

Ignored fungal pathogen sibling – *Leptosphaeria biglobosa*

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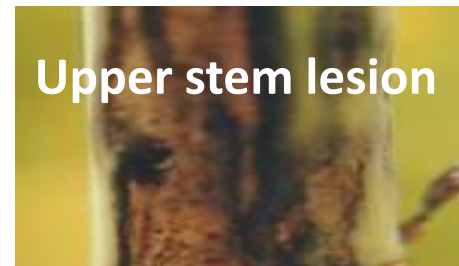


Introduction

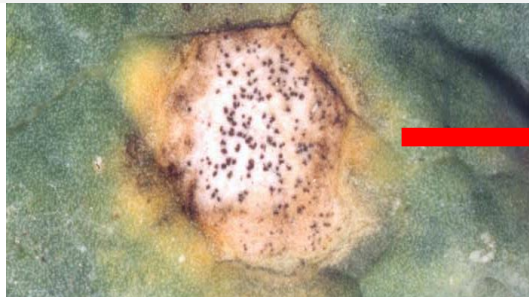


- Phoma stem canker is a major disease on winter oilseed rape in the UK, causing £40-80 M losses annually
- In the UK, the disease is caused by *Leptosphaeria maculans* (*Lm*) and *L. biglobosa* (*Lb*)

Two types of symptoms: phoma leaf spot and phoma stem canker



- *Lm* is considered more damaging than *Lb*
- Previous research mainly focused on *Lm* with little work on *Lb*



Autumn/winter

Summer

Severe upper stem lesions



12 July 2012, Rothamsted, Herts

Question

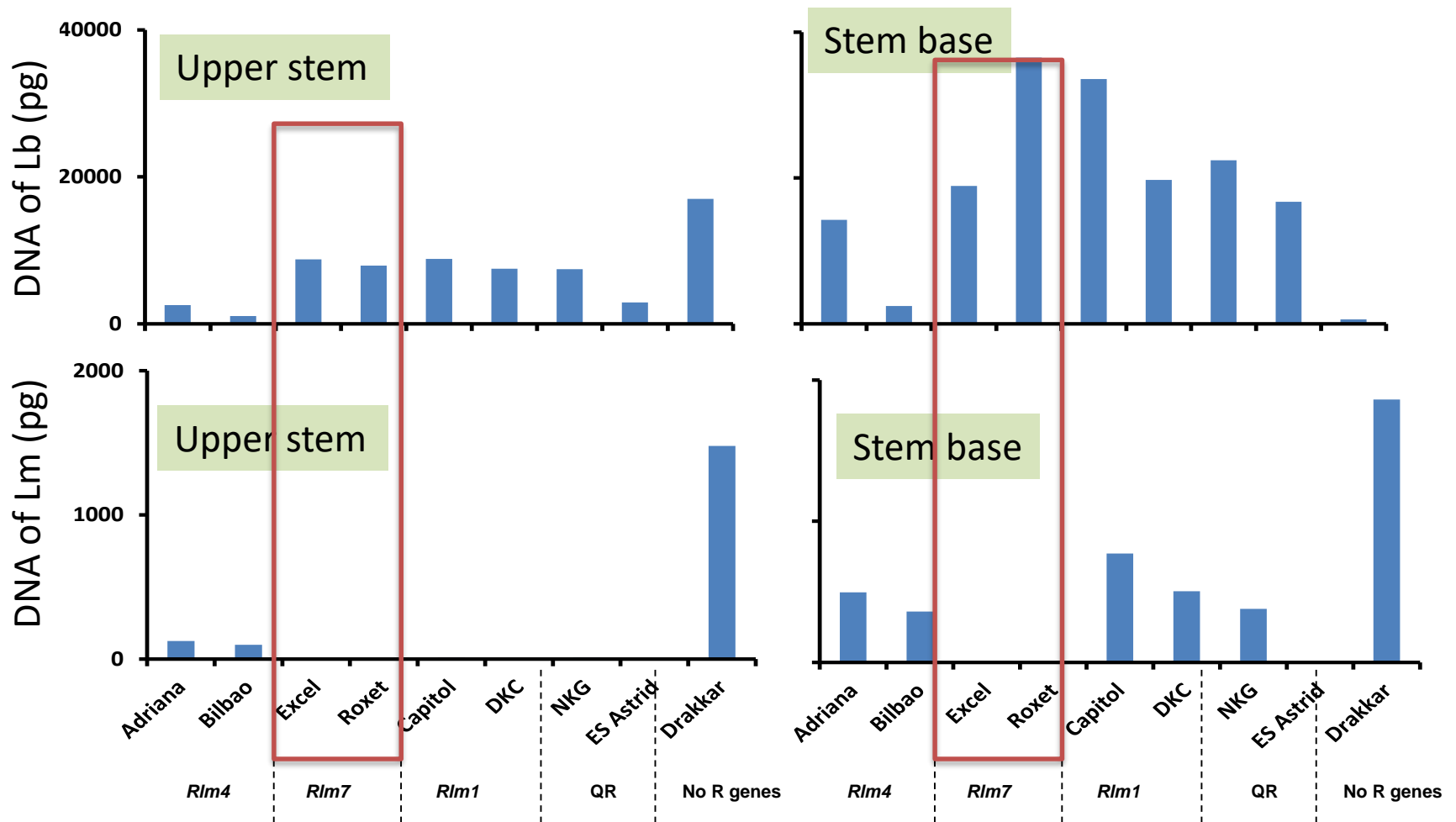
- **Are the upper stem lesions caused by *L. maculans* or *L. biglobosa*?**
- **Can *L. biglobosa* cause severe phoma stem canker epidemics in the UK?**

