

Abstract:

Fifty seven maize lines comprising 23 open pollinated, 30 hybrids and 4 inbred lines were evaluated for resistance to *Turcicum* leaf blight both under greenhouse and field conditions. For greenhouse evaluation, the genotypes were inoculated with mixed inoculum derived from seven pathogenic isolates of *Exserohilum turcicum* whereas in the field trial, natural inoculum was relied upon. The parameters assessed were incubation period, disease incidence, disease severity, lesion density and grain yield. The scale used for disease severity in the greenhouse ranged from 0-6 whereas in the field evaluation, assessment was done using a 0-5 scale based on the proportionate leaf area affected by the disease. The maize genotypes evaluated showed a great variation in terms of lesion density, disease incidence and disease severity. Four lines namely SC Duma 41, H614D, H625, HR-KIB-04A-1-5 consistently rated as resistant with disease severity scores of less than 1, while IR-KIB-03B-19-4, PH1, IR-KIB-03B-19-2, PH4, ZIMLINE/KAT BG-25 and SYNIRO 1 showed a high level of susceptibility with severity scores of higher than 3. The maize genotypes were categorized into three groups namely tolerant, moderately tolerant and susceptible. Fifty three percent of the lines were moderately tolerant while 17 and 30% were tolerant and susceptible, respectively. The susceptible lines produced elliptical gray necrotic sporulating lesions while the lesions were chlorotic and small to medium in size in tolerant genotypes. This study is a clear demonstration of the existence of levels of tolerance in maize genotypes which can be utilized in the management of northern leaf blight.