



AGROMETEOROLOGICAL BULLETIN

June 2014
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



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

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

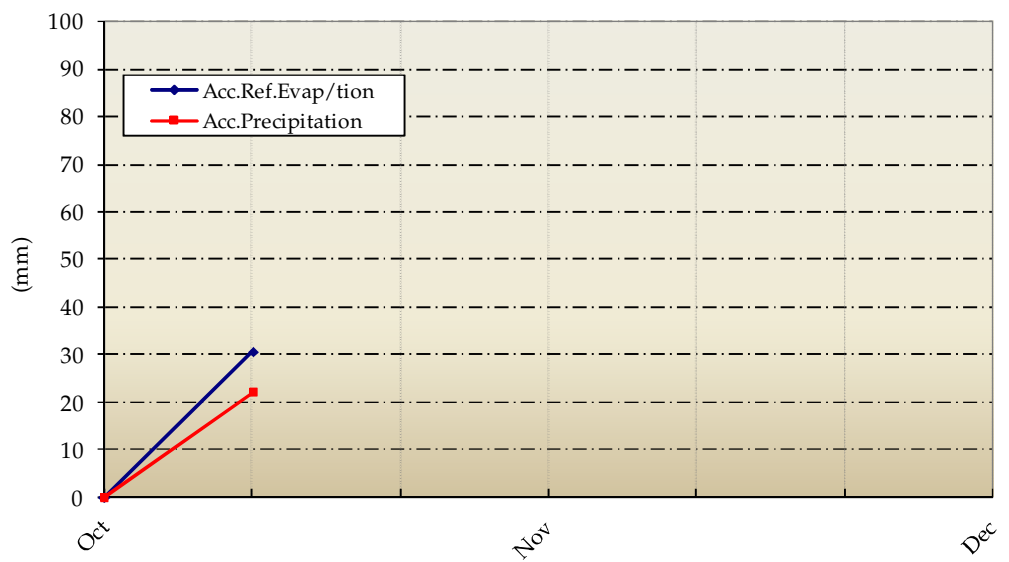
Agrinio

2nd 10-day period (11-20/06/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max													
	Min													
Relative Humidity	Max													
	Min													
Soil Temperature at 10 cm	06 UTC													
	12 UTC													
Sunshine Duration														
Precipitation														
Evaporation														
Growing Degrees	5													
	10													

2nd 10-day period (11-20/06/2014)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration		
Precipitation - Reference Evapotranspiration		
Number of Rainy Days		
Number of Dry Days		

This station is not operated

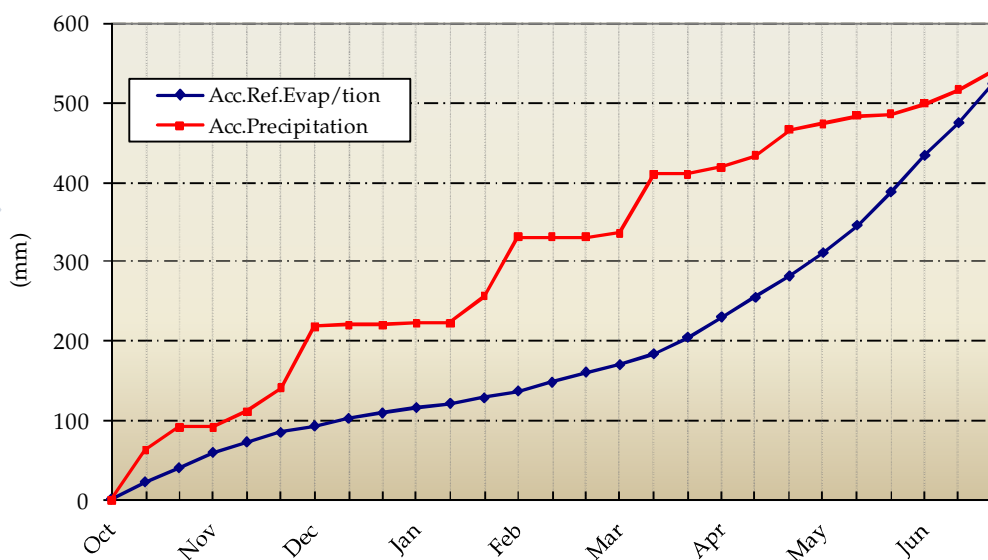
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.2	29.6	26.6	28.4	29.8	28.0	26.6	30.8	28.0	23.8	28.2	29.5	27.5
	Min	17.6	17.0	16.6	17.4	17.8	18.0	18.6	20.0	19.8	15.6	17.8	18.6	15.2
Relative Humidity	Max	94	94	90	92	92	92	94	90	76	91	90	86	-
	Min	55	35	50	48	43	55	61	45	49	53	49	45	-
Soil Temperature at 10 cm	06 UTC	24.6	22.0	23.0	24.3	25.4	24.2	23.6	24.6	24.8	24.4	24.1	22.9	22.6
	12 UTC	27.4	27.2	28.6	28.4	30.0	27.0	27.8	29.2	29.2	25.6	28.0	26.3	27.3
Sunshine Duration		9.4	13.0	11.7	13.1	12.7	10.1	9.8	10.1	10.7	4.4	10.5	9.2	10.3
Precipitation		10.9					11.1		0.0		2.2	24.2	25.7	11.6
Evaporation		6.4	6.3	7.9	8.2	10.5	9.0	6.6	8.7	8.6	3.8	76.0	57.8	79.3
Growing Degrees	5	18.9	18.3	16.6	17.9	18.8	18.0	17.6	20.4	18.9	14.7	180.1	190.4	163.4
	10	13.9	13.3	11.6	12.9	13.8	13.0	12.6	15.4	13.9	9.7	130.1	140.4	113.4

