

Effect of the hot water treatment used in nurseries on pathogenic fungi inhabiting grapevine wood and involved in GTDs.

Bruez E 1, Larignon P 2, Compant S 3, Rey P 1,4

- 1) Université de Bordeaux, ISVV, UMR1065 Santé et Agroécologie du Vignoble (SAVE), Bordeaux Sciences Agro, F-33140, Villenave d'Ornon, France.
- 2) Institut Français de la vigne et du vin (ENTAV-ITV France), pôle Rhône-Méditerranée, 7 avenue Cazeaux, 30230 Rodilhan, France.
- 3) INRA, ISVV, UMR1065 SAVE, F-33140, Villenave d'Ornon, France.
- 4) AIT Austrian Institute of Technology GmbH, Bioresources Unit, Health & Environment Department, Konrad Lorenz Strasse 24, 3430 Tulln, Austria.

E-mail: emilie.bruez@inra.fr

Hot water treatment (HWT) is used in nurseries to control the pathogenic fungi involved in Grapevine Trunk Diseases (GTDs), as well as other pathogens, such as phytoplasmas. The long-term impact of this treatment on the microflora, especially on the fungal microbiota inhabiting the wood-tissues, still remains unknown.

In this study, the fungal microflora of grapevines, treated or not 14 and 15 years earlier by HWT, were compared. Comparisons were made at different plant part levels.

The fungal microflora was relatively abundant in the different types of wood tissues. Certain fungal genera were isolated and identified on the basis of their ITS-DNA sequencing. Independently of the HWT, significant changes in the fungal microflora were observed in 2010 and 2011, the two years of sampling. Although the HWT may have affected the cuttings microflora at the nursery stage, this had not persisted after several years of HWT treatment for the fungi, especially the pathogenic ones, thereby demonstrating that HWT does not durably control GTDs.

HWT is useful for controlling microbial pathogens in nurseries, but does not have a significant long-term control effect on GTD pathogens in mature plants in the vineyards. Similarly, it has no subsequent impact on fungal communities colonizing the wood tissues of grapevine.