



KMA'S BRIEFING ON CLIMATE CHARACTERISTICS

(total 4 pages)

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Release	October 10, 2012

Monthly (September) 2012 Climate Summary

- ◇ Nearly normal in mean temperature and mean minimum temperature, below normal in mean maximum temperature and above normal in precipitation for September 2012 nationwide
- ※ Updated in the greatest monthly precipitation extremes
 - Jindo(Daily precipitation:184.5mm), Sancheong(1-hour precipitation:58.0mm), Miryang and Sancheong(10-minutes precipitation:14.0mm, 15.5mm)

- Climate features of September 2012 and their long-term trends are analyzed using 45 meteorological stations in Korea (the national average) during 1973-2012 (1908-2012 for Seoul).

※ Normal : average from 1981 to 2010.

- **The climatological characteristics in September 2012 can be described as follows:**

o For Korea (whole nation),

- The mean temperature (20.2 °C) and the mean minimum temperature (16.2 °C) were nearly-normal. And the mean maximum temperature (25.2 °C) were below-normal effect of the low-pressure during the first ten-day and the typhoon during the middle ten-day. In addition all temperatures were below those at this time last year.
 - After the first ten days of September, there were the days of the minimum temperature lower than 10°C in the mountains and inland.
- The days of daily temperature range greater than 10°C were 2.0 days below-normal (14.7 days).
- The nationally averaged precipitation (251.4 mm) was 156% of normal, the days of rain (11.3 days) was 2.3 days above-normal. In addition, those were 180.0 mm and 3.5 days higher than those at this time last year.
- The total of sunshine duration (180.6 hours) at September 2012 was 9 hour above-normal and nearly those at this time last year.

o For Seoul,

- The mean temperature (21.0 °C) and the mean minimum (17.4 °C) at September 2012 were nearly-normal and the mean maximum temperature (25.0 °C) was below-normal. Also, the mean and the mean maximum temperatures were lower than those at this time last year and the mean minimum temperature was nearly those.
- The monthly amount of precipitation (212.0 mm) in September 2012 was 125% of normal, the days of rain (11.0 days) was 1.9 days above-normal. In addition, those were 186.4 mm and 7.0 days greater than those at this time last year.
- The total of sunshine duration (190.8 hours) was 108% of normal and 10.4 hours longer than those at this time last year.

※ **Updated in monthly precipitation extremes (in top five ranking)**

- o Daily precipitation (16 stations) : Jindo 184.5 mm, Hapcheon 200.5 mm and so on
- o 1-hour precipitation (11 stations) : Sancheong 58.0 mm, Hapcheon 54.0 mm and so on
- o 10-minutes precipitation (3 stations) : Miryang 41.0mm, Sancheong 15.5 mm and so on

□ **Long-term trend of September climate**

o For Korea (whole nation),

- National mean, mean maximum, and mean minimum temperatures of September 2000s (2001-2010) were 0.8 °C, 0.5 °C, and 1.4 °C higher than those of the 1970s, respectively. All temperatures of September 2012 were smaller than those of the 2000s.
- Nationally averaged precipitation, and days of rain in September 2000s were 58.5 mm and 1.8 day higher than those of the 1970s, respectively. But, those in September 2012 were 86.3 mm and 1.2 day higher than those of the 2000s.
- Nationally total of sunshine duration of September 2000s was 29.4 hours less than those of the 1970s. Those of June 2012 was 24.4 hours longer than those of the 2000s.

o For Seoul,

- The mean, mean maximum, and mean minimum temperature of September 2000s (2001-2010) were 2.0 °C, 0.8 °C, and 2.8 °C higher than those of the 1910s, respectively. These temperatures of September 2012 were lower than those of the 2000s.
- The monthly amount of precipitation and days of rain in September 2000s were 71.3 mm greater than those of the 1910s and 0.2 day less than those, respectively. And these temperatures in September 2012 were 15.1 mm and 1.1 day higher than those of the 2000s.
- The total of sunshine duration of September 2000s was 61.7 hours shorter than that of the 1910s. This total of September 2012 was 41.3 hours longer than that of the 2000s.

