



# KMA'S BRIEFING ON CLIMATE CHARACTERISTICS

[total 6 pages]

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## November and the fall (September~November) 2009,

- ◇ The mean temperature for November and the fall season were warmer than normal by 0.4°C and 0.8°C, respectively.
- ◇ The mean precipitation for November and the fall season accounted for 106.7% and 58.9%, respectively, compared to normal.

- Climate characteristics of November and the fall, and its long-term trends are analyzed, based on 60 meteorological stations across Korea (national average) for the period of 1973-2009 (1908-2009 for Seoul).
- **The climatological characteristics in November 2009 can be described as follows:**
  - o For Korea,
    - The mean temperature (7.9°C) and the mean minimum temperature (3.7°C) were 0.4°C and 1.2°C higher than normal, respectively, while the mean maximum temperature (12.9°C) was 0.5°C lower than normal.
    - The amount of precipitation (55.7mm) was 107% of normal.
    - The average number of rainy days (7.7 days) was equal to normal.
  - o For Seoul,
    - The mean temperature (6.9°C) was equal to normal, while the mean maximum temperature (10.4°C) was 1.1°C cooler than normal. The mean minimum temperature (3.7°C) was 0.8°C higher than normal.
    - The amount of precipitation (52.4mm) accounted for 99% of the normal precipitation.
    - The average number of rainy days (10 days) had 1 more day compared to normal.
- **The climatological characteristics in the fall (September, October, and November) during 2009 can be described as follows:**

- o For Korea,
  - The mean (14.8°C), mean maximum (20.5°C), and mean minimum (10.0°C) temperatures were 0.8°C, 0.6°C, and 1.0°C higher than normal, respectively.
  - The amount of precipitation (152.5mm) was 58.9% of normal, making it the fifth lowest rainfall on record since 1973.
  - The average number of rainy days (20.9 days) was 1.5 days less than normal.
- o For Seoul,
  - The mean (14.9°C), mean maximum (19.2°C), and mean minimum (11.0°C) temperatures were 0.9°C, 0.3°C, and 1.2°C higher than normal, respectively.
  - The average number of rainy days (24 days) was 0.3 days less than normal.

**□ Long-term trend of November and the fall climate**

- o Korea's mean, mean maximum, and mean minimum temperatures of the fall seasons from 2000 to 2009 were 0.7°C, 0.6°C, and 1.0°C higher than those of the 1970s, respectively.
- o For Seoul, the mean minimum temperature of November during the 21st century was 4.1°C and 1.1°C higher than those of the 1920s and 1970s, respectively.
- o For Korea, foggy days during the fall seasons between 2000 and 2009 were 1.9 days less than those of the 1970s, however, for Seoul, the figures are 4.4 days less than those of the 1970s.

※ Normal: average from 1971 to 2000.

※ National average is used average values of 60 meteorological stations starting from 1973.

※ In Seoul, data are analyzed from 1908.

