AGROMETEOROLOGICAL BULLETIN

February 2012
1st 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

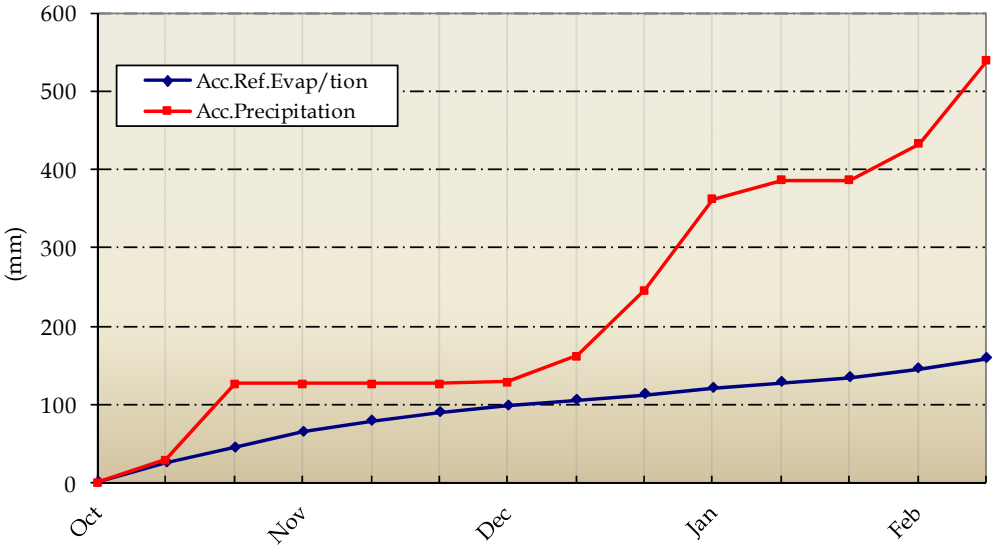
Web adresses of HNMS
www.hnms.gr
www.emy.gov.gr
www.meteo.gov.gr
www.meteohellas.gr

Agrinio

1st 10-day period (1-10/02/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	5.6	5.6	13.0	16.4	16.2	14.6	10.2	8.2	8.2	9.4	10.7	15.9	14.2
	Min	-5.0	0.6	5.6	6.6	6.4	8.8	6.0	4.0	2.8	2.8	3.9	1.2	2.8
Relative Humidity	Max	91	96	84	95	94	89	92	90	71	87	89	90	-
	Min	34	85	66	52	61	54	66	48	46	55	57	39	-
Soil Temperature at 10 cm	06 UTC	3.4	3.6	5.6	6.8	8.2	9.0	7.4	7.2	6.4	6.4	6.4	6.5	7.6
	12 UTC	4.0	4.4	6.6	7.8	9.0	9.4	7.6	7.6	7.4	7.0	7.1	8.0	9.8
Sunshine Duration		0.0	0.2	1.1	1.6	4.6	0.0	0.0	0.0	1.3	1.7	1.0	7.4	4.8
Precipitation			9.0	3.2	13.0	3.0	9.8	61.1	5.4		1.3	105.8	17.5	36.3
Evaporation		2.1	1.5	1.6	6.0	1.7	1.9	3.7	3.0	1.3	1.9	24.7	19.9	16.2
Growing Degrees	5	0.0	0.0	4.3	6.5	6.3	6.7	3.1	1.1	0.5	1.1	29.6	35.4	36.7
	10	0.0	0.0	0.0	1.5	1.3	1.7	0.0	0.0	0.0	0.0	4.5	1.1	4.3

1st 10-day period (1-10/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	13.2	12.7	12.1
Precipitation - Reference Evapotranspiration	92.6	4.8	24.2
Number of Rainy Days	8.0	1.0	3.7
Number of Dry Days	6.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



