



AGROMETEOROLOGICAL BULLETIN

July 2017
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



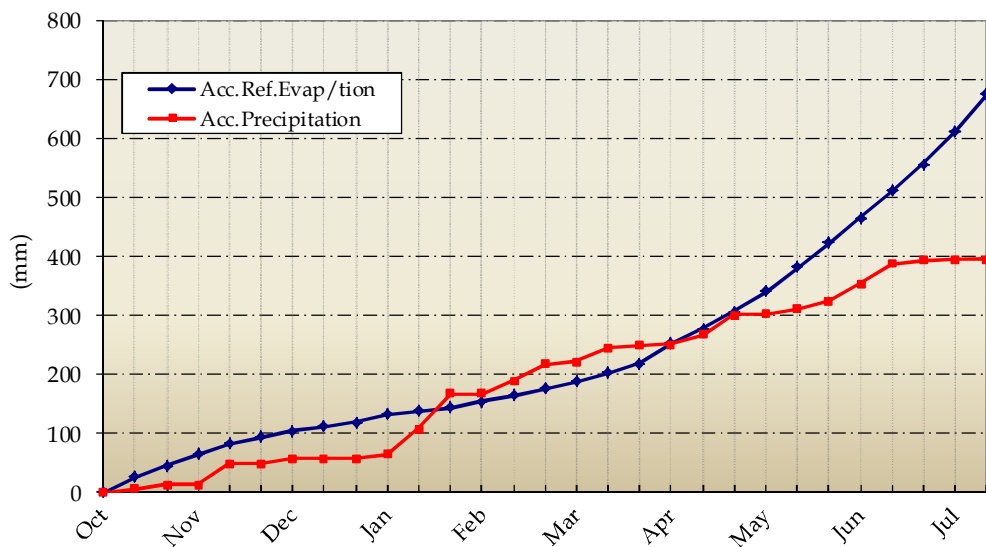
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1st 10-day period (1-10/07/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	38.6	39.6	33.8	28.0	30.4	32.2	32.8	30.2	31.6	34.6	33.2	32.7	29.3
	Min	20.0	18.4	24.4	17.0	14.6	18.0	14.4	15.6	17.4	22.6	18.2	20.2	17.0
Relative Humidity	Max	67	75	84	79	80	80	75	84	81	74	78	79	-
	Min	24	29	45	40	29	25	32	33	43	27	33	32	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	27.2	23.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	33.1	28.2
Sunshine Duration		13.1	13.4	9.8	12.7	13.9	14.0	12.5	13.9	13.4	13.4	13.0	11.8	10.3
Precipitation													2.0	12.1
Evaporation		11.6	13.0	8.2	12.6	10.1	8.7	7.6	10.4	10.2	12.5	104.9	99.5	85.9
Growing Degrees	5	24.3	24.0	24.1	17.5	17.5	20.1	18.6	17.9	19.5	23.6	207.1	214.2	181.3
	10	19.3	19.0	19.1	12.5	12.5	15.1	13.6	12.9	14.5	18.6	157.1	164.2	131.3

1st 10-day period (1-10/07/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	62.9	60.6	56.1
Precipitation - Reference Evapotranspiration	-62.9	-58.6	-44.0
Number of Rainy Days	0.0	1.0	2.2
Number of Dry Days	18.0	4.0	-

