

RESEARCH ARTICLE

# Bioassay of toxin produced by *Alternaria helianthi* causing leaf blight of sunflower

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ABSTRACT

Sunflower is an important oilseed crop of India. The crop is known to suffer from many diseases among which *Alternaria* leaf blight is one of the most important diseases. *Alternaria helianthi* was isolated from the leaf samples collected during *Khari*. The toxin produced by *Alternaria helianthi* in potato dextrose broth was purified and based on its carbohydrate and protein content, the toxin was identified as glycoprotein. Toxin at 100 ppm concentration didn't affect seed germination while toxin concentration of 200 ppm to 3000 ppm affected seed germination. Minimum seed germination of 24.66 per cent was recorded when seeds were treated with toxin @ 3000 ppm. Minimum length of sunflower shoots (2.53 mm) and root length (2.15 mm) was observed at 3000 ppm. Sunflower seedlings placed in 100 ppm toxin showed curling of leaves and wilting after 24 hr. whereas at 3000 ppm seedlings showed curling of leaves in 5 h and wilted within 12 hr. In detached leaf assay, 100 ppm toxin didn't produce any symptom. However, at concentrations of 500, 1000, 2000 and 3000 ppm, the toxin produced typical necrotic spots without yellow halo on sunflower leaves.

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