

Characterization of endophytic microflora colonizing wood tissues of healthy and Esca-diseased vines

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Microbial communities colonizing Cabernet-Sauvignon vine plants infected or not by the trunk-wood disease Esca are studied. Both cultivation and molecular techniques were used to investigate the endophytic microflora colonizing the various plant tissues. High fungal, bacterial and yeast diversity of communities that colonize healthy wood tissues of healthy and Escadiseased plants were pointed out. Bark and internal healthy wood tissues communities were different for fungal, bacterial and yeast communities. The asymptomatic wood of healthy and Esca-plants had a similar microflora. Analyses evidenced that there is a seasonal evolution (from winter to autumn) of fungal communities in the woods, but these communities were similar for summer to autumn. For all samples, the cultivation techniques indicated that the same pathogenic-, saprophytic- and antagonistic-fungal species were isolated from healthy wood tissues of grapevine affected or not by Esca. These fungi were the fastest to grow on media-culture in laboratory conditions. As for pathogenic fungi, some species usually associated with grapevine diseases were frequently isolated from healthy wood of stock and trunk, e.g. Botryosphaeriaceae spp. The comparison between young and 15– 25 years old vine plants evidenced that *Trichoderma* spp. colonized more young plants than older ones. The grapevine fungal microflora evolved with seasons. Abiotic or biotic factors have likely some influence on microbial communities' changes in the plant.