

[P2] Farming System

Thu. Sep 9, 2021 12:15 PM - 2:00 PM Room 2 (Poster) (Farming System)

1:15 PM - 2:00 PM

[P2-08]Effect of Peanut Residues on Nitrogen and Phosphorus Uptake of the Succeeding Wheat Grown in the Paddy-Converted Upland Field

*Nominated for Presentation Awards

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In upland field converted from the paddy, a depletion of soil fertility due to the continuous degradation of organic matters occurred under aerobic condition should be complemented to maintain the crop productivity. We reported that incorporation of green manure legumes, such as *Crotalaria* and *Sesbania*, might be effective in maintaining soil fertility. However, the growers fundamentally desire to introduce cash crops in the crop rotation. In this study, crop residues of peanut, which contains considerable amounts of N and P in the shoots at harvesting time, were quantitatively evaluated in the nutrients supply to the succeeding wheat. Two peanut cultivars, "Ohmasari" and "Chibahandachi", were tested in the field experiment conducted in 2018 - 2019 at the Ryukoku University Farm in Ohtsu, Japan. The shoots as peanut residue were cut into less than 10 cm and then incorporated using a cultivator up to a depth of 20 cm of the plots in autumn 2018. Seeds of wheat cv. "Minaminokaori" were sown on 28 November 2018 and harvested on 12 July 2019. The amount of N and P incorporated as crop residues was 5.3 kg N/10 a and 0.5 kg P/10 a in "Ohmasari" and 2.4 kg N/10 a and 0.3 kg P/10 a in "Chibahandachi", and the ratio of C/N and C/P of the residues was 21 and 24 and 242 and 194, respectively in each cultivar. Contribution of peanut residue to N and P absorption of the succeeding wheat differed between two cultivars. Analysis of nutrient recycling through soil microbial communities after incorporation of the residues is now in progress.