BTH INDUCES ANTI-OXIDATIVE ENZYMES AND LIGNIN FORMATION IN COWPEA

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Over-production of reactive oxygen species (ROS) and lignin deposition are common events in pathogen-stressed plants. Excessive ROS are removed by anti-oxidative enzymes such as superoxide dismutase (SOD) and catalase (CAT) whereas lignification is associated to phenol-peroxidase (POX) activity. In this present study seeds of cowpea (*Vigna unguiculata*) were treated with BTH (Acibenzolar-S-methyl) and its ability to induce SOD, CAT, POX and lignification evaluated. Cowpea seeds were soaked in different BTH concentrations and 24 h later germinated in Germitest® paper to determine *in gel* enzyme activities in root and leaves, and in pots to allow measuring lignin content and leaf area. In primary leaves, at 5 days after BTH seed-treatment (DAT), SOD activity was similar to control whereas CAT and POX activities were higher only at 8 DAT. In roots, SOD and POX activities were induced by BTH at 5 and also at 8 DAT, but CAT only at 5 DAT. Regarding to cowpea tertiary leaf area no measurable differences compared to controls were noted at 30 DAT, although increments in lignin content were observed in plants generated from seeds treated with 0.5, 1.0, 3.0 and 5.0 mM BTH. All together these results suggest that BTH could be used as an inductor of biochemical defenses in cowpea.

Keyword: *Vigna unguiculata*, BTH, ROS and lignin
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