



POTASSIUM ENHANCED GROWTH, FRUIT QUALITY IMPROVEMENTS AND RESISTANCE TO ANTHRACNOSE IN FIELD GROWN CAPSICUM (*CAPSICUM ANNUM* L. CV. ‘HUNGARIAN YELLOW WAX’)

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Potassium (K) is considered as a beneficial nutrient element for a large variety of crops in disease management and quality enhancement. This study was conducted to investigate the effect of potassium on anthracnose disease resistance and some physical and physiochemical parameters of capsicum cv. ‘Hungarian Yellow wax’. Plants were treated with three doses of potassium i. e. recommended dosage of Department of Agriculture (control) - 180g (1K), double the dosage- 360g (2K) and triple the dosage- 540g (3K) per 300ft². Disease resistance to anthracnose in pepper fruits were evaluated by measuring the lesion area for 10 days after inoculation with (DAI) *Colletotricchum capsici*. Potassium at higher doses significantly (at $P \leq 0.05$) reduced the severity of disease with higher reduction (95% and 74%) in treatments received 3K and 2K of potassium respectively. There was a strong negative correlation ($R = -0.802$) between the increasing of K dose and the total lesion area developed for 10 DAI. Disease initiation was delayed by 4 days after inoculation with *C. capsici* in 3K treated fruits compared to the control. Physical and physicochemical parameters of harvested fruits at colour break stage were measured and a significant increase of fruit weight (27%), length (66%), width (13%) and TSS (9.8%) was observed in K3 treated fruits. However, no significant difference was observed in terms of fruit pericarp thickness, pH and % titratable acidity among the three treatments. Fruit firmness and cell wall thickness of the epidermis of 3K treated fruits were found to increase by 24% and 31% in contradictory to the control. The results suggest that application of thrice the dose of potassium is an effective means of improving quality parameters of the cultivar. In addition, anthracnose disease caused by *C. capsici* in *Capsicum annum* L. cv. ‘Hungarian Yellow Wax’ could be effectively suppressed by 3K application and the induced fruit firmness and increased cell wall thickness might have acted as a physical barrier against the infection and invasion of *C. capsici*.

Keywords: *Potassium, Colletotricchum capsici, capsicum anthracnose*