

VARIETAL SCREENING METHOD FOR ANTHRACNOSE IN BEAN (*Phaseolus vulgaris* L.)

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Anthracnose is a fungal disease that significantly reduces both yield and the quality in bean. The most effective way to minimize crop losses due to this disease is the cultivation of resistant varieties. But there are no reliable methods to identify such varieties. A series of, experiments were undertaken to develop a suitable screening method in order to identify anthracnose resistant varieties of bean, under laboratory conditions (*in vitro*). The causal organism was identified as *Colletotrichum lindemuthianum* by using cultural tests, microscopic examination and through Koch's Postulates. Chemical factors found in exudates obtained from pods were separated into two fractions, which are soluble in ether and water. Conidia of *C. lindemuthianum* germinated and produced appressoria within a few hours on fruit exudates of three maturity stages of the tested nine varieties. Percentage of conidia germination in fruit exudates of different varieties showed a significant correlation with the size of anthracnose lesions developed on pods of each bean variety. The highest conidia differentiation of the pathogen was observed in fruit exudates of mature stage of variety "Lanka Butter", which was the highest susceptible bean variety to anthracnose disease. Chemical fractions found in both ether and water enhanced conidia differentiation. The highest lesion development of anthracnose was found in the mature pods, compared to those from harvesting stage and immature pods. Significantly higher conidia differentiation was observed in the original exudates, compared to ether and water fractions. This study revealed that stimulatory effect of bean exudates on conidia germination could be used as a short cut method to identify varieties resistant/susceptible to anthracnose.

Key words: Anthracnose, Appressoria, Bean, *Colletotrichum lindemuthianum*, Exudates