

## [P2] Farming System

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

12:15 PM - 1:00 PM

### [P2-25] Effects of Shading by Solar Panels on Growth and Yield of $C_3$ and $C_4$ Crops

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It is spreading to locate the solar panels at crop cultivation field. At that field, we can get the sell power income by solar panels with the agricultural income. However, we do not have enough information about the effects of shading by solar panels on the growth and yield of crops. In the present study, we have demonstrated that the effects of shading by solar panels on the growth and yield of  $C_3$  and  $C_4$  crops. We compared the growth and yield of crops grown under solar panels (solar plot) with those of crops grown at control field (control plot). The experiments were conducted in 2018 and 2019 at the farmer's field in Kagawa Prefecture, Japan. The average percentage of shading by solar panels during growth periods was about 30%. Experimental materials were maize ( $C_4$ ) and soybean, sweet potato, radish ( $C_3$ ). The fresh weight of corn grain in solar plot was not significantly different than that in control plot. The main stem length of soybean in solar plot was significantly longer than that in control plot. The grain yield of soybean in solar plot was significantly higher than that in control plot. There were no significant difference between each plot in the yield of sweet potato and radish. In conclusion, the yield of  $C_3$  and  $C_4$  crops grown under the shading by solar panels during growth periods were not significantly influenced.