

# #069

## Integrating Control strategies Against soil-borne *Rhizoctonia solani* in OilSeed rape (ICAROS)

ADDRESS

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PLENARY TALKS

Increased oilseed rape (*Brassica napus*, OSR) cropping frequency and incidence of soil-borne diseases have been recently identified as major threats and contributory causes to the current 'yield plateau' in OSR crops. *Rhizoctonia solani*, anastomosis group (AG) 2-1 is strongly associated with the presence of its main host, OSR, and the pathogen is implicated in the yield decline of the crop grown with increased frequency in the rotation. Severe damping off disease caused by AG2-1 has been shown to significantly impact on several root system architecture traits of OSR and crop establishment. The aim of the ICAROS project is to develop new integrative strategies for disease control through work packages designed to i) identify resistance/tolerance traits and novel resistance loci which can be utilised in crop breeding; ii) elucidate disease epidemiology in relation to soil environment and host; iii) quantify yield losses due to damping off diseases caused by *R. solani* and iv) develop methods for control using varietal resistance and seed treatment for improved disease management and yield of OSR. Here we report on the first results from a series of naturally infected and inoculated replicated experiments performed in France, Germany and UK investigating the yield losses and control of *R. solani* AG2-1. Major findings show that *R. solani* AG2-1 reduces OSR establishment and yield of European and UK OSR and there is a strong negative relationship between pathogen biomass quantified in plants and yield loss in field. A major output of the project will be the first integrated guidelines incorporating new findings on the agronomy factors contributing to increased disease risk and the integration of novel seed treatments and varietal resistance for the protection of OSR yield.

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