CLASSICAL BIOLOGICAL CONTROL OF JAPANESE BEETLE

Locations	Switzerland
Dates	01/05/2021 - 31/12/2024

Summary

The Japanese beetle (*Popillia japonica*) is a pest that feeds on hundreds of fruit tree species, causing considerable damage. In the USA, costs to control the pest exceed $450 million per year. Global regions that climatically support the invasion of the Japanese beetle include central Europe where it is considered a high priority pest. This project is aiming to tackle the spread of the Japanese beetle by exploring the use of the parasitic fly, *Istocheta aldrichi,* as a classical biological control agent in Switzerland, where it arrived in 2017.

The problem

The Japanese beetle is native to Japan and Russian Far East and was accidentally introduced to North America in the 20th century. It has since caused considerable damage to crops including grape, plum, cherry, blackberry and raspberry.

First recorded in Europe in the Azores in the 1970s, it succeeded in establishing itself despite the immediate measures taken to eradicate it. In 2014, this invasive specie was found in Parco del Ticino, near Milan, Italy.

It then spread towards Switzerland and in 2017 was caught for the first time in precautionary traps set up in Stabio, Ticino on the Swiss border. It is feared that the beetle will also spread to central Europe due to a suitable climatic environment.

Accordingly, the European Food Safety Authority (EFSA) and the Joint Research Centre of the European Commission have declared the Japanese beetle as a high priority pest in the EU in the new EU Plant Health Law.

This destructive pest feeds on the foliage of plants, and the damage can go as far as complete defoliation. It is also a nuisance to vineyards, parks, lawns, golf courses, landscapes, nurseries and farms.

What we are doing

Using a biological control approach, this project aims to introduce specific natural enemies from the pest's native area – to manage and reduce the risk of the Japanese beetle decimating fruit crops.

In particular, this project will assess the host specificity of *I. aldrichi,* a parasitoid of the adult beetle which has been introduced into North America, and its potential non-target effects in Switzerland.

I. aldrichi, also native to Japan, lays its eggs on the pronotum – mostly on the adult female – causing on average 30% to nearly 100% parasitism.

The project will also evaluate the climate suitability of Switzerland for the establishment of the parasitoids and the host-parasitoid synchronization in the field.

Results so far

Research is underway.

CABI's initial investigations have attracted the attention of the **Swiss Radio and Television** (SRF) who filmed a news item highlighting how his work in Switzerland could pave the way for a *I. aldrichi* to be approved as a classical biological control agent for the Japanese beetle.

Donors

Swiss Federal Office for Agriculture (FOAG)

CABI Project Manager

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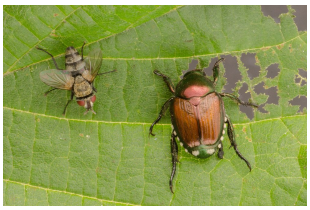

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