

## [P4] Crop Genetics and Physiology

Thu. Sep 9, 2021 12:15 PM - 2:00 PM Room 4 (Poster) (Crop Genetics and Physiology)

1:15 PM - 2:00 PM

### [P4-30] Relationship between Non-Destructive Measurement Parameters and Yield in Sweet Potatoes

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The purpose of this study was to elucidate in detail the relationship between non-destructive measurement parameters such as plant coverage rate and yield in sweet potatoes.

The experiment was conducted at the Jinsai Sandy Dune Farm, Shimane University. Fertilizer application was set at 5 kg N, 14 kg P<sub>2</sub>O<sub>5</sub>, and 14 kg K<sub>2</sub>O per 10 a in 2019, and three levels of nitrogen fertilization were set at 0 kg, 5 kg, and 15 kg per 10 a in 2020. Twenty varieties of sweet potato were used as experimental materials. Transplanting was done in late June. Yield was measured at about 100 days after planting. Plant coverage rate and NDVI values were also measured until 30 days after transplanting. Above-ground traits were measured in July 2019.

There was a significant positive correlation between plant coverage rate in early growth period and yield in both years. Multiple regression analysis of the relationship between above-ground traits and plant coverage rate in early growth showed a relationship between the number of branches and branch nodes and planting rate. There was a significant positive correlation between NDVI value and yield at 1% level. Furthermore, NDVI value and plant coverage rate were also found to be significantly positively correlated. The average plant coverage rate of all varieties increased with increasing nitrogen fertilization. However, the relationship between plant coverage rate and yield was almost constant regardless of the increase or decrease in nitrogen fertilization.

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