



ORIGINAL ARTICLE

A LABORATORY STUDY TO DETERMINE THE APPROPRIATE CONCENTRATION AND THE MOST EFFECTIVE EXTRACTION METHOD FOR ALOE VERA AFFECTING SOME PATHOGENIC FUNGI AND BIOLOGICAL CONTROL AGENTS

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Abstract: The study included isolation and purification of the two fungi *Alternaria solani* and *Fusarium oxysporum* from tomato plants that showed symptoms of early blight and fusarium wilt. The pathogenicity of the two fungi *A. solani* and *F. oxysporum*, as the percentage of germination of cabbage seeds was 32.4% and 21.6% compared with 98.6% for the control treatment and there was no significant effect on the germination with the fungus *T. harizianum*. The results also showed that 10% concentration of cold, hot and alcoholic Aloe vera extract significantly inhibited the radial growth of *F. oxysporum* and *A. solani*, where it was 0.83 and 0.26 cm with cold extract, while with hot extract the radial growth of *F. oxysporum* and *A. solani* is 1.38 and 1.22 cm, respectively each and with alcoholic extract the radial growth of pathogenic fungi *F. oxysporum* and *A. solani* was 0.20 and 0.7 cm, respectively each compared with 3.25 and 2.4 cm in treatment. In comparison, this concentration was more inhibiting in the cold extract of Aloe vera. In the experiment that was conducted to see the effect of 10% concentration. From the cold extract of Aloe vera on the spores of the tested fungi, the results showed that this extract had a significant inhibitory ability on the germination of the spores of *F. oxysporum* and *A. solani*, where the number of spores developing was 16.43 and 8.37, respectively, compared with 29.12 and 20.63, respectively, for each of them in the treatment. The results also showed that the cold and hot Aloe vera extract had no significant inhibition on the growth of the fungus *T. harizianum* nor on the germination of its spores, in contrast to the alcoholic extract Aloe vera only significantly inhibited the growth of the fungus as its radius was 2.2 cm compared with 3.11 cm in the control treatment.

Key words: Aloe vera extract, *Alternaria solani*, *Fusarium oxysporum*, *Trichoderma harzianum*.

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