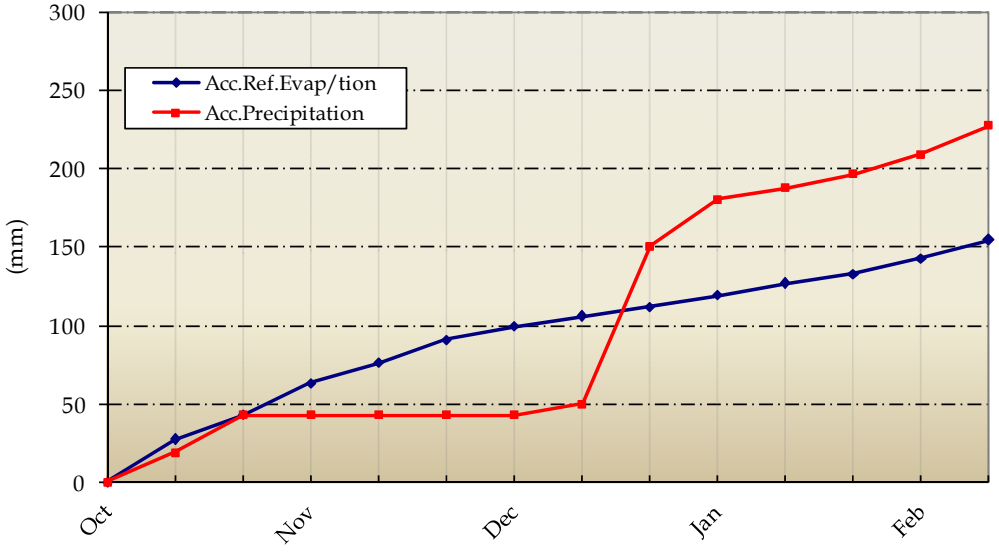
Agrometeorological Data — February 2012

Alexandroupoli

1st 10-day period (1-10/02/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	0.0	0.0	4.0	11.2	12.6	11.0	5.0	0.0	0.8	2.0	4.7	10.7	9.1
	Min	-7.4	-4.6	-0.6	3.2	8.8	5.0	0.0	-4.0	-3.6	-4.2	-0.7	-2.3	0.8
Relative Humidity	Max	60	92	83	93	83	93	-	79	67	72	80	88	-
	Min	34	55	70	72	72	65	-	54	49	46	57	41	-
Soil Temperature at 10 cm	06 UTC	0.4	0.4	0.8	2.6	4.8	6.4	4.2	-	2.0	1.4	2.6	2.8	5.3
	12 UTC	0.4	-0.6	0.8	3.4	6.4	6.6	4.8	1.4	1.6	1.2	2.6	4.6	6.6
Sunshine Duration		11.4	0.0	0.0	3.4	1.3	1.5	0.0	0.0	5.1	10.7	3.3	8.6	3.9
Precipitation			0.0		1.2	1.0		15.8	0.0			18.0		19.4
Evaporation		0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	0.0	3.4	2.0	11.6
Growing Degrees	5	0.0	0.0	0.0	2.2	5.7	3.0	0.0	0.0	0.0	0.0	10.9	9.4	14.1
	10	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.7	0.0	1.4

1st 10-day period (1-10/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	11.3	11.6	10.9
Precipitation - Reference Evapotranspiration	6.7	-11.6	8.5
Number of Rainy Days	3.0	0.0	2.5
Number of Dry Days	8.0	17.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



