Bern University of Applied Sciences
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HAFL Master's Thesis Abstract

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Title: **Strategies to control Thrips tabaci in leek cultivation in the Seeland**

Summary:

The onion thrips *Thrips tabaci* (Lindeman) (Thysanoptera: Thripidae) is a pest with a broad host range occurring all over the world. In conventional leek cultivation in the Seeland, the sucking injuries on the plant's leaves lead to big qualitiy losses and financial damage for the producers. Damage is especially high in hot, dry summers even with high insecticide use. Increasing resistances against the often used insecticides and environmental concern make the reduction of insecticides a major issue. The aim of this thesis was to find a practicable, non-chemical strategy to control *T. tabaci* for leek cultivation in the Seeland. In field trials in 2014, the application of an entomopathogenous fungi (Mycotal®), irrigation, the combination of irrigation and Mycotal® and the use of stone powder was compared to a control group that was treated with commonly used insecticides. The number of thrips per plant was determined with an adapted portablevacuum cleaner. The leaf damage was evaluated optically on a scale from 1 to 9. Plants were weighted additionnally at harvest to check for potential influences of the different applications on yield. Mycotal® treatment had no significant effect on the number of thrips. Trends indicate a decline in thrips numbers. However, after the end of application, thrips show an increasing tendency again. With daily irrigation, the number of thrips per plant could be reduced. The biggest, significant reduction compared to the control was 64% with the irrigation-Mycotal® variant. Leaf damage at harvest was significantly lower in the irrigated variants, which could also be confirmed in an irrigated field in 2015. In the case of irrigation only, 15 of 20 plants had a leaf damage of less than 50%. As the preconditions in the stone powder experimental sites differed strongly from the other sites no statement about the efficiency can be made. Mycotal® use and irrigation tend to increase plant weight. Irrigation and irrigation-Mycotal® variants showed the most promising results. As the additional use of Mycotal® has only a low benefit and is expensive, it can be concluded that the regular irrigation in combination with a reduced insecticide use is the most promising strategy to reduce insecticides.

Keywords: *Thrips tabaci, Allium porrum*, control strategies

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