



**Tailored Management of Sclerotinia in Canola
with the SclerotiniaCM app**



GRDC
GRAINS RESEARCH
& DEVELOPMENT
CORPORATION



GOVERNMENT OF
WESTERN AUSTRALIA

Department of
**Primary Industries and
Regional Development**

BLACKLEGCM
A TOOL FOR MANAGING BLACKLEG DISEASE IN CANOLA

Supported by
Canola Research and Development Corporation

Up to mid-July BlacklegCM had been:

- Downloaded 176 times
- Used in 848 sessions
- Used for a total of 290 hours

→ 1006

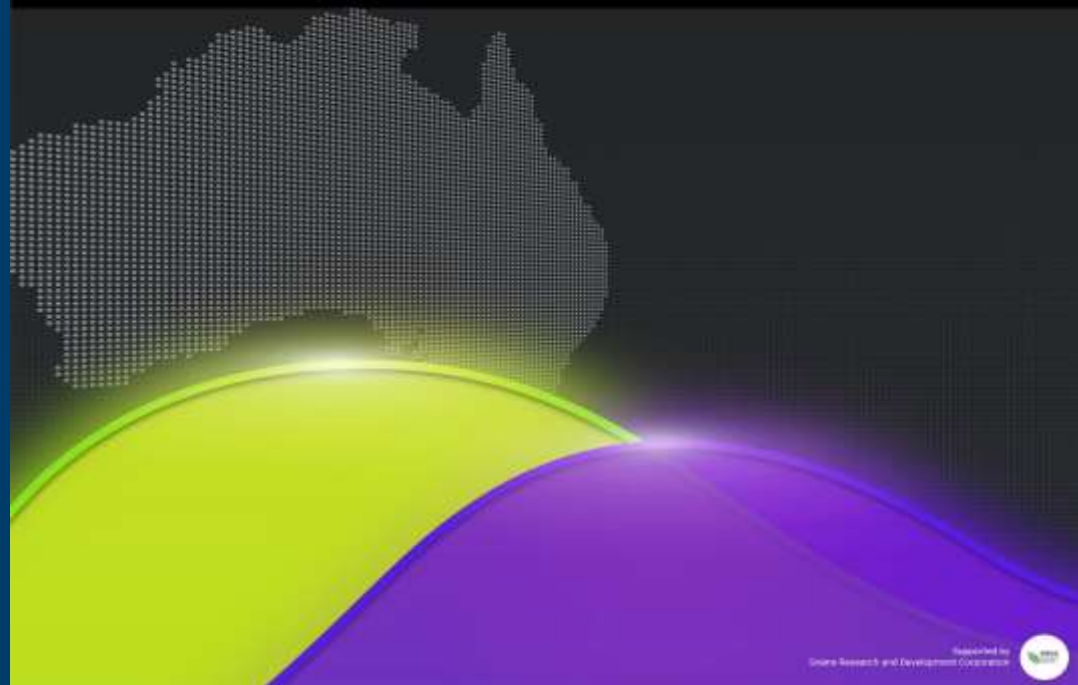


GOVERNMENT OF
WESTERN AUSTRALIA

Department of
Primary Industries and
Regional Development

SCLEROTINIA^{CM}

A TOOL FOR MANAGING SCLEROTINIA DISEASE IN CANOLA



Supported by
Grains Research and Development Corporation



Spray decision

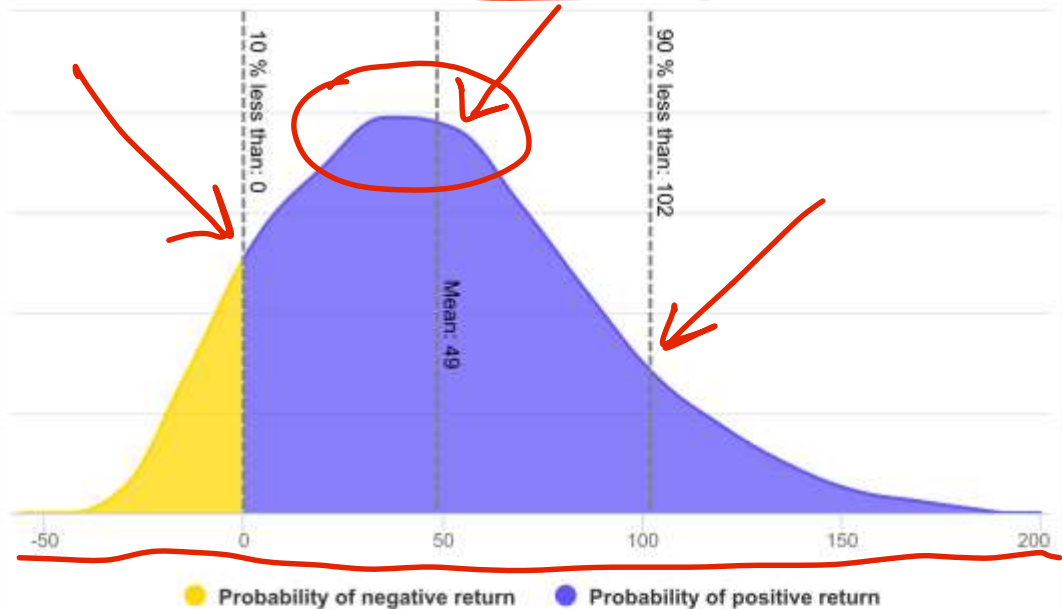
First spray Second spray

Crop circumstance

History

Current conditions

Return from spray (\$/ha)



Spray decision

First spray Second spray

Crop circumstance

Target yield (2.5 t/ha)

Grain price (550 \$/t)

Production cost (350 \$/ha)

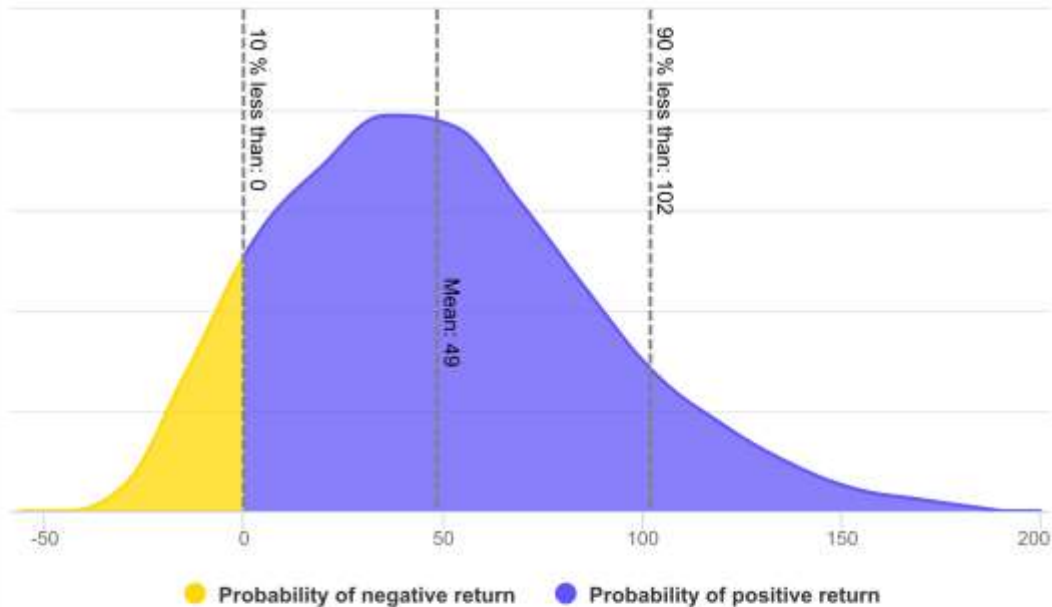
Surface soil texture

Fine texture Sandy

History

Current conditions

Return from spray (\$/ha)