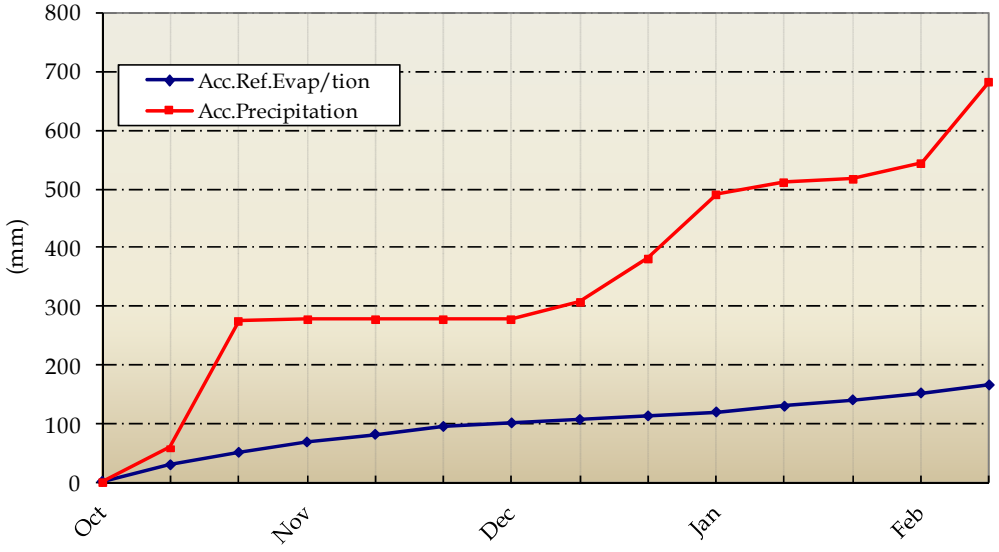
Agrometeorological Data — February 2012

Andravida

1st 10-day period (1-10/02/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	6.8	12.6	16.4	17.2	15.9	17.4	12.6	9.8	7.6	8.4	12.5	14.7	14.0
	Min	-3.0	3.0	7.2	9.8	9.0	8.6	7.8	6.0	4.0	5.2	5.8	3.1	4.8
Relative Humidity	Max	93	93	91	94	88	89	93	93	93	92	92	92	-
	Min	37	72	57	47	55	42	60	57	67	65	56	47	-
Soil Temperature at 10 cm	06 UTC	3.6	5.6	7.6	8.4	9.6	10.2	9.4	9.2	8.4	8.0	8.0	8.2	9.2
	12 UTC	5.2	8.0	-	10.6	11.8	11.0	10.8	9.8	9.4	9.0	9.5	10.6	10.9
Sunshine Duration		0.3	0.4	3.9	3.2	6.2	0.0	2.7	0.0	0.0	0.1	1.7	6.9	5.2
Precipitation			28.8	9.2	0.8	42.8	9.4	14.8	11.1	12.2	9.5	138.6	23.3	28.0
Evaporation		1.2	0.2	1.6	1.8	1.0	1.4	1.1	0.4	0.8	0.8	10.3	18.3	19.1
Growing Degrees	5	0.0	2.8	6.8	8.5	7.5	8.0	5.2	2.9	0.8	1.8	44.3	38.7	44.7
	10	0.0	0.0	1.8	3.5	2.5	3.0	0.2	0.0	0.0	0.0	11.0	2.3	7.9

1st 10-day period (1-10/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	13.8	12.7	12.4
Precipitation - Reference Evapotranspiration	124.8	10.6	15.6
Number of Rainy Days	9.0	2.0	4.1
Number of Dry Days	6.0	2.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



