Abstract

The sugarcane (Saccharum officinarum L.) resistance to leaf scald has been studied without consideration of the percentage of damage to the vascular system. In the present study the occlusion of vascular bundles in the basal and apical parts of the sugarcane stalk was analyzed to evaluate the resistance to Xanthomonas albilineans (Xa). The susceptible sugarcane variety Mex 64-1487 and the resistant variety Co 997 were used under a randomized design with four replications. Inoculation was carried out by injection in the middle of the stalk of 3 month old plants, using 3ml of a $2 \times 10^5$ UFC/ml bacterial suspension or sterile water. The sampling was done at 0, 30, 60, 110 and 213 days after the inoculation, cutting two stalks by replication. In each plant two nodes from the basal part and two from the apical part were sampled and kept in a formaldehyde-alcohol-acetic acid solution, to determine occlusion with a complete randomized design in factorial composition 23 with three replications. The Xa diagnosis was done employing Bio-PCR (bacterial cells in the PCR) and PGBL1 and PGBL2 DNA specific primers for Xa. The percentage of vascular bundle occlusion was larger in the basal part of the stalk in both varieties ($p < 0.05$). The determination of the vascular bundle occlusion allowed a correct evaluation of the resistance of both Mex 64-1487 and Co 997 ($p < 0.05$), analyzing the lower basal part of the stalk.