

[P1] Field Crop Production

2021年9月9日(木) 12:15 ~ 14:00 Room 1 (Poster) (Field Crop Production)

13:15 ~ 14:00

[P1-24]Co-Inoculation of *Bacillus pumilus* TUAT1 and *Bradyrhizobium diazoefficiens* USDA110 on Soybean

*Nominated for Presentation Awards

○Rifa Fadhilah Munifah Hasibuan, Hinako Sugiura, Minori Miyatake, Naoko Ohkama-Ohtsu, Keisuke Katsura (Graduate School of Agriculture, Tokyo University of Agriculture and Technology, Japan)

Application of bio-fertilizer is vital to find inoculation methodology that do not inhibit symbiosis between rhizobium and plants. However, co-inoculation of rhizobium with different microorganism on legumes generally inhibit interdependency with rhizobia. The present study was conducted to find the ideal inoculation method of the bio-fertilizer "Yumebio" containing *Bacillus pumilus* TUAT1 which have plant growth promoting activity without inhibiting rhizobial infection to soybean. Soybean plants were inoculated with *Bradyrhizobium diazoefficiens* USDA110 on the timing of sowing seeds, then 3 treatments were prepared. Simultaneous inoculation of "Yumebio" with rhizobia (SI), Inoculation of "Yumebio" 1 week after rhizobia inoculation (I), and no inoculation of "Yumebio" (NI). Biomass dry weight (shoot and root) and nitrogenase activity based on acetylene reduction assay (ARA) measured at four weeks after sowing. Both ARA per plant and nodule weight were increased significantly with "I" treatment compared to those with "NI". However, there were no significant differences between "SI" and "NI" for shoot biomass and ARA per plant. Nodule numbers were decreased by "SI" compared to "NI". This study suggests that simultaneous inoculation of "Yumebio" and rhizobia inhibits nodule development, and inoculation of "Yumebio" 1 week after inoculation of rhizobia is ideal timing to promote soybean growth without inhibiting rhizobium infection to soybean.