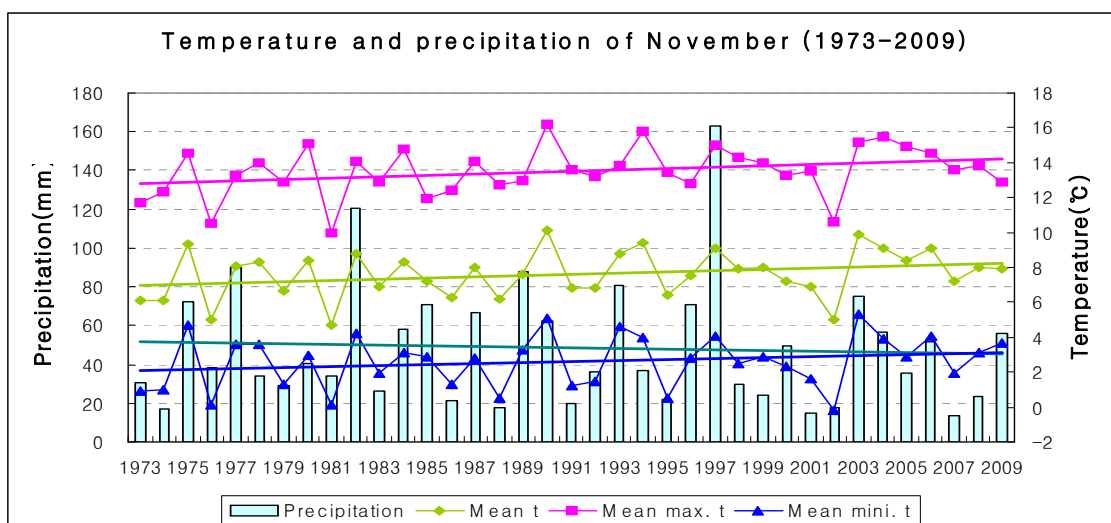
※ 1920s: average from 1921 to 1930

※ 1970s: average from 1973 to 1980

※ 2000s: average from 2001 to 2009

## Appendix 1. November, 2009 Climate

Fig. 1. Temperatures (mean, mean maximum, and mean minimum), and precipitation across South Korea during November (1973–2009)



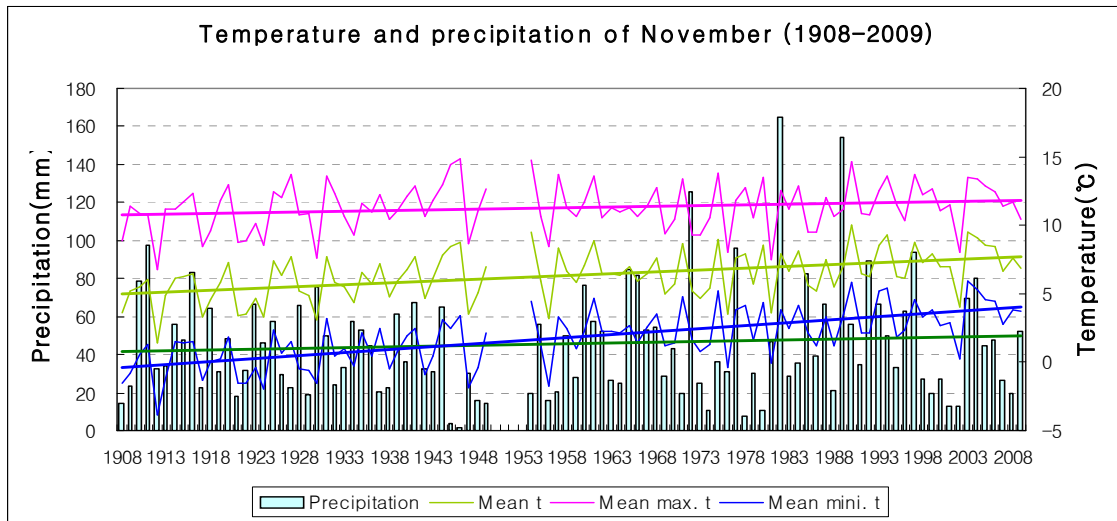
### □ Average values of meteorological elements across Korea (1973–2009)

Elements (National average)	November 2009 (a)	Normals of November(1971-2000) (b)	a-b	rank since 1973 (within 5th)
mean temperature (°C)	7.9	7.5	0.4	-
mean maximum t (°C)	12.9	13.4	-0.5	-
mean minimum t (°C)	3.7	2.5	1.2	-
amount of precipitation (mm)	55.7	52.2	3.5(106.7%)	-
rainy days	7.7	7.7	0	-
foggy days	2.2	2.7	-0.5	-

### □ Average values of meteorological elements across Korea for each decade (1973–2009)

Year	Mean t (°C)	Mean Maximum t (°C)	Mean Minimum t (°C)	Precipitation (mm)	rainy days	foggy days
1973-1980 (a)	7.3	13.0	2.3	44.0	7.7	2.5
1981-1990 (b)	7.4	13.2	2.5	56.6	7.9	2.9
1991-2000 (c)	7.8	13.9	2.6	53.1	7.4	2.7
2001-2009 (d)	7.9	13.8	2.9	38.2	6.6	2.0
d-a	0.6	0.8	0.6	-5.8	-1.1	-0.5
d-b	0.5	0.6	0.4	-18.4	-1.3	-0.9
d-c	0.1	-0.1	0.3	-14.9	-0.8	-0.7

Fig. 2. Temperatures (mean, mean maximum, and mean minimum), and precipitation across Seoul (1908–2009)



□ Average values of meteorological elements across Seoul during November (1908–2009)