Spray decision

First spray Second spray

Crop circumstance ▾

Target yield (1.5 t/ha) ⋮

Grain price (550 \$/t) ⋮

Production cost (350 \$/ha) ⋮

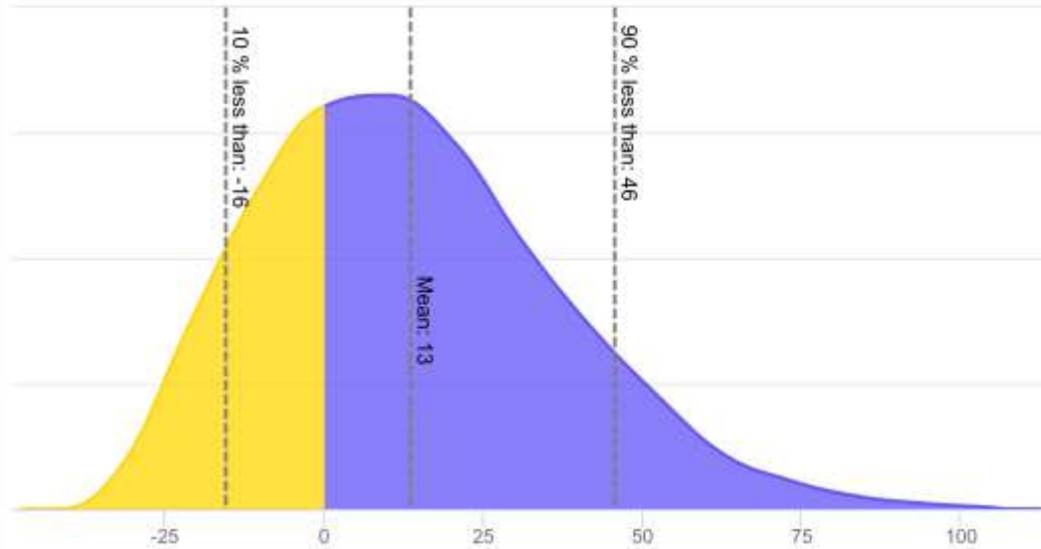
Surface soil texture

Fine texture Sandy

History ▶

Current conditions ▶

Return from spray (\$/ha)



● Probability of negative return ● Probability of positive return

Spray decision

First spray Second spray

Crop circumstance ▶

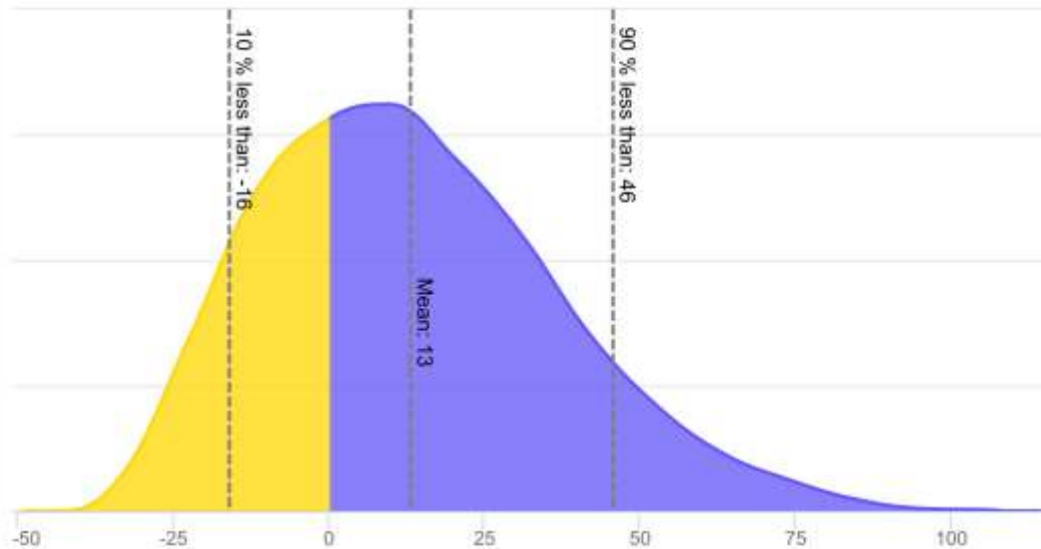
History ▼

Broadleaf crops (3 yr in 10) ⋮

Sclerotinia yield loss (8 yr in 10) ⋮

Current conditions ▶

Return from spray (\$/ha)



