

Peroxidase, Superoxide Dismutase, Catalase and Hydrogen Peroxide Concentration in Cowpea [*Vigna unguiculata* (L.) Walp.], Genotypes TE97 411-1E and BR3 Tracueteua, Infected with *Colletotrichum lindemuthianum*

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A number of species of *Colletotrichum* causes serious yield losses in cowpea. Two diseases are recognized, namely anthracnose and brown blotch. This study was carried out aiming to elucidate the involvement of peroxidase (POX), superoxide dismutase (SOD), catalase (CAT) and H₂O₂ in the defense mechanisms of cowpea against *C. lindemuthianum*. Cowpea seeds were germinated under sterile conditions on sand. Twelve-day-old plants were inoculated with 4.1 x 10⁵ spores/mL on the adaxial surface of primary leaves. Plants were collected at 12, 24, 48, 72 and 96h after inoculation. The development symptoms of *C. lindemuthianum* were analyzed in cleared and stained leaf cuts by light microscopic examinations. Primary leaf crude extracts were used to measure the enzyme activities. Macroscopically infected BR3 leaves revealed the presence of sunken necrotic lesions which enlarged rapidly and coalesced to girdle stems as typical anthracnose lesions seen on susceptible cowpea varieties. In contrast lesions in TE97 were tiny and shiny reddish brown resemble to those present in resistant varieties. Microscopically it was observed that *C. lindemuthianum* gains ingress into cowpea leaves by elaborating, from a melanized apressorium, an infection peg which penetrated the cuticle directly or stomata to initiate infection. POX activity was increased in inoculated primary leaves of TE97 compared to BR3. Increased SOD activity was also observed in TE97 starting from 12h until 24h, decreasing abruptly onward and reaching levels lower than those of BR3. CAT activity decreased in inoculated BR3 at 24h onward in relation to inoculated TE97. (H₂O₂) content was higher at 48h in inoculated TE97 leaves compared with BR3. All together these data suggest that the TE97 is apparently more resistant to *C. lindemuthianum* than BR3.

CAPES.CNPq.FUNCAP.PRONEX.