14.2	18.8	15.0	8.8	6.4	10.6	12.3	-	11.1
	Min	6.8	4.8	3.8	-0.4	8.4	8.6	5.0	1.0	3.0	4.6	-	2.8
Relative Humidity	Max	88	89	88	89	72	83	84	82	70	83	-	-
	Min	69	58	43	37	34	38	43	28	41	43	-	-
Soil Temperature at 10 cm	06 UTC	7.4	7.2	7.0	6.4	4.8	9.2	8.0	4.6	4.6	6.6	-	6.7
	12 UTC	8.4	8.4	9.6	9.4	13.2	10.4	7.8	5.6	6.0	8.8	-	9.0
Sunshine Duration		1.6	0.0	9.4	6.2	9.5	0.0	0.0	9.0	5.2	4.5	-	4.4
Precipitation		0.1					0.5	7.7			8.3	-	13.2
Evaporation		0.8	0.8	2.0	6.6	6.4	2.1	3.2	0.0	0.0	21.9	-	13.2
Growing Degrees	5	4.4	3.3	3.4	1.9	8.6	6.8	1.9	0.0	1.8	32.1	-	21.0
	10	0.0	0.0	0.0	0.0	3.6	1.8	0.0	0.0	0.0	5.4	-	2.4

3rd 10-day period (21-29/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	19.4	-	11.8
Precipitation - Reference Evapotranspiration	-11.1	-	1.4
Number of Rainy Days	3.0	-	2.4
Number of Dry Days	7.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

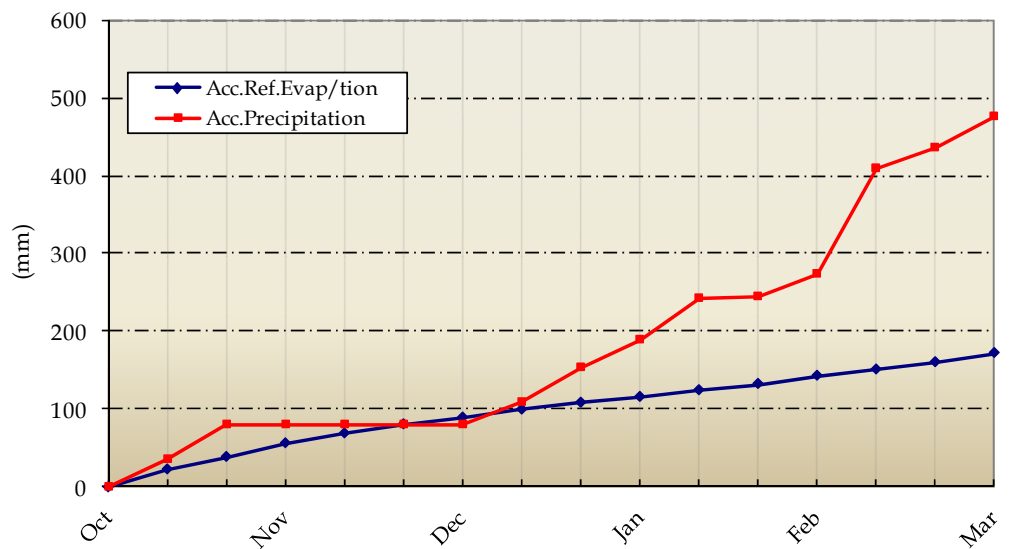


Tripoli

3rd 10-day period (21-29/02/2012)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	10.0	7.1	6.5	15.7	17.0	15.9	7.2	2.7	8.9	10.1	9.6	10.1
	Min	-1.3	4.2	4.2	-0.3	-1.6	-0.3	6.7	0.7	-7.6	0.5	3.1	1.0
Relative Humidity	Max	96	87	86	96	-	96	95	90	93	92	91	-
	Min	66	80	81	19	25	33	-	47	50	50	70	-
Soil Temperature at 10 cm	06 UTC	3.4	5.4	5.2	4.0	-	-	-	-	-	4.5	6.1	5.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	7.9	6.2
Sunshine Duration		2.8	0.0	0.0	-	-	-	-	-	-	0.9	1.9	5.1
Precipitation		0.0	9.4	7.9	0.2			21.2	1.2	0.0	39.9	31.6	27.0
Evaporation		2.7	0.2	-	-	-	-	-	-	-	-	3.1	9.7
Growing Degrees	5	0.0	0.7	0.4	2.7	2.7	2.8	2.0	0.0	0.0	11.2	12.0	14.5
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4

