# Canola pathology for 2022

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GOVERNMENT OF WESTERN AUSTRALIA
Department of Primary Industries and Regional Development

# What did we see?

- Early sowing opportunity – less stem canker generally
- Sclerotinia apothecia present across the wheatbelt
- Sclerotinia found in canola, lupins, chickpeas, lentils
- Blackleg upper canopy infection – variable


Wet and humid conditions required for the disease progression
Initiation of infection
Severe stem rot
SPRING
Sclerotia form inside infected stem
Sclerotia survive in the soil
SUMMER
Direct germination of sclerotia to infect stem base
Apothecia produced from sclerotia in moist soil
GROWING SEASON
Petal infection by ascospores produced in apothecia

# Potential issues 2022

- Increased area of canola in 2021 and predicted high 2022 canola area
- Proximity to 2021 stubble - blackleg spores mainly from 1st year stubble
- Retained seed – need seed dressing
- High input costs &/or supply issues – pressure on making disease control decisions
- Sclerotia in soil from canola & pulse crops

# Know your blackleg levels

## Can’t assess what you don’t measure

Swathing/desiccation stage:

- Cut crowns to assess internal canker infection levels
- Count 200 branches – No. dark areas/death/internal darkening

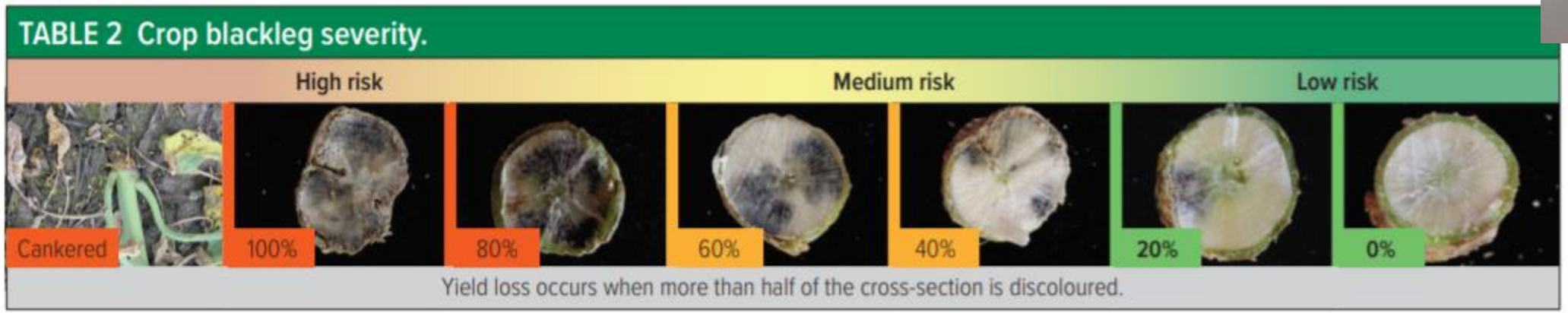


Figure from the blackleg management guide

# Old school risk assessment ….

AUSTRALIAN CANOLA VARIETY RATINGS

## 2021 SPRING FACT SHEET

## BLACKLEG MANAGEMENT GUIDE

GRDC
GRAINS RESEARCH & DEVELOPMENT CORPORATION

GRDC NATIONAL VARIETY TRIALS™

NATIONAL SEPTEMBER 2021

### Quantify the risk, paddock by paddock

**Blackleg can cause severe yield loss, but it can be successfully managed. This Guide and the BlacklegCM app (see Useful Resources, page 6) will help growers and advisers to effectively manage canola crops against blackleg infection, and determine if there is a high-risk situation where practices need to change to reduce or prevent yield loss. Follow Steps 1 through to 4 in sequence, starting below the Key Points.**

**KEY POINTS**

- **Never sow your canola crop into last year's canola stubble**
- **Choose a cultivar with adequate blackleg resistance for your region**
- **Relying only on fungicides to control blackleg poses a high risk of fungicide resistance**
- **If your monitoring has identified yield loss and you have grown the same cultivar for three years or more, choose a cultivar from a different resistance group**
- **Monitor your crops in spring to determine yield losses in the current crop**

*Leptosphaeria maculans*, the causal agent of blackleg, is a sexually reproducing pathogen that may overcome cultivar resistance genes. Fungal spores are released from canola stubble and spread extensively via wind and rain splash. The disease is more severe in areas of intensive canola production.

