



KMA'S BRIEFING ON CLIMATE CHARACTERISTICS

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Monthly (October) 2012 Climate Summary

- ◇ Nearly normal in mean temperature, mean maximum temperature, mean minimum temperature and precipitation for October 2012 nationwide
- ※ **Updated in the greatest monthly precipitation extremes effect of the low-pressure during the last ten-day of October**
 - Baengnyeongdo, Dongducheon, Munsan (Daily precipitation: 56.5 mm, 47.0 mm, 45.5 mm)
 - Baengnyeongdo, Chupungnyeong (1-hour precipitation: 23.0 mm, 16.0 mm)
 - Haenam (10-minutes precipitation: 11.5 mm)
- ※ **The freezing and frost event occurred in mountain and inland**

- Climate features of October 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 October 2012 can be described as follows:**

o For Korea (whole nation),

- The mean temperature (14.3 °C), the mean maximum temperature (21.0 °C) and the mean minimum temperature (8.8 °C) were nearly-normal.
- The days of daily temperature range greater than 10°C were 22.2 days above-normal (20.7 days) and the days of daily minimum temperature less than 0 °C were 0.2 days below-normal(0.9 days).
- The nationally averaged precipitation (56.4 mm) was 117% of normal, the days of rain (4.3 days) were 1.4 days below-normal. In addition, those were 5.1 mm greater and 1.6 days less than those at this time last year.
- The total of sunshine duration (235.4 hours) at October 2012 was 36.1 hour above-normal and 33.9 hour longer than those at this time last year.

※ The seasonal phenomena

- o The freezing event occurred in Daegwallyeong on 4th October and after then, these phenomena occurred in mountain and inland.
- Remark, The first day of frost: 30 September 2012 in Daegwallyeong

- o For Seoul,
 - The mean temperature (15.3 °C), the mean maximum temperature (20.5 °C) and the mean minimum temperature (11.0 °C) at October 2012 were above-normal. Also, all of the temperatures were higher than those at this time last year.
 - The days of daily temperature range greater than 10 °C were 11.0 days below-normal (14.2 days) and the days of daily minimum temperature were less than 0°C were 0.0 days below-normal (0.2 days).
 - The monthly amount of precipitation (99.3 mm) in October 2012 was 192% of normal, the days of rain (6.0 days) were 0.3 days below-normal. In addition, those were 67.3 mm and 1.0 days greater than those at this time last year.
 - The total of sunshine duration (235.4 hours) was 118% of normal and 20.1 hours longer than those at this time last year.

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

- o Daily precipitation (16 stations): Baengnyeongdo (56.5 mm), Dongducheon (47.0 mm) and so on
- o 1-hour precipitation (23 stations): Baengnyeongdo (23.0m), Chupungnyeong (16.0 mm) and so on
- o 10-minutes precipitation (21 stations): Haenam (11.5 mm) and so on

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

- o For Korea (whole nation),
 - National mean, mean maximum, and mean minimum temperatures of October 2000s (2001-2010) were 0.7 °C, 0.6 °C, and 1.0 °C higher than those of the 1970s, respectively. All temperatures of October 2012 were smaller than those of the 2000s.
 - Nationally averaged precipitation, and days of rain in October 2000s were 17.9 mm and 1.2 day less than those of the 1970s, respectively. But, those in October 2012 were 12.7 mm greater and 1.4 days less than those of the 2000s.
 - Nationally total of sunshine duration of October 2000s was 0.1 hours less than those of the 1970s. Those of June 2012 was 39.3 hours longer than those of the 2000s.
- o For Seoul,
 - The mean, mean maximum, and mean minimum temperature of October 2000s (2001-2010) were 2.3 °C, 0.6 °C, and 3.7 °C higher than those of the 1910s, respectively. These temperatures of October 2012 were similar to those of the 2000s.
 - The monthly amount of precipitation and days of rain in October 2000s were 3.2 mm greater than those of the 1910s and 1.3 day less than those, respectively. And these in October 2012 were 57.5 mm greater and 0.1 day less than those of the 2000s.
 - The total of sunshine duration of October 2000s was 45.3 hours shorter than that of the 1910s. This total of October 2012 was 46.0 hours longer than that of the 2000s.