Lm & *Lb* identification & quantification in stem samples

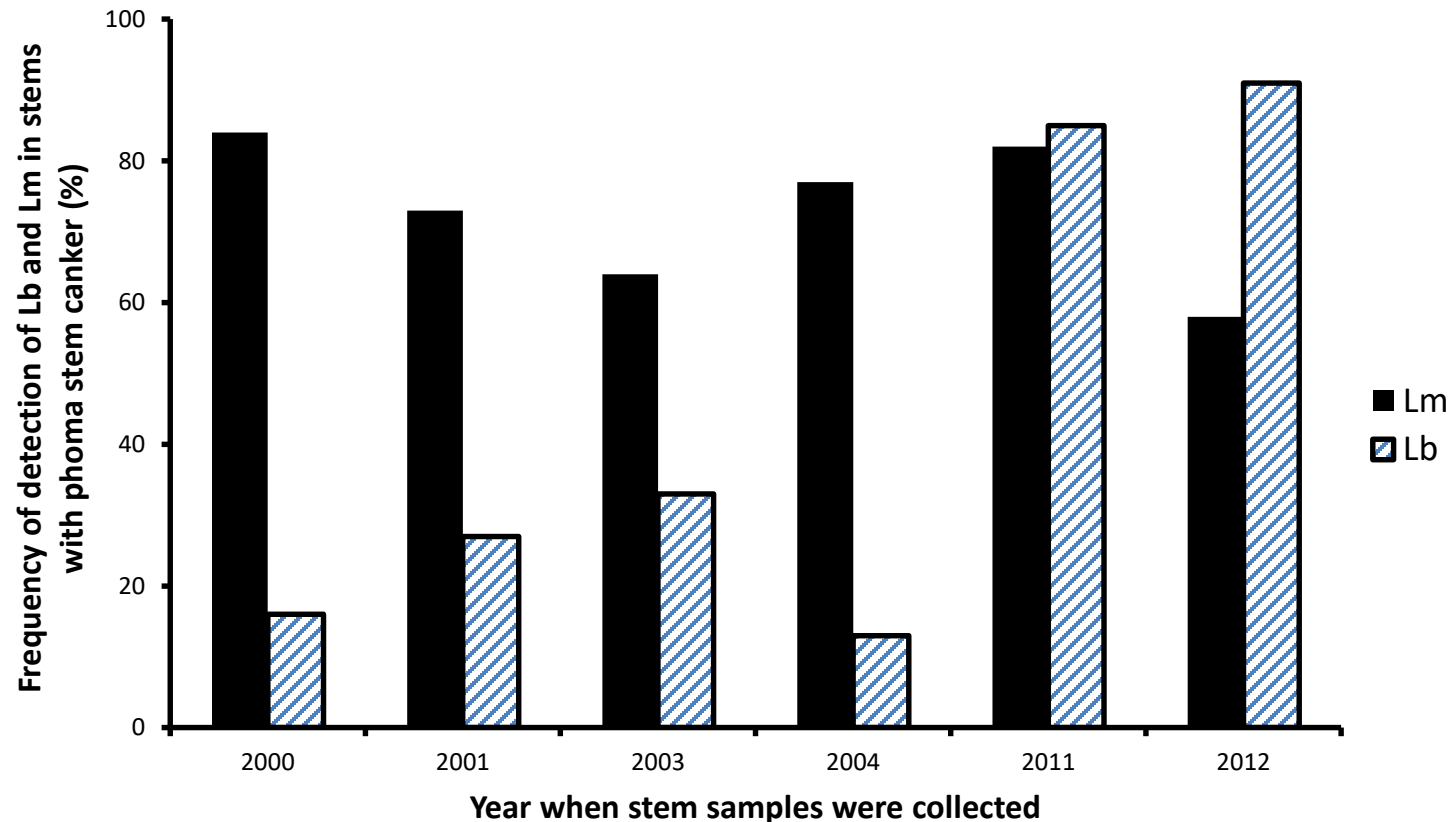


**DNA extraction
& qPCR for *Lm*
and *Lb***

Quantification of *Lm* and *Lb* DNA in stem samples by qPCR



Changes in frequency of *Lm* and *Lb* in the UK



L. biglobosa and *L. maculans* in stem base samples detected by isolation (2000 - 2001) (West et al., 2002) or PCR (2003-2012) (Huang et al., 2011).

Take home message

- Currently, control strategies focus only on *Lm*, do not account for *Lb*
- Cultivar resistance targets only *Lm*, no information on resistance to *Lb*
- Cultivar resistance to *Lm* was susceptible to *Lb*
- In the UK, the frequency of *Lb* detected increased compared with 12 years ago
- There is a risk of severe stem canker epidemics caused by *Lb*
- Effective control of stem canker needs to target both *Lm* and *Lb*

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