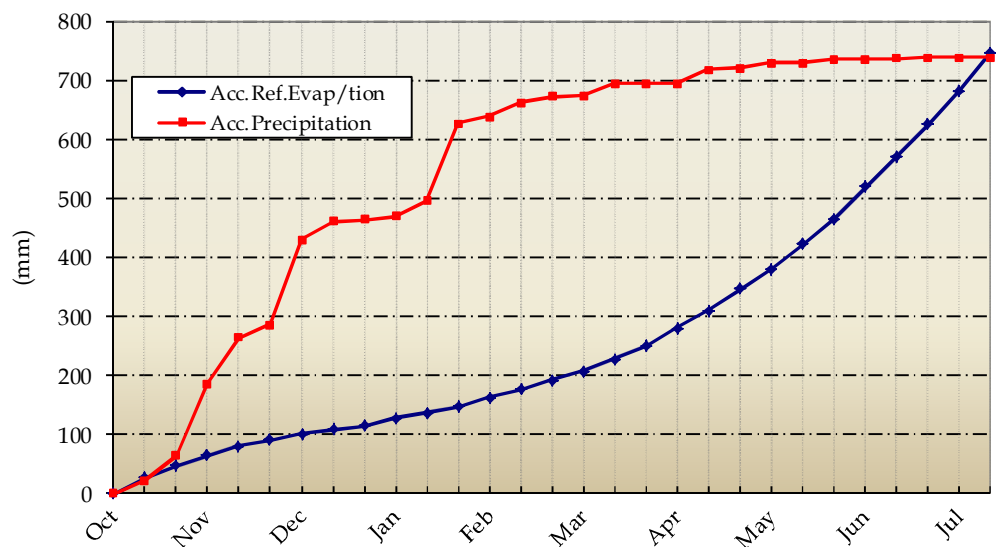
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	36.3	33.2	27.0	29.9	30.7	31.6	34.4	33.1	33.4	34.0	32.4	31.1	29.5
	Min	18.5	20.1	23.6	18.8	17.8	17.4	17.2	17.9	18.6	19.6	19.0	20.0	17.7
Relative Humidity	Max	80	76	80	86	90	80	82	87	86	85	83	88	-
	Min	23	35	47	28	29	30	24	25	35	34	31	40	-
Soil Temperature at 10 cm	06 UTC	30.0	30.0	30.6	29.2	29.0	29.0	29.2	29.4	30.0	30.5	29.7	-	26.9
	12 UTC	32.5	31.8	31.0	31.0	31.5	29.0	31.8	32.0	33.0	33.0	31.7	-	31.6
Sunshine Duration		13.0	12.9	13.3	13.3	13.4	13.5	12.8	13.1	13.0	12.9	13.1	13.0	12.0
Precipitation														0.7
Evaporation		6.0	14.0	11.0	13.0	3.0	15.0	8.0	8.0	8.0	7.0	93.0	63.1	75.0
Growing Degrees	5	22.4	21.7	20.3	19.4	19.3	19.5	20.8	20.5	21.0	21.8	206.6	205.3	186.1
	10	17.4	16.7	15.3	14.4	14.3	14.5	15.8	15.5	16.0	16.8	156.6	155.3	136.1

1st 10-day period (1-10/07/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	63.7	57.2	53.6
Precipitation - Reference Evapotranspiration	-63.7	-57.2	-52.9
Number of Rainy Days	0.0	0.0	0.3
Number of Dry Days	22.0	14.0	-

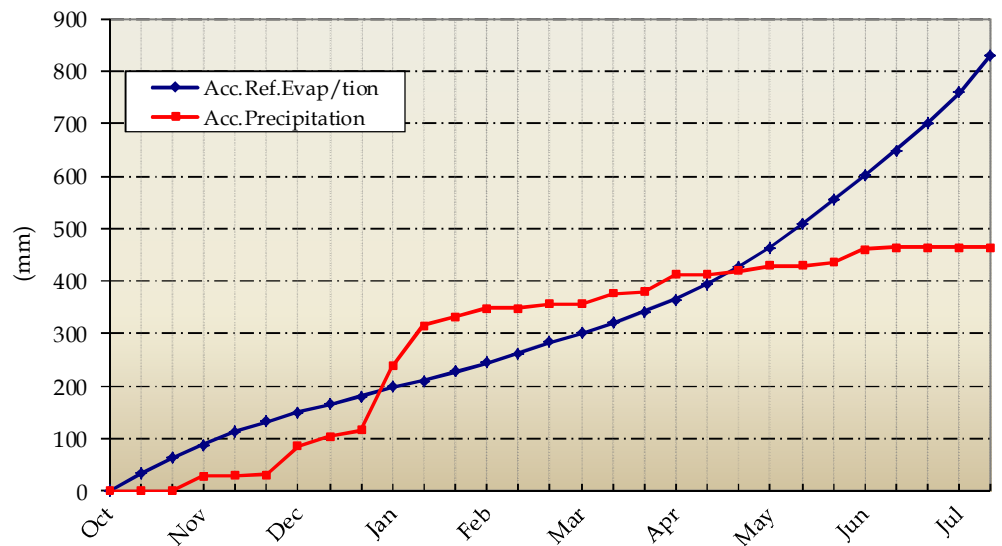
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	34.2	36.2	36.4	28.2	26.6	27.2	28.6	28.6	29.6	29.2	30.5	29.6	28.4
	Min	24.0	26.0	26.0	21.2	23.0	23.8	24.4	25.0	23.8	23.0	24.0	24.6	21.3
Relative Humidity	Max	75	54	67	72	74	63	64	74	72	70	68	79	-
	Min	37	35	26	52	56	46	50	45	46	52	44	62	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.7	12.6	12.8	12.3	11.3	12.9	12.7	12.8	12.7	12.7	12.6	13.3	12.1
Precipitation														0.7
Evaporation		10.3	9.3	12.5	8.3	9.0	9.7	9.8	9.2	8.1	9.5	95.7	82.7	92.1
Growing Degrees	5	24.1	26.1	26.2	19.7	19.8	20.5	21.5	21.8	21.7	21.1	222.5	221.2	198.6
	10	19.1	21.1	21.2	14.7	14.8	15.5	16.5	16.8	16.7	16.1	172.5	171.2	148.6