2nd 10-day period (11-20/06/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	49.2	49.8	52.7
Precipitation - Reference Evapotranspiration	-25.0	-24.1	-41.1
Number of Rainy Days	3.0	4.0	1.6
Number of Dry Days	2.0	3.0	-

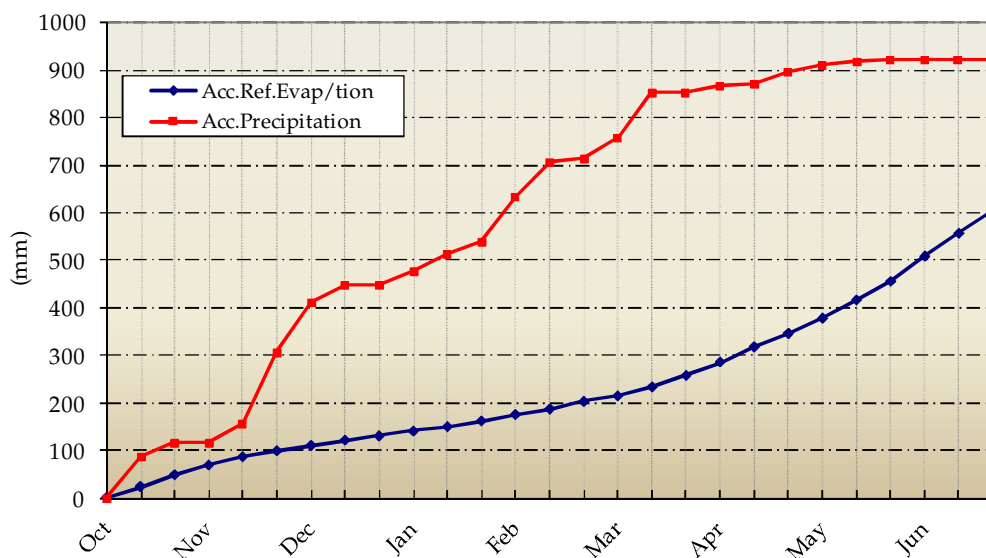
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	30.6	32.6	29.8	30.0	28.0	28.4	28.4	30.0	28.2	25.0	29.1	29.7	28.1
	Min	14.6	17.8	16.4	18.4	19.6	18.1	17.9	18.8	18.6	16.4	17.7	18.0	16.4
Relative Humidity	Max	88	87	88	89	87	89	89	89	91	85	88	84	-
	Min	31	29	39	41	48	49	52	45	45	54	43	39	-
Soil Temperature at 10 cm	06 UTC	24.0	25.0	25.4	25.6	26.0	25.8	25.4	24.6	25.5	25.6	25.3	26.2	24.8
	12 UTC	30.8	30.0	31.0	31.6	31.0	31.0	30.6	28.8	31.0	30.8	30.7	32.7	29.7
Sunshine Duration		12.6	7.4	12.1	9.2	10.8	12.3	0.9	8.3	11.7	8.9	9.4	12.7	11.5
Precipitation														2.1
Evaporation		10.7	7.0	5.5	8.0	5.5	5.0	1.5	8.0	1.0	6.0	58.2	79.2	71.4
Growing Degrees	5	17.6	20.2	18.1	19.2	18.8	18.3	18.2	19.4	18.4	15.7	183.8	188.4	172.2
	10	12.6	15.2	13.1	14.2	13.8	13.3	13.2	14.4	13.4	10.7	133.8	138.4	122.2

