# *Detection and quantification of Sclerotinia on oilseed rape*

ROTHAMSTED RESEARCH

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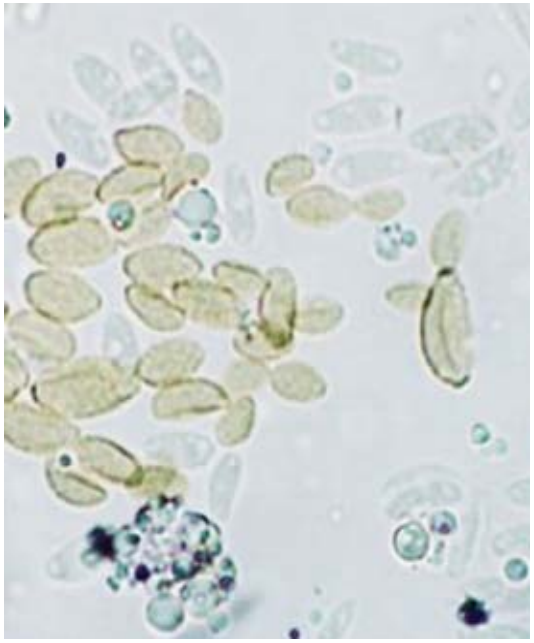


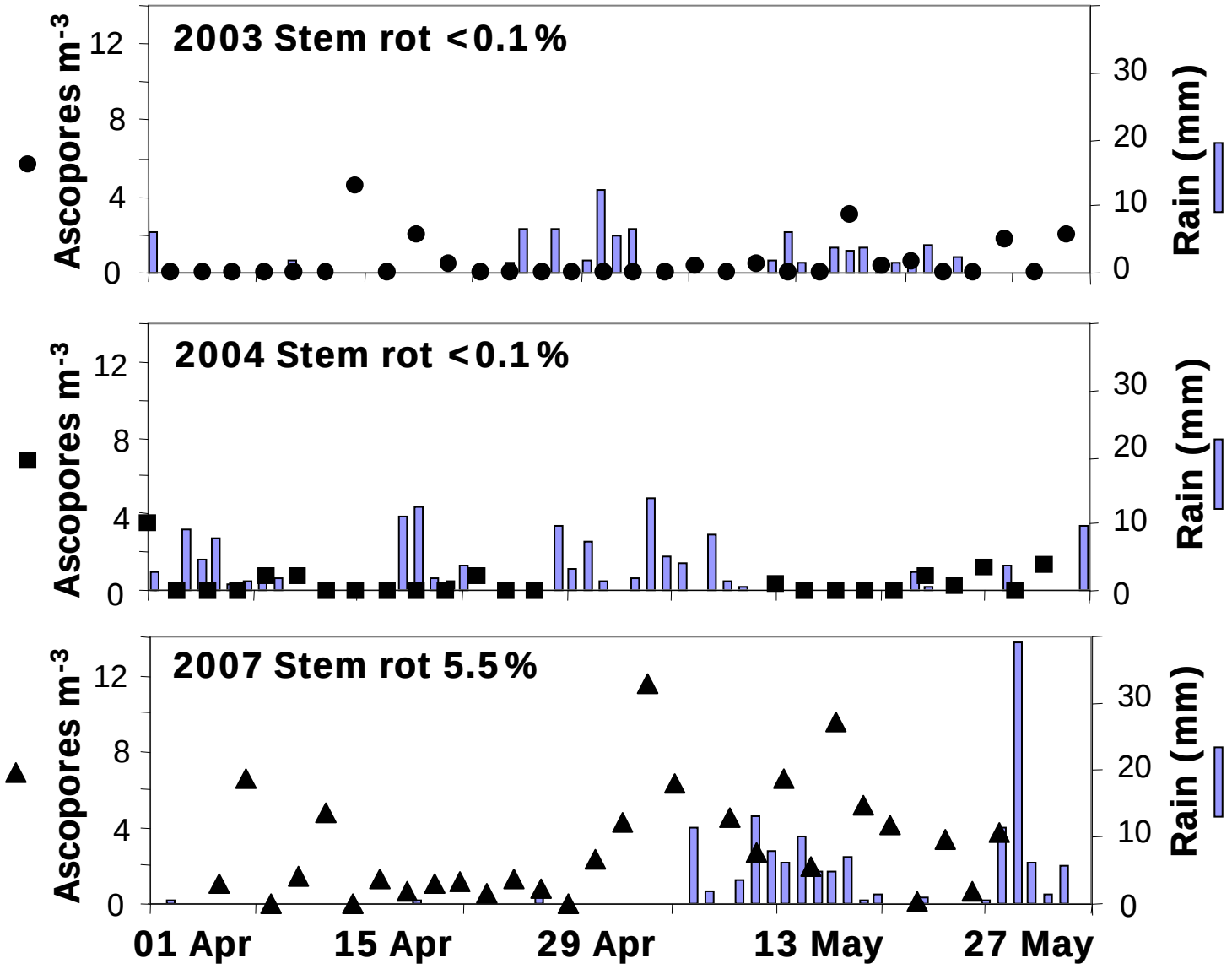
# Diagnostic development

- Current PCR diagnostic (Freeman *et al* 2002) relies on touchdown PCR to differentiate *S. sclerotiorum* from closely related species (eg *Botrytis cinerea*). Not suitable for qPCR
- Microscopic identification time consuming and not accurate
- Diagnostic primers designed around mitochondrial small subunit rRNA
- Optimised for qPCR (Sybr green)
- Detected *S. sclerotiorum* (5 x $10^4$ – 0.05 pg)

# Screening diagnostic method

- Screened against *Brassica napus*, *B. cinerea*, other *Sclerotiorum* species
- No affect on detection when screened in background of *B. cinerea* DNA
- Good correlation between qPCR detection and microscopy counts
- Used to screen spore tapes from Rothamsted from previous years for quantification of *S. sclerotiorum*

Airborne ascospores of *Sclerotinia sclerotiorum*, rainfall and stem rot incidence at Rothamsted in 2003, 2004 and 2007



# Conclusions

- New primer set **quantifies** the amount of *S. sclerotiorum* DNA from environmental samples using qPCR
  - Could be used to detect *Sclerotinia* in soil samples, or to measure growth in plants to assess resistance
- Quantitative, sensitive, accurate method for screening samples for *S. sclerotiorum*
- No signal from *B. cinerea, B. napus* or other *Sclerotinia* species
- Accepted for publication in Plant Pathology