

# Polymer fibres as a prophylactic closure for vines

Melanie Molnar and Michael Fischer

Julius Kühn-Institut, Institute for Plant Protection in Fruit Crops and Viticulture, Siebeldingen

Email of corresponding author: melanie.molnar@jki.bund.de

The Esca disease, a complex of approximately three or more fungi, has become one of the main diseases in vineyards during the last decades causing high losses and low quality wines. The origins of those wood living fungi are in the Mediterranean area, but due to international trades with grafted wood Esca can be found now all over the world. The main entrance for the fungi is wounds in the bark. As vines are pruned once a year during the winter season the spores find an easy entrance.

As wound protections with different waxes or resins have not lead to an improvement so far; the aim of this project is to find a wound closure to protect the pruning wounds from fungi spores. Therefore a prophylactic closure shall be tested. The closure shall be applied during the pruning time,

providing a physical barrier for pathogens first and foremost the Esca fungi.

The new closure is made of electrospun fibers making the material not only physically stable but also air- and water-permeable. Those characteristics shall promote the healing process as the wound can dry and rotting processes are prevented. Moreover the polymers have to be biodegradable as no residues shall be found in the produced wines.

In this study different polymers are tested at present in the lab for their tightness against different Esca spores. Furthermore the biodegradability of the material is tested over time in soil. Additionally the handling of the polymers and the application on vines is tested.