Appendix 1. Climate features in October 2012

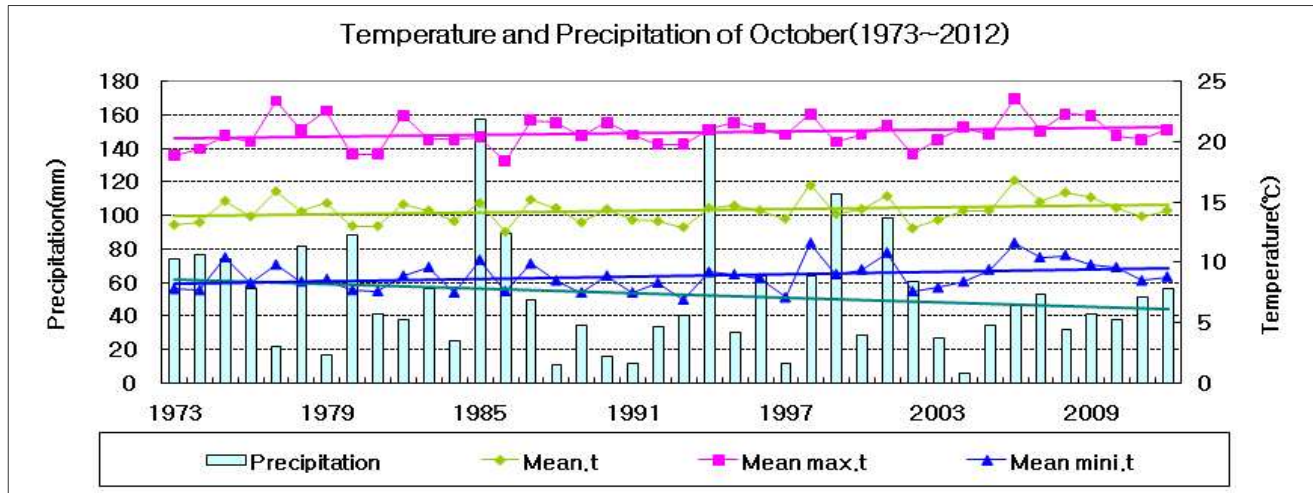


Fig. 1. Temperatures (mean, mean maximum, and mean minimum), and precipitation in South Korea during October 1973-2012.

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

Elements (National) average	Oct. 2012 (a)	Oct. 2011 (b)	Normals of Oct. (1981-2010) (c)	a-b	a-c	Rank since 1973 (within 5th)
Mean temperature (°C)	14.3	13.8	14.3	0.5	0.0	
Mean maximum t (°C)	21.0	20.2	20.8	0.8	0.2	
Mean minimum t (°C)	8.8	8.5	9.0	0.3	-0.2	
Amount of precipitation(mm)	56.4	51.3	50.2	5.1	6.2 (117%)	
Days of rain(day)	4.3	5.9	5.7	-1.6	-1.4	
Sunshine duration(hour)	235.4	201.5	199.3	33.9	36.1	
Cloud amount(1/10)	3.5	4.2	4.1	-0.7	-0.6	
Days of daily temperature range greater than 10°C(day)	22.2	20.5	20.7	1.7	1.5	
Days of daily minimum temperature less than 0°C(day)	0.2	0.9	0.9	-0.7	-0.7	

□ 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)	Cloud amount (1/10)	Days of daily temperature range greater than 10°C(day)	Days of daily minimum temperature less than 0°C(day)
1973-1980(a)	14.1	20.6	8.6	61.6	6.9	196.2	4.3	20.8	1.1
1981-1990(b)	14	20.6	8.6	51.8	6	202.1	4.3	20.8	1.1
1991-2000(c)	14.2	20.7	8.7	55.3	5.6	199.8	4.1	21.2	0.9
2001-2010(d)	14.8	21.2	9.6	43.7	5.7	196.1	4	20.1	0.6
2012(e)	14.3	21.0	8.8	56.4	4.3	235.4	3.5	22.2	0.2
d-a	0.7	0.6	1.0	-17.9	-1.2	-0.1	-0.3	-0.7	-0.5
d-b	0.8	0.6	1.0	-8.1	-0.3	-6.0	-0.3	-0.7	-0.5
d-c	0.6	0.5	0.9	-11.6	0.1	-3.7	-0.1	-1.1	-0.3
e-d	-0.5	-0.2	-0.8	12.7	-1.4	39.3	-0.5	2.1	-0.4

