Beyond *Xylella*, Integrated Management Strategies for Mitigating *Xylella fastidiosa* impact in Europe

Practice abstract 11

Use of sentinel plots for early detection of *Xylella fastidiosa* across contrasting climates and cropping systems



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Xylella fastidiosa (Xf) is difficult to detect at early stages because infected plants may remain asymptomatic or show non-specific symptoms. To improve preparedness, in areas at risk of introduction or spread, the BeXyl project has established a network of sentinel plots as an early-warning system under field conditions.

Sentinel plots consits of known host plants placed in strategic locations where the risk of pathogen introduction or spread is high (areas close to known outbreaks, zones with favourable climatic conditions, or sites along possible pathways of spread). They should be monitored regularly with molecular tests, and maintained over several years to capture slow or low-level infection dynamics.

How did BeXyl make a difference?

BeXyl has established 12 sentinel plots in 8 countries across Europe and the Americas under contrasting climatic conditions. Using a common set of host plants (olive, almond, sweet orange, and Spanish broom and others of local relevance), standardised protocols for symptom assessment, plant sampling, molecular testing, and, insect vector monitoring, the network enables comparable surveillance across sites and helps identify conditions favouring natural transmission of ***Xf***.

Main outcomes

In Mallorca infections were detected in fig, ash, and Spanish broom. In Costa Rica, positive plants included sweet orange, oleander, and several other co-occurring species, confirming active pathogen circulation. Results also showed that symptoms observation alone is not reliable, because some infected plants were asymptomatic.

Impact: Sentinel plots can support early detection of *Xf* in high-risk areas and complement official plant health surveys. BeXyl approach will help to improve preparedness, support targeted surveillance, and provide comparable information on infection risk, host exposure, and transmission under different environmental conditions. These sentinel plots should be maintained beyond the end of the project.

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