

[P3] Abiotic Stress for Crop Production

Thu. Sep 9, 2021 12:15 PM - 2:00 PM Room 3 (Poster) (Abiotic Stress for Crop Production)

1:15 PM - 2:00 PM

[P3-10]Effect of Seed Hydro-Priming on Initial, Middle, and Late Growth Stage of Rice under the Different Soil Moisture Conditions

*Nominated for Presentation Awards

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Low soil moisture causes poor plant emergence and establishment which leads decreasing the upland rice yield. Hydro-priming technique is known as the treatment which promotes enzyme activity, starch degradation, and accumulation of dry resistance substances and improves plant emergence and growth. In recent research, it has been found that the priming effect is not fully appeared under some soil moisture conditions. Therefore, we investigated details of hydro-priming effect on rice growth and yield under different soil moisture conditions. In first experiment, plant emergence and early growth parameter (plant height, root length and dry weight) under the wide range of soil moisture conditions were examined by using small planting pot. In second experiment, primed and untreated seed were cultivated in different soil moisture conditions and priming effect on the middle and late growth stage was examined. This study showed that root growth was increased significantly in primed seed compared to untreated seeds under the dry condition at the initial growth stage. This trait may enhance subsequent plant growth of primed seed under the dry soil moisture condition. During middle and late growth stage, leaf age of primed seed proceeded in advance in primed seed than in untreated seed under dry soil moisture condition. Therefore, it was suggested that priming treatment make growth period short under the dry condition which leads to reduce plant injury caused by less rainfall in late growth stage.