● Probability of negative return ● Probability of positive return



Spray decision

First spray Second spray

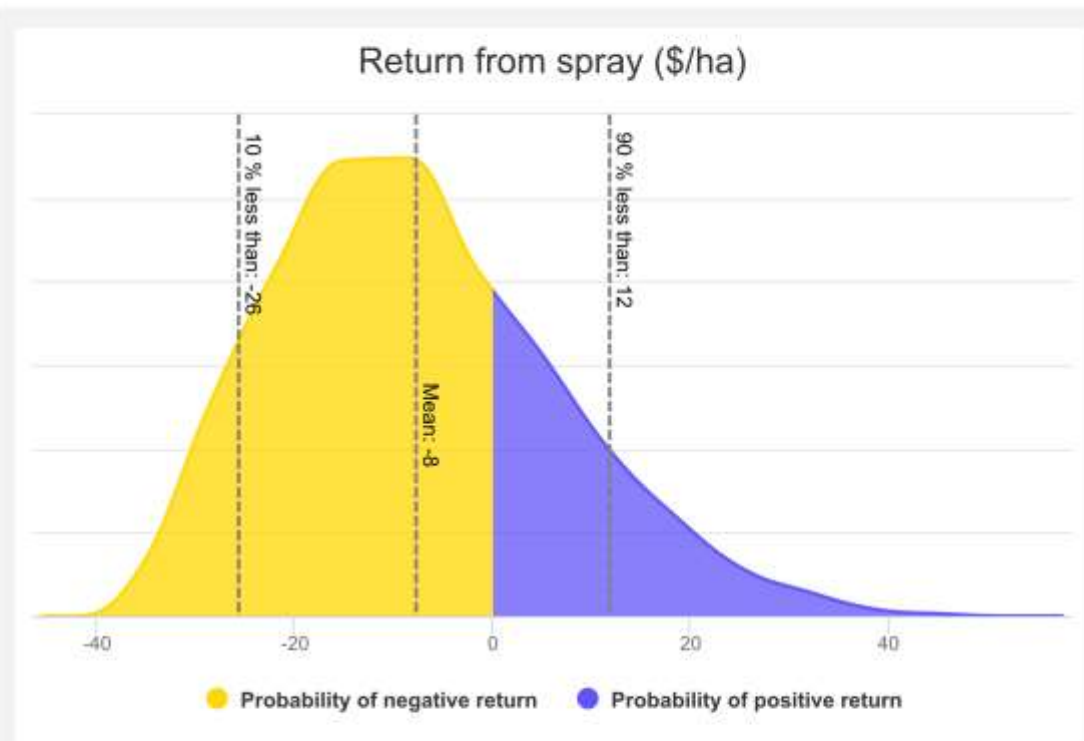
Crop circumstance ▶

History ▼

Broadleaf crops (3 yr in 10) ⋮

Sclerotinia yield loss
(3 yr in 10) ⋮

Current conditions ▶



Spray decision

First spray Second spray

Crop circumstance ▶

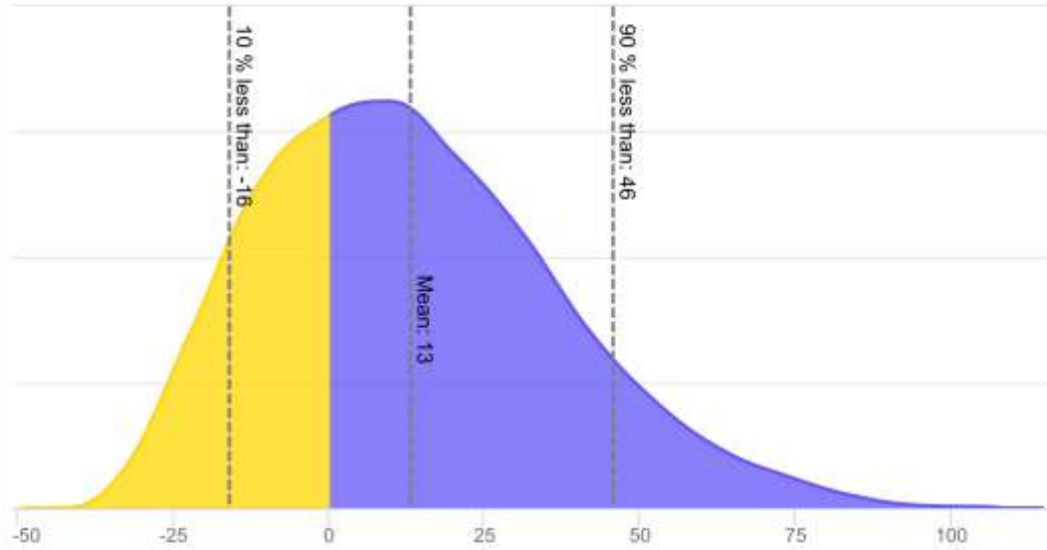
History ▼

Broadleaf crops (3 yr in 10) ⋮

Sclerotinia yield loss (8 yr in 10) ⋮

Current conditions ▶

Return from spray (\$/ha)



● Probability of negative return ● Probability of positive return

Spray decision

First spray Second spray

Crop circumstance ▶

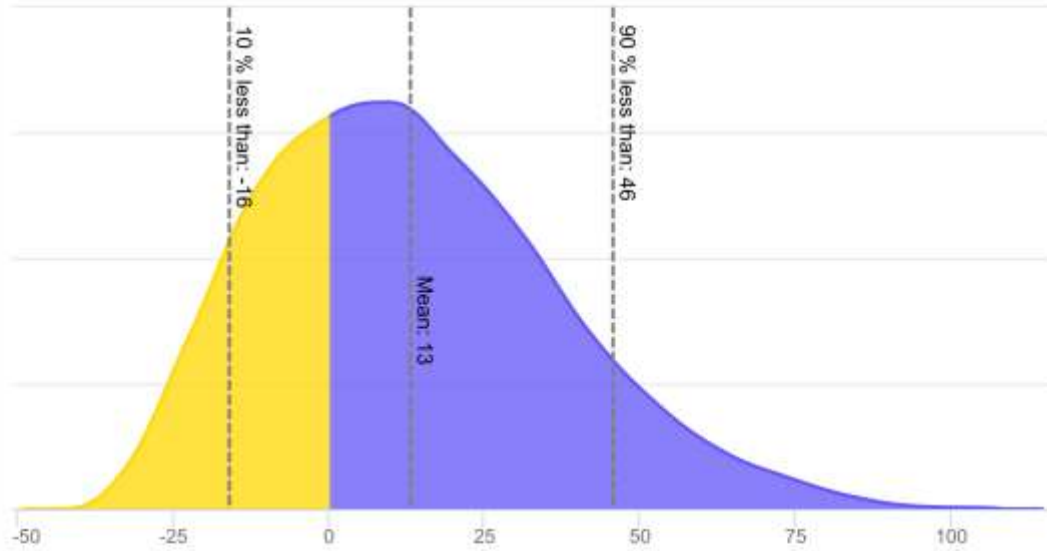
History ▼

Broadleaf crops (3 yr in 10) ⋮

Sclerotinia yield loss (8 yr in 10) ⋮

Current conditions ▶

Return from spray (\$/ha)



● Probability of negative return ● Probability of positive return

Spray decision

First spray Second spray

Crop circumstance ▶

History ▶

Current conditions ▼

Bloom stage (30 %) ⋮

Wet days in the last 3 weeks (10 of 21) ⋮

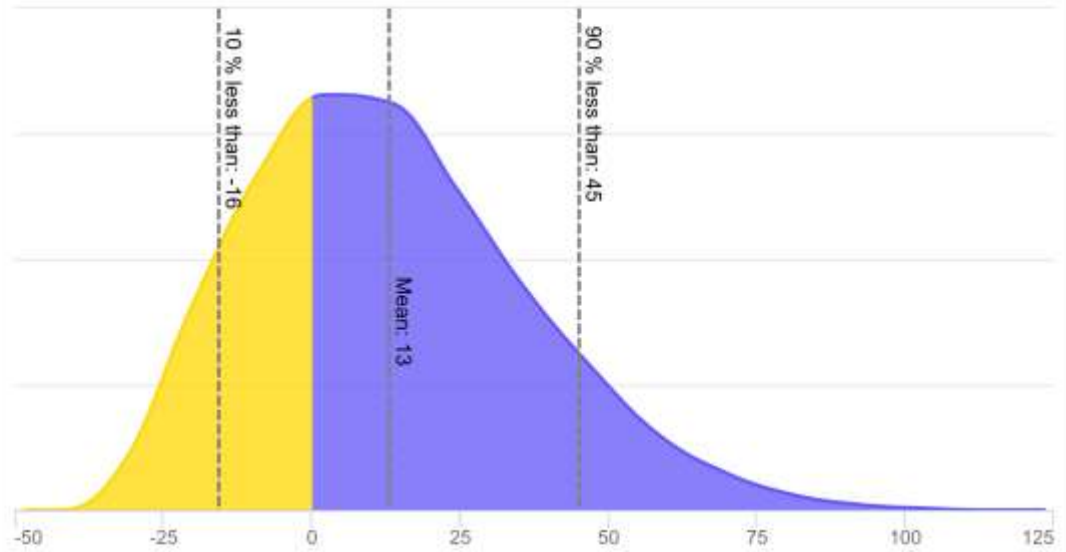
Expected wet canopy days next week (3 of 7) ⋮

Expected wet canopy days in week after next (3 of 7) ⋮

Mitigation by spray (50 %) ⋮

Spray cost (40 \$/ha) ⋮

Return from spray (\$/ha)



