



# AGROMETEOROLOGICAL BULLETIN

*February 2021  
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

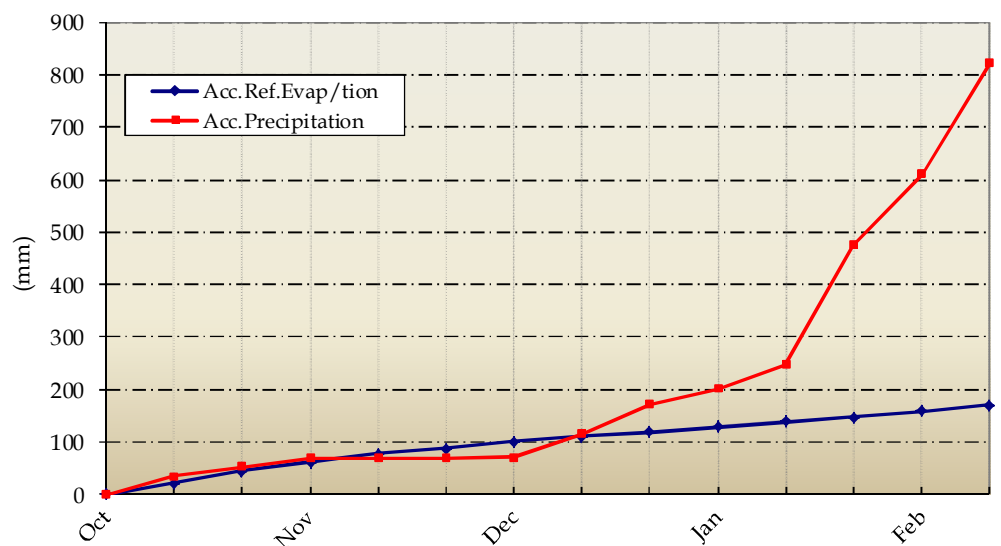
*Web adresses of HNMS*  
[www.emy.gr](http://www.emy.gr)  
[www.hnms.gr](http://www.hnms.gr)  
[www.emy.gov.gr](http://www.emy.gov.gr)  
[www.meteo.gov.gr](http://www.meteo.gov.gr)  
[www.meteohellas.gr](http://www.meteohellas.gr)

Alexandroupoli

1st 10-day period (1-10/02/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.0	15.6	16.6	17.2	14.6	15.8	18.0	17.0	17.4	16.2	16.3	12.1	9.1
	Min	11.8	9.2	8.8	8.4	5.8	9.2	11.0	14.4	12.0	10.0	10.1	2.5	0.8
Relative Humidity	Max	95	97	97	97	98	97	98	93	87	90	95	86	-
	Min	83	83	79	68	85	83	74	67	67	60	75	57	-
Soil Temperature at 10 cm	06 UTC	10.6	9.8	11.0	10.6	10.0	10.4	11.6	13.0	12.2	12.6	11.2	6.9	5.3
	12 UTC	11.2	11.8	12.6	13.2	11.6	12.0	13.0	13.6	14.0	14.3	12.7	8.8	6.6
Sunshine Duration		0.0	3.6	6.8	8.0	4.5	2.3	2.7	2.8	8.1	6.6	4.5	4.7	3.9
Precipitation		192.8							18.7		1.2	212.7	18.5	19.4
Evaporation		-	4.3	1.0	3.1	0.2	0.4	1.4	2.7	3.2	1.5	-	10.0	11.6
Growing Degrees	5	8.4	7.4	7.7	7.8	5.2	7.5	9.5	10.7	9.7	8.1	82.0	33.7	14.1
	10	3.4	2.4	2.7	2.8	0.2	2.5	4.5	5.7	4.7	3.1	32.0	7.4	1.4

1st 10-day period (1-10/02/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	11.2	12.2	10.9
Precipitation - Reference Evapotranspiration	201.5	6.3	8.5
Number of Rainy Days	3.0	2.0	2.5
Number of Dry Days	1.0	5.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

