

Administration

MONTHLY CLIMATE REVIEW OVER KOREA

(total 7 pages)

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May and Spring(March-May) 2016 Climate Summary

- ♦ The nationwide mean temperature (18.6°C) in May 2016 was 1.4°C above normal and the nationwide-average of precipitation (98.4 mm) was 95.7% of normal.
- ♦ The nationwide mean temperature (13.2°C) in spring 2016 was 1.5°C above normal and the nationwide-average of precipitation (312.8 mm) was 131.0% of normal.
- ☐ Climate features and long-term trends in May and spring 2016 were analyzed 45 meteorological stations throughout Korea (national average) during 1973-2016 (1908-2016 for Seoul).
 - * Normal: Average value of climatic element data collected from 1981 to 2010

☐ The climatic characteristics in May 2016

- o Korea (as a whole),
 - The mean temperature $(18.6\,^{\circ}\text{C})$, the mean maximum temperature $(25.1\,^{\circ}\text{C})$ and the mean minimum temperature $(12.4\,^{\circ}\text{C})$ were $1.4\,^{\circ}\text{C}$, $1.8\,^{\circ}\text{C}$, $0.9\,^{\circ}\text{C}$ above normal, respectively.
 - A nationally-averaged precipitation was 98.4 mm, which was 95.7% of normal. The number of rainy days was 8.7, which was 0.1 days more than normal.
 - The total number of hours of sunshine was 269.4, which was 121.4% of normal.

o Seoul,

- The mean temperature $(19.6\,^{\circ}\text{C})$, the mean maximum temperature $(25.7\,^{\circ}\text{C})$ and the mean minimum temperature $(14.1\,^{\circ}\text{C})$ were $1.8\,^{\circ}\text{C}$, $2.7\,^{\circ}\text{C}$, $0.9\,^{\circ}\text{C}$ above normal, respectively.
- The amount of precipitation was 160.5 mm, which was 151.6% of normal.
- The number of rainy days was 9.0, which was same the normal.
- The total number of hours of sunshine was 280.1, which was 131.5% of normal.

☐ Long-term¹) trend in May 2016 climate

- o Korea (as a whole),
 - The national mean temperatures in May during the 2000s (2001-2010) was 0.7° C above that of in the 1970s (1973-1980).
 - The nationwide-average of precipitation in May during the 2000s was 9.2 mm more than that of in the 1970s.
 - The number of rainy days in May during the 2000s was 0.9 days more than that of in the 1970s.
- The total sunshine hours in May during the 2000s was 34.3 hours less than that of in the 1970s.

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- The mean temperatures in May during the 2000s (2001-2010) was 1.4° C above that of in the 1970s (1971-1980).
- The precipitation in May during the 2000s was 10.9 mm more than that of in the 1970s.
- The number of rainy days in May during the 2000s was 0.7 days more than that of in the 1970s.
- The total sunshine hours in May during the 2000s was 33.8 hours less than that of in the 1970s.

☐ The climatic characteristics in Spring 2016

- o Korea (as a whole),
 - The mean temperature $(13.2^{\circ}\mathbb{C})$, the mean maximum temperature $(19.5^{\circ}\mathbb{C})$ and the mean minimum temperature $(7.4^{\circ}\mathbb{C})$ were $1.5^{\circ}\mathbb{C}$, $1.6^{\circ}\mathbb{C}$, $1.4^{\circ}\mathbb{C}$ above normal, respectively.
 - A nationally-averaged precipitation was 312.8 mm, which was 131.0% of normal. The number of rainy days was 25.0, which was 0.5 days more than normal.
 - The total number of hours of sunshine was 686.0, which was 109.0% of normal.