● Probability of negative return ● Probability of positive return

Spray decision

 First spray Second spray

Crop circumstance ▶

History ▶

Current conditions ▼

Bloom stage (30 %) ⋮

Wet days in the last 3 weeks (10 of 21) ⋮

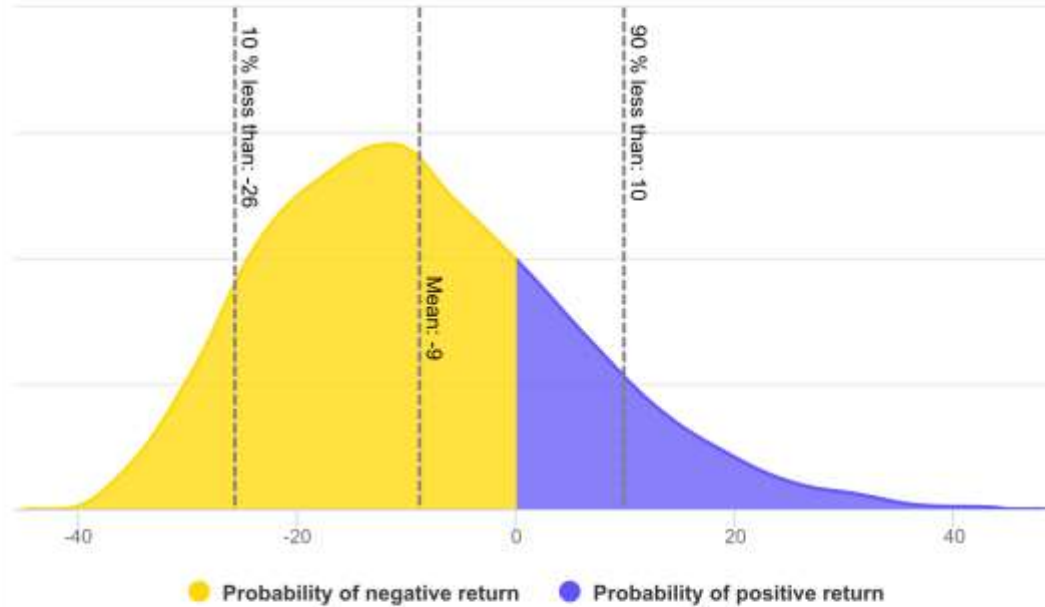
Expected wet canopy days next week (1 of 7) ⋮

Expected wet canopy days in week after next (3 of 7) ⋮

Mitigation by spray (50 %) ⋮

Spray cost (40 \$/ha) ⋮

Return from spray (\$/ha)



Spray decision

First spray Second spray

Crop circumstance

History

Current conditions

Bloom stage (30 %)

Wet days in the last 3 weeks (10 of 21)

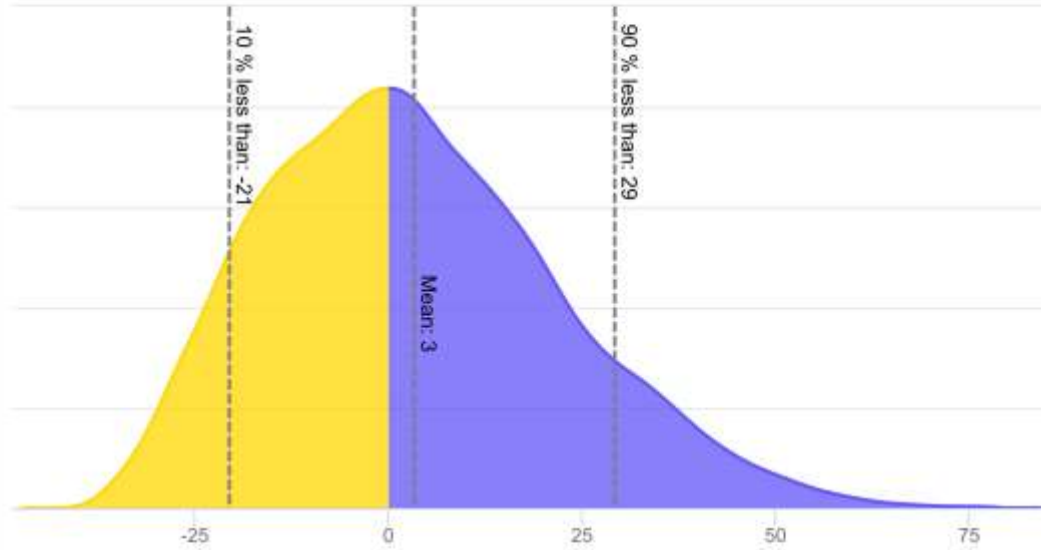
Expected wet canopy days next week (1 of 7)

Expected wet canopy days in week after next (3 of 7)

Mitigation by spray (70 %)

Spray cost (40 \$/ha)

Return from spray (\$/ha)



● Probability of negative return

● Probability of positive return

Spray decision

- First spray
- Second spray

Crop circumstance

History

Current conditions

Bloom stage (30 %)

Wet days in the last 3 weeks (10 of 21)

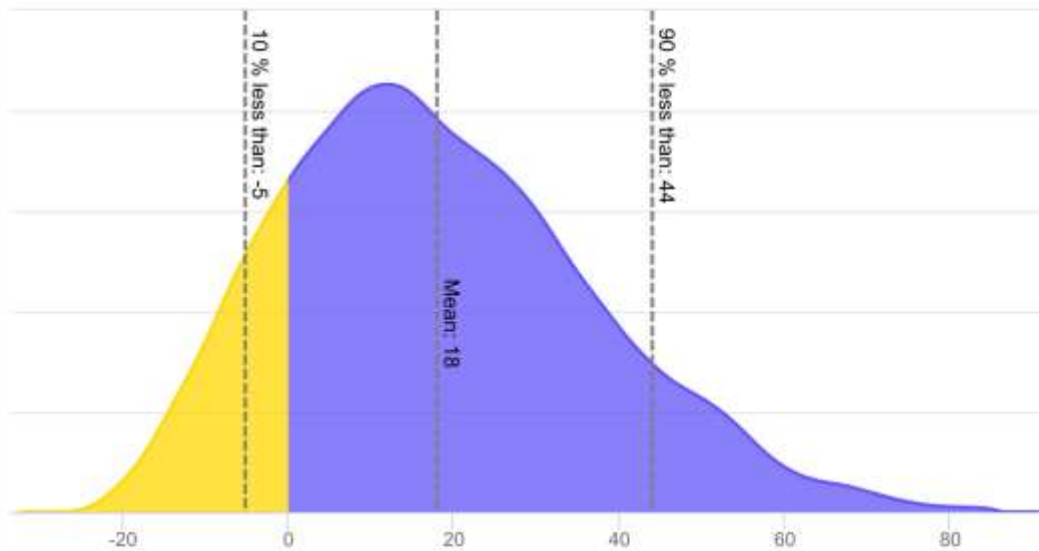
Expected wet canopy days next week (1 of 7)

Expected wet canopy days in week after next (3 of 7)

Mitigation by spray (70 %)

Spray cost (25 \$/ha)

Return from spray (\$/ha)



