

8TH WORLD CLIMATE CONGRESS

May 10-11, 2019 Bangkok, Thailand

Ammonium nitrate pretreatment increased salt tolerance of Thai jasmine rice**Bualuang Faiyue¹, Thanchanok Kraipitukkul², Doungsree Saetae² and Poonyaporn Apithanawit²**¹Environmental Research Institute-Chulalongkorn University, Thailand²Mahidol Wittayanusorn School, Thailand

Soil salinity is one of abiotic problems affecting rice (*Oryza sativa* L.) growth and productivity. The objective of this research was to investigate the effect of ammonium nitrate (NH_4NO_3) pretreatment on growth and ion accumulations in Thai jasmine or Khao Dawk Mali 105 (KDML105) rice seedlings under a salt-stress condition. Rice seedlings were pretreated with 0 or 3 mM NH_4NO_3 for 1 week when they were 21 days old. Then, seedlings were salinised with 0 or 50 mM NaCl for 2 weeks. The results showed that rice seedlings pretreated with 3 mM NH_4NO_3 before being exposed to salt stress significantly increased root dry weight and shoot dry weight compared with non- NH_4NO_3 pretreated seedlings. Rice seedlings pretreated with 3 mM NH_4NO_3 also significantly decreased Na^+ and K^+ concentrations in shoots and roots, but Na^+/K^+ ratio was not affected. It can be concluded that NH_4NO_3 pretreatment potentially increased salt tolerance in rice via the reduction of root- and shoot Na^+ concentrations.

Biography

Bualuang Faiyue has completed his PhD from University of Sussex, Brighton, UK. He focuses on screening and improving salt-tolerant abilities in rice. His research is based on the study of an apoplastic pathway or bypass flow of sodium ion as this pathway is important of sodium uptake into the rice plants under salt stress. After graduation, he has worked as a Biology Teacher at Mahidol Wittayanusorn School, Nakhon Pathom, Thailand. Presently he is a Researcher at Environmental Research Institute, Chulalongkorn University, Bangkok, Thailand.

Bualuang.F@chula.ac.th