3rd 10-day period (21-29/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	11.8	9.3	12.6
Precipitation - Reference Evapotranspiration	28.1	22.3	14.4
Number of Rainy Days	5.0	5.0	3.2
Number of Dry Days	1.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

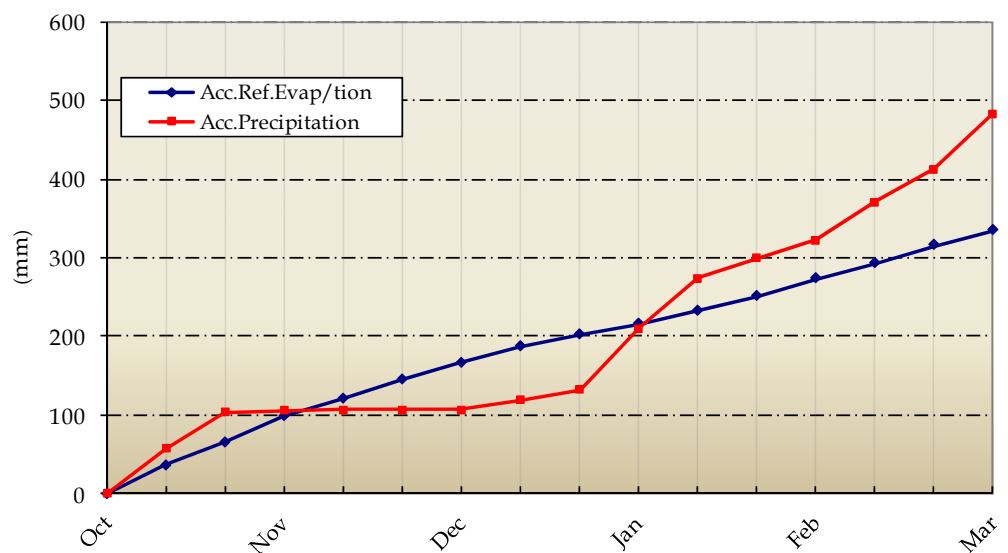


Tympaki

3rd 10-day period (21-29/02/2012)		21	22	23	24	25	26	27	28	29	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.0	14.0	15.0	16.0	17.2	17.0	16.8	12.8	13.4	15.5	16.5	15.4
	Min	4.6	9.8	9.6	6.6	3.0	5.6	10.0	5.8	2.2	6.4	8.8	7.2
Relative Humidity	Max	91	93	94	93	92	95	94	96	99	94	95	-
	Min	33	68	74	53	29	59	57	47	27	50	52	-
Soil Temperature at 10 cm	06 UTC	9.2	11.8	11.6	10.4	8.8	10.2	12.6	10.8	7.8	10.4	12.6	11.0
	12 UTC	13.0	12.2	12.4	12.8	13.2	14.4	14.4	10.6	10.2	12.6	15.4	13.5
Sunshine Duration		6.7	0.0	0.0	5.3	10.5	9.8	2.1	3.7	4.6	4.7	5.1	6.1
Precipitation			4.2	24.0	0.2			18.6	18.7	4.0	69.7	21.0	18.3
Evaporation		1.1	0.3	0.1	0.2	2.8	3.9	0.8	4.5	1.5	15.2	16.9	25.3
Growing Degrees	5	5.8	6.9	7.3	6.3	5.1	6.3	8.4	4.3	2.8	53.2	61.2	52.1
	10	0.8	1.9	2.3	1.3	0.1	1.3	3.4	0.0	0.0	11.1	21.2	14.4

3rd 10-day period (21-29/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	18.8	15.5	16.3
Precipitation - Reference Evapotranspiration	50.9	5.5	2.0
Number of Rainy Days	6.0	5.0	2.7
Number of Dry Days	4.0	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.

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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El. Venizelou street 14, Zip Code 16777

Helliniko, Athens



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ΜΕΤΕΩΡΟΛΟΓΙΚΗ
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Division of Climatology-Applications

Issue Editors :

Charalabopoulos Christos

Filiou Anna

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