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## Enhancing the constitutive resistance in *Capsicum annuum* L. fruits, as an environmentally friendly approach against a fungal disease

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One of the great challenges for food security in the 21st century is searching for possibilities to improve yield stability through the development of disease-resistant crops, against the most problematic diseases. The present study was undertaken to enhance natural disease resistance of *Capsicum annuum* L. against anthracnose disease, through some selected pre- and postharvest treatments. The fungal pathogen, *C. acutatum*, was isolated from naturally infected chili with anthracnose, collected from the study area. Potassium silicate (Kasil®) was applied as a postharvest treatment at concentrations, 0 (control), 100, 200, and 400 mg/l and found that the concentration at 200 mg/l was effective. Elicitor treatment, at 200 mg/l, was done once in a week for 4 weeks, it resulted in significantly reduced anthracnose disease when the harvested fruits were challenge-inoculated with *C. acutatum*. Postharvest application of potassium silicate (Kasil®), at the same concentration reduced anthracnose lesion area by 25 - 100%, compared to the untreated controls. Postharvest spray treatment of chili at mature, green stage with potassium silicate at 200mg/l, reduced the severity of anthracnose development by 34-100%. Spore germination assay revealed that potassium silicate has no antifungal effect on conidia of *C. acutatum*. Potassium silicate (Kasil®) treated fruits, inoculated with *C. acutatum* after harvest, showed greater accumulation of phytoalexins. Related (PR) Proteins such as  $\beta$ -1, 3-glucanase are considered to play an important role in plant disease resistance. .

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