2nd 10-day period (11-20/06/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	48.3	58.6	50.2
Precipitation - Reference Evapotranspiration	-48.3	-58.6	-48.1
Number of Rainy Days	0.0	0.0	0.4
Number of Dry Days	11.0	10.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

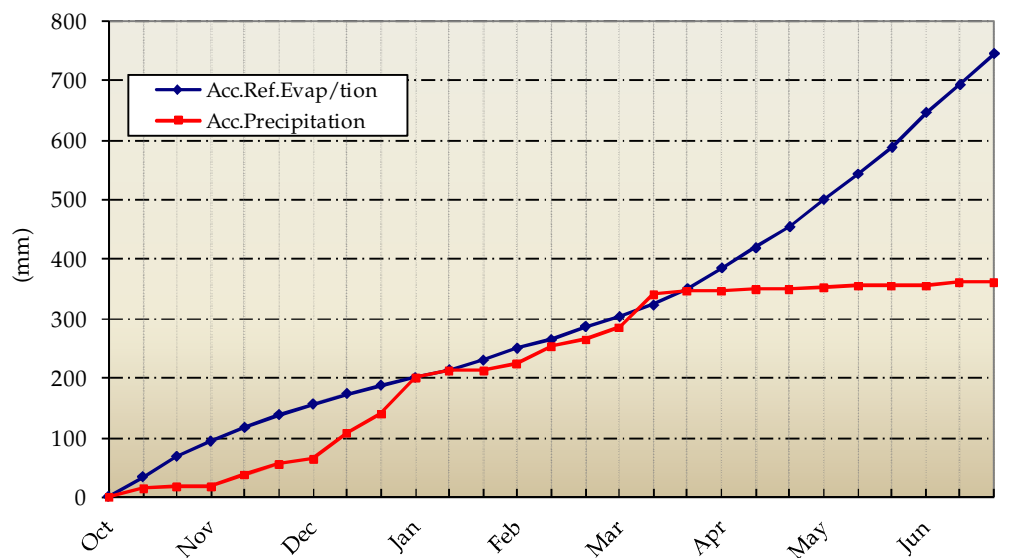


Iraklio

2nd 10-day period (11-20/06/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	25.2	27.2	26.0	29.6	30.2	27.4	28.2	30.5	30.8	27.6	28.3	27.1	27.5
	Min	18.0	19.5	22.4	17.4	20.0	19.0	17.6	21.8	23.6	22.0	20.1	20.5	19.4
Relative Humidity	Max	82	73	74	87	82	82	80	87	70	74	79	83	-
	Min	62	56	55	41	38	57	39	46	37	47	48	61	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.7	12.8	13.1	13.0	9.9	13.1	12.7	9.9	11.9	13.2	12.2	12.1	12.0
Precipitation														0.2
Evaporation		6.0	9.9	5.2	5.0	4.3	3.5	4.7	5.0	9.0	8.2	60.8	64.7	83.8
Growing Degrees	5	16.6	18.4	19.2	18.5	20.1	18.2	17.9	21.2	22.2	19.8	192.0	188.0	184.4
	10	11.6	13.4	14.2	13.5	15.1	13.2	12.9	16.2	17.2	14.8	142.0	138.0	134.4

2nd 10-day period (11-20/06/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	58.2	55.8	-
Precipitation - Reference Evapotranspiration	-58.2	-55.8	0.2
Number of Rainy Days	0.0	0.0	0.2
Number of Dry Days	15.0	33.0	-

