

## **In Vitro Effects of Azadirachta indica Leaves Extract Against Albugo Candida, the Causative Agent of White Blisters Disease of Brassica Oleraceae L., Var. Italica**

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**Abstract :** Broccoli (*Brassica oleraceae* L., var. *italica*) is one of the most important vegetables that is high in nutrients and bioactive compounds. It easily grown on a wide range of soil types and is adaptable to many different climatic conditions. This study was carried out within Jos North and environs in vitro to evaluate Neem (*Azadirachta indica*) leaves extract against *Albugo candida*, the causative agent of white blisters disease of broccoli. Through the survey, prevalence and incidence were accessed and a fluffy white growth symptom on the underside of leaves was also observed on the field. Infected leaves samples were collected from three different farms namely: Farin Gada, Naraguta, and Juth and the organism associated with the disease was isolated. Pathogenicity test carried out revealed the fungal isolate *Albugo candida* to be responsible for the disease. Antimicrobial susceptibility test was performed using agar well diffusion method to determine the minimum inhibitory concentrations of two extract of *Azadirachta indica* leaves against the organism. Ethanolic extract had the highest antifungal activities of  $3.30 \pm 0.21$  -  $17.61 \pm 0.11$  while aqueous extract had the least antifungal activities of  $0.00 \pm 0.00$  -  $13.23 \pm 0.12$ . The minimum inhibitory concentration of aqueous was 100 mg/ml while its minimum fungicidal concentration was at 200 mg/ml. For ethanol, the minimum inhibitory concentration was 50 mg/ml while its minimum fungicidal concentration was 100 mg/ml. Plants being less toxic in usage over synthetic or inorganic chemicals makes them easy to handle, easily accessible and renewable. Due to the biosafety of plant extracts and its availability since the plant-based extracts of the two different solvents were found to be effective against the test organism hence, it is recommended for in-depth research to make it readily available for control of other pathogens and pests.

**Keywords :** antifungal, biocontrol, broccoli, fungi

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