

**[P1] Field Crop Production**

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

12:15 ~ 13:00

**[P1-15] On-Farm Assessment on Growth and Yield Response of Maize to Different Planting Methods and Tillage Conditions in Rice-Based Cropping System in the Philippines**

Kyoko Ito<sup>1</sup>, Noriko Kanno<sup>2</sup>, Ricardo Garcia<sup>3</sup>, Roel R. Suralta<sup>4</sup>, Aurora M. Corales<sup>4</sup>, John O. Abon<sup>4</sup>, Elmer G. Bautista<sup>4</sup>, Crisanta S. Bueno<sup>5</sup>, Niño P. M. C. Banayo<sup>5</sup>, Pompe C. Sta. Cruz<sup>5</sup>, Yoichiro Kato<sup>2</sup>, ○Taiken Nakashima<sup>1</sup> (1. Graduate School of Agriculture, Hokkaido University, Japan, 2. The University of Tokyo, Japan, 3. Pangasinan State University Sta Maria, Philippines, 4. Philippine Rice Research Institute, Philippines, 5. University of the Philippines Los Baños, Philippines)

Maize (*Zea mays* L.) is the second most produced cereal crop in the Philippines. In many areas, it is grown in rice-based multiple cropping system. With the declining labor availability in rural areas, a labor-saving maize production is needed. Hence a hand tractor-mounted multiple-purpose (MP) seeder has been developed as a low-cost mechanized planting option for rice, maize and mung beans. In this study, we performed an on-farm experiment in Northwestern Luzon, the Philippines in 2019-2020 dry season to evaluate growth and yield response of maize to varying combinations of planting methods and tillage intensities. Three planting methods used were mechanized planting with MP Seeder (MP), manually operated local farmers' practice (FP), and high precision manual planting (PP) in combination with two tillage conditions; single and triple passes of rotavation for minimum (MT) and heavy tillage (HT), respectively. In MP, the time and labor costs for planting were drastically reduced compared to FP and PP. In contrast, higher plant density and lower variation in within-row distance were observed in both FP and PP. The yield was not significantly different among planting methods indicating a compensation growth in MP. No significant differences between MT and HT were detected in any parameters above. These results suggest that the use of MP seeder with minimal tillage can reduce labor and seed costs while maintaining yield level similar to the current farmers' practices, although there is still some room for improvement in MP seeder in terms of its seeding precision.