



Department of  
Primary Industries and  
Regional Development



# How long do *Sclerotinia sclerotia* survive?

## SclerotiniaCM tool to help with on-farm management of sclerotinia stem rot

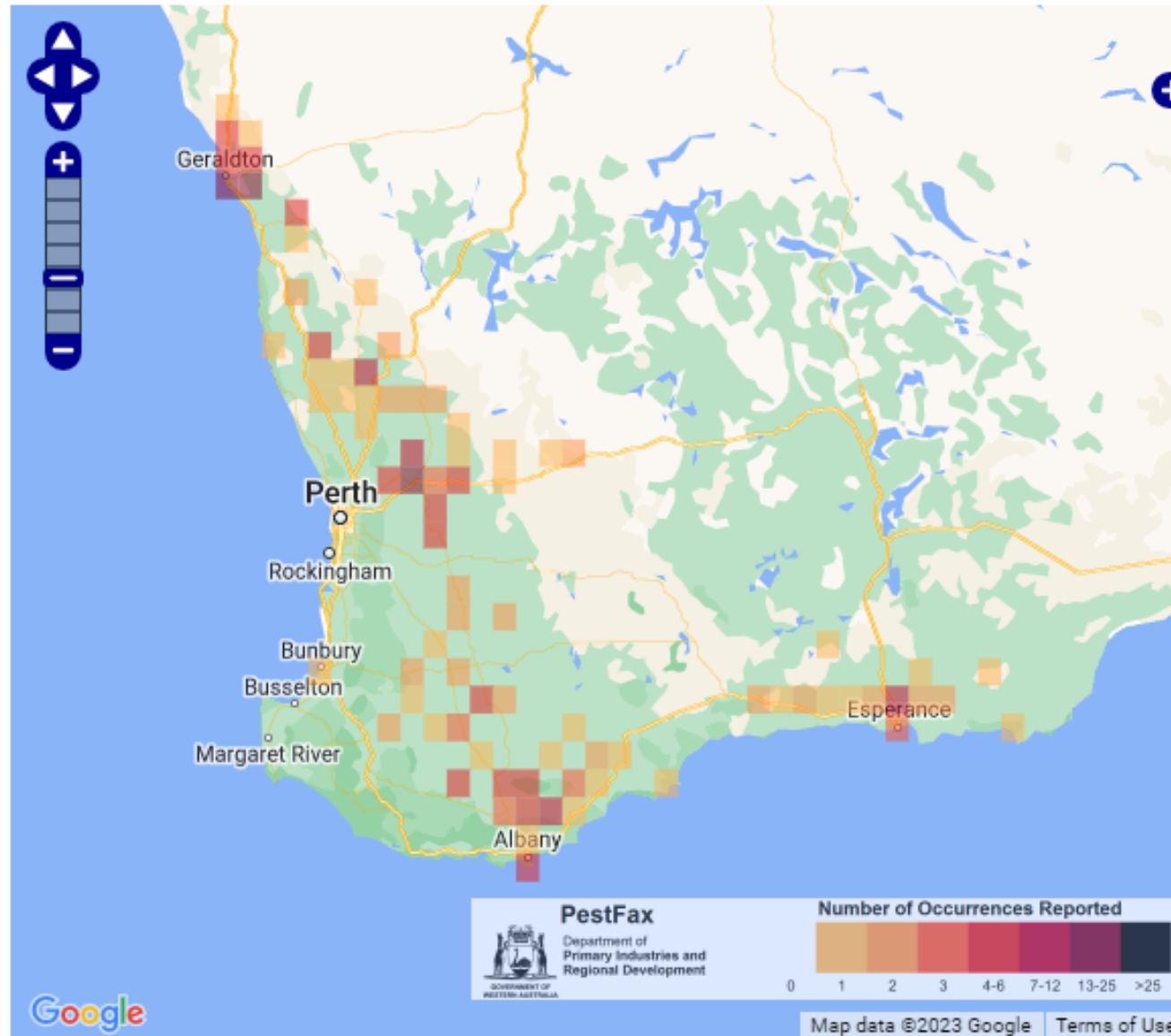
Jean Galloway, Adam Sparks, Steve Marcroft, Ciara Beard and Kylie Chambers