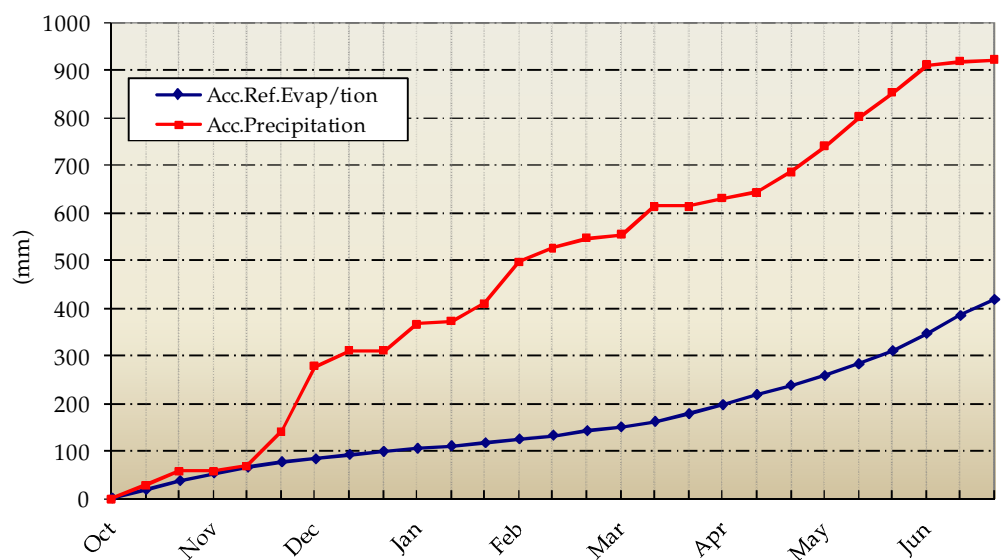
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



2nd 10-day period (11-20/06/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.8	31.2	29.6	28.3	28.3	27.2	25.3	26.2	24.7	24.2	27.5	30.3	28.0
	Min	12.6	19.6	12.7	14.2	17.4	11.0	14.0	14.4	15.2	12.7	14.4	14.3	13.0
Relative Humidity	Max	86	100	100	100	100	80	86	78	100	80	91	79	-
	Min	36	28	43	52	36	44	45	45	30	43	40	29	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	20.6
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	25.0
Sunshine Duration		11.1	9.7	5.6	6.5	0.0	0.0	1.0	8.2	7.9	10.0	6.0	10.2	9.8
Precipitation			1.1		0.0	2.2		0.2		1.6	0.1	5.2	0.5	14.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	70.5
Growing Degrees	5	16.2	20.4	16.2	16.3	17.9	14.1	14.7	15.3	15.0	13.5	159.3	172.8	155.2
	10	11.2	15.4	11.2	11.3	12.9	9.1	9.7	10.3	10.0	8.5	109.3	122.8	105.2

2nd 10-day period (11-20/06/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	34.0	49.4	46.5
Precipitation - Reference Evapotranspiration	-28.8	-48.9	-32.4
Number of Rainy Days	5.0	3.0	2.0
Number of Dry Days	2.0	3.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