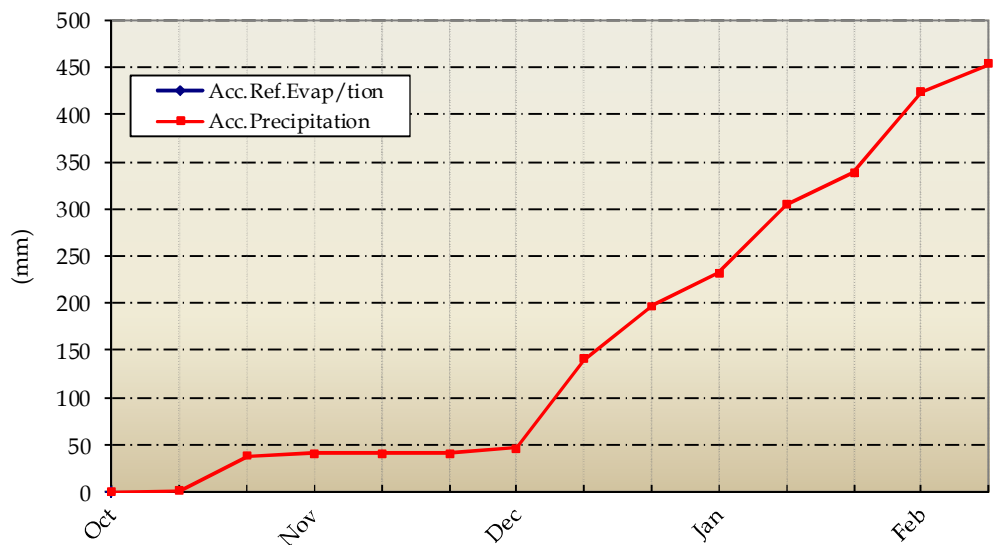


1st 10-day period (1-10/02/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.4	15.7	17.1	17.4	17.9	19.1	20.6	19.7	17.0	18.0	18.0	15.6	14.0
	Min	11.7	9.6	6.1	6.9	8.2	4.5	6.5	12.0	10.0	9.0	8.4	4.0	4.8
Relative Humidity	Max	95	98	98	97	97	97	90	90	91	97	95	99	-
	Min	63	74	62	59	65	60	43	42	69	56	59	54	-
Soil Temperature at 10 cm	06 UTC	12.6	11.4	11.6	11.4	12.2	12.0	12.2	14.2	12.8	11.0	12.1	10.4	9.2
	12 UTC	13.2	13.0	12.2	12.8	12.6	12.8	12.8	15.0	13.2	14.0	13.2	11.9	10.9
Sunshine Duration		4.0	8.0	8.2	8.3	5.5	8.3	5.3	3.9	4.9	8.4	6.5	6.8	5.2
Precipitation		16.0	9.6	1.7						2.2		29.5	6.2	28.0
Evaporation		0.7	0.2	0.8	0.9	6.0	2.1	2.0	1.5	1.2	2.0	17.4	19.6	19.1
Growing Degrees	5	9.6	7.7	6.6	7.2	8.1	6.8	8.6	10.9	8.5	8.5	82.2	47.7	44.7
	10	4.6	2.7	1.6	2.2	3.1	1.8	3.6	5.9	3.5	3.5	32.2	11.0	7.9

1st 10-day period (1-10/02/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	12.4
Precipitation - Reference Evapotranspiration	-	-	15.6
Number of Rainy Days	4.0	3.0	4.1
Number of Dry Days	2.0	7.0	-

