Project Report No. 433

Abstract

July 2008

Sclerotinia in oilseed rape – a review of the 2007 epidemic in England

by

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This is the final report of an HGCA project that ran for six months from September 2007. The project was sponsored by HGCA for £12,545 (Project No. KT 0708 0017).

ABSTRACT

This review examined factors contributing to the sclerotinia stem rot (caused by *Sclerotinia sclerotiorum*) epidemic in winter oilseed rape in 2007. The epidemic was the most severe yet recorded in England, with 5.7% plants affected in random disease survey samples and the worst since 1991. The local and regional distribution of stem rot was examined in relation to crop and pathogen monitoring and weather variables. Comparisons were made between 2006 (an 'average' year) and 2007 and between ADAS farms at Boxworth, Cambs and Rosemaund, Hereford between 1991 and 2007. Criteria for sclerotinia infection used in the German model SkleroPro were evaluated.

Disease survey and reports from consultants and farmers indicated the most severe stem rot in the south west and parts of the West Midlands. In south and central regions including parts of Essex and Hertfordshire, there were also high levels of stem rot. However, most of Eastern and northern England showed only low levels of stem rot and disease incidence was in some cases lower than in 2006. Petal tests and field observations indicated higher levels of ascospore inoculum in 2007 than in 2006. The dry 2007 spring led some to believe that the risk was low, though dry days are favourable for spore dispersal if apothecia (the fruiting bodies of sclerotinia) are present. A monitoring network indicated that apothecia were present during flowering except at one site on the Yorkshire Wolds.

Stem rot infection took place first in late April in the Hereford area where there was some rainfall, but a second and larger phase of infection took place towards the end of flowering (in mid May) in both the west and the south. Fungicides applied at early flowering (11 April) gave good control (70-80%) when high rates of application were used. The decision not to use fungicides and late applications contributed to the high disease incidence. The SkleroPro model identified days when infection might have occurred during flowering in 2006 and 2007 and during 1991-2007 at Boxworth and Rosemaund. No infection conditions were recorded at Bracknell or Coltishall in 2007. The weather during flowering was compared for six crops with severe stem rot (>25% plants affected) identified at Rosemaund (5 crops) and Boxworth (one crop) during 1991-2007 and all other 'low' disease crops, but no significant differences were identified to explain the differences between high and low disease sites. There were indications that high rainfall had a negative effect on stem rot. At Boxworth, inoculum on petals was known to be low in most years and this limited the severity of sclerotinia epidemics. Variation in stem rot incidence reflects both variation in inoculum and the occurrence of favourable weather for infection.

The SkleroPro model showed considerable promise for identifying 'infection periods' when used retrospectively. To be a practical tool to improve decision making, infection periods need to be predicted as fungicides show little curative activity. The development and use of rapid DNA tests to measure sclerotinia inoculum would be a significant advance to support decision making as it appears that inoculum is a limiting stem rot infection in many crops. With increased crop values, two fungicide treatments may be worthwhile at high risk sites to protect the crop throughout flowering. A Sclerotinia Decision Guide on the HGCA website was updated and made available for the 2008 season.