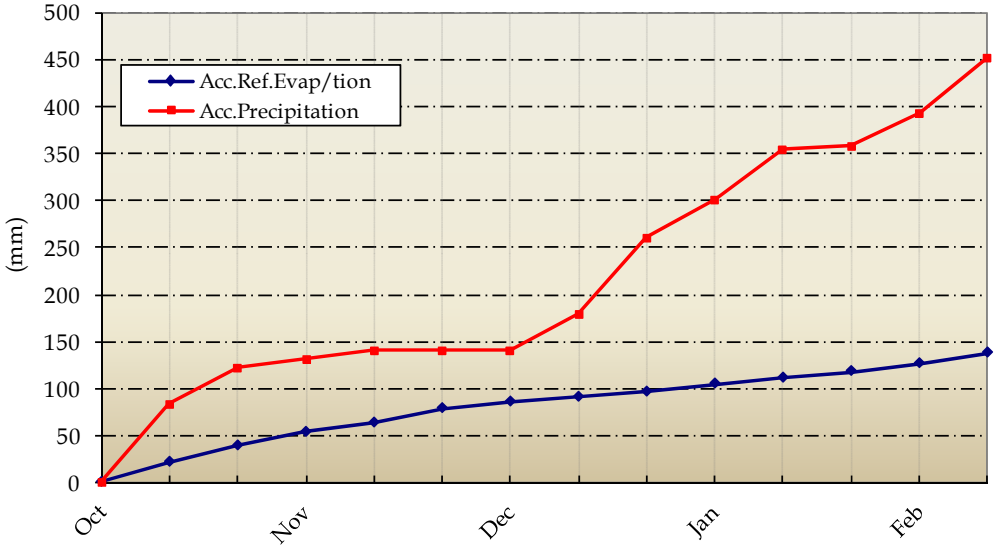
Agrometeorological Data — February 2012

Ioannina

1st 10-day period (1-10/02/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	2.4	3.4	10.8	10.2	8.4	10.8	7.0	5.6	5.4	4.2	6.8	-	10.0
	Min	-6.2	-1.0	1.0	6.2	2.5	4.6	4.8	1.8	-1.0	-1.0	1.2	-	0.6
Relative Humidity	Max	100	96	87	94	97	93	65	60	84	100	88	-	-
	Min	70	64	64	50	72	50	39	29	30	59	53	-	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	4.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	5.1
Sunshine Duration		0.0	0.0	3.2	0.0	2.5	0.0	0.0	0.2	2.4	0.8	0.9	-	3.6
Precipitation		0.1	26.0	9.3	16.0	4.4	2.2	1.4			0.1	59.5	-	35.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	5.0
Growing Degrees	5	0.0	0.0	0.9	3.2	0.5	2.7	0.9	0.0	0.0	0.0	8.2	-	13.4
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.3

1st 10-day period (1-10/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	11.4	-	9.3
Precipitation - Reference Evapotranspiration	48.1	-	26.5
Number of Rainy Days	8.0	-	3.5
Number of Dry Days	5.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



