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## Exogenous Application of Gibberellic Acid and Methyl Jasmonate to Reduce the Effect of Biotic Stress (WBPH) in Rice (*Oryza sativa* L.)

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### [Introduction]

White backed planthoppers (WBPH, *Sogatella furcifera*) cause significant damage to rice plants that exist in rice cultivation areas around the globe, and cause huge economic losses due to reduced production. Rice (*Oryza sativa* L.), is one of the major staple food crops for more than half of the world population. The production and consumption of global rice accounted for almost 90% by Asian countries where 60% of the earth's people live. In this experiment we applied exogenous hormones to WBPH affected rice and evaluate their role in recovery and various agronomic traits.

### [Materials and Methods]

Rice cultivar Ilmi was used as a plant material. The seeds were treated with fungicide and kept in incubator in dark condition for 4 days at 34°C. The Pre-germinated seeds were sown in 3 trays (control, 100 µM GA and 100 µM MeJA) and kept in Green house until seedling development. All the trays have 48 seeds. After 14 days of sowing the rice seedlings were infested with WBPH in specific rearing cage and specific treatment was applied to all the trays according to the experimental design. The number of WBPH and affected plants data were collected every day. After WBPH infestation we determined various phenotypic and genotypic characteristic of rice cultivar Ilmi.

### [Results and Discussion]

We applied exogenous hormones (GA and MeJA) to rice cultivar Ilmi and find their role in recovery of affected plants. WBPH severely affected rice plants. On 1st day of infestation 43, 30 and 48 plants were affected in control, 100 µM GA and 100 µM MeJA respectively. After one week all 48 plants were affected then these plants were treated continuously. After 7 days 26, 46 and 8 plants were recovered in control, 100 µM GA and 100 µM MeJA respectively. This result suggests that Gibberellic acid (GA) highly recover the affected rice plants and it was also observed that GA highly promote rice growth compared to Methyl jasmonate (MeJA).

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