**The missing info in the tables and the graph are due to the absence of data.**

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



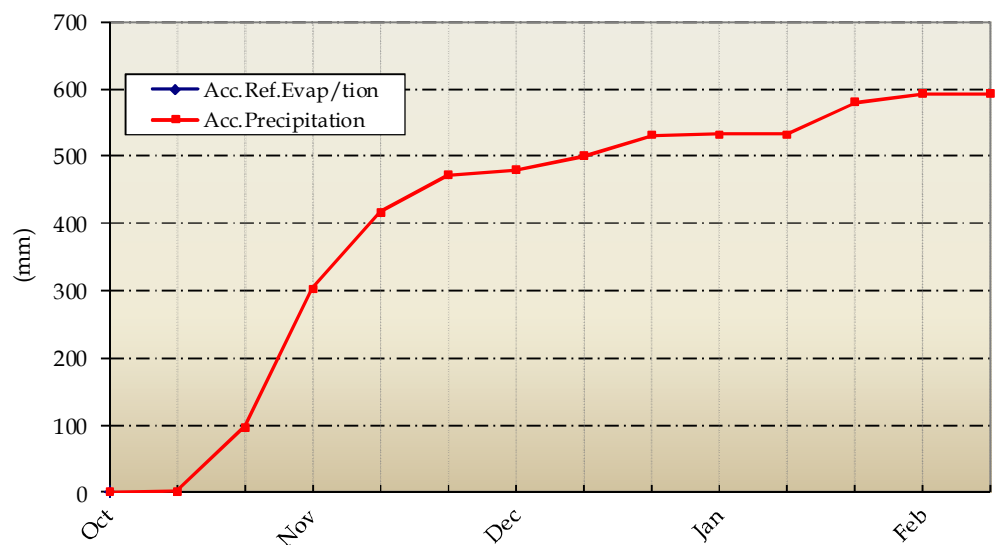
Iraklio

1st 10-day period (1-10/02/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	21.8	17.4	17.0	18.0	17.4	20.8	23.0	22.0	19.6	19.0	19.6	15.1	14.6
	Min	15.4	12.0	11.2	9.6	10.4	9.6	11.0	17.0	12.0	12.8	12.1	8.9	8.7
Relative Humidity	Max	83	93	97	97	97	97	88	86	86	87	91	88	-
	Min	47	74	79	64	80	52	38	56	53	65	61	56	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		7.4	5.3	3.9	8.9	8.6	9.0	5.7	7.2	9.0	8.8	7.4	5.4	4.3
Precipitation													19.8	22.4
Evaporation		2.6	1.0	1.1	1.7	0.8	2.4	4.2	3.9	2.0	2.2	21.9	30.1	29.3
Growing Degrees	5	13.6	9.7	9.1	8.8	8.9	10.2	12.0	14.5	10.8	10.9	108.5	70.1	66.4
	10	8.6	4.7	4.1	3.8	3.9	5.2	7.0	9.5	5.8	5.9	58.5	21.9	19.8

1st 10-day period (1-10/02/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	-
Precipitation - Reference Evapotranspiration	-	-	22.4
Number of Rainy Days	0.0	3.0	4.2
Number of Dry Days	13.0	5.0	-

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



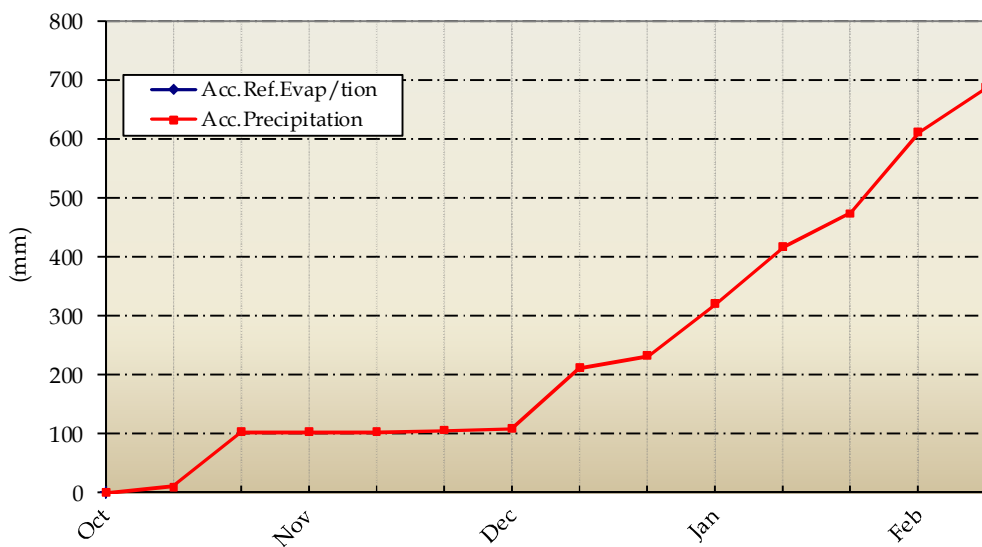
Ioannina

1st 10-day period (1-10/02/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	11.8	9.0	12.8	14.4	16.3	19.4	18.0	14.5	11.1	12.2	14.0	11.3	10.0
	Min	6.6	6.5	2.8	1.9	2.7	-0.1	0.0	8.5	6.1	5.3	4.0	-1.1	0.6
Relative Humidity	Max	97	99	100	100	100	100	100	100	99	99	99	97	-
	Min	78	89	75	73	60	45	37	44	81	70	65	54	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	4.2
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	5.1
Sunshine Duration		0.8	0.0	3.8	4.1	5.2	7.6	3.8	0.0	0.0	1.8	2.7	4.4	3.6
Precipitation		29.6	15.5						14.7	13.8	1.8	75.4	4.3	35.8
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	5.0
Growing Degrees	5	4.2	2.8	2.8	3.2	4.5	4.7	4.0	6.5	3.6	3.8	39.9	9.4	13.4
	10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.3

