THE INFLUENCE OF SILICON IN SUPPRESSING RICE DISEASE AND THEIR RESIDUAL EFFECT

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Abstract: Silica (Si) plays a significant role in improving yields in a wide range of crops by increasing resistance to stress and enhancing growth through a number of well-documented mechanisms. Silica is a most abundant mineral element (18%) in soil and plays a significant role in crop production and resistance crop diseases. Silicon can lower the electrolyte leakage from rice leaves and, therefore, promote greater photosynthetic activity in plants grown under water deficit or heat stress. Silicon increases the oxidation power of rice roots, decreases injury caused by climate stress such as typhoons and cool summer damage in rice, alleviates freezing damage in sugarcane, favours' super cooling of palm leaves, and increases tolerance to freezing stress in some plants. Silicon reduces the availability of toxic elements such as manganese, iron and aluminium to roots of plants such as rice and sugarcane and increases rice and barley resistance to salt stress. Silica results did show that there was a relationship between Si content and blast susceptibility and developed resistance of all cucurbitaceous family fungal diseases.

Keywords: Silica, Disease resistance, Rice, Soil minerals

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