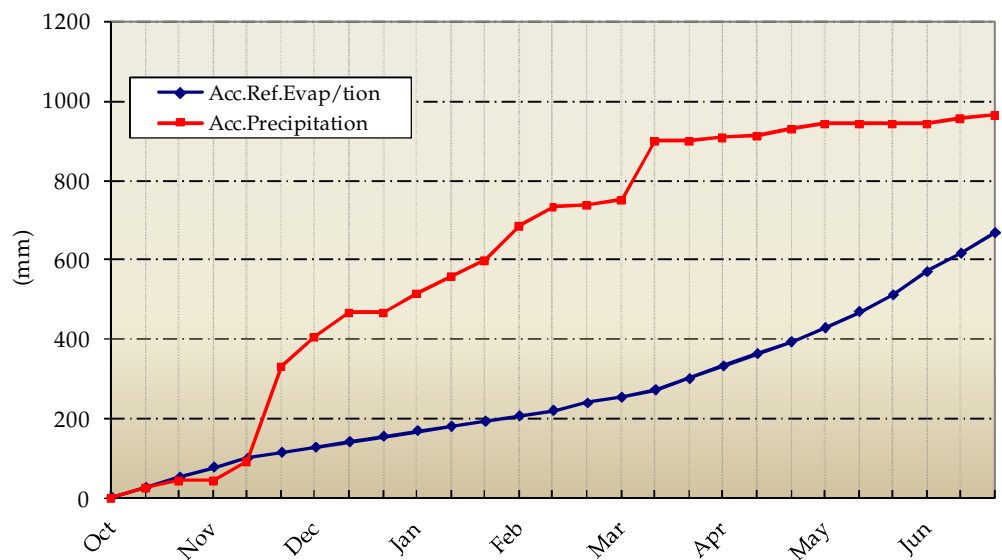


Kalamata

2nd 10-day period (11-20/06/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.7	28.5	29.6	31.8	27.6	27.2	29.8	29.3	30.8	26.7	29.1	30.4	29.3
	Min	16.3	15.8	14.8	17.8	15.9	18.1	16.4	16.2	17.9	15.8	16.5	16.8	15.9
Relative Humidity	Max	92	93	91	91	94	94	93	93	93	93	93	88	-
	Min	37	46	40	27	36	42	41	46	27	42	38	35	-
Soil Temperature at 10 cm	06 UTC	21.4	21.4	21.4	22.4	22.8	23.4	23.4	23.2	23.4	23.0	22.6	22.4	23.0
	12 UTC	22.6	23.0	23.6	24.2	24.8	25.4	25.4	24.0	25.0	23.6	24.2	25.0	27.4
Sunshine Duration		9.5	5.2	9.2	12.6	12.3	12.0	10.0	7.7	12.2	10.1	10.1	11.6	11.0
Precipitation		6.9	3.6								0.3	10.8	3.0	3.1
Evaporation		-	-	-	-	-	-	-	-	-	-	-	80.4	80.7
Growing Degrees	5	18.0	17.2	17.2	19.8	16.8	17.7	18.1	17.8	19.4	16.3	178.0	186.3	175.9
	10	13.0	12.2	12.2	14.8	11.8	12.7	13.1	12.8	14.4	11.3	128.0	136.3	125.9

2nd 10-day period (11-20/06/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	51.7	58.6	54.6
Precipitation - Reference Evapotranspiration	-40.9	-55.6	-51.5
Number of Rainy Days	3.0	2.0	0.9
Number of Dry Days	1.0	11.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