^{1) 2000}s: 2001~2010 / 1970s of Korea(Seoul): 1973~1980(1971~1980)

o Seoul,

- The mean temperature (13.6°C) , the mean maximum temperature (19.5°C) and the mean minimum temperature (8.5°C) were 1.6°C , 2.4°C , 1.0°C above normal, respectively.
- The amount of precipitation was 277.8 mm, which was 127.7% of normal.
- The number of rainy days was 24.0, which was 0.3 days less than normal.
- The total number of hours of sunshine was 753.3, which was 124.1% of normal.

☐ Long-term²⁾ trend in Spring 2016 climate

- o Korea (as a whole),
 - The national mean temperatures in spring during the 2000s (2001-2010) was 0.7° C above that of in the 1970s (1973-1980).
 - The nationwide-average of precipitation in spring during the 2000s was 35.9 mm less than that of in the 1970s.
 - The number of rainy days in spring during the 2000s was 0.9 days more than that of in the 1970s.
 - The total sunshine hours in spring during the 2000s was 57.1 hours less than that of in the 1970s.

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- The mean temperatures in spring during the 2000s (2001-2010) was 1.2° C above that of in the 1970s (1971-1980).
- The precipitation in spring during the 2000s was 22.5 mm more than that of in the 1970s.
- The number of rainy days in spring during the 2000s was 2.0 days more than that of in the 1970s.
- The total sunshine hours in spring during the 2000s was 76.2 hours less than that of in the 1970s.

^{2) 2000}s: 2001~2010 / 1970s of Korea(Seoul): 1973~1980(1971~1980)

Appendix 1 Climate features of May 2016 (Nationwide)

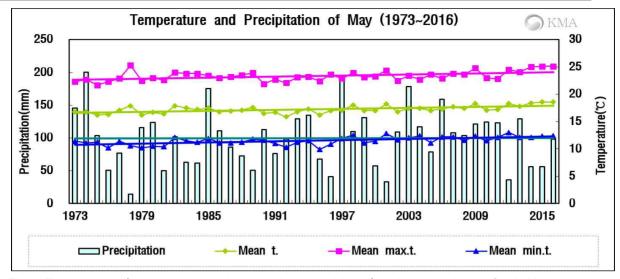


Fig 1. Temperatures (mean, mean maximum and mean minimum) and precipitation in South Korea during May (1973–2016).

☐ The nationwide average value of meteorological element during May (1973-2016)

Elements (whole country)	May 2016(a)	May 2015(b)	Normals of May (1981-2010)(c)	a-b	а-с	Rank since 1973 (within 5th)
Mean temperature (°C)	18.6	18.6	17.2	0.0	1.4	the highest
Mean maximum temp. ($^{\circ}$ C)	25.1	25.1	23.3	0.0	1.8	the 2nd highest
Mean minimum temp. (℃)	12.4	12.3	11.5	0.1	0.9	the 4th highest
Precipitation (mm)	98.4	56.5	101.7	41.9 (263.5%)	-3.3 (95.7%)	
Days of rain (day)	8.7	6.6	8.6	2.1	0.1	
Sunshine duration (hour)	269.4	284.7	221.9	-15.3 (94.6%)	47.5 (121.4%)	the 4th highest
Mean cloud amount (1/10)	4.8	4.3	5.1	0.5	-0.3	
Days of maximum temperature more than 30°C(day)	2.2	3.5	1.1	-1.3	1.1	
Asian dust days (day)	1.5	0.0	1.1	1.5	0.4	

$\hfill\Box$ The nationwide average value of meteorological element during May in each decade (1973–2010)

