

Root system architecture of Thai rice at seedling stage

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Thai rice landraces are great resources for research on roots because of their high genetic variation. Root system architecture (RSA) is a term used for describing the spatial configuration and distribution of the root system in rooting media. The RSA traits of Thai local rice at seedling stage have not been well studied. Here, we applied gel-based system and software-assisted image analysis to study general RSA traits of 7 Thai local rice varieties, including GwianHak, LeuangPuangThong, LeuangPratew 123, NahngNgahm, Puang Thong, Pratan Ban Boong, and Sangyod. At 11 days after germination, we observed the difference of 7 traits among the 7 accessions such as average root diameter, number of roots, total root length, root system depth, and surface area. Our results showed that the RSA of LeuangPuang Thong was distinct from the others owing to the shallowest root system depth (5.299 ± 0.301 cm), while NahngNgahm had the deepest root system (10.025 ± 0.713 cm). We hope that our results would be useful for further studies concerning early development of rice root system.

Key words: rice, root system architecture

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