# My talk today will cover two main sections

- ❖ Longevity of *Sclerotinia sclerotia* in WA
- ❖ Testing of the **SclerotinaCM** decision support tool in WA

# Sclerotinia in canola over the past 10 years in WA

## PestFax Map



- Mostly in high and medium rainfall zones
- Sporadically in LRZ

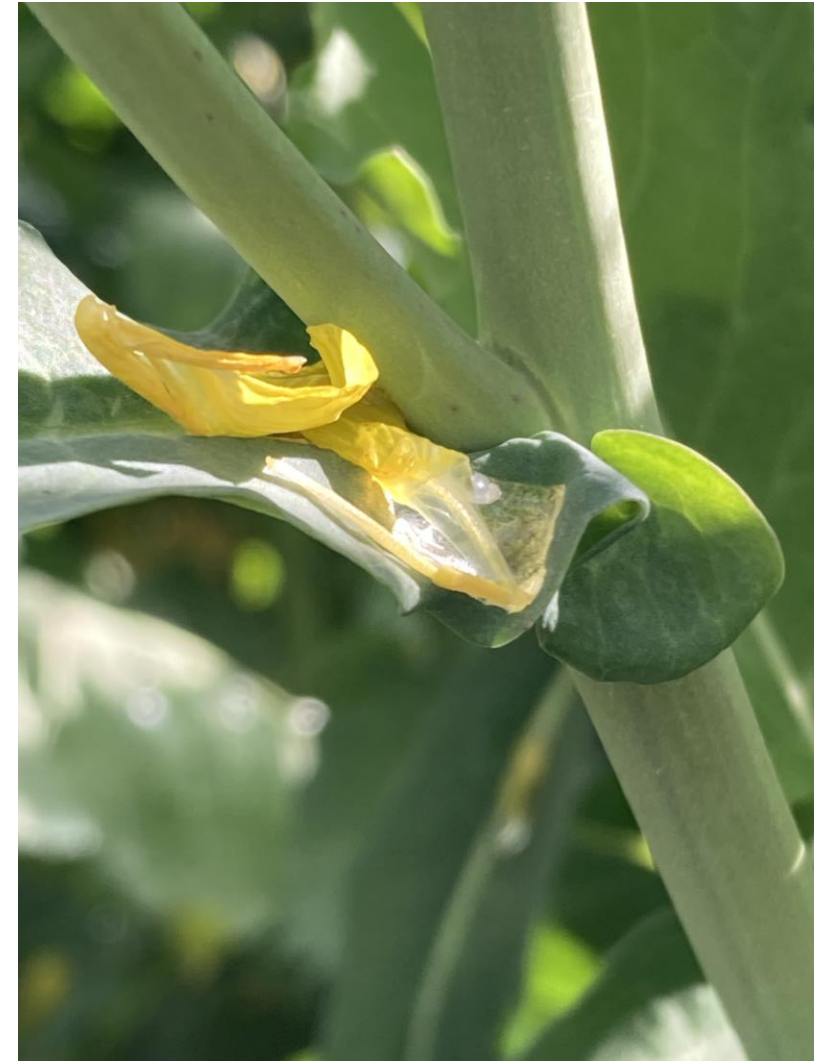
# **Sclerotia** **‘Rat droppings’**



**Germinate as  
apothecia**



**Infected petals in  
leaf axis**





# Survival of sclerotia on the soil surface



Collected sclerotia after harvest in 2016  
Placed them in a PVC ring “depot”  
Monitored from 2017-2022



# Apothecia production over 6 seasons at Northam

1	2-3	Dry
4	7	Average
8-9	10	Wet

Rainfall deciles

Year	2017	2018	2019	2020	2021	2022
Autumn decile	2	2	1	3	10	7
Winter decile	4	10	7	1	9	10
<b>Apothecia production</b>	<b>0</b>	<b>+10</b>	<b>1</b>	<b>0</b>	<b>+10</b>	<b>+30</b>