1st 10-day period (1-10/07/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	70.6	65.2	-
Precipitation - Reference Evapotranspiration	-70.6	-65.2	0.7
Number of Rainy Days	0.0	0.0	0.1
Number of Dry Days	32.0	32.0	-

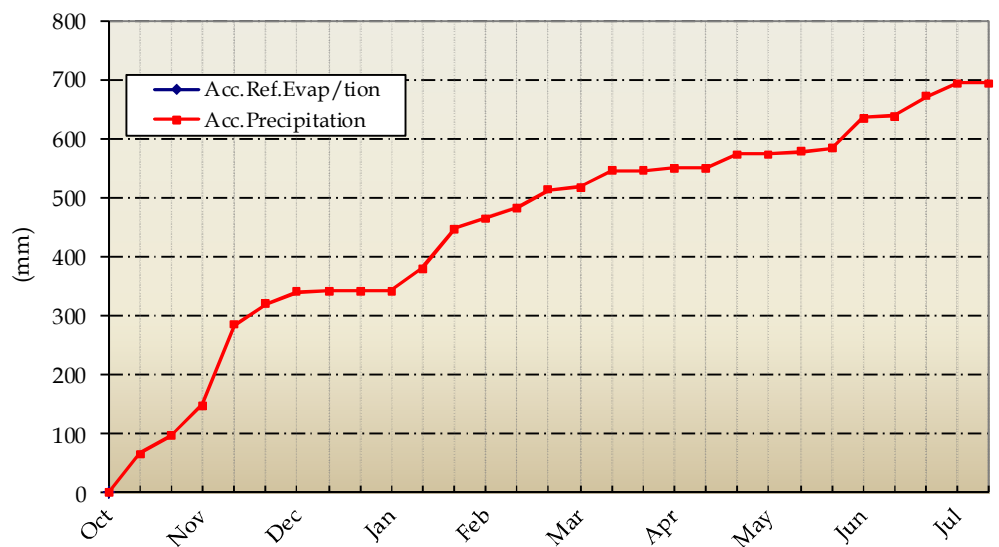
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	39.0	37.8	29.8	31.2	30.4	34.2	36.2	35.6	37.2	36.0	34.7	32.9	30.4
	Min	17.0	16.5	14.2	19.0	15.2	13.5	14.8	15.0	16.0	17.5	15.9	15.6	14.5
Relative Humidity	Max	80	63	70	68	80	90	96	78	82	92	80	99	-
	Min	16	18	33	26	31	23	12	18	17	22	22	29	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	22.7
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	27.2
Sunshine Duration		12.7	11.1	13.1	13.0	12.7	12.9	12.9	13.0	10.5	12.3	12.4	10.8	10.5
Precipitation													5.7	6.6
Evaporation		-	-	-	-	-	-	-	-	-	-	-	-	72.0
Growing Degrees	5	23.0	22.2	17.0	20.1	17.8	18.9	20.5	20.3	21.6	21.8	203.1	192.2	168.8
	10	18.0	17.2	12.0	15.1	12.8	13.9	15.5	15.3	16.6	16.8	153.1	142.2	120.3