**STEP 1:** Use Table 1 to determine your farm's blackleg risk.

**TABLE 1 Regional blackleg factors.**

| Environmental factors that determine risk of severe blackleg infection | Blackleg severity risk factor | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | High risk | | | Medium risk | | | | Low risk | |
| Regional canola intensity (% area sown to canola) | above 20 | 16–20 | 15 | 11–14 | 11–14 | 10 | 6–9 | 5 | below 5 |
| Annual rainfall (mm) | above 600 | 551–600 | 501–550 | 451–500 | 401–450 | 351–400 | 301–350 | 251–300 | below 250 |
| Total rainfall received March–May prior to sowing (mm) | above 100 | above 100 | above 100 | above 100 | 91–100 | 81–90 | 71–80 | 61–70 | below 60 |

Combined high canola intensity and adequate rainfall increase the probability of severe blackleg infection.

# Canola spore maturity forecast

## Canola blackleg spore shower risk forecast for Western Australia - 13 May 2021

### Moora

| Forecast for crops sown on | 29 April | 6 May | 13 May |
|---|---|---|---|
| Blackleg risk | Low | Moderate | Moderate |

### Mount Barker

| Forecast for crops sown on | 29 April | 6 May | 13 May |
|---|---|---|---|
| Blackleg risk | High | High | High |

**Search:**
canola blackleg spore maturity 2022

# Use available tools (iphone & android app stores)


- **BlacklegCM** for stem canker risk & whether 4-6 leaf fungicide is necessary
- Updates variety resistance levels twice yearly
- Compares scenarios
- Old school paper version on GRDC site


- **SclerotiniaCM** brings together all the factors needed for sclerotinia to cause yield losses
- Shows likelihood and size of response to fungicide application
- Compares scenarios

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# Guide to canola bloom stages

GRDC GRAINS RESEARCH & DEVELOPMENT CORPORATION

| 10% Bloom<br>~10 Main stem flowers open | 20% Bloom<br>14-16 Main stem flowers open | 30% Bloom<br>~20 Main stem flowers open<br>*petal drop starts* | 50% Bloom<br>20+ Main stem flowers open<br>*full bloom* |
|---|---|---|---|

Crops are said to be at a particular point once half of the plants have reached that bloom stage, eg. a crop where 50% of plants have 10 flowers open on the main stem, is at 10% bloom.

Download the SclerotiniaCM tool to determine whether fungicide applications to manage sclerotinia stem rot are worthwhile for your paddock and the local conditions.

Prepared by GRDC Project *Disease Epidemiology and Management Tools for Australian grain growers*

# Disease management 2022

Rotation

- NO canola on canola – it's your industry
- Choose your paddock - as far from 2021 stubble as possible
- Legume crops from 2021 may be significant source of sclerotia

Variety

- Know your variety's blackleg resistance rating:
  - major effective gene resistance (R) protects against UCI
  - resistance can / will decline over time
- No evidence for resistance to sclerotinia in current varieties
- Sclerotinia – hybrids denser canopy than OP's & branch more

https://www.canolacouncil.org/canola-watch/2013/10/02/count-stems-after-harvest/

# Disease management 2022

Agronomy

- Early sowing – potentially avoids blackleg spore release for crown canker, but increases UCI & sclerotinia risk
  - Blackleg spore maturity forecast can provide risk outlook
- Stubble management (burning, TopDown etc)

Fungicide

- Invest in seed dressings (lots of bare seed sown in 2021)
- Look at fungicide options (rotate groups)
- Use BlacklegCM and SclerotiniaCM to aid decision making

# Thank you

## Visit dpird.wa.gov.au

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