

Pest and Disease Management System for Supporting Winter Oilseed Rape Decisions (PASSWORD) LK0917

Sponsor: DEFRA

Partners: ADAS; RES; CSL; SAC; HGCA; Du Pont; Pro Cam Group; Novartis; Perry Foundation

Total project cost: £342k

**Contact: Dr Peter Gladders, ADAS Boxworth, Battlegate Rd, Cambridge, CB3 8NN Tel: 01954 268230 Fax: 01954 268268
Email: peter.gladders@adas.co.uk**

Fungicides and insecticides represent a major input on winter oilseed rape. However, many applications are mistimed or unnecessary and contribute to economic and environmental costs. Decision making can be improved by developing forecasting and risk assessment methods for pests and diseases and ensuring that these are made available to the agricultural industry. More accurate targeting of pesticide sprays will help to maintain the profitability and sustainability of winter oilseed rape under the increasingly difficult conditions for UK agriculture (e.g. Agenda 2000), whilst reducing the environmental impact of pesticides.

This project will deliver a prototype Internet-based, integrated pest and disease decision support system (DSS) for winter oilseed rape. The disease DSS will include components for forecasting, at the start of the growing season, risk of severe epidemics of stem canker (*Leptosphaeria maculans*; anamorphic stage, *Phoma lingam*) and light leaf spot (*Pyrenopeziza brassicae*; anamorphic stage, *Cylindrosporium concentricum*) in different regions of the UK. Development of the system will rely on the modelling of existing epidemiological data using empirical and simulation approaches to produce crop-specific disease forecasts. Forecasts for these two diseases will be integrated with an existing DSS for pests (DORIS) to give growers and advisors up-to-date risk assessment information throughout the growing season.

The accessibility of the Internet will allow the system to be updated easily and efficiently and enable model-derived pest and disease risk warnings to be e-mailed to registered parties so that optimal spray windows can be accurately pinpointed. User appraisal will be arranged during development to ensure that the ultimate product is in a form that can be easily used by the agricultural industry, despite the complexity of host-pathogen/pest-environment interactions.

The consortium has a wide base of expertise in relevant areas of agricultural, statistical and computer science and is well qualified to deliver this DSS. The

consortium members have previously collaborated successfully on oilseed rape pest and disease projects.