● Probability of negative return ● Probability of positive return

Spray decision

 First spray Second spray

Crop circumstance ▶

History ▶

Current conditions ▼

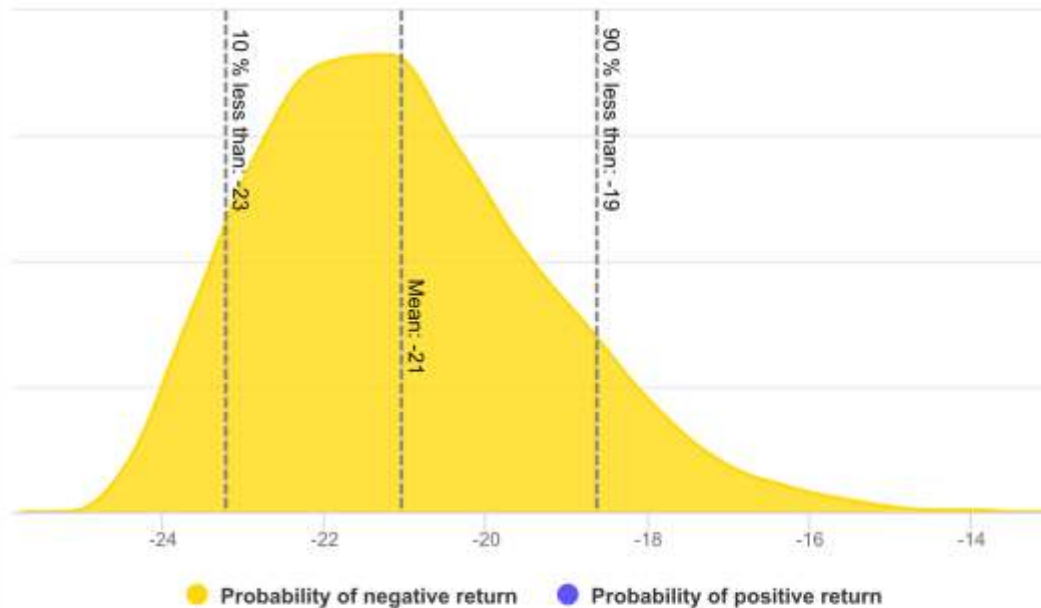
Bloom stage (30 %) ⋮

Bloom stage at previous
spray (10 %) ⋮Wet days in the last 3
weeks (10 of 21) ⋮Expected wet canopy days
next week (1 of 7) ⋮Expected wet canopy days
in week after next (3 of 7) ⋮

Mitigation by spray (70 %) ⋮

Spray cost (25 \$/ha) ⋮

Return from second spray (\$/ha)



Spray decision

First spray Second spray

Crop circumstance

Target yield (2.5 t/ha)

Grain price (550 \$/t)

Production cost (350 \$/ha)

Surface soil texture

Fine texture Sandy

History

Current conditions

Bloom stage (50 %)

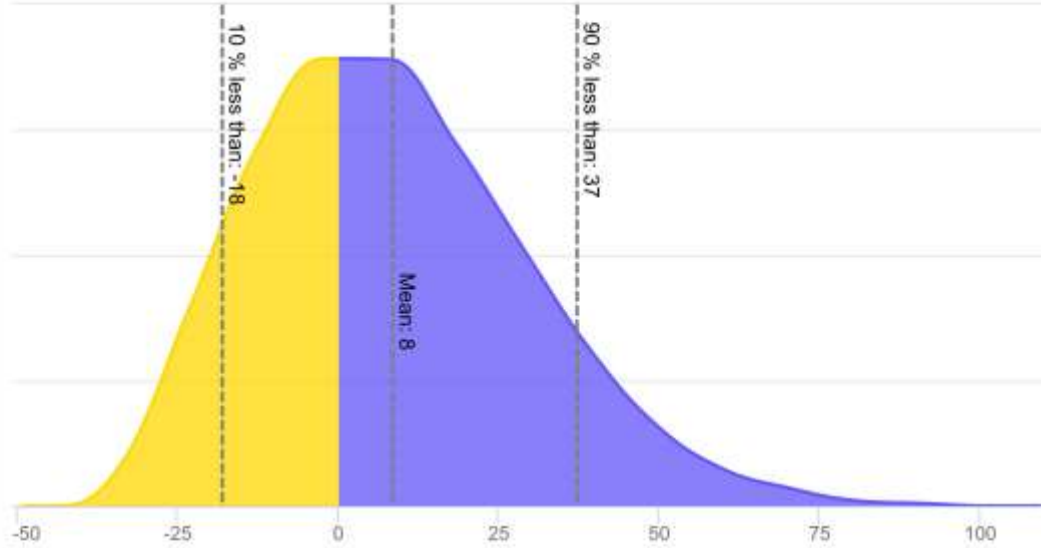
Bloom stage at previous spray (10 %)

Wet days in the last 3 weeks (14 of 21)

Expected wet canopy days next week (5 of 7)

Expected wet canopy days in week after next (3 of 7)

Return from second spray (\$/ha)



● Probability of negative return ● Probability of positive return



Spray decision

First spray Second spray

Crop circumstance

Target yield (1,5 t/ha)

Grain price (550 \$/t)

Production cost (350 \$/ha)

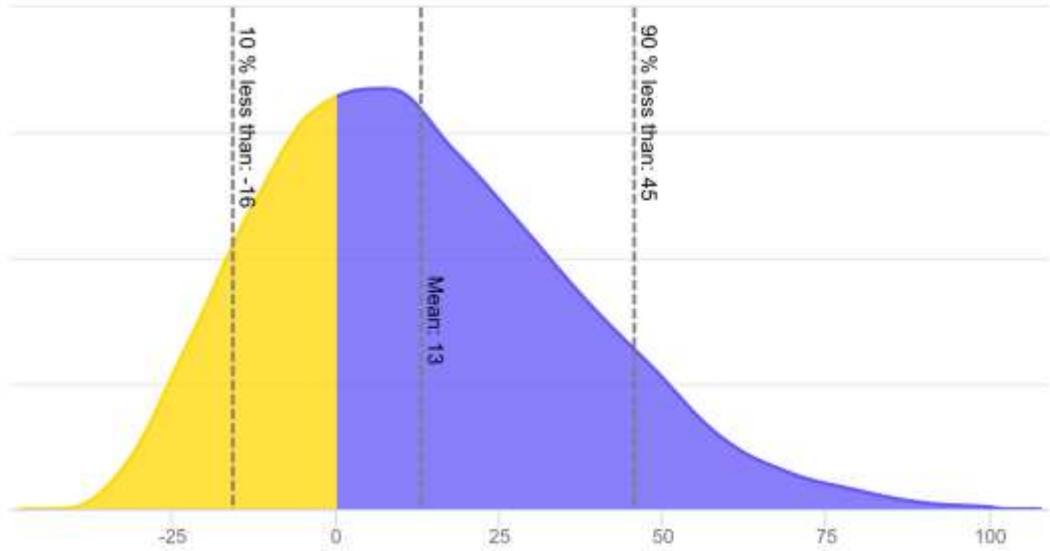
Surface soil texture

Fine texture Sandy

History

Current conditions

Return from spray (\$/ha)



● Probability of negative return ● Probability of positive return

Summary

Net Return >

Yield >

Grain Price >

Disease Impact >

Mitigation >

About >

Tips >

Diagnostic >

Spray decision

First spray Second spray

Crop circumstance

Target yield (1.5 t/ha)

Grain price (550 \$/t)