1st 10-day period (1-10/02/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	9.3
Precipitation - Reference Evapotranspiration	-	-	26.5
Number of Rainy Days	5.0	2.0	3.5
Number of Dry Days	0.0	5.0	-

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

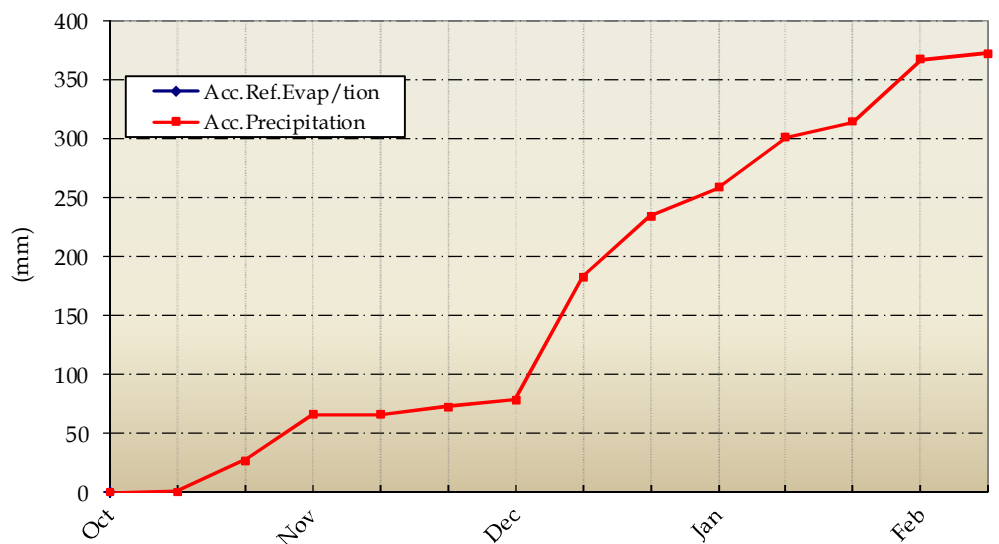


1st 10-day period (1-10/02/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.0	17.3	19.9	19.4	20.3	21.0	18.6	20.0	19.3	18.6	19.1	15.8	14.9
	Min	12.0	7.8	5.1	7.2	7.6	6.3	5.3	11.1	9.3	5.5	7.7	4.8	4.8
Relative Humidity	Max	100	100	100	100	98	99	100	78	100	100	98	89	-
	Min	68	73	50	47	55	40	53	53	50	57	55	45	-
Soil Temperature at 10 cm	06 UTC	12.4	11.8	11.0	10.6	11.0	11.0	11.0	12.4	13.0	12.0	11.6	10.6	9.7
	12 UTC	12.8	12.4	11.5	11.8	12.2	11.5	12.0	13.4	13.0	13.0	12.4	11.3	11.0
Sunshine Duration		2.9	3.9	9.0	9.2	8.6	8.5	4.1	3.6	6.5	8.7	6.5	5.8	5.1
Precipitation		2.6	1.5						0.0	0.4	0.6	5.1	13.2	28.3
Evaporation		1.5	0.9	2.0	2.4	1.6	2.0	1.8	1.5	1.7	2.2	17.6	18.2	24.5
Growing Degrees	5	9.5	7.6	7.5	8.3	9.0	8.7	7.0	10.6	9.3	7.1	84.3	53.3	48.9
	10	4.5	2.6	2.5	3.3	4.0	3.7	2.0	5.6	4.3	2.1	34.3	11.1	8.7

1st 10-day period (1-10/02/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	16.8	14.4
Precipitation - Reference Evapotranspiration	-	-3.6	13.9
Number of Rainy Days	4.0	3.0	4.1
Number of Dry Days	1.0	5.0	-

