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European wineries explore UV light technology to boost vine health and reduce pesticide use

UV light trials for healthier vines

Tuesday, December 19, 2023



In a significant development in sustainable viticulture, Familia Torres and Jean Leon, two prominent wineries in the Penedès region (Spain), have unveiled preliminary results from their field trials using ultraviolet light flashes. These trials are part of the LIFEISLIGHT project, a European initiative aimed at using UV-C light to enhance plant

defenses against fungal diseases in vineyards, thereby reducing the reliance on pesticides and their environmental impact.

The project, funded by the European Commission's LIFE program, involves collaboration between the wineries, UVBoosting, and universities of Toulouse and Bordeaux. The presentation event, held at Jean Leon on December 14, featured key speakers such as Joan Reyes from the DACC (Departament d'Acció Climàtica, Alimentació i Agenda Rural de la Generalitat de Catalunya) in Barcelona, François Sement from UVBoosting, Mireia Torres, Director of Jean Leon and Innovation and Knowledge at Familia Torres, and Montse Torres, Head of Viticulture in the Innovation Department at Familia Torres.

Joan Reyes highlighted the European Commission's Farm to Fork strategy, which aims to cut pesticide use in vineyards by 50% by 2030. Following this, François Sement explained the mechanism of ultraviolet technology. According to UVBoosting, exposure to UV light temporarily activates the plants' natural defenses, making them more resilient. This technology is harmless to wildlife, flora, or the wine itself and can counteract several vineyard performance issues like cryptogamic diseases (mildew, powdery mildew), spring frosts, or water stress.

Familia Torres and Jean Leon have been conducting field trials for two seasons to demonstrate the effectiveness of this technology as a plant defense stimulator and a potential substitute for fungicides. The trials also investigated whether UV light stimulation could mitigate the effects of drought. The 2023 trials involved treatments in three different Jean Leon plots to assess the impact of UV flashes on each plot's performance.

Montse Torres reported that the results are not yet conclusive. In 2023, there were no significant powdery mildew issues, and severe drought led to a notable reduction in yield. However, it was observed that younger vineyards, less affected by drought, seemed to respond positively to UV light treatment. In the young vine plot treated with UV light, yields were higher than in other plots without such treatment.

Looking ahead, Familia Torres and Jean Leon plan to conduct more trials next year, focusing on the impact of UV light flashes on insects and grape microorganisms as part of the LIFEISLIGHT project. This innovative approach holds promise for sustainable

viticulture, potentially leading to reduced pesticide use and enhanced vine health.