

**PB-60**

## **Discovery of SNP Related to Salinity Stress on Heading Stage in the Korean Wheat Core Collection by GWAS Analysis, Comparison of Culm Length on Kongju National University Field and Reclaimed Land**

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### **[Introduction]**

Due to global warming, the temperate climate has been changing to a subtropical climate in South Korea. Also, drought and torrential rains occur from spring to summer due to climate change. The representative varieties of Korea were early mature wheat, and most of them are harvested before about the middle of June. It is considered important because abiotic stress negatively affects flowering and ripening stage, the plant decreased seed potential. In order to cope with these circumstances, we explored the Korean wheat core collection for salt stress resistance and calculated the difference between what culm length of Kongju national university field (KNU field) and reclaimed land.

### **[Materials and Methods]**

Phenotype data that core collection was evaluated chlorophyll, soil EC and pH, have treated on salt stress and control. And culm length was measured from wheat grown in KNU field and in reclaimed field. For genotyping, a total of 22,775 SNP probes that the 35,143 SNP markers were removed using Beagle v5.2. were sorted to minor allele frequencies < 0.05 and missing data > 10%. GWAS estimated the associated SNP locations for analyzed phenotype and genotype data by using FarmCPU that statistical model of the GAPIT.

### **[Results and Discussion]**

Accession number 165 (Milyang 22) was selected as the best growth resource at high chlorophyll content on salt treatment and resource is belong to highest 30 accessions at ratio culm length. In reproductive stage, 3 SNP codes (AX-94645681:chr5D / AX-94871926:chr6D / AX-94788541:chr1B) were selected candidate transcript location by GWAS for salt stress. In the future, exploring SNP related to culm length for GWAS at ripening stage.

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