Year	Mean temp.	Mean max. temp.	Mean min. temp.	Prep. (mm)	Days of rain (day)	Sunshine duration (hour)	Mean cloud amount (1/10)	Days of maximum temperature more than 30°C (day)	Asian dust days (day)
1973-1980(a)	16.8	22.8	10.8	104.0	8.2	243.0	5.0	1.3	0.9
1981-1990(b)	17.2	23.3	11.4	88.5	8.0	232.8	5.4	1.0	1.2
1991-2000(c)	16.9	23.0	11.2	103.4	8.8	224.3	4.9	1.0	1.1
2001-2010(d)	17.5	23.5	12.0	113.2	9.1	208.7	5.1	1.2	1.0
2016(e)	18.6	25.1	12.4	98.4	8.7	269.4	4.8	2.2	1.5
d-a	0.7	0.7	1.2	9.2	0.9	-34.3	0.1	-0.1	0.1
d-b	0.3	0.2	0.6	24.7	1.1	-24.1	-0.3	0.2	-0.2
d-c	0.6	0.5	0.8	9.8	0.3	-15.6	0.2	0.2	-0.1
e-d	1.1	1.6	0.4	-14.8	-0.4	60.7	-0.3	1.0	0.5

Appendix 2 Climate features of May 2016 (Seoul)

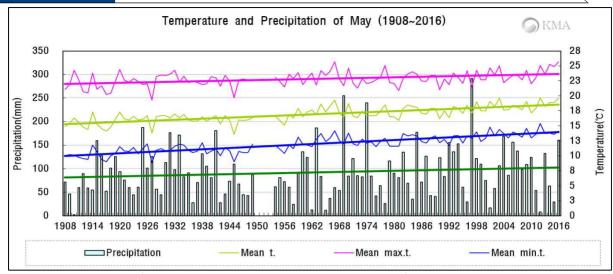


Fig 2. Temperatures (mean, mean maximum and mean minimum) and precipitation in Seoul during May (1908–2016).

☐ The average value of meteorological element during May in Seoul(1908-2016)

Elements (Seoul)	May 2016(a)	May 2015(b)	Normals of May (1981-2010)(c)	a-b	a-c	Rank since 1908 (within 5th)
Mean temperature ($^{\circ}$ C)	19.6	18.9	17.8	0.7	1.8	the 2nd highest
Mean maximum temp. ($^{\circ}$ C)	25.7	24.9	23.0	0.8	2.7	the highest
Mean minimum temp. (°C)	14.1	13.6	13.2	0.5	0.9	
Precipitation (mm)	160.5	28.9	105.9	131.6 (555.4%)	54.6 (151.6%)	
Days of rain (day)	9.0	6.0	9.0	3.0	0.0	
Sunshine duration (hour)	280.1	290.4	213.0	-10.3 (96.5%)	67.1 (131.5%)	
Mean cloud amount (1/10)	4.6	4.1	5.2	0.5	-0.6	
Days of maximum temperature more than $30^{\circ}\mathbb{C}(day)$	4.0	4.0	0.5	0.0	3.5	the highest
Asian dust days (day)	1.0	0.0	1.4	1.0	-0.4	

☐ The average value of meteorological element during May in Seoul in each decade (1911-2010)

	Year	Mean temp. (°C)	Mean max. temp.	Mean min. temp.	Prep. (mm)	Days of rain (day)	Sunshine duration (hour)	Mean cloud amount (1/10)	Days of maximum temperature more than 30°C (day)	Asian dust days (day)
1	911-1920(a)	15.4	21.8	10.1	92.0	9.4	248.1	5.9	0.2	0.2
	1921-1930	16.1	22.4	10.8	86.8	11.0	235.5	6.3	0.1	0.1
1	931-1940(b)	16.3	22.8	11.2	103.3	9.7	264.7	5.7	0.7	0.0
	1941-1949	15.8	22.3	10.7	75.4	8.6	261.7	6.2	0.3	0.0
_	1954-1960	16.5	22.8	11.6	75.1	8.4	239.2	5.7	0.1	0.4
	1961-1970	17.8	23.5	12.8	90.7	7.3	226.5	5.6	0.6	0.6
1	971-1980(c)	16.9	22.6	12.1	95.0	8.1	227.8	4.9	0.5	0.6
	1981-1990	17.5	22.8	12.8	90.2	9.3	226.9	5.6	0.1	1.6
	1991-2000	17.7	22.9	12.9	121.4	9.0	218.1	5.0	0.7	1.4
2	2001-2010(d)	18.3	23.4	13.8	105.9	8.8	194.0	4.9	0.7	1.3
	2016(e)	19.6	25.7	14.1	160.5	9.0	280.1	4.6	4.0	1.0
	d-a	2.9	1.6	3.7	13.9	-0.6	-54.1	-1.0	0.5	1.1
	d-b	2.0	0.6	2.6	2.6	-0.9	-70.7	-0.8	0.0	1.3
	d-c	1.4	0.8	1.7	10.9	0.7	-33.8	0.0	0.2	0.7
	e-d	1.3	2.3	0.3	54.6	0.2	86.1	-0.3	3.3	-0.3

