

Distribution and dynamics of *Verticillium dahliae* in olive fields

J.A. Hiemstra, K. Perkins, K. Pham and J. Woodhall

Disease incidence in Verticillium Wilts usually is related to inoculum levels in the soil which can vary considerably, both spatially and with time. Additionally, disease incidence in perennial hosts may vary with the year because in many species, including olive, infected trees may recover, which makes disease essentially an annual event. These aspects of the epidemiology hamper reliable estimation of disease risk in perennial hosts such as olive. In an EU-funded project (www.vertigeen.eu) aimed at developing efficient and reliable methods for disease risk assessment in Verticillium Wilt of olive (VWO) we investigated distribution and dynamics of *V. dahliae* in two Verticillium infected olive fields in Portugal and Spain over a period of two years. Additional samples were collected in fields in Spain, Italy and Greece. Soil samples and wood samples from 10-15 diseased trees per field (5 subsamples per tree) were analysed separately using qPCR. A range of assays, including a general *V. dahliae* assay, an assay for defoliating type strains and one with specificity to VCG1 and 3 isolates were used. Spatial variation and changes with time of soil inoculum levels together with changes in the relative amount of *V. dahliae* in diseased trees in the same period will be presented. Finally consequences for disease risk assessment, recovery of diseased trees and control of VWO will be discussed.