
Oral sessions | Field Crop Production | O14: Legume Production in Asia

[O14] Legume Production in Asia

Chair: Kuniyuki Saito (Okayama University, Japan)

Chair: Tianfu Han (Chinese Academy of Agricultural Sciences, China)

Fri. Sep 10, 2021 9:45 AM - 11:45 AM Room 1 (Oral) (Field Crop Production)

10:05 AM - 10:25 AM

[O14-02] Soybean Adaptation under Saturated Soil Culture with Application of Paddy Straw Biomass Ameliorant, Biological and Chemical Fertilizers on Tidal Swamp in Indonesia

(Invited Speaker)

○Munif Ghulamahdi (Department of Agronomy and Horticulture, Faculty of Agriculture, IPB University, Indonesia)

Saturated soil culture (SSC) is a cultivation that gives continuous irrigation and maintains water depth constantly and makes soil layer under root in saturated condition. This technology is appropriate to prevent pyrite oxidation on tidal swamp. This research were conducted in South Sumatera and Jambi Province from 2009-2018. This objective of this research are to study the adaptation mechanism and the efficiency of production input of soybean with biological and chemical fertilizer. This research used field and green house experimentation. This research consisted of : 1) adaptation mechanism, 2) soybean response in the different water depth, 3) effect of paddy straw biomass ameliorant, 4) effect of macro and micro nutrient, 5) efficiency of P fertilizer of Fungy Micorrhiza Arbuscular, 6) application of *Rhizobium* sp. and N foliar fertilizer. This research result were : 1) adaptation mechanism on SSC was begun with the increasing of root ethylene, root aerenchyme formation, root development, nitrogenase activity, and nutrient uptake, 2) Tanggamus with water depth 20 cm under soil surface gave the highest productivity, 3) paddy straw increased humic acid, decreased Al and increased soil pH 4). application of P + K + Ca + Dung + Zn gave the highest productivity, 5) application of Micorrhiza increased efficiency of P, 6) application of inoculant *Rhizobium* sp. and N foliar fertilizer gave the highest productivity. Soybean productivity on Type C overflow with SSC technology on Tanggamus was obtained 4.6 t ha⁻¹.