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



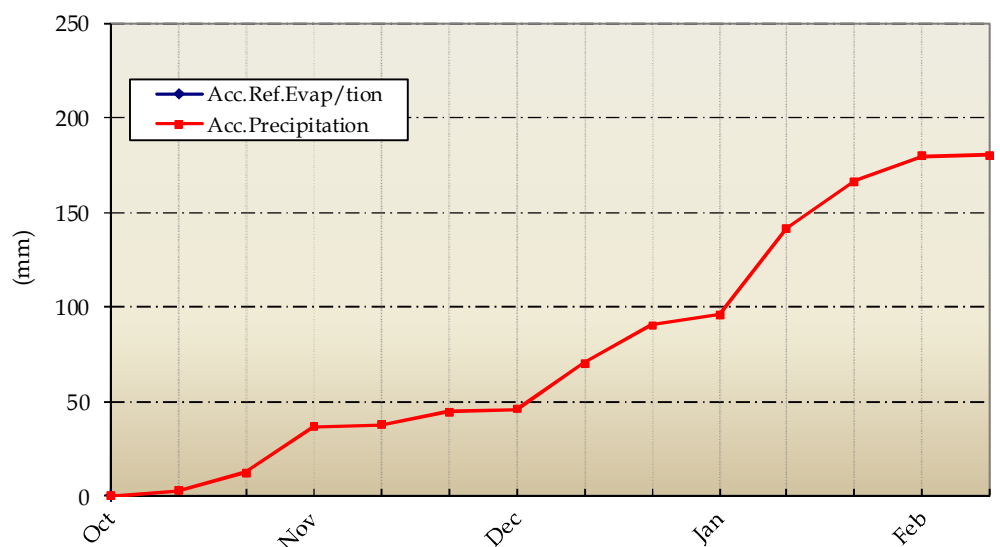
Larisa

1st 10-day period (1-10/02/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	17.8	18.3	17.4	19.0	18.8	19.8	14.6	19.4	19.6	18.6	18.3	14.3	11.2
	Min	7.6	4.8	2.3	1.4	3.2	0.8	2.7	6.2	4.4	3.2	3.7	-0.3	0.4
Relative Humidity	Max	98	98	98	99	100	100	100	97	95	96	98	93	-
	Min	49	45	57	50	50	56	71	49	45	47	52	44	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	6.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	6.8
Sunshine Duration		4.7	5.1	7.8	6.6	5.9	7.7	0.5	3.5	6.4	3.9	5.2	6.4	4.3
Precipitation		0.5							0.0	0.0		0.5	9.6	9.7
Evaporation		1.0	1.9	1.7	1.2	1.4	0.7	2.4	1.6	0.8	1.9	14.6	15.0	6.9
Growing Degrees	5	7.7	6.6	4.9	5.2	6.0	5.3	3.7	7.8	7.0	5.9	60.0	25.9	16.7
	10	2.7	1.6	0.0	0.2	1.0	0.3	0.0	2.8	2.0	0.9	11.5	0.2	0.7

1st 10-day period (1-10/02/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	14.5	13.4	9.6
Precipitation - Reference Evapotranspiration	-14.0	-3.8	0.1
Number of Rainy Days	1.0	2.0	2.8
Number of Dry Days	1.0	8.0	-

