

# *Phaeomoniella chlamydospora* and *Phaeoacremonium aleophilum* can spread into grapevine canes from trunks of infected mother vines

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## Introduction

Petri disease is responsible for poor establishment in many newly-planted vineyards and is thought to be caused by *Phaeomoniella chlamydospora* (*Pch*; Figure 1) and/or *Phaeoacremonium aleophilum* (*Pal*; Figure 2). The young vines are infected prior to planting but it is not known how infection occurs. Grapevines are propagated from canes harvested from mother vines (Figure 3) and both of these fungi colonise the xylem parenchyma and vessels of mature grapevine wood.

Do infected mother vines give rise to infected cuttings and, if so, does infection occur via propagules carried in the sap flow or by mycelial growth into the base of the canes?

## Materials and methods

Whole canes, 4-6 m long, were harvested from infected Ramsey rootstock mother vines in order to map the occurrence of *Pch* and *Pal* along the full length of the canes. Twenty canes were harvested: 5 canes from each of 4 mother vines. The canes were processed into cuttings 40-50 cm long, recording the position of the cuttings along the cane length and tagging accordingly. The waste pieces from between the cuttings were surface sterilised, cut into slices 3 mm thick, plated onto PDA and examined after 4 weeks for the presence of *Pch* and *Pal*. The cuttings were callused, potted up and grown on for 2 seasons in a glasshouse to allow any infection courts to become well-established. The stems of the resultant young vines were harvested, surface sterilised by peeling off the bark, dipping in ethanol and flaming, then split open longitudinally. The stem pieces were moist incubated for 6-8 weeks prior to examination for the presence of *Pch* and *Pal*.



Figure 3

Harvesting canes from grapevine rootstock mother vines

## Results and conclusion

Infected mother vines can give rise to infected cuttings. Both *Phaeomoniella chlamydospora* and *Phaeoacremonium aleophilum* were found scattered randomly along the full length of the canes (Figure 4), suggesting that infection occurs via propagules such as spores or fragments of hyphae carried in the sap flow, rather than by mycelial growth from the crown of the infected trunk into the canes.

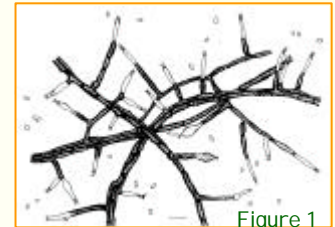


Figure 1

*Phaeomoniella chlamydospora*

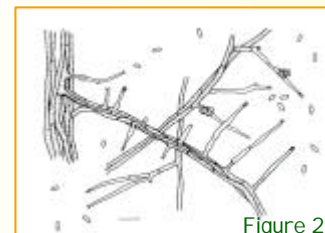


Figure 2

*Phaeoacremonium aleophilum*

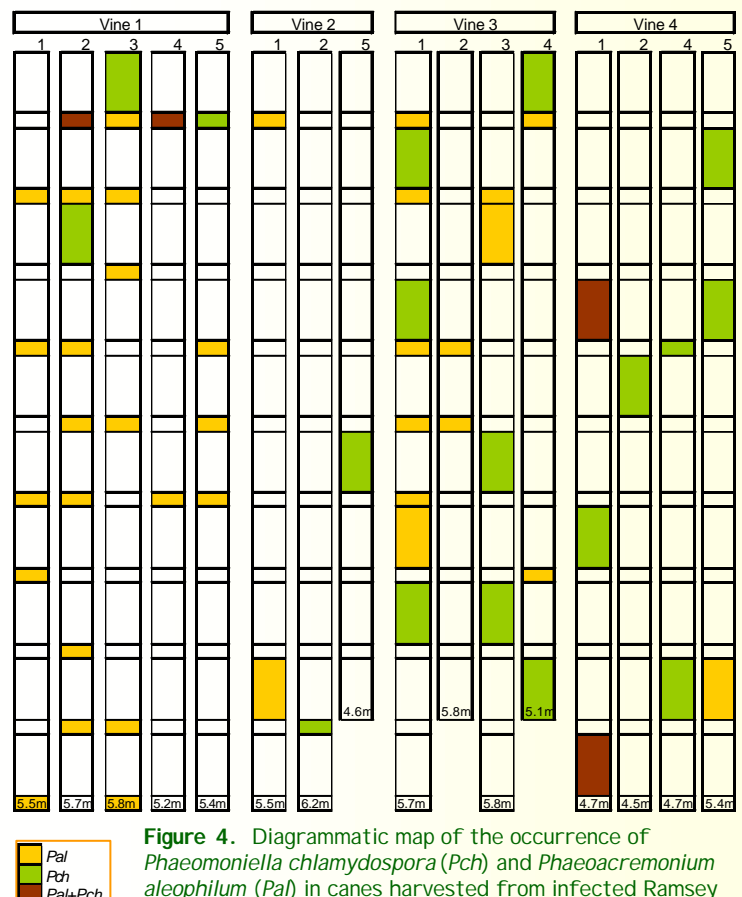


Figure 4. Diagrammatic map of the occurrence of *Phaeomoniella chlamydospora* (*Pch*) and *Phaeoacremonium aleophilum* (*Pal*) in canes harvested from infected Ramsey mother vines