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Article

Evaluation of the efficiency of some vegetable oils and bio-fungi in controlling Aphis fabae Scopoli of black bean insect.

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ABSTRACT

The experiment was conducted to evaluate the efficiency of some vegetable oils such as watercress oil, aloe vera oil and eucalyptus oil in the percentage of nymphs of black broad bean Aphis fabae Scopoli on the chard plant Beta vulgaris subbsp. cicla. The mortality rate was 83.88, 90.56, and 93.89 % for oils used in the laboratory, while the percentage of loss in the field was 82.91. 88.19 and 89.86%, respectively, the results showed that vegetable oils had an effect on the destruction of whole black broad bean insects, and the increase of this effect with the increase of the time and concentration factor.

Keywords: Aphis fabae; Plant oils; Biological fungi.

INTRODUCTION

The aphid Aphis fabae Scopoli is one of the most dangerous insects that infect barley and many economic plants. The danger of aphids lies in the speed of reproduction and their spread on many weeds, crops and various plant families. Aphids infect both surfaces of the leaf due to the nature of the sucking penetrating mouth of the insect, so it sucks the plant juice from the leaves, which leads to the leaves turning yellow as the infection intensifies and the affected leaves wrinkle. It shows mold that causes the leaves to stop photosynthesizing and transmits many viral diseases [1]. Aphids need a large amount of protein in the plant juice, so they absorb the juice to get enough protein substances, and then they excrete the excess water and sugars in the form of honeydew. Swiss chard (Beta vulgaris subbsp. cicla) is a type of hybrid leafy vegetable of the sage family spread all over the world. The first species belonged to the island of Sicily. Its leaves and roots are eaten at other times. It contains minerals, vitamins A, B, C, K1, K2, folic acid and iron. The chard can be harvested before its green leaves are ripe. However, it can also be harvested after maturity. It has bright green leaves and is threatened to be eaten by various birds and insects due to its good and sweet taste. It can be planted at any time of the year with water and fertilizer, so it is considered one of the profitable economic plants [2]. Bio-control is one of the promising modern strategies in integrated control to reduce the impact of pests and their spread, not to leave adverse effects on the agricultural ecosystem, not to disturb the ecological balance, and to be safer and more stable in controlling insect pests. Many fungi were used to combat aphids