INVESTIGATION OF THE EFFECT OF ORGANIC OILS ON CONTROLLING DOWNY MILDEW DISEASE IN CUCUMBER *(Cucumis sativus)* GROWN UNDER PROTECTIVE HOUSE CONDITIONS IN SRI LANKA

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ABSTRACT

This experiment was conducted to study the effect of plant extracts on downy mildew disease control in cucumber (*Cucumis sativus*). This experiment was laid out in a Completely Randomized Design (CRD) with replicates having the following treatments. T1- Control (no use of any chemical or plant extract), T2- mancozeb treatment (positive control), T3- garlic extract treatment, T4- castor oil treatment, T5- ginger extract treatment, T6- neem oil treatment. These extracts were used at 5% concentration. After the onset of the disease, plants at T1 were died after 6 weeks. As a result of this experiment, neem oil and mancozeb showed that the disease was well controlled and this experiment showed that it was more difficult to control the disease using ginger extract. Also, garlic extract and castor oil were found to be able to control the disease to some extent. This shows that neem oil as capable as chemicals can be effectively used to control downy mildew disease.

In the 4th and 5th weeks, there was no significant difference between the treatments ($p>0.05$). T3 had the highest mean in the 4th week (3 ± 0.9), and T4 in the 5th week (5 ± 0.9). A significant difference was observed in the 6th, 7th, and 8th weeks ($p<0.05$). T5 showed the highest number of spots over time, while T6 controlled the spots by the 8th week. T6, T2, T3, and T4 gradually reduced the spots, but in the 7th week, the plant in T1 died due to the highest number of spots. In the 4th week, there was no significant difference between the treatments ($p>0.05$), with all showing similar mean values. However, significant differences were observed in the 5th, 6th, 7th, and 8th weeks ($p<0.05$). From the 1st to the 8th week, there was a significant difference between the treatments ($p<0.05$). T1 showed optimum growth in the 1st week, but by the 6th week, the plant had died.

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