

RESISTANCE IN COTTON TO WHITEFLY, *Bemisia tabaci* (GENNADIUS)

MOHAMMAD ASIF ZIA

Agricultural Extension Wing, Sialkot.

ABSTRACT

Out of nine cotton (*Gossypium hirsutum* L.) cultivars tested in replicated field trial at Gujrat (Pakistan) during 1990, LH-119 was found the most resistant while NIAB-78 the most susceptible to the attack of whitefly, *Bemisia tabaci* (Gennadius). The density of gossypol glands, the density of hairs on the lower leaf surface, number of nectaries leaf, the amount of crude fats and total sugars in the leaves were negatively and leaf area, leaf blade thickness, moisture and crude protein contents of leaves were positively correlated to the mean population of whitefly per leaf. The total ashes and fibre contents had no role in imparting resistance in cotton to whitefly.

INTRODUCTION

Cotton (*Gossypium hirsutum* L.) is the most important cash crop in Pakistan. It is infested by a number of insect pests including whitefly, *Bemisia tabaci* (Gennadius). Whitefly not only sucks cell sap and deteriorates plant health and vigour but also deteriorates the quality of cotton lint and transmits a number of viral diseases in cotton and other plant species (Inayat-Ullah *et al.*, 1985). Yield losses in cotton due to whitefly attack are sometimes more than 50% (Inayat-Ullah *et al.*, 1985). As physio-chemical plant characters play an important role in the susceptibility/resistance to insect pests (Painter, 1951), hence present studies were designed to identify the most effective plant characters imparting resistance in cotton to whitefly, so that these can be exploited in future in breeding cotton for resistance. Ahmad and Haq (1981) found that hair length and hair density on midrib and leaf lamina favoured whitefly. Reducing sugars, calcium, magnesium, potassium and moisture contents of leaves were directly while phosphorus, iron, fats and proteins indirectly correlated with resistance in cotton against whitefly. pH of leaf cell sap did not play any role. Baloch *et al.* (1982) found that hairy varieties were more susceptible to whitefly (*Bemisia tabaci* (Gennadius)).

Khalifa and Gameel (1983) concluded that varieties with Okra leaf shape, glabrous plant body and high gossypol contents supported significantly smaller populations of *Bemisia tabaci* (Genn.). Sippell *et al.* (1983 and 1987) Showed that low leaf hair density and deeply