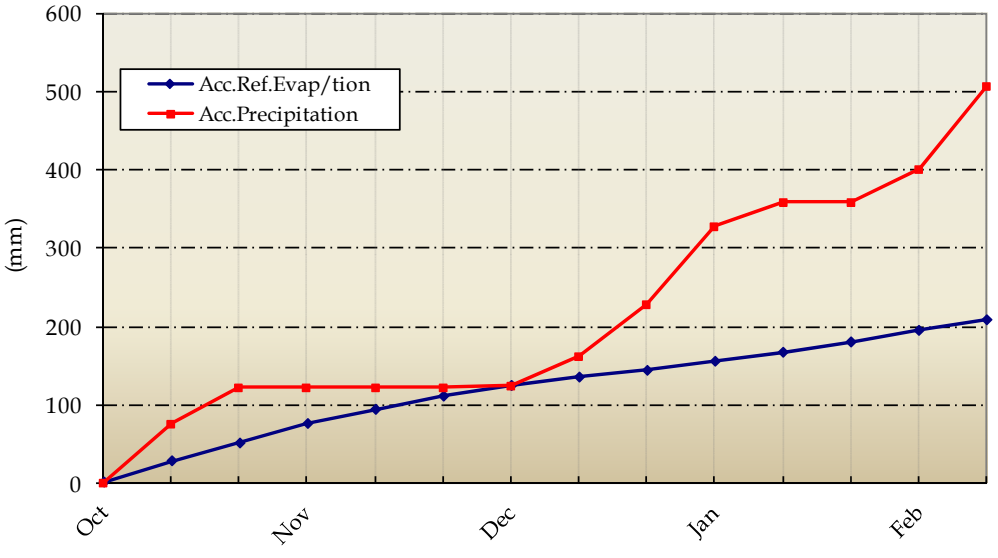
Agrometeorological Data — February 2012

Kalamata

1st 10-day period (1-10/02/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	10.2	12.6	16.0	17.0	15.4	18.4	11.2	9.0	9.0	9.0	12.8	15.4	14.9
	Min	-0.2	4.0	5.4	12.0	12.0	9.4	7.6	5.0	4.4	4.4	6.4	3.6	4.8
Relative Humidity	Max	87	97	97	79	95	92	97	97	94	94	93	94	-
	Min	34	76	67	61	75	37	82	81	65	71	65	46	-
Soil Temperature at 10 cm	06 UTC	6.0	7.4	8.4	9.4	11.0	10.6	10.4	9.6	8.4	8.2	8.9	9.0	9.7
	12 UTC	7.0	8.2	9.4	10.8	12.0	11.6	10.6	9.6	8.6	8.6	9.6	9.7	11.0
Sunshine Duration		4.5	2.1	5.5	9.9	0.4	1.6	0.0	0.0	1.3	0.7	2.6	6.5	5.1
Precipitation		0.0	8.9	18.2		11.1	6.2	41.0	10.4	0.6	9.6	106.0	26.8	28.3
Evaporation		0.7	0.6	1.2	4.0	0.9	5.3	2.3	0.3	1.0	8.8	25.1	20.2	24.5
Growing Degrees	5	0.0	3.3	5.7	9.5	8.7	8.9	4.4	2.0	1.7	1.7	45.9	44.7	48.9
	10	0.0	0.0	0.7	4.5	3.7	3.9	0.0	0.0	0.0	0.0	12.8	1.9	8.7

1st 10-day period (1-10/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	13.7	16.9	14.4
Precipitation - Reference Evapotranspiration	92.3	9.9	13.9
Number of Rainy Days	8.0	3.0	4.1
Number of Dry Days	6.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



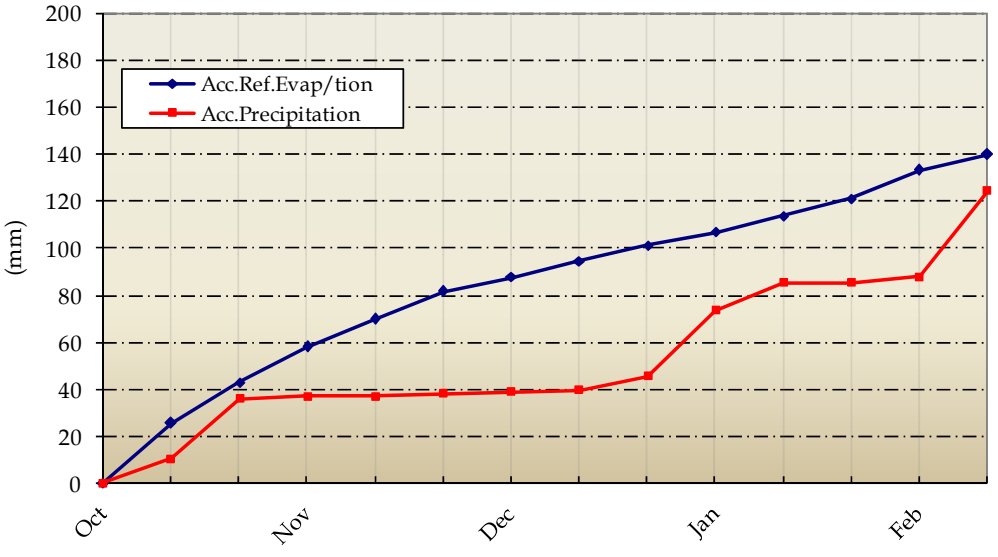
Agrometeorological Data — February 2012

Larisa

1st 10-day period (1-10/02/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	1.6	1.6	3.0	5.2	8.0	9.2	7.2	4.0	2.4	3.4	4.6	12.1	11.2
	Min	-3.6	0.0	-0.2	0.2	1.2	5.0	3.6	0.6	-0.2	-0.8	0.6	-0.3	0.4
Relative Humidity	Max	96	100	100	100	100	100	77	79	92	96	94	94	-
	Min	74	85	82	87	94	72	66	63	61	82	77	48	-
Soil Temperature at 10 cm	06 UTC	3.6	2.2	2.0	2.0	4.0	4.4	4.2	3.6	3.6	6.4	3.6	5.1	6.1
	12 UTC	4.0	2.2	4.0	3.4	4.4	4.6	5.0	4.0	4.0	4.2	4.0	6.3	6.8
Sunshine Duration		0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	5.1	4.3
Precipitation		0.0	11.0	4.2	0.0	2.1	2.0	15.0	0.0	0.0	2.2	36.5	5.4	9.7
Evaporation		0.0	0.2	0.2	2.4	2.0	1.5	4.6	4.0	4.1	0.4	19.4	10.8	6.9
Growing Degrees	5	0.0	0.0	0.0	0.0	0.0	2.1	0.4	0.0	0.0	0.0	2.5	13.1	16.7
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7

