DIFFERENTIAL GROWTH RESPONSE OF COTTON GENOTYPES INFECTED WITH ROOT ROT TO SILICON NUTRITION

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ABSTRACT

A hydroponics study was carried out to investigate the effect of silicon (Si) on increased tolerance of eleven cotton genotypes against root rot. Pre-germinated seedlings were grown with and without Si in half strength modified Johnson's solution. The genotypes harvested one-month after transplanting, exhibited substantial growth differences in terms of biomass production, leaf Si, phosphorus (P) and potassium (K) concentrations. Inspite of obvious symptoms of root rot in both treatments, shoot and root dry matter was significantly improved by Si addition in the root medium indicating increased tolerance to root rot. Among genotypes, BH-118 performed better with Si addition in term of biomass production. Silicon concentration increased while P and K concentrations decreased significantly in cotton leaves by Si application in the growth medium of cotton genotypes infected with root rot. Shoot dry matter (SDM) correlated positively with root dry matter (RDM) ($r = 0.76^{**}$) and Si concentration ($r = 0.42^{**}$) in leaves.