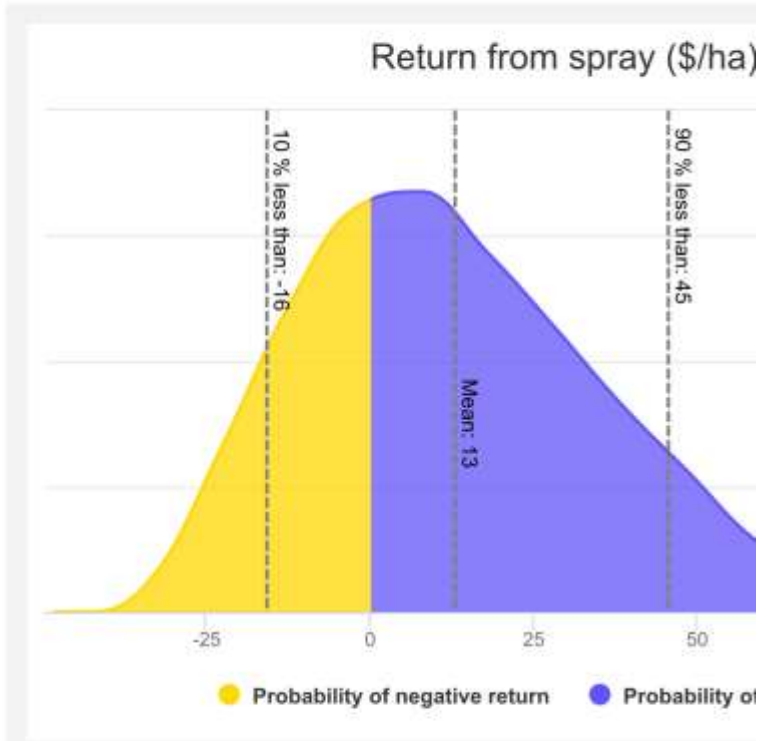
Production cost (350 \$/ha)

Surface soil texture

Fine texture Sandy

History >

Current conditions >





Spray decision

 First spray Second spray

Crop circumstance

Target yield (1.5 t/ha)

Grain price (550 \$/t)

Production cost (350 \$/ha)

Surface soil texture

 Fine texture Sandy

History

Current conditions

No spray		Spray		Difference	
Expected yield (t/ha)		Expected yield (t/ha)		Expected yield (t/ha)	
Minimum	1	Minimum	1.1	Minimum	0
Mean	1.3	Mean	1.4	Mean	0.1
Maximum	1.5	Maximum	1.6	Maximum	0.2
Loss to sclerotinia (t/ha)		Loss to sclerotinia (t/ha)		Loss to sclerotinia (t/ha)	
Minimum	0.09	Minimum	0.04	Minimum	-0.16
Mean	0.19	Mean	0.1	Mean	-0.1
Maximum	0.3	Maximum	0.16	Maximum	-0.04
Net return (\$/ha)		Net return (\$/ha)		Net return (\$/ha)	
Minimum	220	Minimum	230	Minimum	-16
Mean	340	Mean	353	Mean	13
Maximum	458	Maximum	469	Maximum	45

Summary >

Net Return >

Yield >

Grain Price >

Disease Impact >

Mitigation >

About >

Tips >

Diagnostic >

Spray decision First spray Second spray**Crop circumstance** ▾

Target yield (1.5 t/ha) ⋮

Grain price (550 \$/t) ⋮

Production cost (350 \$/ha) ⋮

Surface soil texture Fine texture Sandy**History** ▶**Current conditions** ▶**No spray**

Expected yield (t/ha)

Minimum

Mean

Maximum

1

1.3

1.5

Spray

Expected yield (t/ha)

Minimum

Mean

Maximum

1.1

1.4

1.6

Loss to sclerotinia (t/ha)

Minimum

Mean

Maximum

0.09

0.19

0.3

Loss to sclerotinia (t/ha)

Minimum

Mean

Maximum

0.04

0.1

0.16

Net return (\$/ha)

Minimum

Mean

Maximum

220

340

458

Net return (\$/ha)

Minimum

Mean

Maximum

230

353

469

Spray decision

First spray Second spray

Crop circumstance

target yield (1.5 t/ha)

Yield range (0.9 - 1.8 t/ha)

Grain price (550 \$/t)

Production cost (350 \$/ha)

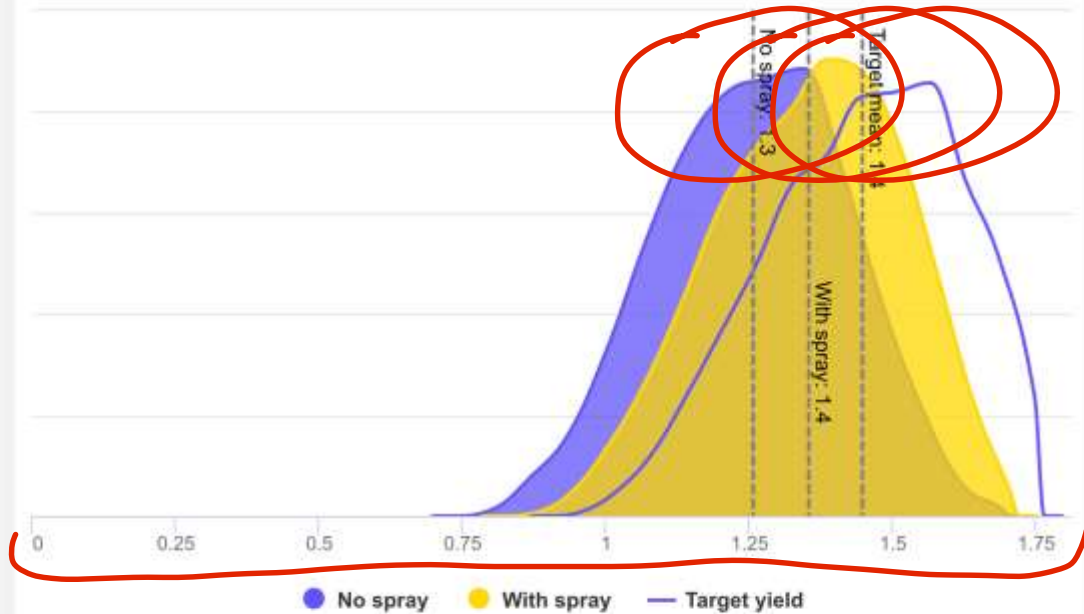
Surface soil texture

Fine texture Sandy

History

Current conditions

Target and expected yields (t/ha)



Generate report

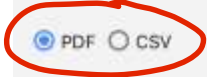
Scenario Name: Old Macdonald's back paddock



Looks like some rain is coming.



PDF CSV



Send report

Cancel





7:21 am, Mon 4 Feb

Cancel

SclerotiniaCM report

Send



Spray decision

First spray Second

Crop circumstance

Target yield (1.5 t/ha)

Yield range (0.9 - 1.8 t/ha)

Grain price (550 \$/t)

Production cost (350 \$/t)

Surface soil texture

Fine texture Sand

History

Current conditions

To: old.macdonald@farm.com



Cc/Bcc, From: art.diggle@agric.wa.gov.au

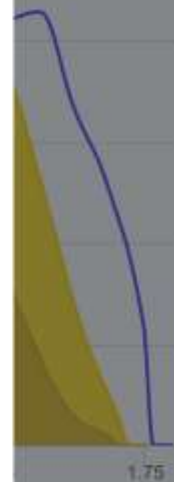
Subject: SclerotiniaCM report



Old Macdo...paddock.pdf

Art Diggle

Department of Primary Industries and Regional Development, WA



Old Macdonald's back paddock

04/02/2019, 11:20:05 am

Looks like rain is coming

User input

Spray decision	First spray		
Crop circumstance			
Target yield (t/ha)	1.5	Yield range (t/ha)	0.9 - 1.8
Grain price (\$/t)	550	Grain price range (\$/t)	525 - 580
Production cost (\$/t)	350	Surface soil texture	Sandy

History

Frequency of broadleaf crops (Years in 10)	3	Frequency of sclerotinia yield loss (Years in 10)	8
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Current conditions