1st 10-day period (1-10/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	6.7	9.8	9.6
Precipitation - Reference Evapotranspiration	29.8	-4.4	0.1
Number of Rainy Days	6.0	1.0	2.8
Number of Dry Days	8.0	4.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



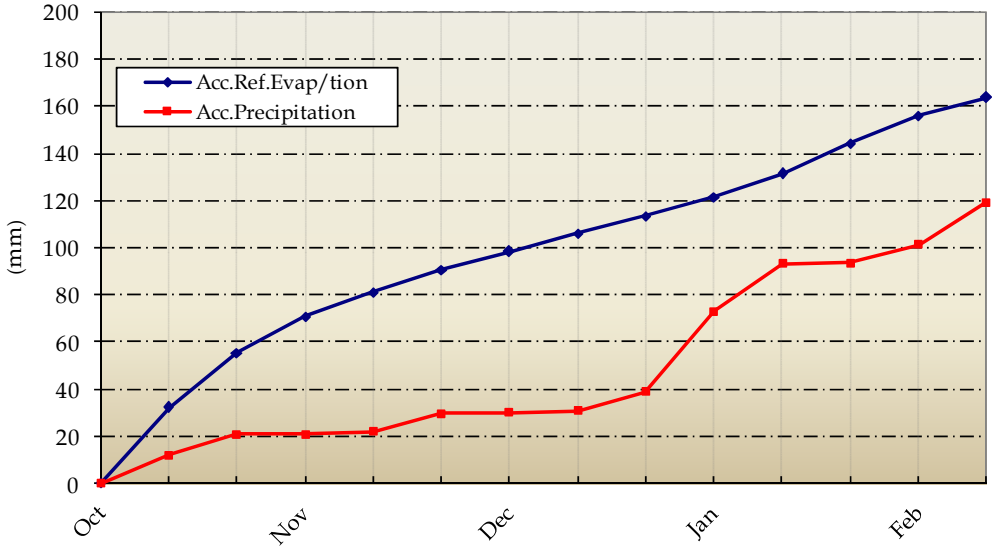
Agrometeorological Data — February 2012

Mikra

1st 10-day period (1-10/02/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	2.4	1.4	2.4	7.0	7.4	10.6	9.0	1.8	3.8	2.6	4.8	-	10.3
	Min	-6.0	-2.0	0.2	2.2	4.4	2.2	1.8	-0.8	-2.4	-0.4	-0.1	-	1.6
Relative Humidity	Max	82	100	100	97	97	97	96	88	89	93	94	-	-
	Min	33	62	93	91	94	65	67	65	41	75	69	-	-
Soil Temperature at 10 cm	06 UTC	0.8	2.2	3.0	3.8	6.0	5.4	5.4	3.8	2.4	3.2	3.6	-	5.6
	12 UTC	2.4	2.4	3.4	5.4	6.4	6.6	5.8	3.4	5.0	3.8	4.5	-	7.1
Sunshine Duration		4.6	0.0	0.0	2.5	0.0	0.0	0.0	0.0	1.7	0.0	0.9	-	4.3
Precipitation			0.1	1.2	0.8	0.4	8.3	6.5	0.1	0.0	0.5	17.9	-	10.5
Evaporation		0.0	0.9	1.7	1.6	0.7	0.4	0.0	0.0	0.0	0.0	5.3	-	12.4
Growing Degrees	5	0.0	0.0	0.0	0.0	0.9	1.4	0.4	0.0	0.0	0.0	2.7	-	17.2
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.8

1st 10-day period (1-10/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	7.7	-	11.4
Precipitation - Reference Evapotranspiration	10.2	-	-0.9
Number of Rainy Days	8.0	-	2.6
Number of Dry Days	7.0	-	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



