

Fifty four varieties of upland cotton (*Gossypium hirsutum* L.) were screened for resistance to bacterial blight caused by *Xanthomonas malvacearum* E. F. Smith, (Dowson) under natural field conditions and artificial Inoculation. In general, moderately high levels of field infection provided useful information on susceptibility of varieties but 11 needed to be supplemented with artificial inoculation to confirm resistance. Hypocotyl regions of one week-old seedlings were subjected to artificial inoculation with bacterial blight crude isolate using hypodermic needles. None of the fifty four varieties tested was immune to disease 18.5 % showed a high level of resistance, 29.6 % were recorded as resistant while 20.4 % were susceptible. Another 18.5 % were highly susceptible and 13.0 % showed inconsistent disease reaction under natural field conditions. However, under artificial inoculation the seedlings showed lesions of varied sizes but none of the varieties was found to be resistant. Statistical analysis showed non-significant ($P = 0.05$) disease interaction indicating susceptibility to disease at the seedling stage. This may be due to lower levels of resistance in seedlings than in mature cotton plants. The resistant varieties were mainly of African origin and well adapted to local conditions. They are therefore potentially useful as commercial varieties in their own right or as donor parents for blight resistance.