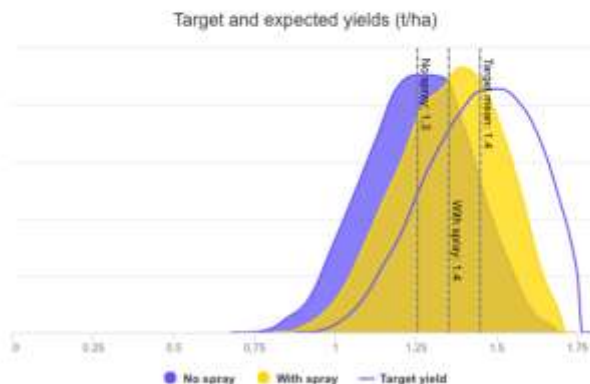
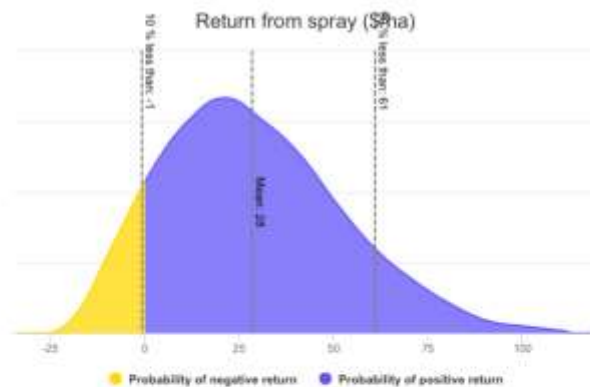
Bloom stage (%)	30	Bloom stage at previous spray (%)	N/A
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Wet days in the last 3 weeks (Days in 21)	10	Forecast wet days next week (Days in 7)	3
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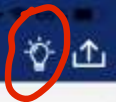
Forecast wet days in week after next (Days in 7)	3		
Mitigation by spray (%)	50	Spray cost (\$/ha)	50

Summary table

	No spray	Spray	Difference
<i>Expected yield (t/ha)</i>			
Minimum	1	1.1	0
Mean	1.3	1.4	0.1
Maximum	1.5	1.6	0.2
<i>Loss to sclerotinia (t/ha)</i>			
Minimum	0.09	0.04	-0.16
Mean	0.19	0.1	-0.1
Maximum	0.3	0.16	-0.04
<i>Net return (\$/ha)</i>			
Minimum	220	247	-1
Mean	340	369	28
Maximum	455	481	61



SclerotiniaCM report			
Created	04/02/2019	11:20:50 am	
Note	Looks like rain is coming		
Crop circumstance			
Spray decision	First spray		
Target yield (t/ha)	1.5		
Yield range	0.2		
Grain price (\$/t)	550		
Grain price range	0.1		
Production cost (\$/t)	350		
Surface soil texture	Sandy		
History			
Frequency of broadleaf crops (Years in 10)	3		
Frequency of sclerotinia yield loss (Years in 10)	8		
Current conditions			
Bloom stage (%)	30		
Wet days in the last 3 weeks (Days in 21)	10		
Forecast wet days next week (Days in 7)	3		
Forecast wet days in week after next (Days in 7)	3		
Mitigation by spray (%)	50		
Spray cost (\$/ha)	25		
Summary	Minimum	Mean	Maximum
Expected yield no spray	1.0388664316564167	1.2547375178180196	1.4625242988836344
Expected yield spray	1.1330222978067932	1.351891280798312	1.556327818775558
Loss to sclerotinia no spray	0.09454493628341301	0.1942328093064547	0.2971110937421562
Loss to sclerotinia spray	0.04409959147139166	0.09707904632616463	0.15649372026358743
Net return no spray	220.3429892440878	340.14502729884197	455.3984122488635
Net return spray	247.2576210253065	368.5806767479594	481.30568206085275
Net return difference	-0.8630575198911166	28.435649449118575	60.90679550514527



Spray decision

First spray Second spray

Crop circumstance

Target yield (1.5 t/ha)

Yield range (0.9 - 1.8 t/ha)

Grain price (550 \$/t)

Production cost (350 \$/ha)

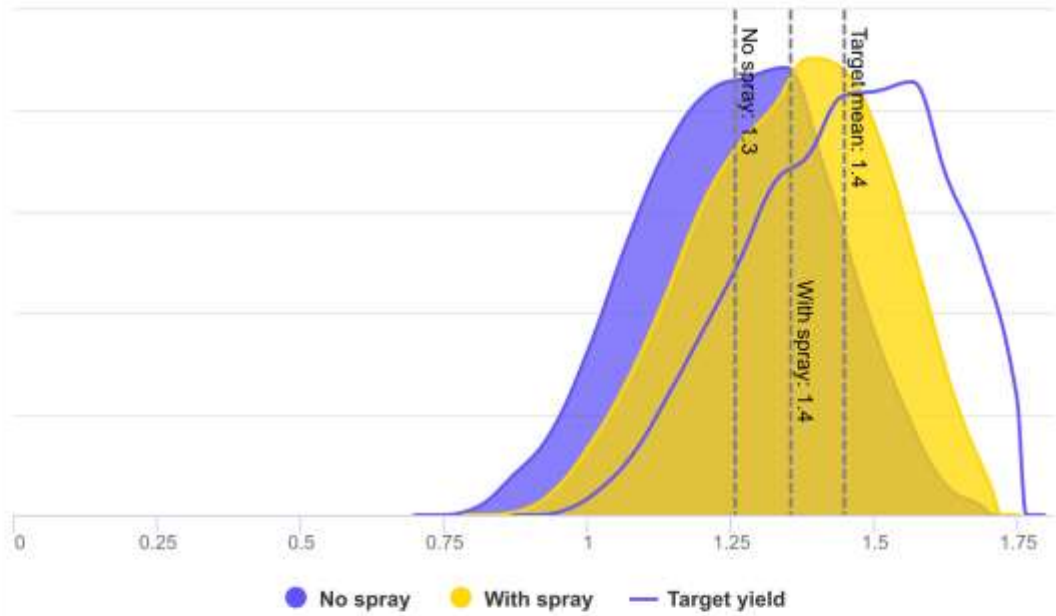
Surface soil texture

Fine texture Sandy

History

Current conditions

Target and expected yields (t/ha)





Spray decision ⓘ

First spray Second spray

Crop circumstance ⓘ

- 1 Target yield (1.5 t/ha)
- 1 Yield range (0.9 - 1.8 t/ha)
- 1 Grain price (550 \$/t)
- 1 Production cost (350 \$/ha)