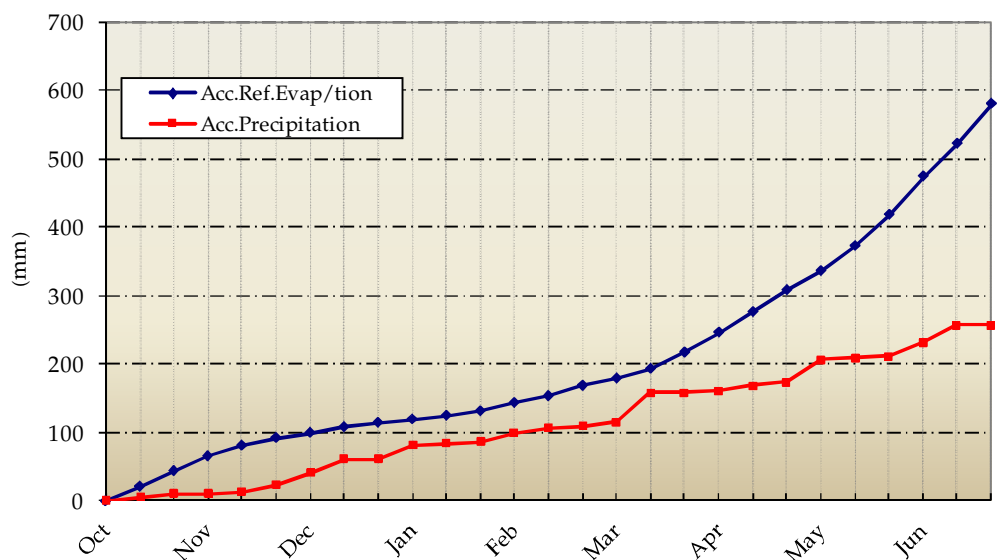


Larisa

2nd 10-day period (11-20/06/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.8	32.4	35.0	34.2	28.6	33.0	32.6	35.0	31.0	29.6	32.6	31.9	31.7
	Min	16.8	20.3	17.0	17.6	18.6	15.2	18.0	21.2	18.2	17.0	18.0	17.5	15.7
Relative Humidity	Max	74	69	76	85	81	95	93	83	92	60	81	87	-
	Min	19	28	21	22	37	20	23	18	21	26	24	29	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	23.9
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	26.6
Sunshine Duration		10.4	10.7	12.5	7.9	6.8	12.6	2.1	12.1	10.2	10.0	9.5	10.1	10.5
Precipitation					0.6			0.0	0.0			0.6	32.3	6.2
Evaporation		9.2	11.0	10.9	7.3	6.9	11.2	6.2	11.4	10.4	7.0	91.5	97.5	85.8
Growing Degrees	5	20.8	21.4	21.0	20.9	18.6	19.1	20.3	23.1	19.6	18.3	203.1	197.3	186.8
	10	15.8	16.4	16.0	15.9	13.6	14.1	15.3	18.1	14.6	13.3	153.1	147.3	136.8

2nd 10-day period (11-20/06/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	58.2	58.1	58.5
Precipitation - Reference Evapotranspiration	-57.6	-25.8	-52.3
Number of Rainy Days	1.0	4.0	1.7
Number of Dry Days	4.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

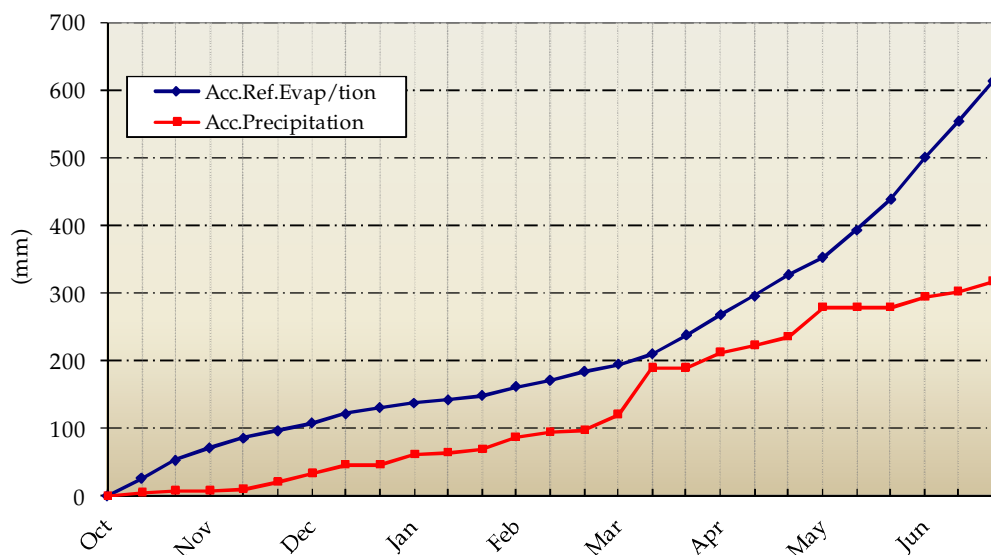


Mikra

2nd 10-day period (11-20/06/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	33.5	31.0	32.5	32.5	28.8	30.0	28.5	30.2	27.4	28.2	30.3	31.0	29.7
	Min	18.0	20.6	18.4	18.0	19.7	16.8	18.4	21.0	17.0	18.1	18.6	19.2	17.0
Relative Humidity	Max	75	87	72	77	76	81	84	91	92	59	79	78	-
	Min	24	30	26	25	39	30	42	39	36	34	32	33	-
Soil Temperature at 10 cm	06 UTC	24.0	25.4	25.2	26.0	26.0	24.8	26.0	26.2	24.2	22.6	25.0	25.5	24.4
	12 UTC	30.9	31.0	31.6	32.1	29.2	31.0	30.2	32.0	30.0	28.2	30.6	30.5	29.1
Sunshine Duration		10.6	13.0	13.3	11.1	6.2	12.5	6.3	9.0	8.8	12.8	10.4	10.1	10.3
Precipitation		0.0	0.6						0.0	14.5		15.1	18.8	11.5
Evaporation		8.0	10.7	11.5	6.4	6.6	11.2	2.0	11.8	5.2	16.3	89.7	91.4	85.4
Growing Degrees	5	20.8	20.8	20.5	20.3	19.3	18.4	18.5	20.6	17.2	18.2	194.3	201.1	183.4
	10	15.8	15.8	15.5	15.3	14.3	13.4	13.5	15.6	12.2	13.2	144.3	151.1	133.4