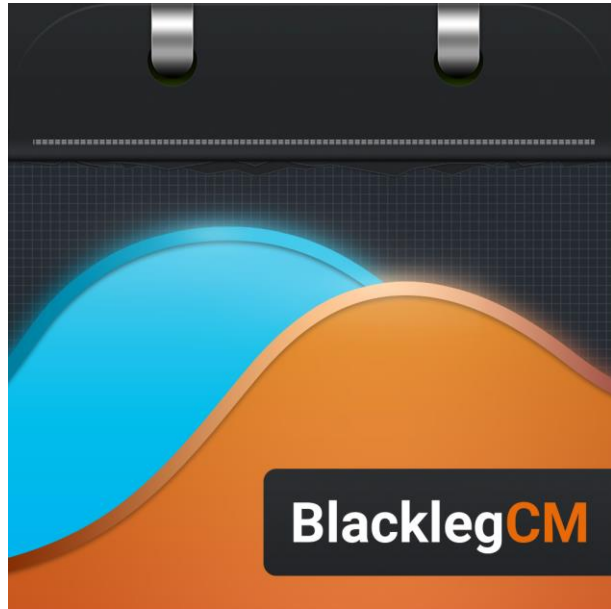
**More apothecia produced in year 6 than any other year**

# Key Messages

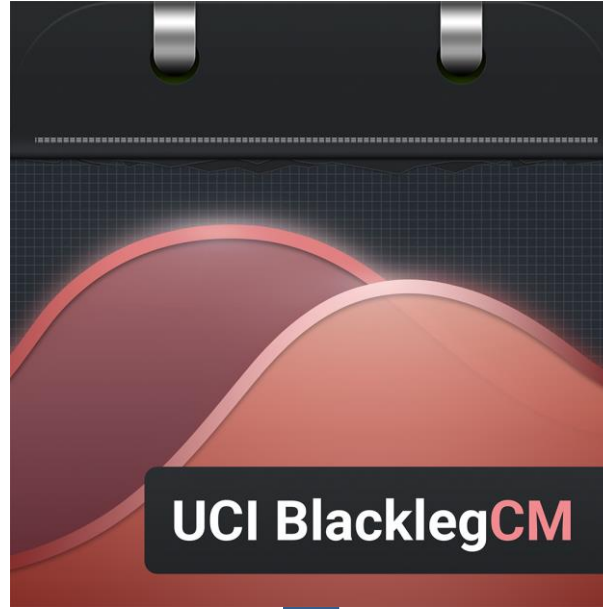
- ❖ Sclerotinia sclerotia survive for at least 6 seasons on the soil surface in WA
- ❖ Assume that paddocks that have grown canola or lupins in the past 6 years have a sclerotinia risk



# Three canola decision support tools – the CM series



Blackleg crown  
canker  
Used 4-6 leaf  
stage



Blackleg Upper Canopy  
Infection  
Used first flowers  
onwards



Sclerotinia stem  
rot  
Used 10-50%  
bloom stage





# SclerotiniaCM decision support tool

- ❖ Developed with leading Sclerotinia experts
  - National Canola Pathology Team
- ❖ Used all available data and knowledge at time of release
- ❖ It assumes that Sclerotinia inoculum is everywhere

## Key message



SclerotiniaCM is not just an economic calculator

It is a disease model that 'predicts' when sclerotinia stem rot might develop

# How to find graph views in Sclerotinia CM

Click on the hamburger icon

Summary



Spray decision

☒ First spray ☐ Second spray

Crop circumstance

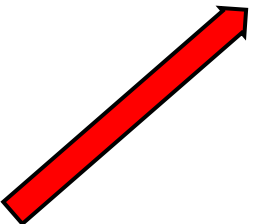
History

Current conditions

No spray		Spray		Difference	
Expected yield (t/ha)		Expected yield (t/ha)		Expected yield (t/ha)	
Minimum	1.7	Minimum	1.7	Minimum	0
Mean	1.8	Mean	1.9	Mean	0.1
Maximum	2	Maximum	2	Maximum	0.1
Loss to sclerotinia (t/ha)		Loss to sclerotinia (t/ha)		Loss to sclerotinia (t/ha)	
Minimum	0.07	Minimum	0.03	Minimum	-0.12
Mean	0.15	Mean	0.08	Mean	-0.08
Maximum	0.23	Maximum	0.12	Maximum	-0.03
Net return (\$/ha)		Net return (\$/ha)		Net return (\$/ha)	
Minimum	593	Minimum	601	Minimum	-19
Mean	689	Mean	695	Mean	6
Maximum	783	Maximum	782	Maximum	32

\*1 year in 10 values will be less than the minimum or more than the maximum

Choose  
net  
return  
from the  
drop  
down  
menu



SclerotiniaCM

Summary

Net Return

Yield

Grain Price

Disease Impact

Mitigation

About

Tips

Spray decision

☒ First spray ☐ Second spray

Crop circumstance

History

Current conditions

No spray

Expected yield (t/ha)

Minimum1.7

Mean1.8

Maximum2

Spray

Expected yield (t/ha)

Minimum

Mean

Maximum

Loss to sclerotinia (t/ha)

Minimum0.07

Mean0.15

Maximum0.23

Loss to sclerotinia (t/ha)

Minimum

Mean

Maximum

Net return (\$/ha)

Minimum593

Mean689

Maximum783

Net return (\$/ha)

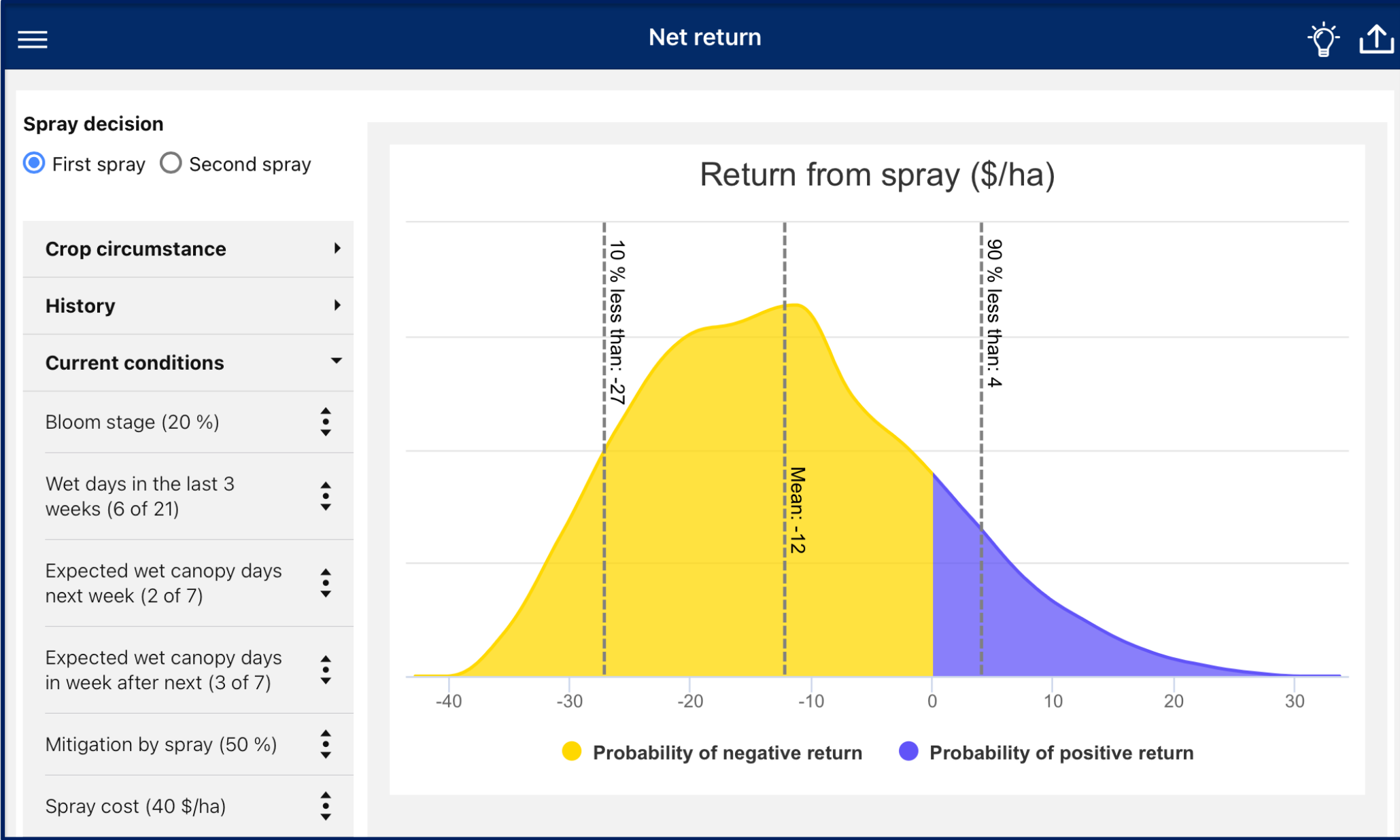
Minimum

Mean

Maximum

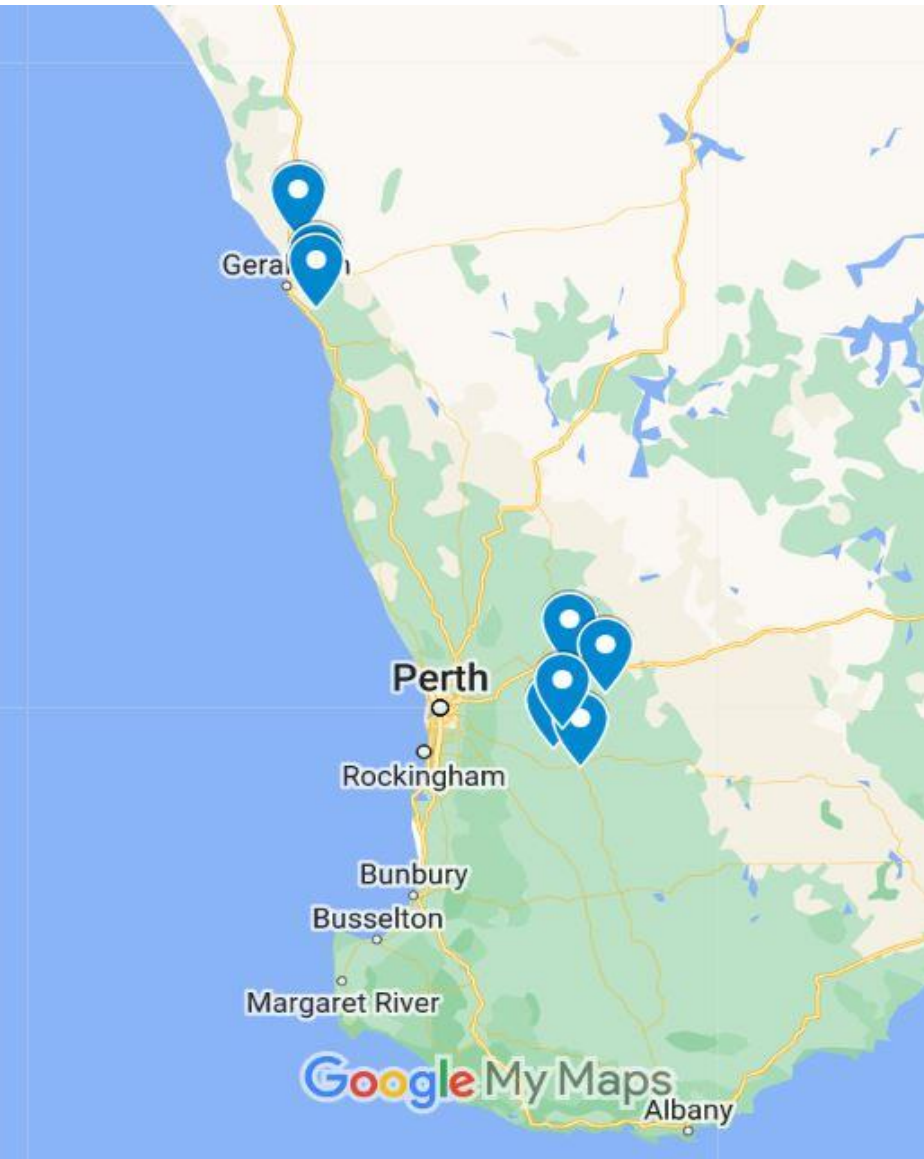
\*1 year in 10 values will be less than the minimum or more than the maximum

