



Understanding if and how alternative products  
can control apple scab for future incorporation  
into apple scab strategies

Dr Tom Passey

# Project History



- AHDB commissioned CP 205: Horticulture crop protection efficacy studies 2022 – Call 1: WP4 Scab control on pome fruit
- Trial developed alongside AHDB to test efficacy of various products preventatively and curatively against apple scab
- Products selected were:
  - authorised in UK or with high chance of authorisation
  - available for use in Organics
- Trial commission, details, approvals and product arrival did not progress as fast as the trees and due to high temperatures in summer of 2022 trees stopped growing and leaves were not sufficiently susceptible to the scab inoculum



# Project history



BAPL commissioned a repeat of the AHDB trial at the start of 2023



Project handed over to HCP at the end of June 2023



# New product testing

<b>Product</b>	<b>Active substance</b>	<b>MAPP number (if available)</b>	<b>On-label or EAMU number (if available)</b>	<b>Experimental approval needed (Y or N)</b>
Core	Captan	16934	On-label	
Difference	Difenoconazole	16129	On-label	
AHDB9762	Bacteria Biocontrol	XXXXX		PERMIT FOR TRIAL PURPOSES COP
AHDB9711	Elicitor and metal	n/a		PERMIT FOR TRIAL PURPOSES COP
HCP9692	Elicitor	XXXXX		PERMIT FOR TRIAL PURPOSES COP
HCP9693	Elicitor	XXXXX		PERMIT FOR TRIAL PURPOSES COP
AHDB9791	Bacteria Biocontrol	XXXXX		PERMIT FOR TRIAL PURPOSES COP
AHDB9808	Inorganic compound	XXXXX		PERMIT FOR TRIAL PURPOSES COP



# Trial set up

- Trial products applied to trees the day before (preventative) or the day after (curative) inoculation event
- 5 blocks
- 15 treatments total (6x products, 1x preventative control product, 1x curative control product, 1x untreated control)
- 1 potted tree per treatment per block
- Potted trees under protection used so scab only from trial period
- Products applied at label rate to run-off



# Experiment 1

- 10<sup>th</sup> to 12<sup>th</sup> May
  - Natural inoculum
  - Insufficient scab for analysis
  - Untreated Control scab on only 2 out of 5 trees (11 lesions total)

<b>Product</b>	<b>Pre inoculation</b>	<b>Post inoculation</b>
Control	0 (Captan)	0 (Difference)
AHDB9762	1	8
AHDB9711	0	1
HCP9692	2	6
HCP9693	1	2
AHDB9791	9	11
AHDB9808	1	0



# Experiment 2

- 21<sup>st</sup> to 24<sup>th</sup> June
  - Artificial inoculation only
  - High temperatures (>30°C) day of inoculation and 72 hours afterwards
  - No scab on untreated control
  - Only 15 lesions found in whole trial (although 12 lesions found on a single tree treated pre-inoculation with treatment AHDB9791)



