Poster Session | Abiotic Stress for Crop Production | P3: Poster Session

[P3] Abiotic Stress for Crop Production

2021年9月9日(木) 12:15 〜 14:00 Room 3 (Poster) (Abiotic Stress for Crop Production)

13:15 〜 14:00

[P3-08]Simple Model for Root Distribution across Soil Depth in Rice (*Oryza sativa* L.) under Fluctuating Soil Moisture Conditions

Hien Thi Thanh Nguyen, Tohru Kobata, ○Kuniyuki Saitoh (Graduate School of Environmental and Life Science, Okayama University, Japan)

A simple method for describing rice root distribution under fluctuating soil moisture conditions was developed. Four rice cultivars with different levels of drought tolerance were grown in pots with a diameter/height of 0.30/0.85 m, and watering was terminated at the booting stage. The distribution of root length density (RLD) at maturity was described by a quadratic function of soil depth (D_S) in each cultivar under moist and desiccated soil conditions. The equation resulted in three parameters indicating the root distribution traits of each cultivar: the RLD at half the observed D_S($RLD_{0.5}$) and the reduction rate, expressed as RLD per D_S (slope) and the maximum rate at $D_S=0$ (intercept) in the differentiated equation. Cultivars with high $RLD_{0.5}$ absorbed large amounts of water from deep D_S. Higher intercept and $RLD_{0.5}$ values accompanied higher slope values, and the same trends were observed for diverse rice cultivars and growth stages. This simple model is convenient for use in evaluating root distribution traits in rice.