Appendix 1. Climate features in September 2012

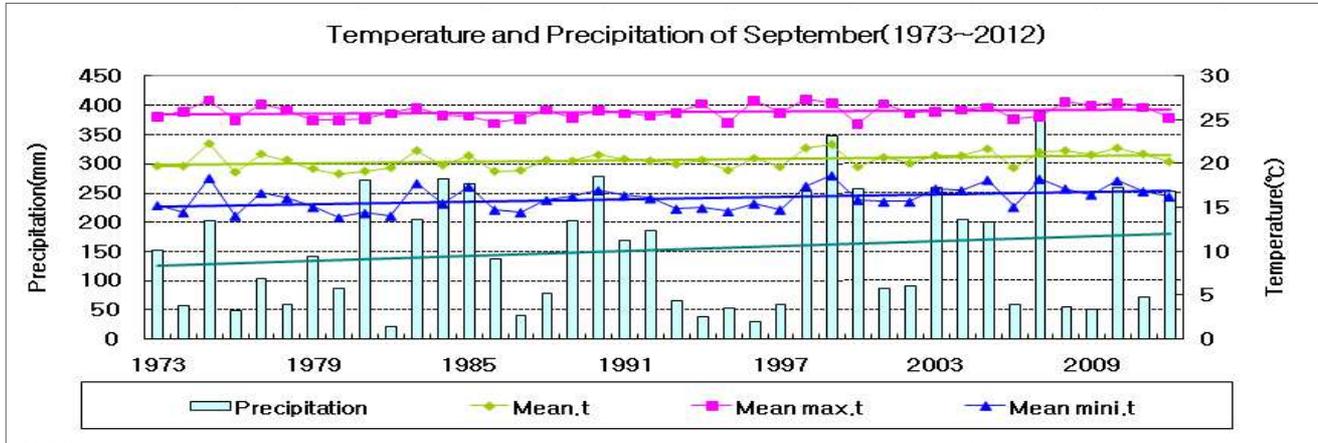


Fig. 1. Temperatures (mean, mean maximum, and mean minimum), and precipitation in South Korea during September 1973-2012.

□ Average values of meteorological elements across Korea (1973-2011)

Elements (National) average	Sep. 2012 (a)	Sep. 2011 (b)	Normals of Sep. (1981-2010) (c)	a-b	a-c	Rank since 1973 (within 5th)
Mean temperature (°C)	20.2	21.1	20.5	-0.9	-0.3	
Mean maximum t (°C)	25.2	26.4	25.9	-1.2	-0.7	
Mean minimum t (°C)	16.2	16.8	16.1	-0.6	0.1	
Amount of precipitation(mm)	251.4	71.4	162.8	180.0	88.6 (156%)	
Days of rain(day)	11.3	7.8	9.0	3.5	2.3	
Sunshine duration(hour)	180.6	180.0	171.6	0.6	9.0	
Days of daily temperature range greater than 10°C(day)	12.7	14.1	14.7	-1.4	-2.0	
Days of mean temperature greater than 25°C(day)	0.4	4.8	1.9	-4.4	-1.5	
Days of amount of precipitation greater than 30mm/hour(day)	0.4	0.1	0.2	0.3	0.2	

□ Average values of meteorological elements across Korea for each decade (1973-2010)

Year	Mean temp (°C)	Mean max. temp. (°C)	Mean min. temp. (°C)	Amount of rain (mm)	Days of rain (day)	Sunshine duration (hour)	Days of daily temperature range greater than 10°C(day)	Days of mean temperature greater than 25°C(day)	Days of amount of precipitation greater than 30mm/hour (day)
1973-1980(a)	20.1	25.7	15.4	106.6	8.3	185.6	16.1	1.5	0.1
1981-1990(b)	20.1	25.5	15.7	177.6	9.0	176.5	14.8	1.2	0.3
1991-2000(c)	20.4	26.0	15.9	145.7	7.9	182.1	15.8	2.3	0.1
2001-2010(d)	20.9	26.2	16.8	165.1	10.1	156.2	13.3	2.3	0.2
2012(e)	20.2	25.2	16.2	251.4	11.3	180.6	12.7	0.4	0.4
d-a	0.8	0.5	1.4	58.5	1.8	-29.4	-2.8	0.8	0.1
d-b	0.8	0.7	1.1	-12.5	1.1	-20.3	-1.5	1.1	-0.1
d-c	0.5	0.2	0.9	19.4	2.2	-25.9	-2.5	0.0	0.1
e-d	-0.7	-1.0	-0.6	86.3	1.2	24.4	-0.6	-1.9	0.2

