



Early warning system against mildew and greymold control



Farmer's name

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Name of the farm

Stensgård Jordbær



Country

Denmark



Description of the farm context

The Novel approach (NA) was used on several some farms among those Stensgård Jordbær who were one of those that used it with succes. Stensgård Jordbær are a midsize danish strawberry grower producing conventional strawberries for pick your own and local sale in supermarkets throughout the most norther region of Denmark. They did use the warning system in 2025 to reduce the number of sprays done to control Botrytis infection.

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](https://www.linkedin.com/company/advisorynetpest/)



www.advisorynetpest.eu

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

THE TECHNIQUE

Short Description:

An early warning system has been developed on mildew and greymold diseases to avoid regular scheduled sprays on open field strawberries.

Crop Sector:

Strawberry

Targeted pest and diseases:

Botrytis cinerea/grey mould and to lesser degree mildew.

Objective of the NA:

Traditionally fungi diseases on leaves and fruits have been avoided by regular scheduled sprays in open field strawberry production. An approach that have lead to a lot of fungicide resistance and many residues in strawberries. With trustworthy warning systems a lot of the sprays can be avoided as shown in trials done by Nibio in Norway. The job now is to introduce and make the growers accustomed to use and trust the warning systems. It can be done by demonstrating it and let growers in general have the possibility to get warnings and do their own experiences.

Level of practice adoption across the country:

1 2 3 4





Expectations regarding RURP

*RURP : Reduction of Use and Risks of Pesticides

Open field strawberry production traditionally relies on regular scheduled sprays to control fungi diseases. This system could help avoid unnecessary treatments once the system is adopted and trusted by farmers.



Methods/strategy of application in the farm

Traditionally the fungicide treatments was planned regular treatments. With the new approach using the american strawberry advisory system(SAS) the sprays can now be done only when there's a need for them. SAS uses a combination of climate station data and weather forecasts to predict the need for spraying up to 3 days ahead.



Key success factors

The key succes factors

- climate stations close enough to the farms
- Good weather weather forecasts
- A trustworthy warning system
- Well educated farmers that understands the limitations of a warning system

It appears that SAS are working sufficiently good enough since the feed back has been good from Stensgård Jordbær and others. It is also well tested in scientific tests.



Improvements of the NA

By giving a up to 72 hour warning of risk of infection the farmer can plan a protective spray instead of spraying at a certain interval which sometimes might be done right after na infection which is not as effective. But using this NA Stensgård Jordbær have approx. Halved their use of fungicide sprays during flowering reducing the risk of fungicide residues in the product and pot. Harm to the enviroment.



Resources and skills needed to adopt the NA

The NA is fairly easy to adopt. A farmer needs a climate station close to the farm and a reliable weather forecast system. It is na advantage, if the farmer also have a good understanding of the infection because he/she might need to overrule the warnings sometimes. Either do na extra spray or not do one even though the SAS advices it.



Figure 1: Botrytis c. is a harmful fungi in strawberry

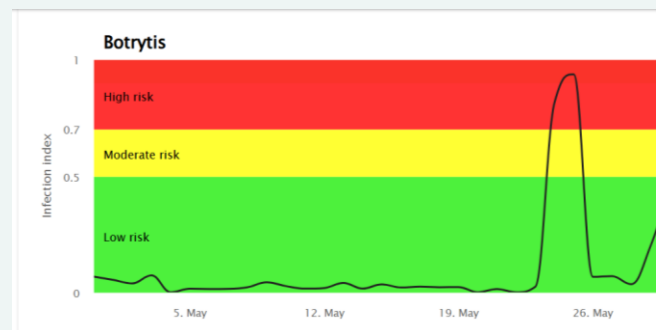


Figure 2: The SAS generated curve for may 25 in central Jutland



Advice from the Advisor

SAS can be used under conditions resembling danish weather with trust. It gives one a good impression of how strong the infection risk are at any time. Especially in periods with a little humid weather, it helps the farmer to trust that the risk of infection are low.

There are also a european version that can be used. FruitWeb.



Farmers Testimony

The farmer Mikkel Simonsen says that they are using and trusting the SAS which have helped them to reduce the use of fungicides considerably.



Policies and Regulatory Support

There are no direct governmental support for making more people use the SAS or other systems.

But SAS supports the general policies about reducing the use of pesticides.



Social and Cultural Acceptance

The customers of danish strawberries does not know a lot about how they are grown but from time to time there are discussions about the pesticide residues which means any NA that contribute to a reduction of the amounts of residues is a help. Therefore this NA is a good help when reducing the use of fungicides.



BENEFITS

The benefits of the NA are big. Saving the farmer for work and expenses to buy fungicides.

Reducing the risk for farmers and workers to get contaminated with fungicides while working.

Reducing the amount of fungicide residues in the berries, saving consumer for getting fungicides in their food.

Saving the environment for leaching or drifting fungicides when the use are halved.



BOUNDARIES

The focus has been on Botrytis. The mildew warning are still not working perfect and there are other diseases like black spot.

Those must be taken into account too. If not, one might experience higher losses to those fungus than before introducing the SAS.

To go further on NA replication:

The NA can be replicated at least where the growing method is relativly similar to danish open field strawberry growing.

In countries like UK and BENELUX countries with tunnel/glass house growing conditions are different and the use of SAS less likely to give benefits. In contrary a well functioning mildew model could be good.

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 arthropods other than bees	-- / - / 0 / + / ++	😊
	Impact on non-target soil micro-organisms	-- / - / 0 / + / ++	😊
Air quality	Impact on pesticide emissions	-- / - / 0 / + / ++	😊
Energy use	Impact on total energy consumption	-- / - / 0 / + / ++	😊
Working conditions	Knowledge requirements	high training level moderate training level low training level no training	😐
	Impact on working-time	- 3%	😊
	Impact on human health	high risk moderate risk low risk none	😊
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...	- 20% Fungicides	😊
Outputs	Impact on yields (produced volumes)	+ 5%	😊
	Impact on crop quality	-- / - / 0 / + / ++	😊
Profitability	Payback period	1 year	😊

Impact Highlights

The systemic feasibility analysis clearly highlights the novel approach's strengths in managing grey mold and mildew in open-field strawberries. By using early warning systems, it enables highly effective and consistent disease control while substantially reducing fungicide use.

This targeted spraying strategy lowers environmental emissions and preserves biodiversity, showing no adverse impact on beneficial organisms. Yields and crop quality may even slightly improve, though with some variability. Moderate training is required, and adoption depends on growers' trust in the warnings.

The system scores very positively overall.

Evaluation:

