Varietal Resistance of *Carica papaya* to Anthracnose Disease caused by *Colletotrichum gloeosporoides*

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Carica papaya (Family: Caricaceae), originated in Central America, is a leading fruit in Sri Lanka with a high nutritive and medicinal value. Two popular varieties, 'Rathna' (a Sri Lankan hybrid) and 'Red lady' (Mexican), are commercially grown in Sri Lanka. The variety 'Red lady' is resistant to anthracnose disease compared to 'Rathna'. In this study the factors underlying the resistance of var. 'Red lady' to anthracnose disease was investigated. The factors considered included the peel anatomy, thickness and hardness of the fruit, latex content and its chitinase activity and some physico-chemical characteristics.

The causative agent was isolated from an anthracnose lesion in var. 'Red lady' and 'Rathna' and identified as *Colletotrichum gloeosporoides*. The average latex exuded from an unripe fruit of the same maturity level in both varieties, through a 1 inch incision was higher in resistant 'Red lady' than that of the susceptible variety. However, the latex content µl/g tissue was slightly higher in the susceptible cultivar. The latex obtained from the resistant 'Red lady' had twice the chitinase activity than that of the latex obtained from the susceptible variety. The thickness of peel and the cuticle was greater in 'Red lady' than in 'Rathna'. Fruits of var. 'Red lady' were much harder than the fruits of the susceptible variety. The soluble fraction of papaya latex from the variety 'Red lady' showed a greater spore digesting ability than that from the susceptible 'Rathna'. On the other hand, the total soluble solid content in the pulp was higher in the variety 'Rathna' than 'Red lady'. These results indicate that the greater chitinase activity of the latex and the hardness of skin of the variety 'Red lady' may have contributed to its greater resistance to anthracnose disease.