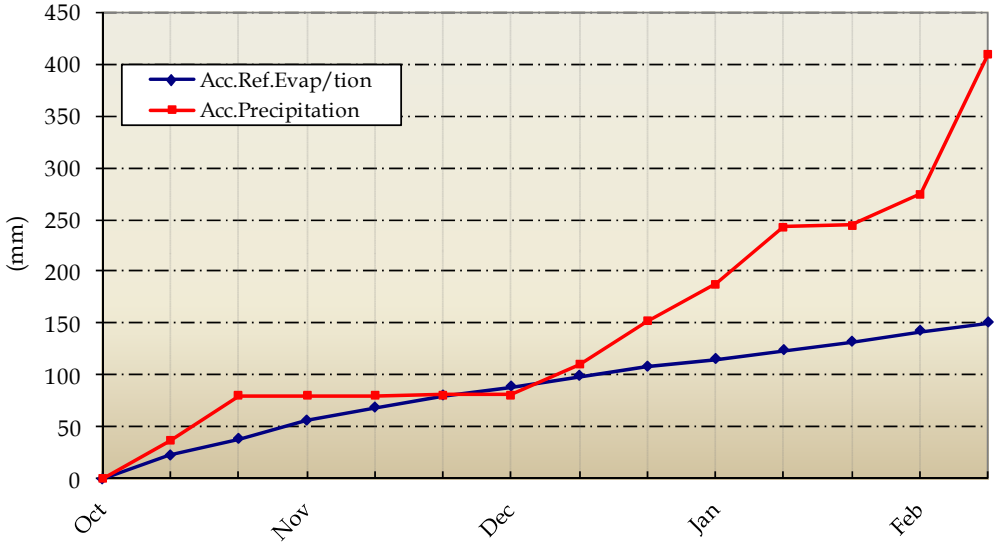
Agrometeorological Data — February 2012

Tripoli

1st 10-day period (1-10/02/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	1.7	7.7	11.2	12.4	13.3	9.1	4.7	3.6	1.1	3.4	6.8	10.4	10.0
	Min	-4.3	-2.3	0.1	4.9	5.5	4.2	2.4	0.4	-1.2	-1.3	0.8	-2.3	0.4
Relative Humidity	Max	88	95	96	83	85	92	91	87	94	95	91	94	-
	Min	46	64	80	54	63	77	83	71	75	74	69	47	-
Soil Temperature at 10 cm	06 UTC	0.8	2.0	1.6	3.8	5.0	5.8	4.6	4.0	2.4	2.2	3.2	2.7	5.0
	12 UTC	1.2	1.8	3.8	5.4	7.0	6.2	5.6	4.8	3.2	2.0	4.1	5.1	5.8
Sunshine Duration		4.8	2.2	2.3	3.1	1.9	0.0	0.0	1.7	0.0	0.0	1.6	5.7	4.9
Precipitation		0.2	14.1	3.7	0.3	1.0	75.3	24.3	4.0	1.3	11.2	135.4	39.9	26.5
Evaporation		0.0	0.0	0.0	1.0	0.1	0.5	0.1	-	-	-	-	0.0	8.6
Growing Degrees	5	0.0	0.0	0.7	3.7	4.4	1.7	0.0	0.0	0.0	0.0	10.4	4.1	13.4
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4

1st 10-day period (1-10/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration		8.0	11.2	11.6
Precipitation - Reference Evapotranspiration		127.4	28.7	14.9
Number of Rainy Days		10.0	3.0	4.1
Number of Dry Days		6.0	1.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