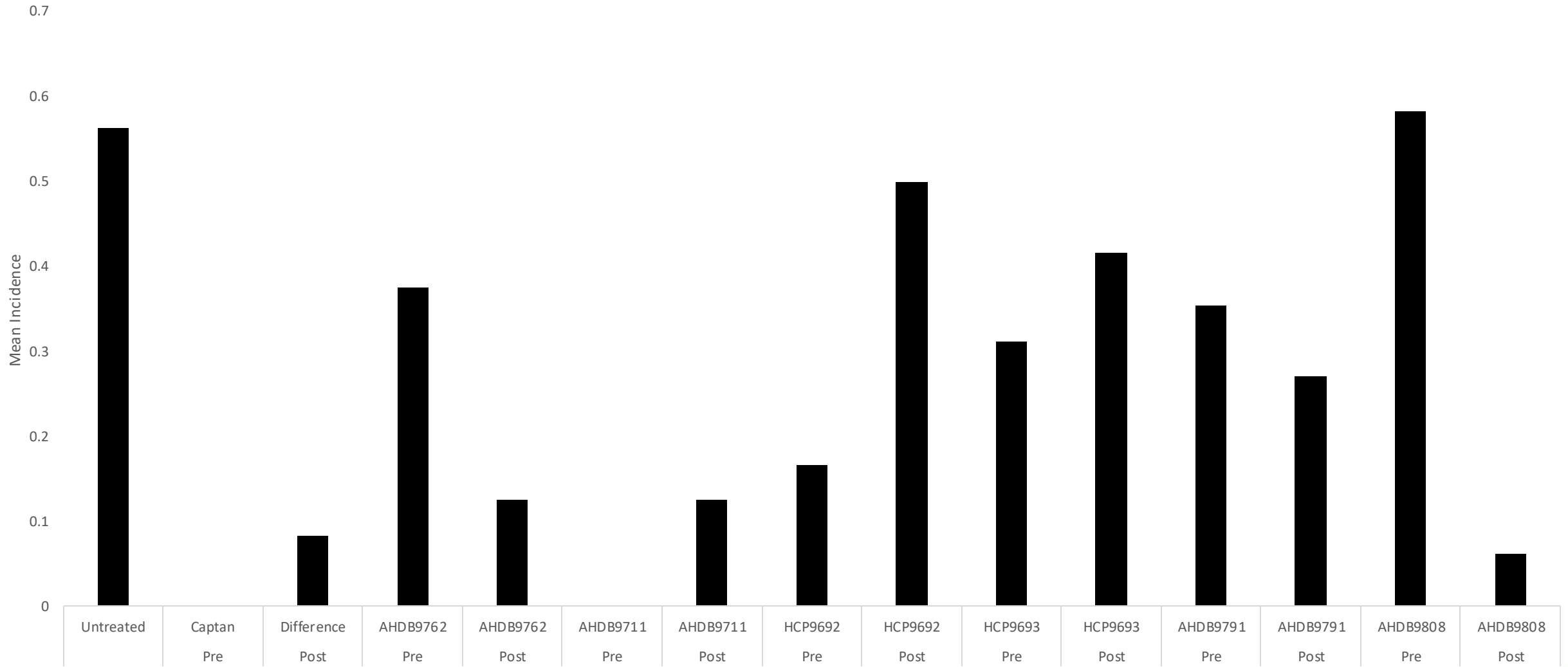
# Experiment 3

- 26<sup>th</sup> to 28<sup>th</sup> July
  - Artificial Inoculum only
  - Successful inoculation – scab found on all uninoculated trees

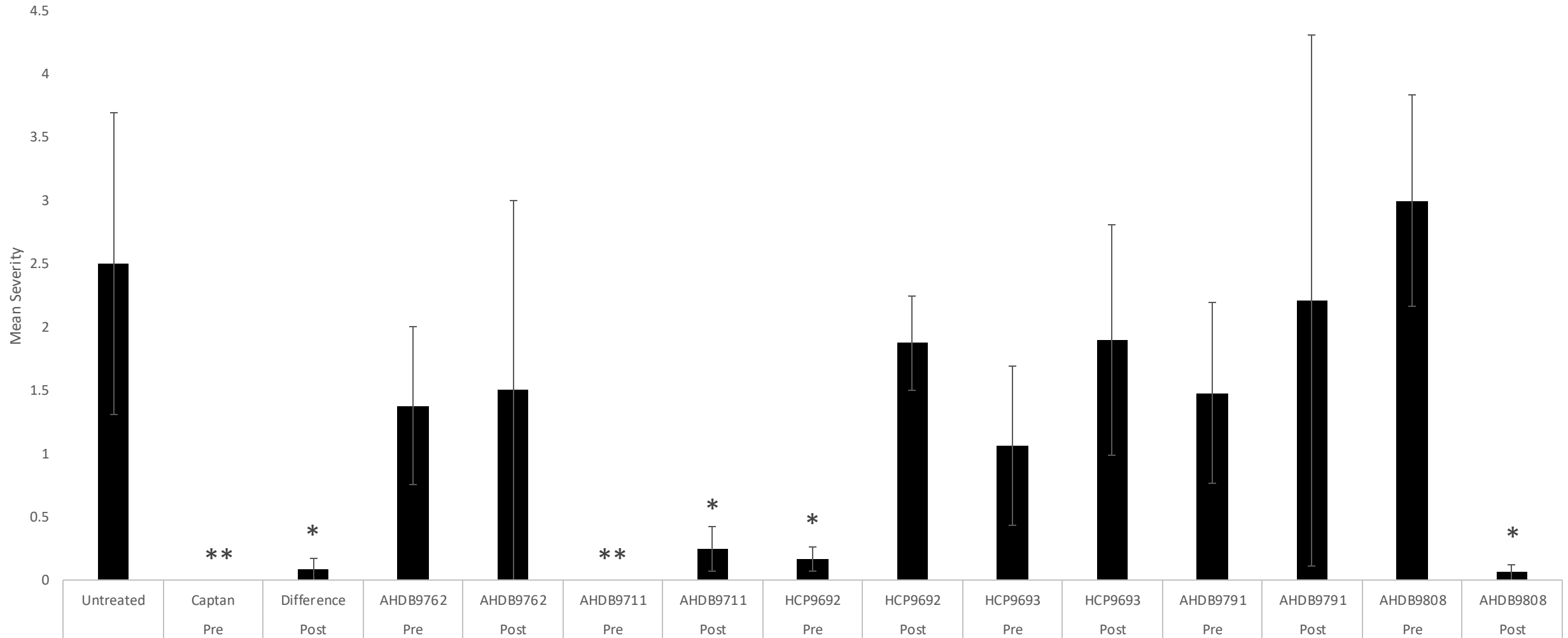




# Incidence of scab



# Severity of Scab



# Conclusions

- Treatment AHDB9711 (Elicitor and metal) appears to have efficacy against scab when applied before and after an inoculation event
- Treatment HCP9692 (Elicitor) appears to reduce scab when used preventatively
- Treatment AHDB9808 (Inorganic Compound) appears to reduce scab when used curatively
- Treatments AHDB9762 and AHDB9791, both bacterial biocontrols, did not reduce levels of scab



# Next steps

- Full orchard trial of AHDB9711, HCP9692 and AHDB9808 over a season
- Authorisation (On-label/EAMU)
- Incorporation of products into an IPM scab strategy
- Overwintering control



# Thank you



**Horticulture**  
Crop Protection

**Carlos Duarte**

Adam Doxford

Rachel McGauley

**Xiangming Xu**

Katie Stewart

Joyce Robinson

East Malling Glasshouse Team





niab.com

