

## [P3] Abiotic Stress for Crop Production

Thu. Sep 9, 2021 12:15 PM - 2:00 PM Room 3 (Poster) (Abiotic Stress for Crop Production)

1:15 PM - 2:00 PM

### [P3-44] Heavy Flooding Effects on Productivity of Paddy Rice Cultivar 'Nanatsuboshi'

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Pot experiments were conducted for three years to elucidate effects of heavy flooding on paddy rice productivity and quality. Every year, three mature seedlings were transplanted onto paddy soil under water of 0.05 m depth in Wagner's pots in late May. Mature rice was harvested in mid-September. Treatments were set as 3 depth levels, 5 growth stages, and 3 flooding durations. We defined 'reducing' as a relative value of gross brown rice weight to control of less than 0.7.

As the averages assessed over three years, 5 days of treatment in booting stage with upper leaf submergence show a reducing plot. Moreover, under complete submergence, 5 days of treatment in panicle formation stage and more than 3 days of treatment in the booting and heading stage showed as reducing plots. Results show that gross brown rice yield reductions by heavy flooding occurred from panicle formation to the heading stage, and especially during the booting and heading stage.

Yield components of brown rice were affected by submergence treatment from the panicle formation stage to heading. Correlation coefficients between the gross brown rice weight and each yield component show that the number of ears had high positive correlation in the tillering and panicle formation stage, and that grain numbers per ear had high positive correlations in the booting and heading stage. Therefore, rice productivity reduction because of heavy flooding can explain that of ear-numbers until panicle formation stage, and the reduction of grain numbers per ear from booting stage.