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[O11] Direct-seeded Rice in Asia-Oceania Region

Chair: Yoichiro Kato (The University of Tokyo, Japan)

Chair: Virender Kumar (International Rice Research Institute, Philippines)

2021年9月9日(木) 09:45 ~ 11:45 Room 1 (Oral) (Field Crop Production)

11:10 ~ 11:25

[O11-06]Mechanized Dry Direct Seeding: A Technology for Improving Rice Productivity and Increasing Production Efficiency of Rainfed Lowlands in the Philippines

(Invited Speaker)

○Pompe Campoy Sta Cruz¹, Crisanta Sunio Bueno², Nino Paul Meynard Calalo Banayo³, Ruth Agbisit⁴, Roel Suralta⁵, John Eric Abon⁶, Aurora Corales⁷, Elmer Bautista⁸, Yoichiro Kato⁹ (1.Crop Physiology, University of the Philippines Los Baños, Philippines, 2.Crop Physiology, University of the Philippines Los Baños, Philippines, 3.Crop Physiology, University of the Philippines Los Baños, Philippines, 4.Crop Physiology, University of the Philippines Los Baños, Philippines, 5.Crop Biotech Center, Philippine Rice Research Institute, Philippines, 6.Rice Mechanization Division, Philippine Rice Research Institute, Philippines, 7.Technology Management Division, Philippine Rice Research Institute, Philippines, 8.Rice Mechanization Division, Philippine Rice Research Institute, Philippines, 9.Graduate School of Agricultural and Life Sciences, The University of Tokyo, Japan)

Dry direct seeding of rice (DDSR) is an adaptive practice of rainfed farmers in the Philippines to cope with insufficient rainfall that cannot support the conventional transplanting of rice. Currently, DDSR is done by manual broadcasting, furrow seeding or dibbling. Such practices entail high labor cost, and in most cases uneven crop growth and stand, which is translated to low grain yield. As of 2019, Philippine annual rice yield in rainfed lowlands is relatively lower (3.13 t ha^{-1}) than irrigated (4.43 t ha^{-1}) areas. Hence, the need for strategic R & D to improve the rice productivity and production efficiency in such fragile environment. The Department of Agriculture has prioritized investments in enhancing R & D towards improving rice productivity, which includes the rainfed environments. In line with this, a Multi-Purpose Seeder, adapted to small areas with DDSR cultural package such as, improved crop establishment, appropriate variety, and nutrient management, was evaluated and compared to farmers' practices. Evaluation and verification trials were conducted in three provinces in 2017, six provinces in 2018, and 16 provinces in 2019. Using Multi-Purpose Seeder, the amount of rice seed used for crop establishment was optimized at 60 kg ha^{-1} , a significant reduction based on current farmers' seeding rate of up to 240 kg ha^{-1} . With the use of Multi-Purpose Seeder coupled with DDSR cultural package, crop establishment cost (labor & seed) was reduced from trials conducted in 2017, 2018 and 2019. In addition to rice crop, DDSR mechanized packages for corn and mungbean are being generated to optimize crop productivity per unit land area.