1st 10-day period (1-10/07/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	-	-	51.3
Precipitation - Reference Evapotranspiration	-	-	-44.7
Number of Rainy Days	0.0	3.0	1.5
Number of Dry Days	15.0	4.0	-

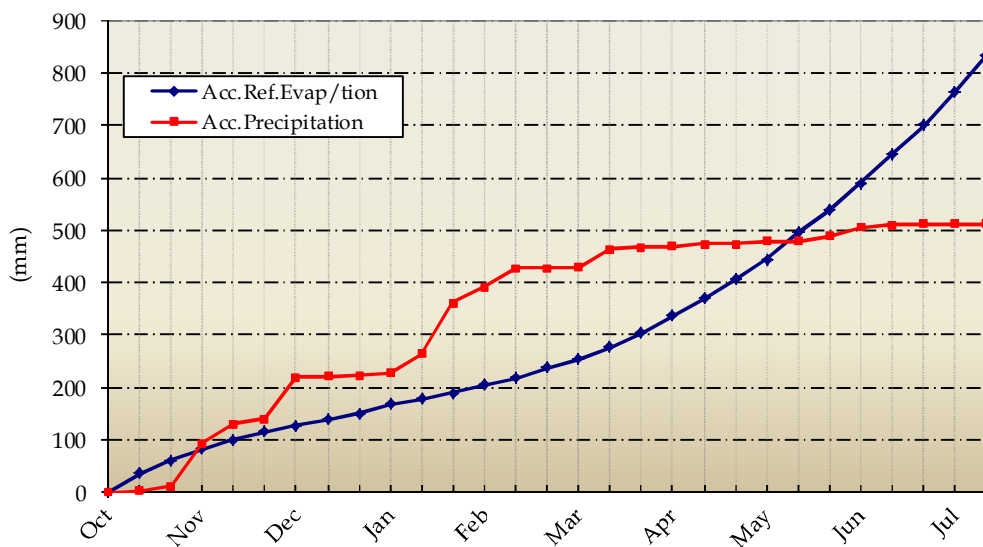
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	38.6	42.3	31.5	30.3	31.9	31.3	34.9	31.1	33.4	33.5	33.9	32.0	30.8
	Min	25.3	22.6	23.9	17.7	17.8	15.4	15.8	16.5	18.1	20.6	19.4	19.6	17.6
Relative Humidity	Max	48	68	62	83	87	79	85	89	89	77	77	86	-
	Min	18	11	24	39	27	29	20	32	29	30	26	36	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	26.1	25.3
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	28.0	29.5
Sunshine Duration		12.8	12.6	11.9	11.8	12.9	12.9	12.9	12.8	12.7	11.6	12.5	11.9	11.4
Precipitation													0.5	1.0
Evaporation		7.2	11.8	8.2	9.9	3.4	11.0	8.0	11.0	6.6	4.9	82.0	77.2	89.7
Growing Degrees	5	27.0	27.5	22.7	19.0	19.9	18.4	20.4	18.8	20.8	22.1	216.3	208.1	191.7
	10	22.0	22.5	17.7	14.0	14.9	13.4	15.4	13.8	15.8	17.1	166.3	158.1	141.7

1st 10-day period (1-10/07/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	69.7	60.7	56.4
Precipitation - Reference Evapotranspiration	-69.7	-60.2	-55.4
Number of Rainy Days	0.0	1.0	0.3
Number of Dry Days	21.0	10.0	-

