

## [P2] Farming System

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

1:15 PM - 2:00 PM

### [P2-12] Cropping System Which Consists of Potato in Winter Season, Green Manure and Sugarcane under Kunigami Merge Soil in Northern Part of Okinawa Island

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Upland farming which consists of sugar cane is established settled in traditionally in the Okinawa Island. It is main crop in the upland farming because it results in relatively high profitability. However, because its early growth is slow, and topsoil is exposed for a long term, a large quantity of erosion out of the field by heavy rain, and the sugar cane invites terrible erosion followed by the decline of soil production capacity. Green manure is effective to reduce decline of soil fertility because it prevents soil erosion to cover topsoil by a green manure and increase of organic matter by its plowing-in. Green manure plowing-in gives good effect on physical and chemical characteristics of the soil. In that case soil gas phase rate is improved remarkably. Guinea grass with much biomass has most efficient. Plowing-in of *Crotalaria juncea* among *Crotalaria* species was effective in improvement of available nitrogen compared with Guinea grass, which was closely related with the increase of yield and of the starch value of potato. In addition, the crop rotation with the sugarcane increases available nitrogen and potato yield. On the other hand, it was revealed that the crop rotation had a repressive effect the same as resistant variety. Bacterial wilt for potato decreases by taking crop rotation with sugarcane and a long-term rotation. Besides, bacterial wilt might occur frequently by the crop rotation including Guinea grass. Therefore, the choice of the green manure as the preceding crop was important.