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



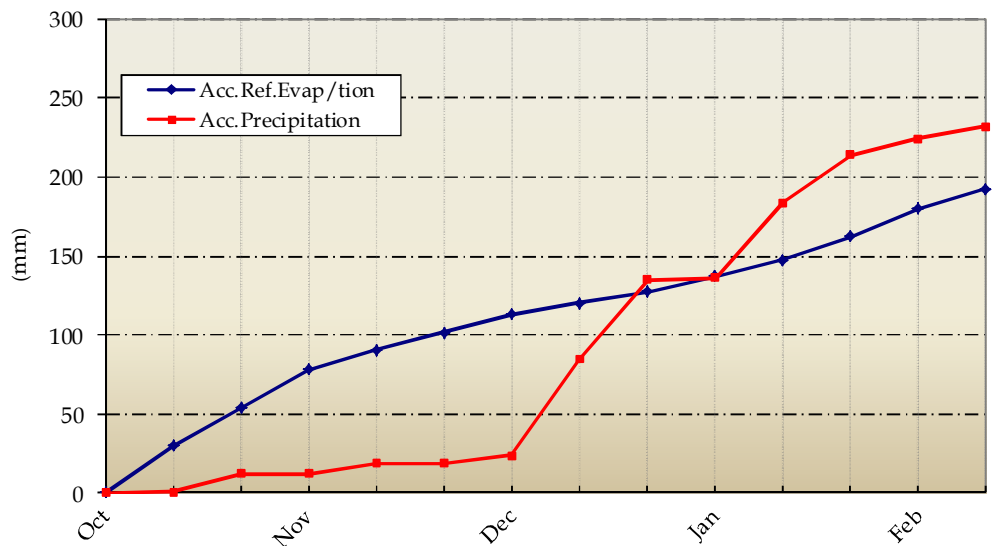
Mikra

1st 10-day period (1-10/02/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	16.8	15.9	15.5	15.6	16.2	14.4	12.0	16.9	19.0	18.5	16.1	12.7	10.3
	Min	8.8	8.2	4.6	5.0	6.0	9.4	7.9	10.4	8.2	6.8	7.5	2.7	1.6
Relative Humidity	Max	95	94	97	96	97	97	99	97	91	91	95	84	-
	Min	53	63	64	71	69	77	89	59	44	46	64	53	-
Soil Temperature at 10 cm	06 UTC	9.0	9.4	8.8	9.2	9.4	11.0	10.8	11.2	10.4	11.0	10.0	7.1	5.6
	12 UTC	11.2	10.8	10.6	10.8	11.4	12.2	11.2	12.0	12.0	11.8	11.4	8.4	7.1
Sunshine Duration		5.0	7.3	9.1	7.8	8.1	4.9	0.0	2.0	7.1	3.5	5.5	6.0	4.3
Precipitation		2.3							5.4	0.0		7.7	8.7	10.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	12.4
Growing Degrees	5	7.8	7.1	5.1	5.3	6.1	6.9	5.0	8.7	8.6	7.7	68.1	27.3	17.2
	10	2.8	2.1	0.1	0.3	1.1	1.9	0.0	3.7	3.6	2.7	18.1	1.1	0.8

1st 10-day period (1-10/02/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	12.6	16.4	11.4
Precipitation - Reference Evapotranspiration	-4.9	-7.7	-0.9
Number of Rainy Days	2.0	2.0	2.6
Number of Dry Days	1.0	8.0	-

The missing info in the tables are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