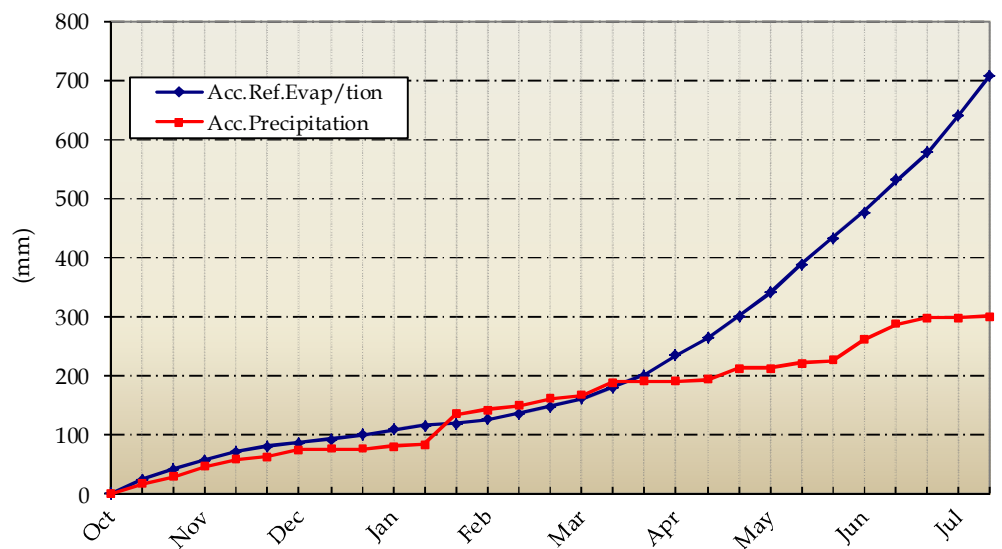
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	43.2	42.4	41.8	31.8	31.4	32.2	37.0	34.5	37.2	37.2	36.9	34.0	32.9
	Min	21.0	21.0	24.8	17.2	19.6	17.6	17.6	19.2	20.2	20.8	19.9	20.0	17.5
Relative Humidity	Max	66	74	48	65	75	78	73	78	79	87	72	82	-
	Min	14	15	21	24	29	29	15	29	22	29	23	25	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	27.1	26.1
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	28.2	28.7
Sunshine Duration		11.7	11.7	12.0	11.6	9.7	12.5	12.0	11.9	10.8	11.6	11.6	10.5	10.7
Precipitation											2.5	2.5	1.4	5.5
Evaporation		13.0	7.1	15.2	10.1	9.3	12.0	8.5	11.8	13.7	13.0	113.7	116.4	95.9
Growing Degrees	5	27.1	26.7	28.3	19.5	20.5	19.9	22.3	21.9	23.7	24.0	233.9	220.0	202.1
	10	22.1	21.7	23.3	14.5	15.5	14.9	17.3	16.9	18.7	19.0	183.9	170.0	152.1

1st 10-day period (1-10/07/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	67.7	63.3	62.4
Precipitation - Reference Evapotranspiration	-65.2	-61.9	-56.9
Number of Rainy Days	1.0	2.0	1.4
Number of Dry Days	22.0	4.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

