

# **EFFICACY OF BTH AND NEEMAZAL AGAINST AN AGGRESSIVE ISOLATE OF SUNFLOWER DOWNY MILDEW CAUSED BY *Plasmopara halstedii* (FARL. ( BERL. ET DE TONI)**

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Sunflower is an important oilseed crop, but its yield is highly affected by devastating diseases such as sunflower downy mildew caused by *Plasmopara halstedii*. The high variability of this pathogen compromises the effective management of sunflowers; therefore, IPM including alternative methods is a promising tool against downy mildew. The goal of our study was to assess the effectiveness of BTH (benzothiadiazole in Bion 50 WG) and NeemAzal as inducers of resistance against sunflower downy mildew. Sunflower seedlings were treated with BTH and NeemAzal before inoculation with varying concentrations of *Plasmopara halstedii* sporangia and incubated overnight at 16°C. Disease severity was assessed using a 0- 4 scale, and plant height was measured twice. Histological analysis of sunflower hypocotyls was conducted to examine pathogen structures and host reactions. Both BTH and NeemAzal treatments reduced disease development, with BTH showing greater efficacy in inhibiting pathogen growth and reducing plant height compared to NeemAzal. Histological examination revealed decreased presence of pathogen structures and increased necrosis in treated plants. Further experiments with inducers are recommended. Preliminary results indicate that NeemAzal and BTH reduce the progression of disease symptoms. Plant inducers offer an ecofriendly approach to disease management, including the control of sunflower downy mildew.