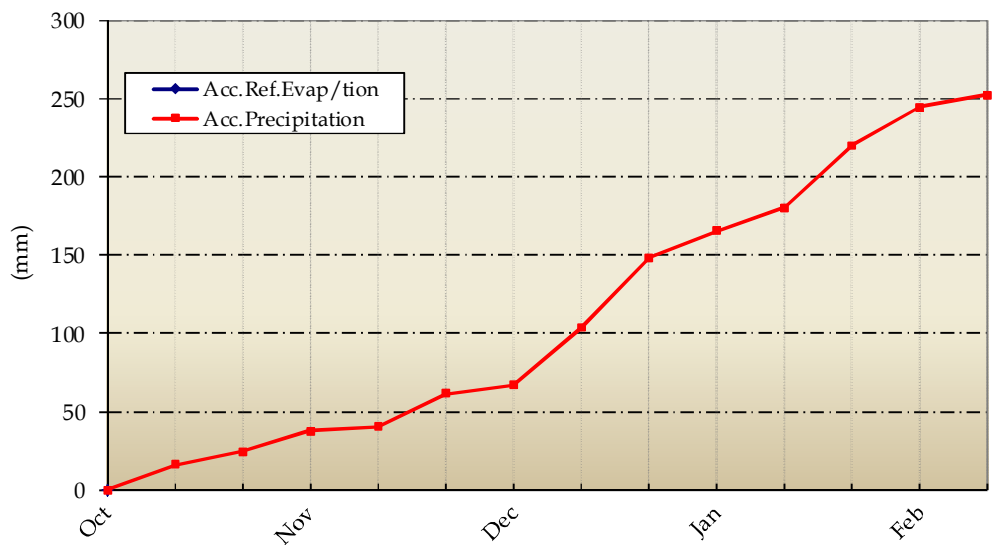


1st 10-day period (1-10/02/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	15.8	18.2	17.7	20.9	19.4	22.6	20.6	19.8	19.4	19.2	19.4	13.8	12.0
	Min	12.6	5.1	3.6	4.7	6.2	5.0	7.8	14.2	12.8	8.0	8.0	2.8	2.6
Relative Humidity	Max	98	99	100	100	100	100	71	60	75	82	88	94	-
	Min	63	45	57	36	43	33	33	31	37	34	41	44	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		0.9	6.6	8.3	8.4	7.5	8.3	4.1	5.1	8.6	7.8	6.6	5.9	
Precipitation		8.0									0.1	8.1	14.0	16.3
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	-
Growing Degrees	5	9.2	6.7	5.7	7.8	7.8	8.8	9.2	12.0	11.1	8.6	86.8	37.3	
	10	4.2	1.7	0.7	2.8	2.8	3.8	4.2	7.0	6.1	3.6	36.8	10.3	

1st 10-day period (1-10/02/2021)	Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-
Precipitation - Reference Evapotranspiration	-	16.3
Number of Rainy Days	2.0	4.1
Number of Dry Days	1.0	8.0

The missing info in the tables and the graph are due to the absence of data.

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



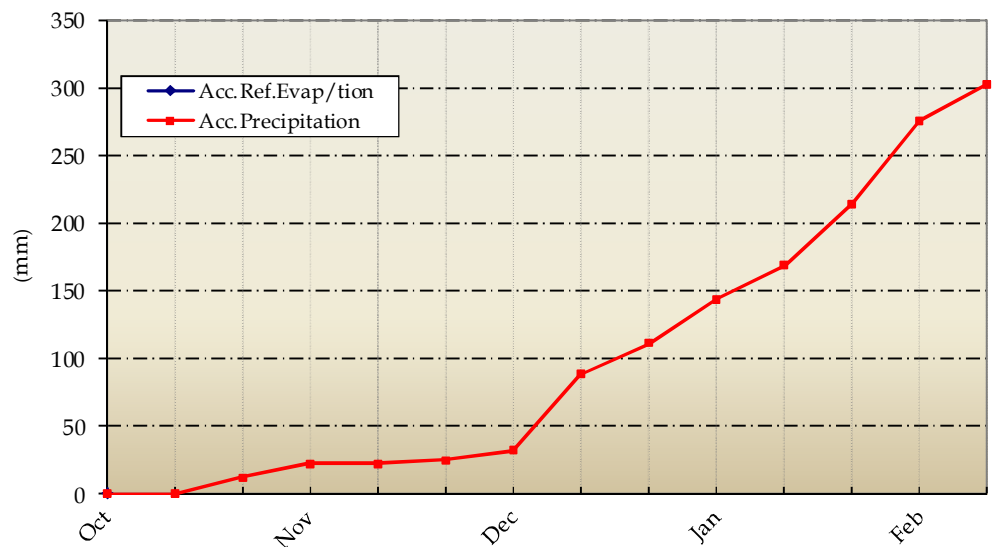
Tripoli

1st 10-day period (1-10/02/2021)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	13.1	13.0	16.2	18.8	20.6	20.0	17.0	13.4	14.0	14.9	16.1	12.2	10.0
	Min	8.5	5.4	1.1	-0.6	0.2	2.1	2.1	7.0	8.8	6.0	4.1	-1.9	0.4
Relative Humidity	Max	94	99	100	100	100	87	93	93	88	88	94	100	-
	Min	55	58	44	37	21	23	24	61	51	49	42	44	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	2.8	5.0
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	6.4	5.8
Sunshine Duration		2.8	2.4	5.9	8.7	8.2	7.8	3.1	1.9	4.9	8.6	5.4	6.6	4.9
Precipitation		10.7							6.5	4.4	5.3	26.9	7.7	26.5
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	8.6
Growing Degrees	5	5.8	4.2	3.7	4.1	5.4	6.1	4.6	5.2	6.4	5.5	50.8	-	13.4
	10	0.8	0.0	0.0	0.0	0.4	1.1	0.0	0.2	1.4	0.5	4.3	-	0.4

1st 10-day period (1-10/02/2021)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	13.2	-	11.6
Precipitation - Reference Evapotranspiration	13.7	-	14.9
Number of Rainy Days	4.0	2.0	4.1
Number of Dry Days	1.0	5.0	-

The missing info in the tables and the graph are due to the absence of data.

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<sub>n</sub> 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