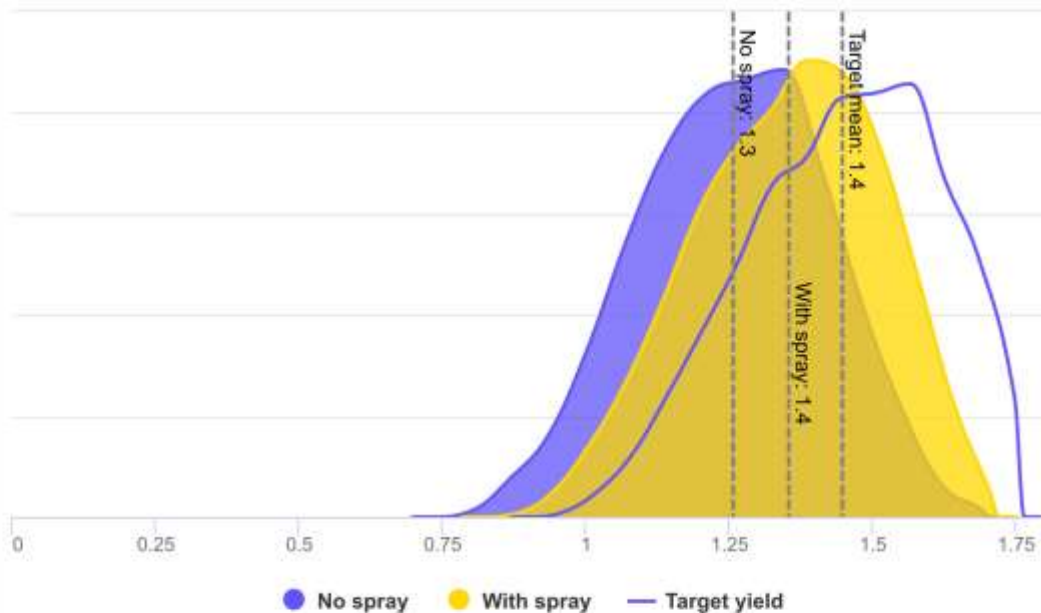
Surface soil texture ⓘ

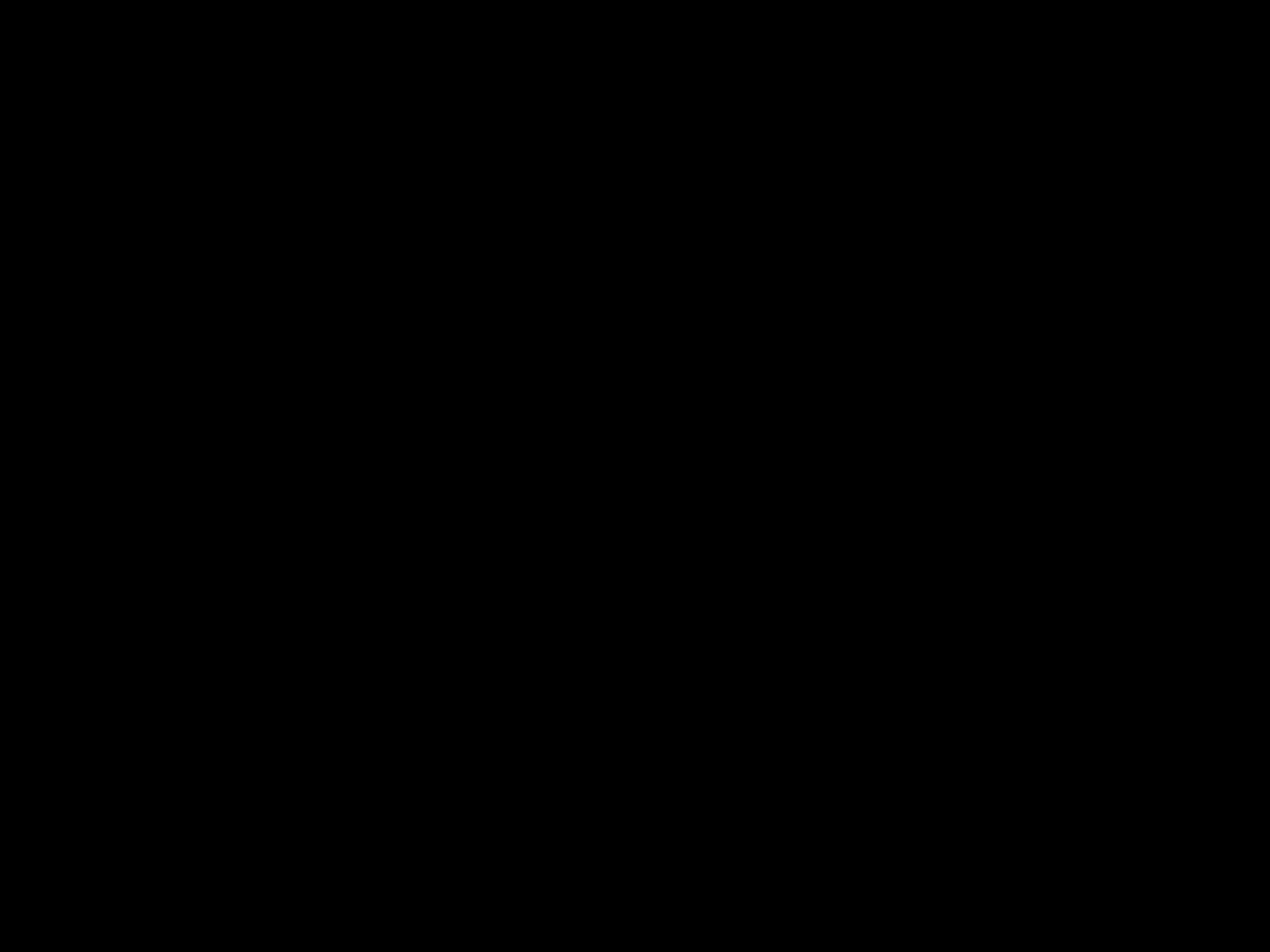
Fine texture Sandy

History ⓘ

Current conditions ⓘ

Target and expected yields (t/ha)



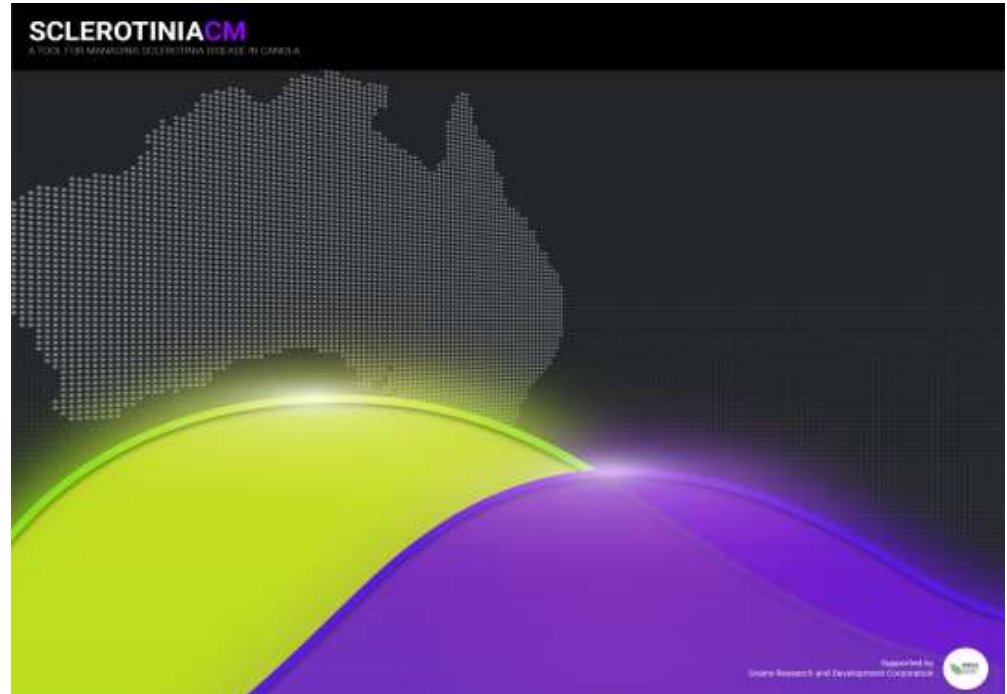


SclerotiniaCM

**Art Diggle, Steve Marcroft, Kurt Lindbeck,
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Andrea Hills, Angela Van de Wouw,
Andrew Ware, Susie Sprague, Jean Galloway**

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Thank you

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