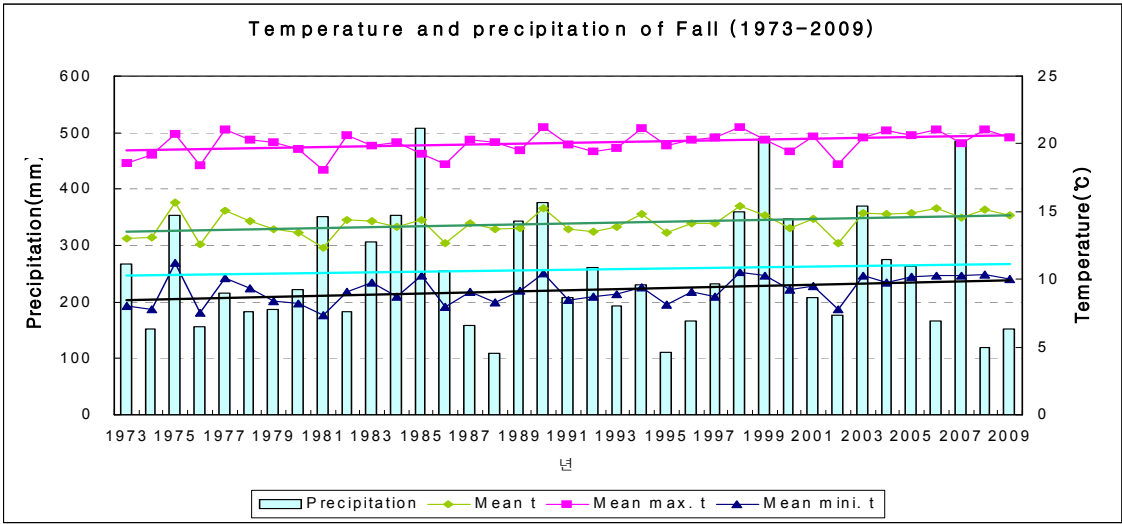
Elements (Seoul) average	November 2009 (a)	Normals of November (1971-2000) (b)	a-b	rank since 1908 (within 5th)
mean temperature (°C)	6.9	6.9	0	-
mean maximum t (°C)	10.4	11.5	-1.1	-
mean minimum t (°C)	3.7	2.9	0.8	-
amount of precipitation (mm)	52.4	53.0	-0.6(98.9%)	-
rainy days	10	9.0	1.0	-
foggy days	0	1.8	-1.8	-

□ Meteorological elements across Seoul during November for each decade (1911–2009)

Year	Mean t (°C)	Mean Maximum t (°C)	Mean Minimum t (°C)	Precipitation (mm)	rainy days	foggy days
1911-1920	5.2	10.7	0.1	51.7	8.8	-
1921-1930(a)	5.0	10.4	-0.3	43.2	9.6	-
1931-1940	6.0	11.4	1.2	40.2	9.4	-
1941-1950	6.6	12.2	1.2	28.9	6.9	-
1954-1960	6.6	11.6	1.9	38.1	6.7	-
1961-1970	6.6	11.2	2.4	50.7	10.3	2.1
1971-1980	6.6	11.3	2.7	39.1	9.1	2.9
1981-1990	6.7	11.2	2.7	69.6	9.6	1.3
1991-2000	7.4	11.9	3.3	50.4	8.3	1.3
2001-2009 (b)	7.5	11.7	3.8	40.6	8.2	1.1
b-a	2.5	1.3	4.1	-2.6	-1.4	-

Appendix 2. Fall, 2009 Climate

Fig. 3. Temperatures (mean, mean maximum, and mean minimum), and precipitation across the South Korea during the fall seasons (1973–2009)



