

Abstract:

Exserohilum turcicum the causal agent of northern corn leaf blight is a threat to corn production in many areas of the world. The pathogen has a high genetic variability in terms of virulence, genetic structure and several races have been reported. Diseased corn plants from Kenya, Germany and Austria were used to isolate the pathogen following the standard isolation procedures. Detached leaf technique using leaves of maize plants with (Ht0) genes for resistance were used to evaluate aggressiveness and the parameters assessed included incubation period, size of chlorotic and necrotic lesions, lesion density, area under disease progress curve (AUDPC) and rate of lesion expansion. Differential cultivars bearing Ht1, Ht2, Ht3, HtN and Ht0 resistance genes were used to perform race typing on 87 isolates under greenhouse conditions. Isolates from the three countries showed a great variation in aggressiveness with incubation periods ranging from 2 to 6 days, lesion size ranging from 1.81 mm² to 57.04 mm², rate of lesion expansion ranging from 0.29 mm²/day to 21.67 mm²/day and AUDPC ranging from 31.3 mm² to 133.9 mm². Twelve races namely 0,1,2,3,N,12,13,13N,3N,123,23,23N were identified from the three countries. Race 2 was the most common and had 27% frequency of occurrence followed by race 0 and 1 which had frequency occurrence of 22% and 12% respectively. There was no distinct correlation between the type of the race and its origin and different races scattered within the various countries. The high level of genetic variability may explain the occurrence of the disease in the different geographical localities and the ability of the pathogen to infect most of the germplasm including the resistant varieties