Appendix 3 Climate features of Spring 2016 (Nationwide)

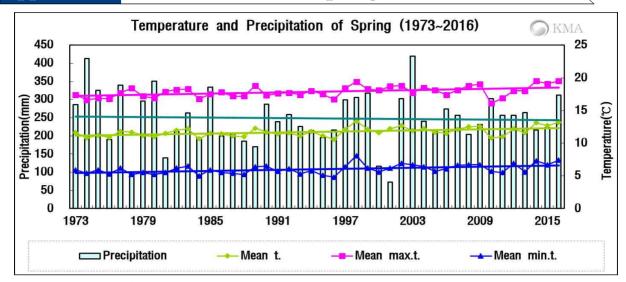


Fig 1. Temperatures (mean, mean maximum and mean minimum) and precipitation in South Korea during Spring (1973–2016).

☐ The nationwide average value of meteorological element during Spring (1973-2016)

Elements (whole country)	Spring 2016(a)	Spring 2015(b)	Normals of Spring (1981-2010)(c)	a-b	a-c	Rank since 1973 (within 5th)
Mean temperature ($^{\circ}$ C)	13.2	12.7	11.7	0.5	1.5	the 2nd highest
Mean maximum temp. (℃)	19.5	19.1	17.9	0.4	1.6	the highest
Mean minimum temp. (℃)	7.4	6.7	6.0	0.7	1.4	the 2nd highest
Precipitation (mm)	312.8	223.1	236.6	89.7 (160.6%)	76.2 (131.0%)	
Days of rain (day)	25.0	25.9	24.5	-0.9	0.5	
Sunshine duration (hour)	686.0	708.0	629.5	-22.0 (96.9%)	56.5 (109.0%)	
Mean cloud amount (1/10)	4.8	4.3	4.9	0.5	-0.1	
Days of maximum temperature more than 30°C(day)	2.2	3.6	1.1	-1.4	1.1	
Asian dust days (day)	5.4	6.0	5.4	-0.6	0.0	

☐ The nationwide average value of meteorological element during Spring in each decade (1973–2010)

Year	Mean temp.	Mean max. temp.	Mean min. temp.	Prep. (mm)	Days of rain (day)	Sunshine duration (hour)	Mean cloud amount (1/10)	Days of maximum temperature more than 30°C (day)	Asian dust days (day)
1973-1980(a)	11.3	17.3	5.6	287.5	24.6	659.7	5.0	1.3	3.0
1981-1990(b)	11.5	17.7	5.8	219.2	24.2	655.0	5.1	1.0	3.1
1991-2000(c)	11.7	17.9	5.9	239.0	23.9	631.0	4.7	1.1	5.3
2001-2010(d)	12.0	18.1	6.4	251.6	25.5	602.6	4.8	1.3	7.6
2016(e)	13.2	19.5	7.4	312.8	25.0	686.0	4.8	2.2	5.4
d-a	0.7	0.8	0.8	-35.9	0.9	-57.1	-0.2	0.0	4.6
d-b	0.5	0.4	0.6	32.4	1.3	-52.4	-0.3	0.3	4.5
d-c	0.3	0.2	0.5	12.6	1.6	-28.4	0.1	0.2	2.3
e-d	1.2	1.4	1.0	61.2	-0.5	83.4	0.0	0.9	-2.2

