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Jan 2019

DOI: [10.23880/izab-16000135](https://doi.org/10.23880/izab-16000135)Lab: [Animal Plant Interactions Lab](#)

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Abstract

Plants express various constitutive and induced resistance mechanisms that require substantial share of plant nutrients. Microbial fertilizers such as Phosphate Solubilizing Bacteria (PSB) are known to enhance nutrient availability to the plant, thereby helping in plant growth. However, it is still unknown whether such a growth compromises plant resistance. In present study, we evaluated the effect of PSB on early as well late responses in tomato (*Solanum lycopersicum*) after damage by *Spodoptera litura*. We also studied whether these responses translate to resistance mechanisms by analyzing response of insect larvae on damaged plants. Our results indicate that, at early hour both unsupplemented and plants supplemented by PSB showed equal susceptibility towards insect induced oxidative damage. From 48h onwards elevated resistance mechanisms were observed in PSB-supplemented plants, especially increase in trichome numbers and shoot biomass. Moreover, decreased feeding preference of larvae was also observed on the previously damaged PSB-supplemented plants. However, an increased consumption index does indicate increased palatability of the plant, possibly due to high phosphorus availability. Our results thus indicate that PSB administration improves growth as well as induced resistance in tomato.

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