

## P22-16 : Change in rhizosphere microbial community of *Miscanthus condensatus*, a pioneer plant on recent Miyake-jima volcanic deposit, during the vegetation development

Guo Yong<sup>1</sup>, Fujimura Reiko<sup>1</sup>, Sato Yoshinori<sup>2</sup>, Nishizawa Tomoyasu<sup>1</sup>, Kamijo Takashi<sup>3</sup>, Ohta Hiroyuki<sup>1</sup>

<sup>1</sup>Ibaraki Univ. College of Agri. , <sup>2</sup>National Research Instit. for Cultural Properties Tokyo, <sup>3</sup>Faculty of Life and Environ. Sci., Univ. of Tsukuba

Whereas microbes firstly colonize the new volcanic deposits and drive the initial geochemical cycle, the role of pioneer plants is of big significance as they enhance carbon input into soil and directly influence soil microbiome. However, the influence of pioneer plant on the rhizosphere community during the vegetation development is still unclear. In this study, we analyzed the rhizosphere communities of *Miscanthus condensatus*, colonizing the recent volcanic deposits in the Island of Miyake. Plants with rhizosphere soil were collected from four sites with different colonization levels of *M. condensatus* colonization: few (OY), sparsely (IG1), fully (IG2) colonized sites, and fully colonized site with partial shrub (IG3). Total DNA of rhizospheric community was subjected to T-RFLP profiling and clone library analyses targeting bacterial 16S rRNA and fungal ITS rRNA genes. Overall, bacteria of Acidobacteria, Actinobacteria, and Alphaproteobacteria were higher in the fully colonized sites (IG2 and IG3), while Betaproteobacteria and Gammaproteobacteria were higher in the few and sparsely colonized sites (OY and IG1). Ascomycota and Basidiomycota dominated the fungal communities at the four sites. These results suggest that the influence of pioneer plant on the bacterial community in rhizosphere is higher than those on the fungal community during the vegetation development.

keywords:rhizosphere,pioneer plant,vegetation development,early soil ecosystem,