

Pathogenicity of *Colletotrichum truncatum* and its influence on soybean seed quality

ABSTRACT

Pathogenicity of *Colletotrichum truncatum* and its influence on soybean seed quality were evaluated by artificial inoculation. *C. truncatum* enabled to establish as latent infection without showing any visible symptom in all seed components with maximum frequency values of 100% for seed coat, 43.0% for cotyledon and 30.0% for embryonic axes after 4 days of incubation period. The infection level remained the same in all seed components until the end of the incubation period. Fungal infection reduced seed germination by 29.2% and viability by 26.9% than un-inoculated seeds in vitro. Moreover, infection increased the electrolyte leakages compared with control. Under glasshouse conditions, pathogenicity of *C. truncatum* on seeds and seedlings was more virulent than that of controlled conditions. In the glass house, *C. truncatum* reduced seed germination and seedling survival by 46.4% and 75.8%, respectively and caused pre- and post-emergence damping-off of seedlings. However, fungal infection by *C. truncatum* increased protein and oleic acid content and reduced linoleic acid content, but did not change in extracted oil and other fatty acids when compared with un-inoculated seeds after 4 days of incubation.

Keyword: Soybean; Seed-borne infection; Seed quality; *Colletotrichum truncatum*