

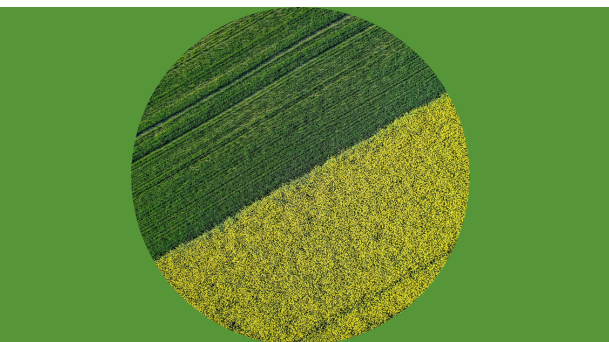


»»» NEWSLETTER «««

NEWSLETTER #1

SafeWax Mission, Aims and Partners

May 2023
Edition #1



»»» THE PROBLEM

Agriculture is vital for our survival and stands as the world's largest industry. One of the primary challenges confronting the agricultural sector is the significant extent of crop losses attributed to plant diseases, pest infestations, and extreme weather conditions. These factors result in pronounced declines in yields, posing a threat to global food security.

CURRENT STATE OF THE ART «««

Commercial agriculture depends mainly on chemical fungicides to protect crop yields plants against phytopathogenic fungi. However, their overuse and misuse over the past decades have led to severe toxic effects on all living systems (animals and humans) and the environment and the emergence of resistant fungal strains, which in turn makes these fungicides inefficient.



SAFEWAX MISSION

>>> THE TECHNOLOGY

SafeWax is an innovative wax coating derived from organic food waste, inspired by the protective and self-cleaning properties found on the leaves of certain plants. By applying SafeWax to crops, they acquire the ability to naturally repel harmful pathogens, eliminating the need for traditional pesticides. It serves as a physical barrier, preventing pathogens from penetrating plants and causing diseases. Additionally, it acts as a filter for harmful UV radiation, leading to increased crop yield and enhanced plant health.



GENERIC TECHNOLOGY FOR SUSTAINABLE CROP PROTECTION

>>> LONG-TERM VISION

In Europe, the leading global wine-growing region, despite grapevines covering just 5% of the agricultural area, they consume over 70% of fungicides. SafeWax concepts will initially be demonstrated on grapevine, as a relevant model crop of high importance to Europe's economy, environment and culture, which is highly susceptible to fungal diseases and is the most-frequently treated crop. SafeWax will then be expanded to other sensitive commodity crops.





SAFEWAX PARTNERS

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The SafeWax team, consisting of top academic and industrial experts from across Europe, is dedicated to addressing challenges in agriculture.



TECHNION

Technion, a Israel's primary technological university and the country's largest hub of basic and applied research, will coordinate the SafeWax project. Prof. Boaz Pokroy, serving as the Principal Investigator (PI) and project manager, heads the "Bio-inspired Surface Engineering and Biomineralization Lab" and will spearhead the development of the SafeWax technology. Prof. Ester Segal, acting as a co-PI and co-project manager, leads a multidisciplinary biotechnology team focusing on studying the biointerface between nanostructured materials and bacteria and will take charge of characterizing the antimicrobial properties of SafeWax.

UNIBO

The Department of Chemistry at UNIBO will empower the project with cutting-edge expertise to characterize the efficacy and safety of the SafeWax treatment on plants against pathogen attachment. Team members Elena Baraldi (Assoc. Prof.) and Claudio Ratti (Assoc. Prof.) will bring expertise in plant pathology and pathogen-host interactions. Ilaria Filippetti, an Associate Professor, will focus on studying the photosynthetic activity and transpiration rate of SafeWax-treated plants.

BASF

BASF stands as one of the world's largest chemical companies. In particular, BASF creates chemistry for a sustainable future by combining economic success with environmental protection and social responsibility, among others in crop protection. The research related to the characterization of SafeWax coatings and their application to plants will be led by Dr. Matthias Kellermeier, Head of the Expert Area "Surfaces&Interfaces" at BASF's Department of Materials Science.

EUROFINS

Eurofins Agroscience Services is a fully integrated Contract Research Organization offering bespoke one-stop solutions (laboratory, semi-field and field testing and regulatory services) to the agricultural industrial sector. Eurofins will ensure that the regulatory pathways are considered by design.

IFV

The French Wine and Vine Institute is dedicated to advancing research and innovation in the wine industry. With deep expertise in vine physiology and disease management, IFV offers valuable experimental resources and close connections to the European wine industry.



"The overarching goal of the SafeWax project is to facilitate affordable, safe, and nutritious food production for millions of people."

Prof. Boaz Pokroy

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