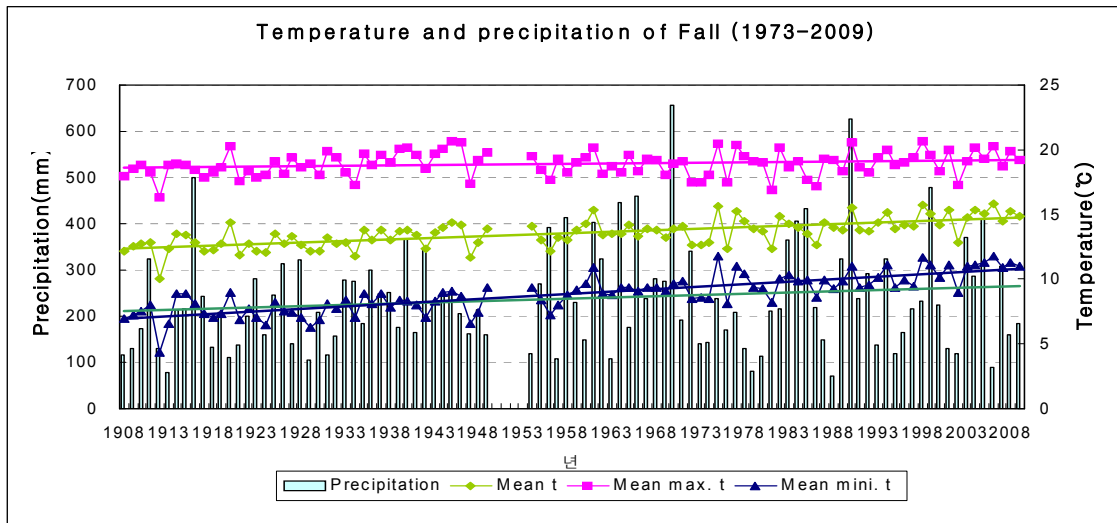
□ Average values of the meteorological elements during the fall seasons (1973–2009)

Elements (National average)	Fall 2009 (a)	Normals of Fall (1971-2000) (b)	a-b	rank since 1973 (within 5th)
mean temperature (°C)	14.8	14.0	0.8	-
mean maximum t (°C)	20.5	19.9	0.6	-
mean minimum t (°C)	10.0	9.0	1.0	-
amount of precipitation (mm)	152.5	259.0	-106.5(58.9%)	fifth lowest
rainy days	20.9	22.4	-1.5	-
foggy days	6.5	9.5	-3.0	-

□ Average values of the meteorological elements during the fall seasons for each decade (1973–2009)

Year	Mean t (°C)	Mean Maximum t (°C)	Mean Minimum t (°C)	Precipitation (mm)	rainy days	foggy days
1973-1980 (a)	13.9	19.8	8.8	216.6	23.0	9.3
1981-1990 (b)	13.9	19.8	9.0	294.4	23.1	9.9
1991-2000 (c)	14.2	20.2	9.2	259.9	21.0	9.4
2001-2009 (d)	14.6	20.4	9.8	246.5	22.2	7.4
d-a	0.7	0.6	1.0	29.9	-0.8	-1.9
d-b	0.7	0.6	0.8	-47.9	-0.9	-2.5
d-c	0.4	0.2	0.6	-13.4	1.2	-2.0

Fig. 4. Temperatures (mean, mean maximum, and mean minimum), and precipitation across Seoul during the fall seasons (1908–2009)



□ Average values of the meteorological elements during the fall seasons across Seoul (1908–2009)

Elements (Seoul) average	Fall 2009 (a)	Normals of Fall (1971-2000) (b)	a-b	rank since 1908 (within 5th)
mean temperature (°C)	14.9	14.0	0.9	-
mean maximum t (°C)	19.2	18.9	0.3	-
mean minimum t (°C)	11.0	9.8	1.2	-
amount of precipitation (mm)	183.8	239.9	-56.1(76.6%)	-
rainy days	24.0	24.3	-0.3	-
foggy days	0	3.9	-3.9	-

□ Meteorological elements across Seoul for each decade (1911–2009)

Year	Mean t (°C)	Mean Maximum t (°C)	Mean Minimum t (°C)	Precipit- ation (mm)	rainy days	foggy days
1911-1920	12.6	18.5	7.6	215.9	26.3	-
1921-1930(a)	12.5	18.4	7.1	211.6	24.7	-
1931-1940	13.2	19.2	8.2	235.5	25.6	-
1941-1950	13.4	19.5	8.2	219.9	24.0	-
1954-1960	13.4	18.8	8.7	239.7	23.4	-
1961-1970	13.8	18.9	9.4	337.0	27.0	5.7
1971-1980	13.8	18.8	9.5	175.5	24.8	6.2
1981-1990	13.9	18.7	9.7	301.8	23.7	3.4
1991-2000	14.4	19.2	10.2	242.6	24.4	2.2
2001-2009 (b)	14.8	19.3	10.9	228.3	24.0	1.8
b-a	2.3	0.9	3.8	16.7	-0.7	-