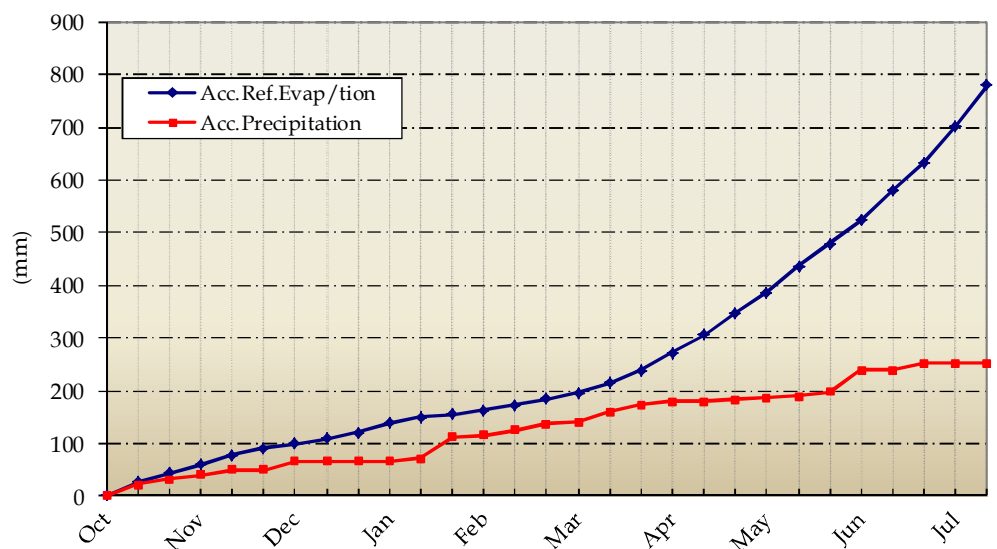


Mikra

1st 10-day period (1-10/07/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	38.7	40.2	35.0	31.2	31.0	31.8	35.6	33.0	36.0	34.4	34.7	32.5	31.1
	Min	22.3	21.8	25.0	22.0	20.2	18.8	19.0	20.2	20.4	22.2	21.2	20.7	18.5
Relative Humidity	Max	65	62	48	65	68	65	66	67	74	66	65	79	-
	Min	23	13	31	25	28	29	24	32	25	27	26	31	-
Soil Temperature at 10 cm	06 UTC	31.0	31.2	31.8	28.8	29.6	29.6	29.5	30.4	30.8	31.2	30.4	30.4	26.2
	12 UTC	36.0	35.6	34.4	33.0	34.8	34.5	34.8	35.4	35.8	35.8	35.0	34.3	30.9
Sunshine Duration		12.8	11.6	13.4	11.6	12.6	13.3	13.5	13.7	13.2	12.8	12.8	11.0	10.7
Precipitation													0.8	8.7
Evaporation		11.4	16.2	18.0	12.8	9.7	7.5	15.6	9.4	10.7	13.8	125.1	92.8	95.7
Growing Degrees	5	25.5	26.0	25.0	21.6	20.6	20.3	22.3	21.6	23.2	23.3	229.4	216.2	198.0
	10	20.5	21.0	20.0	16.6	15.6	15.3	17.3	16.6	18.2	18.3	179.4	166.2	148.0

1st 10-day period (1-10/07/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	77.4	65.5	61.2
Precipitation - Reference Evapotranspiration	-77.4	-64.7	-52.5
Number of Rainy Days	0.0	1.0	1.7
Number of Dry Days	25.0	8.0	-

Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration

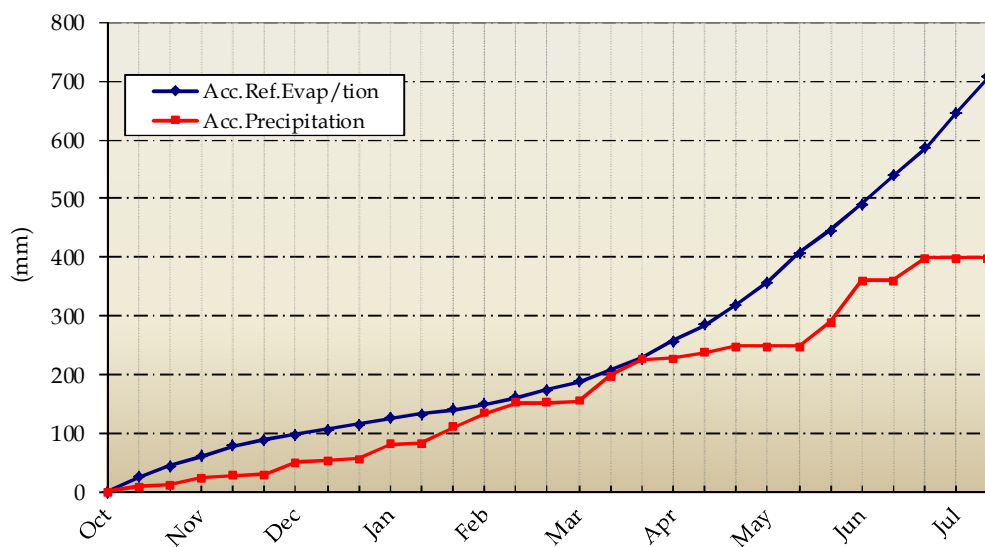


Tanagra

1st 10-day period (1-10/07/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	41.0	42.3	33.1	28.3	28.0	29.3	32.9	32.2	35.1	34.6	33.7	32.3	31.6
	Min	21.0	21.8	25.1	19.4	18.4	18.7	17.8	18.7	19.1	20.4	20.0	20.9	17.5
Relative Humidity	Max	58	63	50	67	71	60	60	64	68	61	62	62	-
	Min	14	9	17	33	26	23	23	29	21	22	22	26	-
Soil Temperature at 10 cm	06 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
	12 UTC	-	-	-	-	-	-	-	-	-	-	-	-	-
Sunshine Duration		12.9	12.9	12.3	12.9	13.5	13.4	13.5	13.3	13.1	13.1	13.1	12.7	
Precipitation														3.9
Evaporation		-	-	-	-	-	-	-	-	-	-	-	97.5	
Growing Degrees	5	26.0	27.1	24.1	18.9	18.2	19.0	20.4	20.5	22.1	22.5	218.6	216.1	
	10	21.0	22.1	19.1	13.9	13.2	14.0	15.4	15.5	17.1	17.5	168.6	166.1	