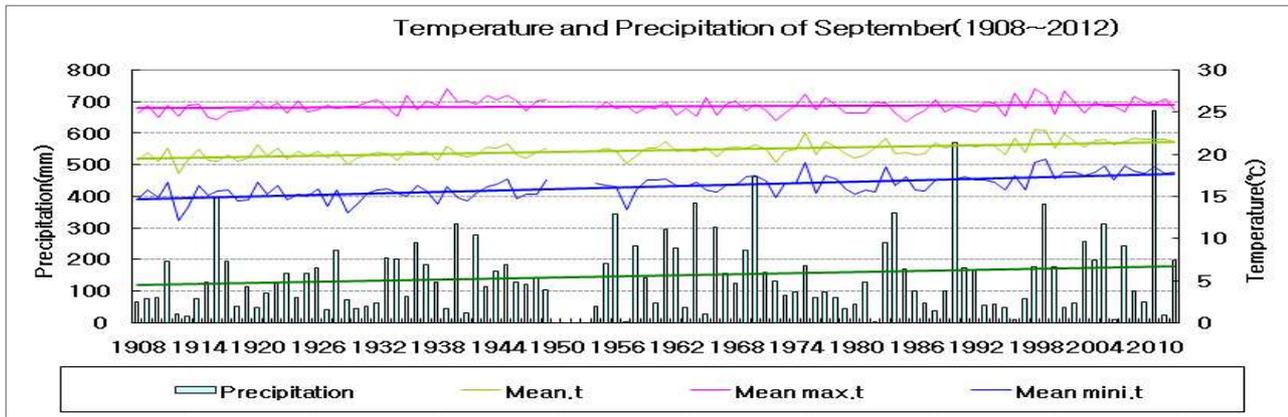


Fig. 2. Temperatures (mean, mean maximum, and mean minimum) and precipitation in Seoul during September 1908-2012

□ Meteorological elements across Seoul during June (1908-2012)

Elements (National) average	Sep. 2012 (a)	Sep. 2011 (b)	Normals of Sep. (1981-2010) (c)	a-b	a-c	Rank since 1908 (within 5th)
Mean temperature (°C)	21.0	21.8	21.2	-0.8	-0.2	
Mean maximum t (°C)	25.0	26.6	25.8	-1.6	-0.8	
Mean minimum t (°C)	17.4	17.7	17.2	-0.3	0.2	
Amount of precipitation(mm)	212.0	25.6	169.3	186.4	42.7 (125%)	
Days of rain(day)	11.0	4.0	9.1	7.0	1.9	
Sunshine duration(hour)	190.8	180.4	176.2	10.4	14.6	
Days of daily temperature range greater than 10°C(day)	7.0	11.0	10.2	-4.0	-3.2	
Days of mean temperature greater than 25°C(day)	2.0	7.0	2.5	-5.0	-0.5	
Days of amount of precipitation greater than 30mm/hour(day)	0.0	0.0	0.4	0.0	-0.4	

□ Meteorological elements across Seoul during May for each decade (1911-2012)

Year	Mean temp (°C)	Mean max. temp. (°C)	Mean min. temp. (°C)	Amount of rain (mm)	Days of rain (day)	Sunshine duration (hour)	Days of daily temperature range greater than 10°C(day)	Days of mean temperature greater than 25°C(day)	Days of amount of precipitation greater than 30mm/hour (day)
1911-1920(a)	19.7	25.3	15.1	125.6	10.1	211.2	16.3	1.6	0.0
1921-1930	19.9	25.6	14.9	118.1	8.5	217.8	18.4	0.5	0.0
1931-1940(b)	20.1	26.1	15.5	153.3	8.8	220.9	19.0	1.3	0.1
1941-1949	20.3	26.4	15.7	140.2	10.3	207.5	18.7	0.1	0.1
1954-1960	20.2	25.5	16.0	148.7	9.6	183.2	14.4	0.4	0.3
1961-1970	20.7	25.6	16.5	226.6	10.7	172.2	12.8	0.7	0.5
1971-1980(b)	20.5	25.5	16.5	102.0	8.6	174.6	12.0	1	0.0
1981-1990	20.6	25.4	16.6	178.0	8.1	192.0	11.3	0.8	0.5
1991-2000	21.3	26.0	17.2	132.9	9.4	187.0	11.6	3.5	0.3
2001-2010(d)	21.7	26.1	17.9	196.9	9.9	149.5	7.8	3.2	0.5
2012(e)	21.0	25.0	17.4	212.0	11.0	190.8	7.0	2.0	0.0
d-a	2.0	0.8	2.8	71.3	-0.2	-61.7	-8.5	1.6	0.5
d-b	1.6	0.0	2.4	43.6	1.1	-71.4	-11.2	1.9	0.4
d-c	1.2	0.6	1.4	94.9	1.3	-25.1	-4.2	2.2	0.5
e-d	-0.7	-1.1	-0.5	15.1	1.1	41.3	-0.8	-1.2	-0.5