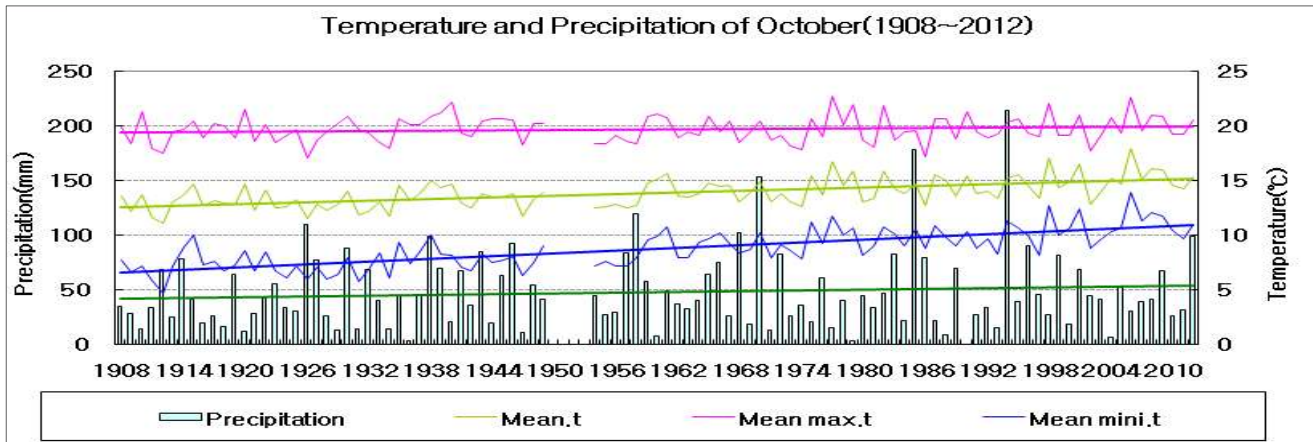


Fig. 2. Temperatures (mean, mean maximum, and mean minimum) and precipitation in Seoul during October 1908-2012

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

Elements (National) average	Oct. 2012 (a)	Oct. 2011 (b)	Normals of Oct. (1981-2010) (c)	a-b	a-c	Rank since 1908 (within 5th)
Mean temperature (°C)	15.3	14.2	14.8	1.1	0.5	
Mean maximum t (°C)	20.5	19.3	19.8	1.2	0.7	
Mean minimum t (°C)	11.0	9.7	10.3	1.3	0.7	
Amount of precipitation(mm)	99.3	32.0	51.8	67.3	47.5 (192%)	
Days of rain(day)	6.0	5.0	6.3	1.0	-0.3	
Sunshine duration(hour)	235.4	215.3	198.8	20.1	36.6	
Cloud amount(1/10)	3.6	3.8	3.9	-0.2	-0.3	
Days of daily temperature range greater than 10°C(day)	11.0	14.0	14.2	-3.0	-3.2	
Days of daily minimum temperature less than 0°C(day)	0.0	0.0	0.2	0.0	-0.2	

□ Meteorological elements across Seoul during October 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)	Cloud amount (1/10)	Days of daily temperature range greater than 10°C(day)	Days of daily minimum temperature less than 0°C(day)
1911-1920(a)	13	19.5	7.4	38.6	7.4	234.7	4.5	23.1	1.3
1921-1930	12.8	19.3	6.9	50.3	6.6	225	4.3	23.1	1.7
1931-1940(b)	13.4	20.1	7.9	42	7.4	232.3	4.2	23	1
1941-1949	13.2	19.9	7.6	52.3	6.8	239	4	24.6	0.8
1954-1960	13.3	19.3	8.1	53	7.1	218.8	4	20.6	0.4
1961-1970	14.2	19.8	9.3	59.7	6	211.2	4.1	19.5	0
1971-1980(b)	14.2	19.7	9.5	34.4	7.1	194.2	4	17.9	0.2
1981-1990	14.4	19.6	9.8	54.2	6.7	207.5	4.3	15.6	0.3
1991-2000	14.6	19.7	10	59.3	6.7	199.6	3.9	15	0.2
2001-2010(d)	15.3	20.1	11.1	41.8	6.1	189.4	3.5	12.1	0.1
2012(e)	15.3	20.5	11.0	99.3	6.0	235.4	3.6	11.0	0.0
d-a	2.3	0.6	3.7	3.2	-1.3	-45.3	-1.0	-11.0	-1.2
d-b	1.9	0.0	3.2	-0.2	-1.3	-42.9	-0.7	-10.9	-0.9
d-c	1.1	0.4	1.6	7.4	-1.0	-4.8	-0.5	-5.8	-0.1
e-d	0.0	0.4	-0.1	57.5	-0.1	46.0	0.1	-1.1	-0.1