

Blackleg in Stubble Retained Systems

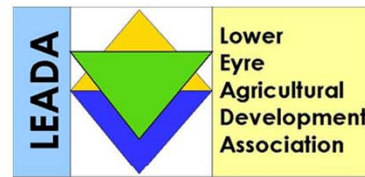
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On behalf of National Canola Pathology Project - UM51

PREMIUM
FOOD AND WINE FROM OUR
CLEAN
ENVIRONMENT



Stubble total spore release per hectare per rainfall event



1 year old - 69 450 000

2 year old - 1 931 998

3 year old - 363 285

4 year old - 84 750



Majority of spores released by one-year old stubble

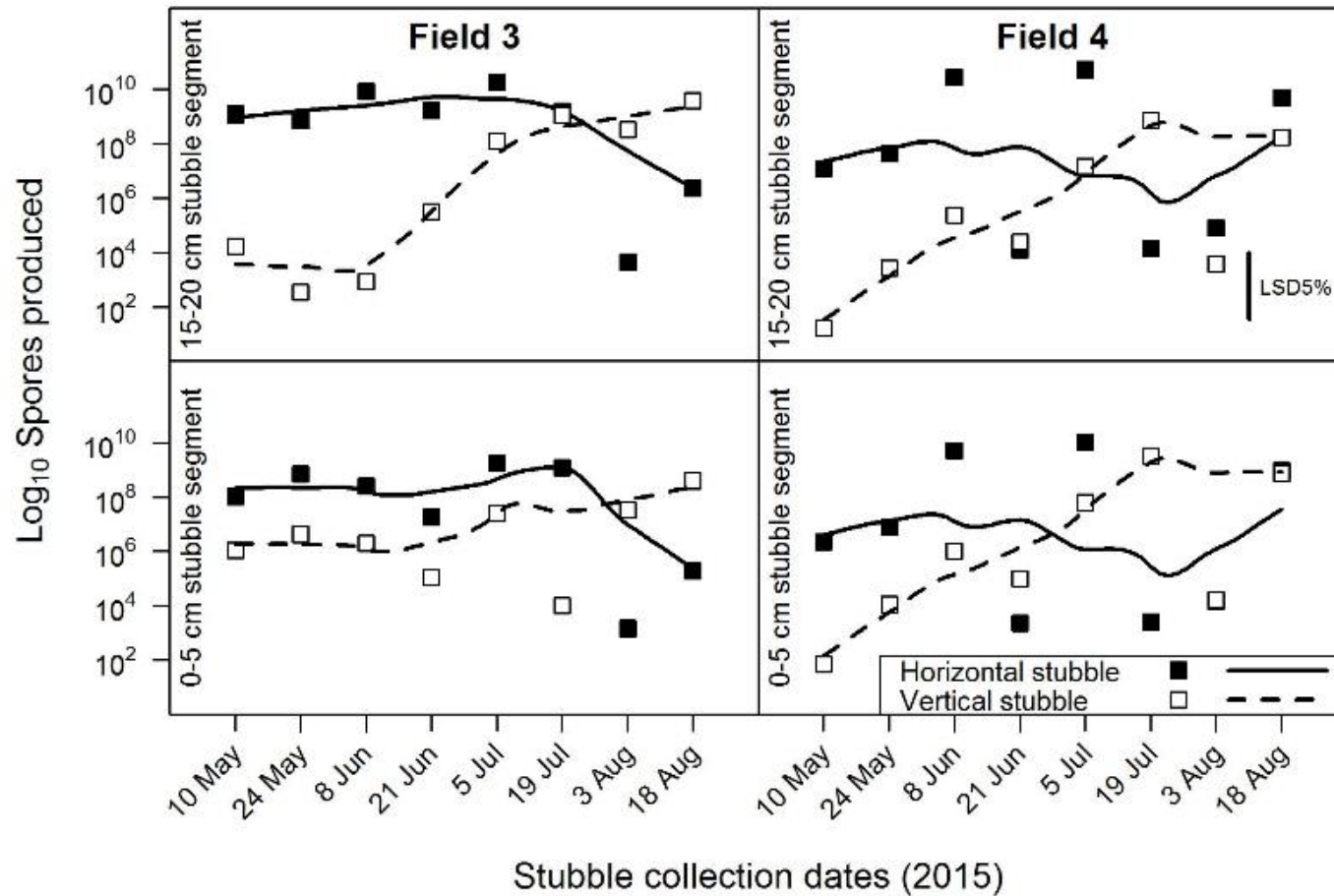


Current stubble conservation strategies (controlled traffic)





Spore release patterns changed under new conservation practices



What impact do these changes have on management decisions and disease epidemiology?

- Canola grown in a 1 in 2 year rotation
 - Are there more spores being released in the second year from vertical stubble?
- Is the delayed spore release impacting on disease symptoms?
 - Upper canopy infection



McCredden J., Cowley R. B., Marcroft S. J., Van de Wouw A. P. (2017) Changes in farming practices impact on spore release patterns of the blackleg pathogen, *Leptosphaeria maculans*. Crop and Pasture Science.

Abstract

Blackleg disease is caused by the stubble-borne pathogen *Leptosphaeria maculans* and results in significant yield losses in canola (*Brassica napus*) worldwide. Control of this disease includes breeding for resistance, fungicides and cultural practices including stubble management. In recent years, cropping systems have changed with the introduction of no-till farming and inter-row sowing, and it is unknown what impact these changes have had on stubble retention. The aim of this study is to investigate the impact of inter-row sowing on stubble retention and spore release. The use of inter-row sowing resulted in 25–48% of stubble remaining standing (vertical) in fields after 1 year. Furthermore, spore release was significantly ($P < 0.05$) delayed in stubble that remained vertical in the field compared with stubble lying down, with total spore release from vertical stubble 66% less than from horizontal stubble. The impact these changes have on the epidemiology of blackleg disease remains unknown.