Accumulation of Hydrogen Peroxide and Induction of Antioxidative Enzyme Activities Confer Resistance of Cowpea [*Vigna unguiculata* (L.) Walp.] to the fungus *Colletotrichum gloeosporioides*

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Cowpea is one of the most important crops in the semiarid Northeast of Brazil. Although tolerant to adverse climate conditions it is constantly threatened by pathogens which impair production. Species of fungi belonging to the *Colletotrichum* genus are one of these organisms. In this present work it was raised the hypothesis that both hydrogen peroxide accumulation and elevated reactive oxygen species (ROS) scavenging enzymatic activities were involved with the difference in susceptibility of two cowpea genotypes to *C. gloeosporioides* attack. Cowpea seeds of BR 3 TRACUATEUA and TE 97-411-1E genotypes were germinated under sterile conditions on washed, sterilized river sand, in a greenhouse. Twelve-day-old plants, without apparent injury, were selected, transferred to a growth chamber and inoculated with 2.5 x 10^7 spores mL^{-1} fungus suspension on the adaxial surface of fully developed primary leaves. Primary and secondary leaves were collected at 0, 24, 48, 72, 120, 168 and 192 hours after inoculation and the dialyzed leaf extracts used for measurement of hydrogen peroxide (H_2O_2) accumulation and peroxidase (POX), superoxide dismutase (SOD), catalase (CAT) and ascorbate peroxidase (APX) enzymatic activities. In Br 3 genotype H_2O_2 accumulated and all studied enzymes increased their activities in the primary leaves of infected plants compared to infected TE 97. These results suggest that BR 3 genotype is more resistant to the fungus *C. gloeosporioides* than TE 97 apparently because of its rapid H_2O_2 accumulation capacity during the fungal biotrophic stage, when this compound may act as a toxic agent since it inhibited *in vitro* the spore germination and fungal growth of *C. gloeosporioides*, and elevated constitutive and induced antioxidant enzymatic activities of POX, SOD, CAT and APX which may control the plant ROS-induced tissue damage of this more resistant genotype during the fungal necrotrophic stage.