1st 10-day period (1-10/07/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	61.5	62.9	
Precipitation - Reference Evapotranspiration	-61.5	-62.9	3.9
Number of Rainy Days	0.0	0.0	1.2
Number of Dry Days	22.0	12.0	-

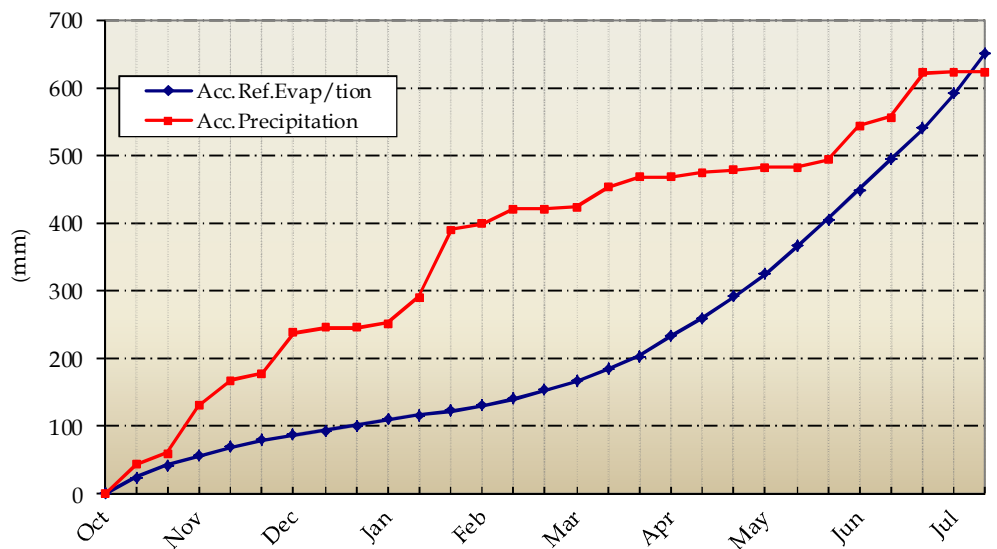
Diagram of Accumulated Precipitation and Accumulated Reference Evapotranspiration



1st 10-day period (1-10/07/2017)		1	2	3	4	5	6	7	8	9	10	Mean Value or Sum	Previous Year Value	Past Years Mean Value
Temperature	Max	41.2	40.5	29.9	29.0	28.0	31.8	33.0	35.1	35.7	35.8	34.0	30.9	30.2
	Min	16.4	16.3	17.7	13.3	15.3	13.2	14.0	13.7	15.3	15.2	15.0	15.6	13.4
Relative Humidity	Max	72	69	80	70	76	76	78	79	84	83	77	98	-
	Min	10	11	14	28	27	21	18	18	15	20	18	30	-
Soil Temperature at 10 cm	06 UTC	27.0	27.6	27.8	26.8	27.0	26.2	26.8	-	-	27.8	27.1	23.5	25.0
	12 UTC	-	-	34.0	33.2	32.6	32.2	32.6	-	-	34.4	33.2	28.8	28.1
Sunshine Duration		12.7	13.1	13.2	12.0	12.6	13.2	13.1	11.8	12.7	10.5	12.5	10.1	10.6
Precipitation													41.1	7.1
Evaporation		11.1	10.6	9.7	9.8	7.2	8.8	-	-	-	7.3	-	67.1	64.6
Growing Degrees	5	23.8	23.4	18.8	16.2	16.7	17.5	18.5	19.4	20.5	20.5	195.2	182.6	167.9
	10	18.8	18.4	13.8	11.2	11.7	12.5	13.5	14.4	15.5	15.5	145.2	132.6	117.9

1st 10-day period (1-10/07/2017)		Previous Year Value	Past Years Mean Value
Reference Evapotranspiration	59.8	49.9	53.2
Precipitation - Reference Evapotranspiration	-59.8	-8.8	-46.1
Number of Rainy Days	0.0	4.0	1.3
Number of Dry Days	13.0	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 °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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