2nd 10-day period (11-20/06/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	59.1	59.8	57.4
Precipitation - Reference Evapotranspiration	-44.0	-41.0	-45.9
Number of Rainy Days	2.0	3.0	1.8
Number of Dry Days	3.0	0.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

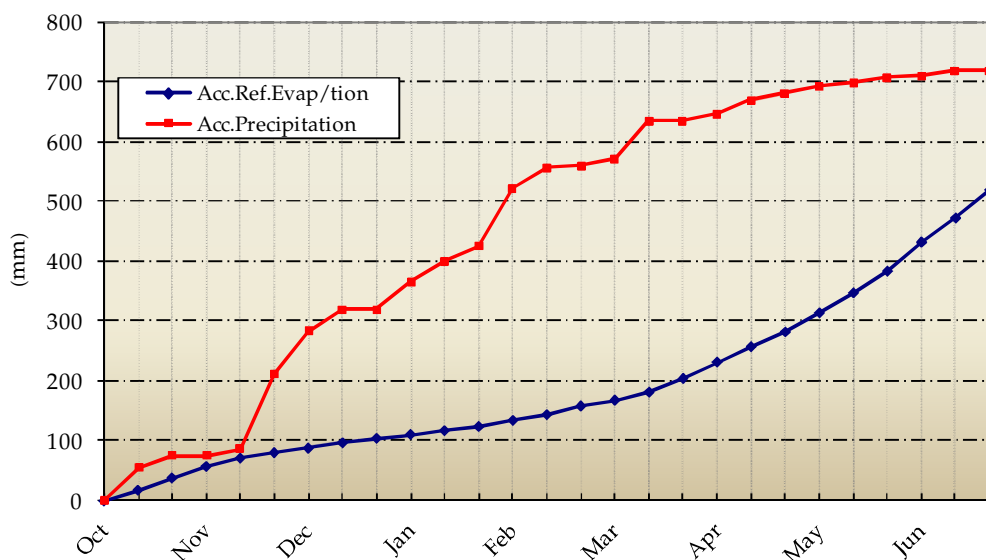


Tripoli

2nd 10-day period (11-20/06/2014)		11	12	13	14	15	16	17	18	19	20	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	29.9	28.3	30.0	30.2	28.2	28.7	31.0	30.4	26.3	24.1	28.7	28.5	28.6
	Min	14.6	12.0	11.0	12.0	11.6	10.3	11.2	13.3	12.9	14.7	12.4	13.7	11.6
Relative Humidity	Max	83	94	96	98	96	95	91	86	87	85	91	75	-
	Min	25	32	28	22	14	17	24	21	23	39	24	32	-
Soil Temperature at 10 cm	06 UTC	20.4	21.4	20.8	22.4	21.8	22.8	23.8	24.0	24.2	24.2	22.6	22.4	22.7
	12 UTC	26.4	27.6	29.2	-	-	31.0	30.8	29.4	31.0	28.4	29.2	28.8	25.9
Sunshine Duration		12.0	7.6	8.5	7.5	9.6	12.9	7.0	3.9	12.4	8.6	9.0	10.1	10.8
Precipitation													5.7	5.7
Evaporation		7.4	4.9	4.4	6.5	7.3	8.9	6.8	7.2	9.1	6.0	68.5	71.4	62.0
Growing Degrees	5	17.3	15.2	15.5	16.1	14.9	14.5	16.1	16.9	14.6	14.4	155.4	161.1	151.2
	10	12.3	10.2	10.5	11.1	9.9	9.5	11.1	11.9	9.6	9.4	105.4	111.1	101.2

2nd 10-day period (11-20/06/2014)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	47.2	51.8	52.3
Precipitation - Reference Evapotranspiration	-47.2	-46.1	-46.6
Number of Rainy Days	0.0	2.0	1.4
Number of Dry Days	11.0	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.

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

© HELLENIC NATIONAL METEOROLOGICAL SERVICE

Reproduction is prohibited without written permission

El. Venizelou street 14, Zip Code 16777

Helliniko, Athens



ΕΘΝΙΚΗ
ΜΕΤΕΩΡΟΛΟΓΙΚΗ
ΥΠΗΡΕΣΙΑ

HELLENIC NATIONAL METEOROLOGICAL SERVICE

Division of Climatology-Applications

Issue Editors :

Papakrivou Anastasia

The present bulletin was designed and implemented under the support of Water Resources Management Division of Agriculture University of Athens