Appendix 4 Climate features of Spring 2016 (Seoul)

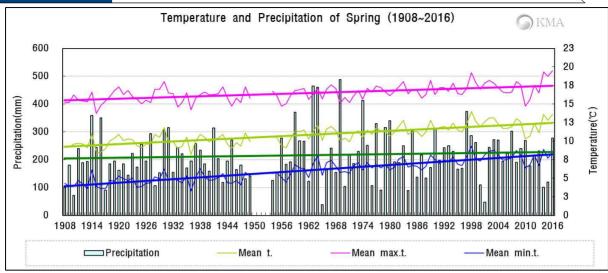


Fig 2. Temperatures (mean, mean maximum and mean minimum) and precipitation in Seoul during Spring (1908–2016).

☐ The average value of meteorological element during Spring in Seoul(1908-2016)

Elements (Seoul)	Spring 2016(a)	Spring 2015(b)	Normals of Spring (1981-2010)(c)	a-b	a-c	Rank since 1908 (within 5th)
Mean temperature ($^{\circ}$ C)	13.6	12.8	12.0	0.8	1.6	the 2nd highest
Mean maximum temp. (°C)	19.5	18.7	17.1	0.8	2.4	the highest
Mean minimum temp. (℃)	8.5	7.7	7.5	0.8	1.0	
Precipitation (mm)	277.8	119.0	217.5	158.8 (233.4%)	60.3 (127.7%)	
Days of rain (day)	24.0	21.0	24.3	3.0	-0.3	
Sunshine duration (hour)	753.3	777.2	607.0	-23.9 (96.9%)	146.3 (124.1%)	
Mean cloud amount (1/10)	4.3	4.0	4.8	0.3	-0.5	
Days of maximum temperature more than 30 °C (day)	4.0	4.0	0.5	0.0	3.5	
Asian dust days (day)	7.0	10.0	6.6	-3.0	0.4	

☐ The average value of meteorological element during Spring in Seoul in each decade (1911-2010)

Year	Mean temp. $(^{\mathbb{C}})$	Mean max. temp. (℃)	Mean min. temp. (℃)	Prep. (mm)	Days of rain (day)	Sunshine duration (hour)	Mean cloud amount (1/10)	Days of maximum temperature more than 30°C (day)	Asian dust days (day)
1911-1920(a)		15.7	4.4	220.8	26.7	696.5	5.6	0.2	1.7
1921-1930	10.2	16.2	4.7	203.5	26.1	673.3	5.6	0.1	0.3
1931-1940(b)		15.8	4.9	213.4	26.0	705.3	5.4	0.7	0.0
1941-1949	10.0	16.1	4.9	190.8	25.1	722.4	5.5	0.3	0.0
1954-1960	10.4	16.0	5.7	223.9	25.9	636.6	5.4	0.1	1.3
1961-1970	11.1	16.5	6.5	250.4	23.2	631.8	5.4	0.6	1.9
1971-1980(c)	11.0	16.5	6.5	247.5	23.5	619.4	5.0	0.5	2.5
1981-1990	11.6	16.9	7.0	199.1	23.8	657.8	5.1	0.1	3.9
1991-2000	12.1	17.3	7.5	228.5	23.6	620.1	4.6	0.7	6.8
2001-2010(d)		17.1	8.0	225.0	25.5	543.2	4.7	0.7	9.2
2016(e)	13.6	19.5	8.5	277.8	24.0	753.3	4.3	4.0	7.0
d-a	2.5	1.4	3.6	4.2	-1.2	-153.3	-0.9	0.5	7.5
d-b	2.4	1.3	3.1	11.6	-0.5	-162.1	-0.7	0.0	9.2
d-c	1.2	0.6	1.5	-22.5	2.0	-76.2	-0.3	0.2	6.7
e-d	1.4	2.4	0.5	52.8	-1.5	210.1	-0.4	3.3	-2.2