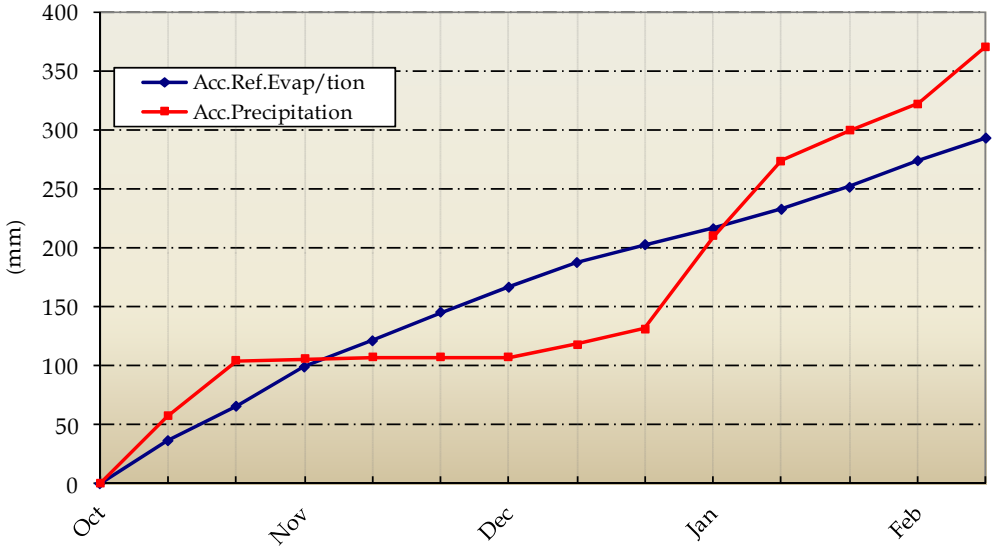
Agrometeorological Data — February 2012

Tympaki

1st 10-day period (1-10/02/2012)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	9.2	14.0	17.4	17.8	18.6	17.6	14.4	14.4	13.2	14.2	15.1	15.9	15.4
	Min	3.6	2.6	8.0	8.8	7.6	8.8	6.8	6.0	4.8	4.4	6.1	7.5	6.8
Relative Humidity	Max	90	94	95	92	94	92	93	94	90	91	92	94	-
	Min	34	74	40	51	46	45	41	49	42	25	45	45	-
Soil Temperature at 10 cm	06 UTC	6.8	7.0	9.8	10.2	10.6	11.4	11.2	10.0	9.6	8.6	9.5	10.8	10.8
	12 UTC	9.2	8.0	12.2	12.8	14.2	12.2	12.4	12.6	12.0	11.4	11.7	13.4	12.9
Sunshine Duration		8.9	0.1	5.5	6.9	8.1	0.3	4.8	3.3	6.9	5.1	5.0	7.1	5.7
Precipitation			8.1	4.1	0.3		0.2	13.9	20.3	1.8	0.1	48.8	31.7	25.1
Evaporation		3.9	0.8	0.3	2.6	5.1	5.6	3.2	1.6	2.3	1.5	26.9	26.8	29.6
Growing Degrees	5	1.4	3.3	7.7	8.3	8.1	8.2	5.6	5.2	4.0	4.3	56.1	66.9	61.0
	10	0.0	0.0	2.7	3.3	3.1	3.2	0.6	0.2	0.0	0.0	13.1	19.3	15.3

1st 10-day period (1-10/02/2012)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	19.2	18.7	17.0
Precipitation - Reference Evapotranspiration	29.6	13.0	8.1
Number of Rainy Days	8.0	5.0	3.3
Number of Dry Days	5.0	4.0	-

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 ^{o}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 : ^{o}C
- Relative Humidity : %
- Soil Temperature : ^{o}C
- Sunshine Duration : Hours
- Precipitation : mm
- Evaporation (Pan) : mm
- Growing Degrees : ^{o}C

UTC (Universal Time coordinates) in Greece

- Winter : Time(UTC) = Local time - 2
- Summer : Time(UTC) = Local time - 3

El. Venizelou street 14, Zip Code 16777
Helliniko, Athens

ΕΘΝΙΚΗ ΜΕΤΕΩΡΟΛΟΓΙΚΗ ΥΠΗΡΕΣΙΑ
HELLENIC NATIONAL METEOROLOGICAL SERVICE
Division of Climatology-Applications
Issue Editors :
Charalabopoulos Christos
Filiou Anna

The present bulletin was designed and implemented under the support of Water Resources Management Division of Agriculture University of Athens (Professor A. Liakatas)