

RESEARCH ARTICLE

Biochemical characterization of isolates of *Alternaria helianthi* (hansf.) tubaki and nishihara causing sunflower blight

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SUMMARY

A pure culture of 25 isolates of *Alternaria helianthi* were collected from IIOR, Rajendranagar, Hyderabad and biochemical nature was tested under *in vitro*. The isolates were characterized based on production of total sugars, total proteins, total free amino acids and phytotoxins. The estimation of all parameters reflected significant variation among all. The isolate Ah-25 produced maximum concentration of total sugar (13.28 mg), while minimum concentration was noticed in Ah-13 (3.10 mg). Similarly, the total proteins content was found highest in the isolate Ah-25 (21.43 mg) and lowest with the isolate Ah-15 (9.53 mg). Among the isolates, the total free amino acids ranged between 5.67 mg (Ah-15) to 21.24 mg (Ah-21). The phytotoxicity of the crude toxin was tested by adopting detached leaf technique at different concentrations. None of the tested isolates have produced symptoms at 50 ppm concentration. However, the typical symptoms of necrotic lesions were observed at 100 ppm with nine isolates (Ah-1, Ah-2, Ah-4, Ah-7, Ah-12, Ah-17, Ah-21, Ah-24 and Ah-25). Among the remaining isolates Ah-3, Ah-5, Ah-6, Ah-9, Ah-10, Ah-11, Ah-16, Ah-18 and Ah-23 showed necrotic symptoms at 200 ppm toxin concentration. Whereas the isolates Ah-8, Ah-13, Ah-14, Ah-15, Ah-19, Ah-20 and Ah-22 resulted in symptom development at 500 ppm concentration. Further, the strains were found to vary in their biochemical composition between all the isolates under the study.

Key Words : Sunflower, *Alternaria helianthi*, Phytotoxins

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