

# MASTER THESIS

for obtaining the academic degree

Master of Science

With the title:

## **ECOLOGISATION OF THE APPLE PRODUCTION IN LEBANON**

### **Explorative study**

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View on apple orchards in Akoura, Lebanon (private picture)

Department: Faculty of Landscape Management and Nature Conservation

Study program: Organic- Agricultural management

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## ABSTRACT

As this study got conducted while the United Arab Emirates banned Lebanese apples due to exceeding pest residue levels, the focus of the research is on the status quo of Lebanese pest management on apple orchards in the region Mount Lebanon. The evaluation is based on a literature review, 14 expert interviews with various stakeholders of the Lebanese apple sector to elaborate on relevant pests, control methods, the consulting structure and the governmental monitoring on pest management in Lebanon. Furthermore, six orchards in three villages in the region Mount Lebanon are observed to elaborate on the circumstances of Lebanese apple production. 16 pen and paper questionnaires were handed out to apple growers who attended the training session in Mresti about pest and disease management to include the perspective of small-scale apple farmers. Results show that due to climate change currently *Ceratitis Capitata* threatens Lebanese apple production. “*The Mediterranean fruit fly (Ceratitis Capitata), or medfly, is one of the world’s most destructive agricultural pests.*” (OXITEC, 2016, p.1) in both conventional and organic farming. Experts estimate a harvest loss of 50 % on the variety Golden Delicious in 2017 caused by the Mediterranean fruit fly (INT.I). Because it is a new relevant pest on apple orchards in the region Mount Lebanon, apple growers have little experience on its control (INT. IX). According to the literature review it is recommended that farmers cooperate and start an area wide control program, because *Ceratitis Capitata* is able to fly up to 20 km a day and attack neighbouring fields or even further by wind (AGES, 2017).

Furthermore, improved standards on transparency and MRL monitoring are needed to secure sales markets and therefor the livelihood of Lebanese apple growers.

Keywords: *Apple growing Lebanon; Ceratitis Capitata; exceeding pest residue levels*