Graph  
view will  
be  
displayed





# On-farm testing of SclerotiniaCM in WA



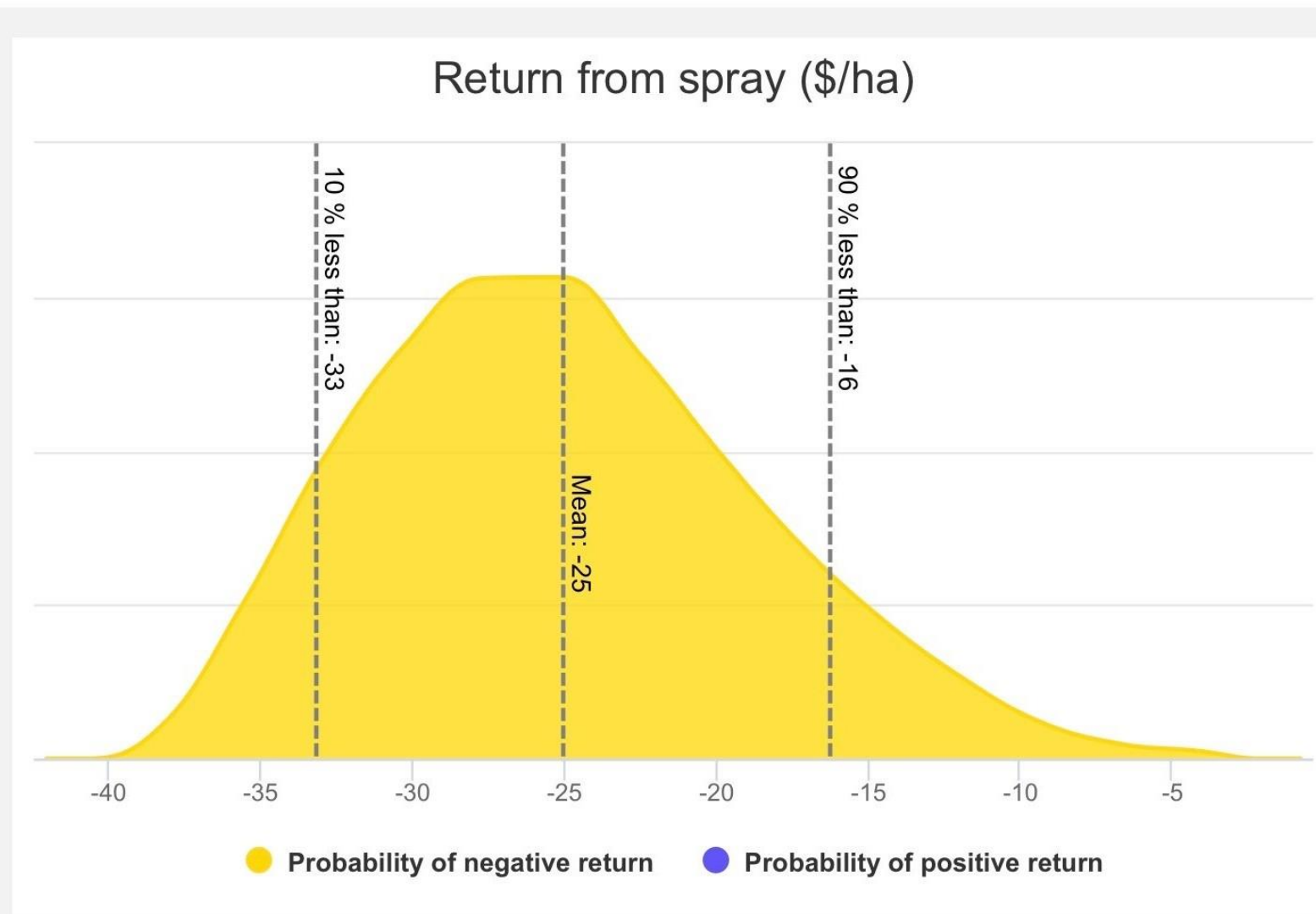
- 10 trials over 3 seasons
- Petal testing at all sites to confirm that inoculum was present
- Rated for sclerotinia stem rot prior to harvest

