Effect of regional cultural practices in Korean wheat cultivar growers

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We analyzed the cultivation situation of Korean wheat was analyzed for the extension of cultivated area and enhancing the self-sufficiency ratio of Korean wheat of 175 farmers in nationwide for two years, 2010/2011 and 2011/2012. Average cultivation career and area were 7.7 years and 2.4~3.3ha. Keumkang cv. was mainly cultivated in small scale whereas Jokyung and Baekjoong cvs. were cultivated large scale in southern part of Korea, Gyeongsangnam-do, Jeolllanambuk-do and Kwangju metropolitan city in 2011/2012. Compared to the mean temperature and precipitation in the normal year, the mean temperature was lower before the heading stage and higher amount of precipitation after the heading stage in 2010/2011 but in the year of 2011/2012, it performed the opposite status. Among 175 farmers, 144 farmers were sown between the late October and the early November with broad ridge method and the other farmers were sown using the drill method. We used the 29.7kg/10a fertilizer dose for wheat cultivation, which was higher amount compared to standard amount of applied fertilizer recommended by rural development administration. Additional fertilizer, nitrogen fertilizer was applied between the late February and early March. Heading date was the early May, in 2011 and late April in 2012, whereas the mean temperature from regeneration stage to tillering stage in 2011 was higher than that of 2012. Most of the farmers’ harvested wheat in mid-June and Pre-harvest sprouting and Fusarium head blight were occurred in 2011 due to the high amount precipitation during grain filling period.

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Fig. 1. Mean temperature and precipitation in 2010/2011 and 2011/2012. □ and ○ indicate precipitation and mean temperature in 2010/2011, □ and ○ indicate precipitation and mean temperature in 2011/2012 and □ and ○ indicate average precipitation and average of mean temperature for average year. I, II, III, IV, V, VI and VII in growth stage indicate for emergency stage, regeneration stage, tillering stage, maximum tillering stage, heading stage, milky stage and maturing stage.

Fig. 2. Frequency of mean values of sowing time of participated farmers at Chungcheongbuk-do, Chungcheongnam-do, Gangwon-do and Gyeonggi-do (A) and at Gyeongsangnam-do, Jeollanam-do, Jeollabuk-do and metropolitan city, including Kwangju and Taegu (B). Error bars indicate the standard deviation.