



Attract and Kill Strategy against *Drosophila suzukii*



Farmer's name

Orchard Farm Sailer



Contact

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Name of the farm

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Country

Austria



Description of the farm context

it is an orchard farm with a size of around 6 hectare. They produce apple, stonefruit and elderberry for the market.

Climatic conditions are continental with influence of the mediterranean sea (there is a weather station directly on the farm).

Partner Organization



AdvisoryNetPEST

The **AdvisoryNetPEST** project aims to create a **network** and **upgrade advisory services** across the EU to increase the sharing of knowledge and the **adoption of innovative solutions to reduce the use and risks of pesticides** (RURP) in all **EU Member States**, enabling the agricultural sector to achieve the targets proposed by the Farm to Fork Strategy.



[AdvisoryNetPEST](#)



www.advisorynetpest.eu

The practices identified in this project are called 'Novel Approaches' and abbreviated as 'NA'

THE TECHNIQUE

Short Description:

The feeding bait attracts the target insect and stimulates active feeding. Combined to a reduced insecticide dose, mortality of the target insect can be similar to a full dose insecticide application

Crop Sector:

Orchard and soft fruits

Targeted pest and diseases:

Drosophila suzukii

Objective of the NA:

The targeted insect is attracted by the bait. Combined to insecticides, this technic enables to have similar mortality results with a reduced dosis. Furthermore, this technic enables to reduce non target effects on other insects as only specific insects are attracted.

Level of practice adoption across the country:

1 2 3 4



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Expectations regarding RURP

This method enables to maintain similar efficiency of pest control, using reduced insecticide dosis. Furthermore, the bait attracts only the specific pest, reducing non target effects.

*RURP : Reduction of Use and Risks of Pesticides



Key success factors

Advice and recommendations needed for the first implementation (storage conditions of the product, how to mix in tank, big droplet applications etc...)



Methods/strategy of application in the farm

The farmer is still facing that challenge. Elderberry production is harmed by the occurrence of the spottet wing drosophila „Drosophila suzukii“. That insect has a very broad host spectrum and elderberry is quiet late in the season, so there is already a high population of the pest insect in the field. With the regulated number of applications it is often not possible to protect the crop for the whole harvesting period.



Figure 1: Size of a male *Drosophila suzukii* (compared to a 1Euro coin).



Improvements of the NA

No great modifications needed, adaptations of nozzles and spraying technic (dependend on the crop zone of fruits)

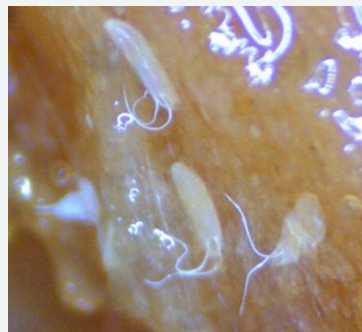


Figure 2: typical eggs of *D. suzukii*, laid on fruit skin with respiratory filaments



Resources and skills needed to adopt the NA

No specific resources needed: bait (product available on the market), nozzles for the sprayer. in general the implementation should be easy and practical, so only a bait is added to the common application.



Figure 3: optimal droplet deposit of the bait plus insecticide on leaves



Advice from the Advisor

Advisor will support the approach when sustainable (lower insecticide amount) and efficiency is proofed on a broader base, more field trials and replicates needed.



Farmers Testimony

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Policies and Regulatory Support

This NA currently has no legal legitimacy in Austria and other EU countries. The reduction of a specified amount of an active substance to a designated area, deviating from the recorded indication, is not legally possible. Yet, in some countries a legal interpretation of the instructions for use is possible. A cross-analyses of interpretations and communication with industrial suppliers of chemicals could strengthen the role of the government.



Social and Cultural Acceptance

Due to the limited legal framework, this point was not discussed.



BENEFITS

Main benefit is the use of a reduced dose of insecticides when combined with a feeding bait



BOUNDARIES

The method can perform well in some cases but fail in others, depending on factors such as pest population levels and climatic conditions. Therefore, it may serve as a complementary element within an overall strategy, but it is less reliable than conventional insecticides. Regarding potential negative impacts, one study assessed effects on honeybees and found no observable harm. However, there remains a possibility that the bait could also attract other insect species.

To go further on NA replication:

Countries where the bait is regularly available can implement and test that strategy.

Systemic Feasibility Analysis: Expert insights from Literature and Field Data

CRITERIUM	INDICATOR	INDICATOR SCORE			EVALUATION
Pesticide use reduction level	Reduction of the applied volume of pesticides	high reduction (>25%) moderate reduction (10-25%) low reduction (<10%) no reduction			😊
Effectiveness of controlling the target pest/diseases/weed	Percentage reduction of the target pest/weed infestation or of the damage caused by the target disease	high reduction (>60%) moderate reduction (30-60%) low reduction (<30%) no reduction			😊
Biodiversity	Impact on bees	--/-/0/+/ ++			😊
	Impact on earthworms	--/-/0/+/ ++			😊
Air quality	Impact on pesticide emissions	--/-/0/ + /++			😊
Working conditions	Knowledge requirements	high training level moderate training level low training level no training			😊
	Impact on working-time	+ 15%			😐
	Impact on human health	high risk moderate risk low risk no risk			😊
	Risk mitigation on operator/employee exposure	high mitigation moderate mitigation low mitigation no mitigation			😊
Costs	Required level of investment	> EUR 100.000 EUR 50.000 - 100.000 EUR 10.000 - 50.000 < EUR 10.000			😊
	Impact on various types of variable costs: fuel, energy, labour, water, consumables...	labour +	equipment +	consumables +	😐
Outputs	Impact on yields (produced volumes)	--/-/ 0 /+/++			😊

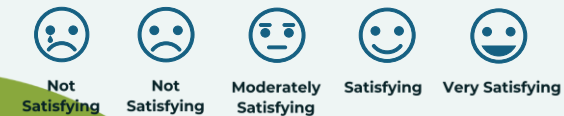
Impact Highlights

In comparison to the common practice of repeated full-dose insecticide applications against *Drosophila suzukii*, the novel “Attract and Kill” strategy employs a feeding bait combined with a reduced insecticide dose, achieving comparable mortality while substantially lowering pesticide usage.

This approach maintains crop yield, enhances biodiversity, and provides notable benefits for bees, earthworms, and human health. It is straightforward to implement and requires minimal training; however, it is more labour-intensive, entails variable additional costs, and involves a relatively high initial investment.

Further limitations include bait degradation or wash off and the requirement for precise pest monitoring. A significant adoption barrier is the absence of regulatory provisions for authorising reduced-dose insecticide applications with bait.

Evaluation:



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