# 2019 Trials

No sclerotinia stem rot at any site

- Petal test 29%
- No sclerotinia stem rot
- Ave yield 0.4 t/ha

Net return

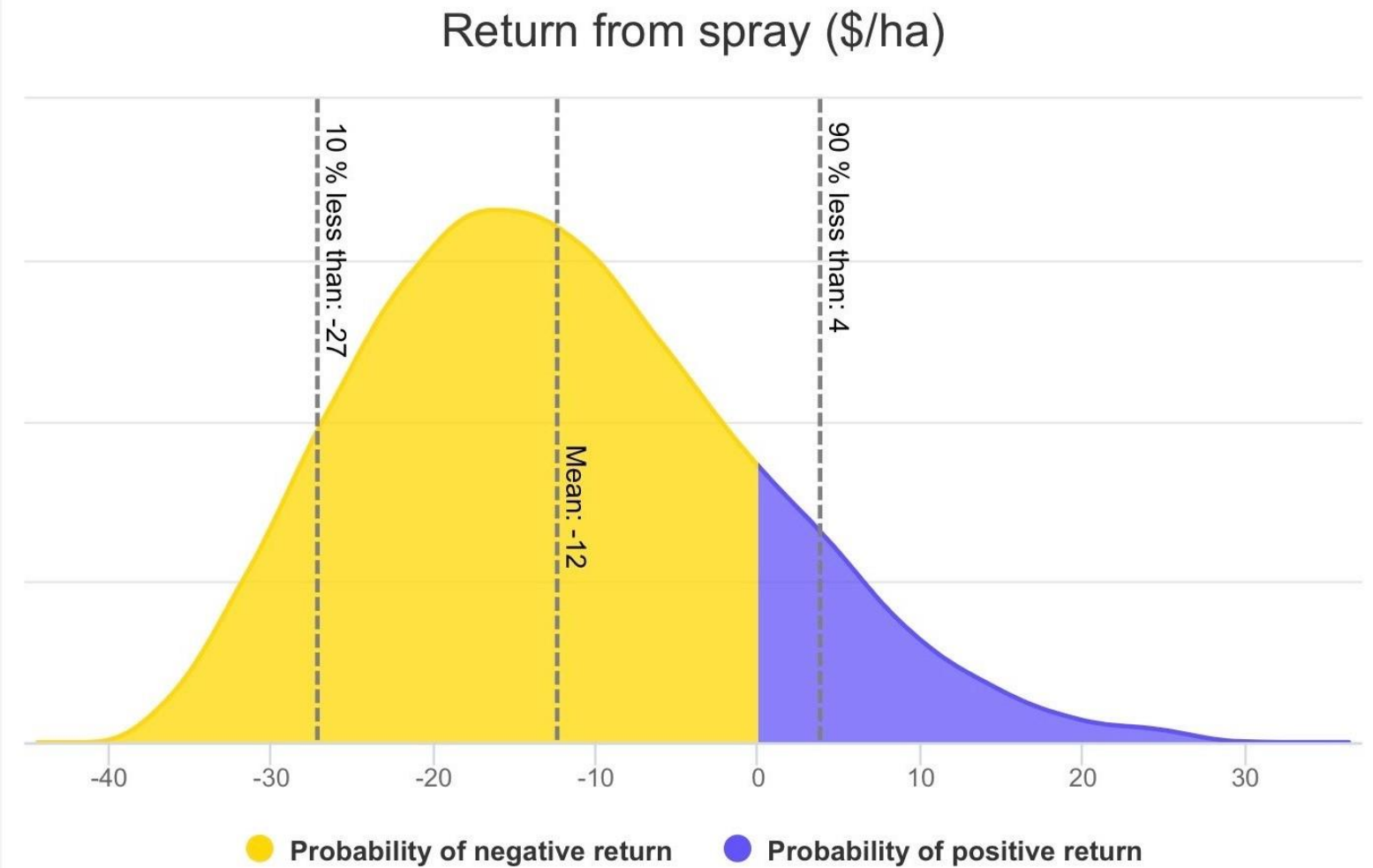


## Northampton 2019

# 2020 Trials

Sclerotinia stem rot  
at 4 out of 5 trial sites

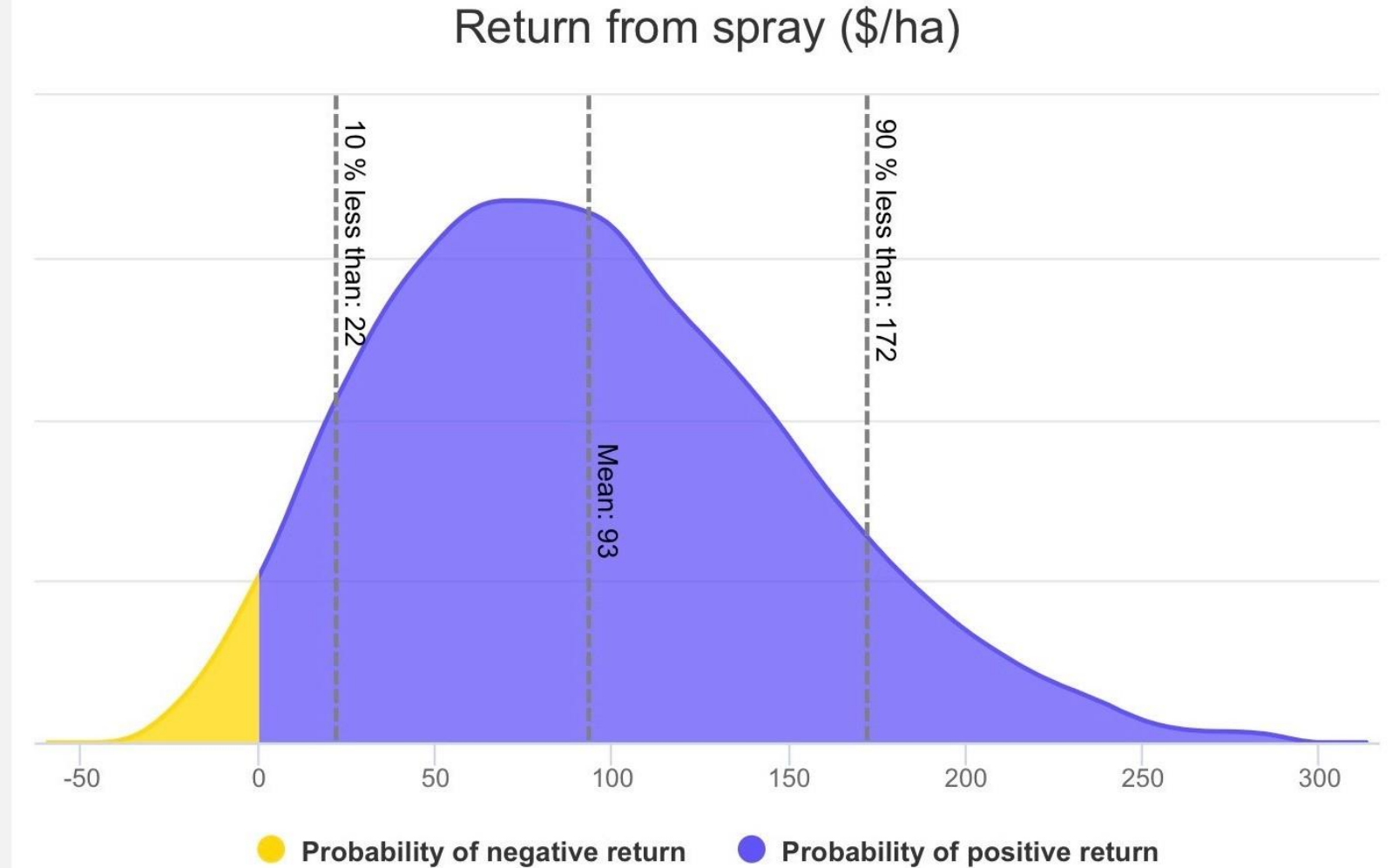
- Petal test 73%
- 39% of plants infected
- Ave yield 2.1 t/ha



## South Greenough 2020

# 2022 trial

- Petal test 90%
- 39% of plants infected
- Ave yield 2.4 t/ha





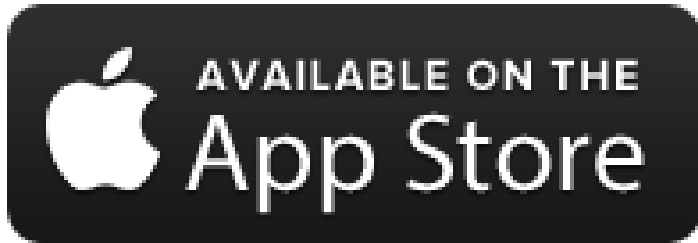
# Conclusions for SclerotiniaCM testing

Accurately predicts circumstances in which sclerotinia stem rot might develop

## Key message:

Look at the graph view and pay attention to the proportion of yellow and purple in the graph

➤ Now available on phones



# Acknowledgements

- ❖ Funding from GRDC and DPIRD for disease modelling projects DAW2112-002RTX, DAW1810-007RTX and DAW00228
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# Thank you

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