

# Improving Robustness in Scab Control

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# Why?

- Loss of fungicides
- Restrictions on use
- More and more scab susceptible apple varieties!
- Pear scab on the rise?



# **I** mproving **R** obustness **I** n **S** cab control

- **Concept**
  - Products which might fill the gaps
    - Biostimulants
    - Elicitors
    - Nutrients
    - Biofungicides
    - New conventional fungicides

# IRIS Design

- Untreated control
- Full scab control programme
- 'Light' scab control programme
- Trial products

# Products trialled 2021-2025

- 4 Biostimulants
- 5 Biofungicides
- 8 Nutritional Feeds
- 1 Growth Regulator
- 2 Traditional Fungicides



# Trial overview

- Fully replicated experiments managed by Oxford Agricultural Trials
- Treatments applied in 400 l/ha
- Base treatments applied at start of season to all plots
- Dynamic design
  - if disease pressure is high the trial can be modified
- Assessments of leaf scab made in June and August
- Assessments of fruit scab August and at harvest
- Yield size and quality assessed
  - Assess biostimulant effects

# IRIS 2021-2025

- More than 20 products assessed
- Some did not provide a reduction in scab
- Others provided consistent results



# Phorce

- Active stabilised Potassium Phosphite (38%)
- Nutrient complex N (5%) and  $K_2O$ (15%)
- Biostimulant
- Contains a patented stabilizer
- Guarantees the phosphite never oxidizes in your tank
- Rate 1.0 l/ha each spray round

# Procrop ISR

- Bacterial fermentation media and brewer's yeast
- 4% Copper
- Rate 1.0 l/ha each spray round
- OF&G approved



# Reef

- Liquid mineral fertilizer containing sulphur and copper
- Formulated as a suspension concentrate
- Excellent rainfastness, leaf coverage, efficacy & tank mix compatibility
- Rate 2.5 l/ha each spray round

# Trident Plus

- Copper (2%), zinc (4%) and cobalt (0.08%)
- Chelated using a natural citric polymer to boost uptake
- Rate 2.0 l/ha each spray round

# Mantrac Pro

- 500 g/l manganese
- Substantial Mn provision
- Quickly taken up by the crop
- Mobile within the plant
- Rate 0.25 l/ha each spray round

# Kudos

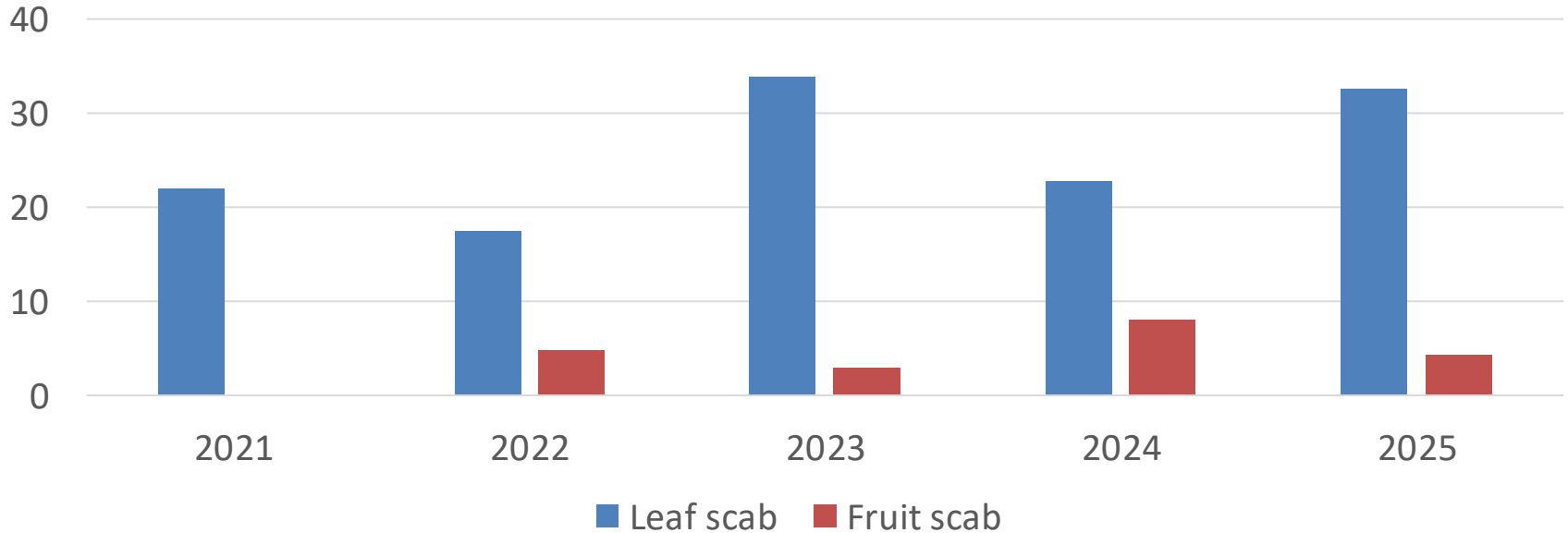
- Prohexadione calcium growth regulator
- Effects on fireblight known
- Some evidence of scab reduction in other trials
- 2 applications @ 0.6 kg/ha pre-flowering
- 3 applications @ 0.3 kg/ha late May & June

# Control treatments

- Untreated
- Robust control – Delan Pro each spray round
- Light Control – 1 fungicide pre-flowering

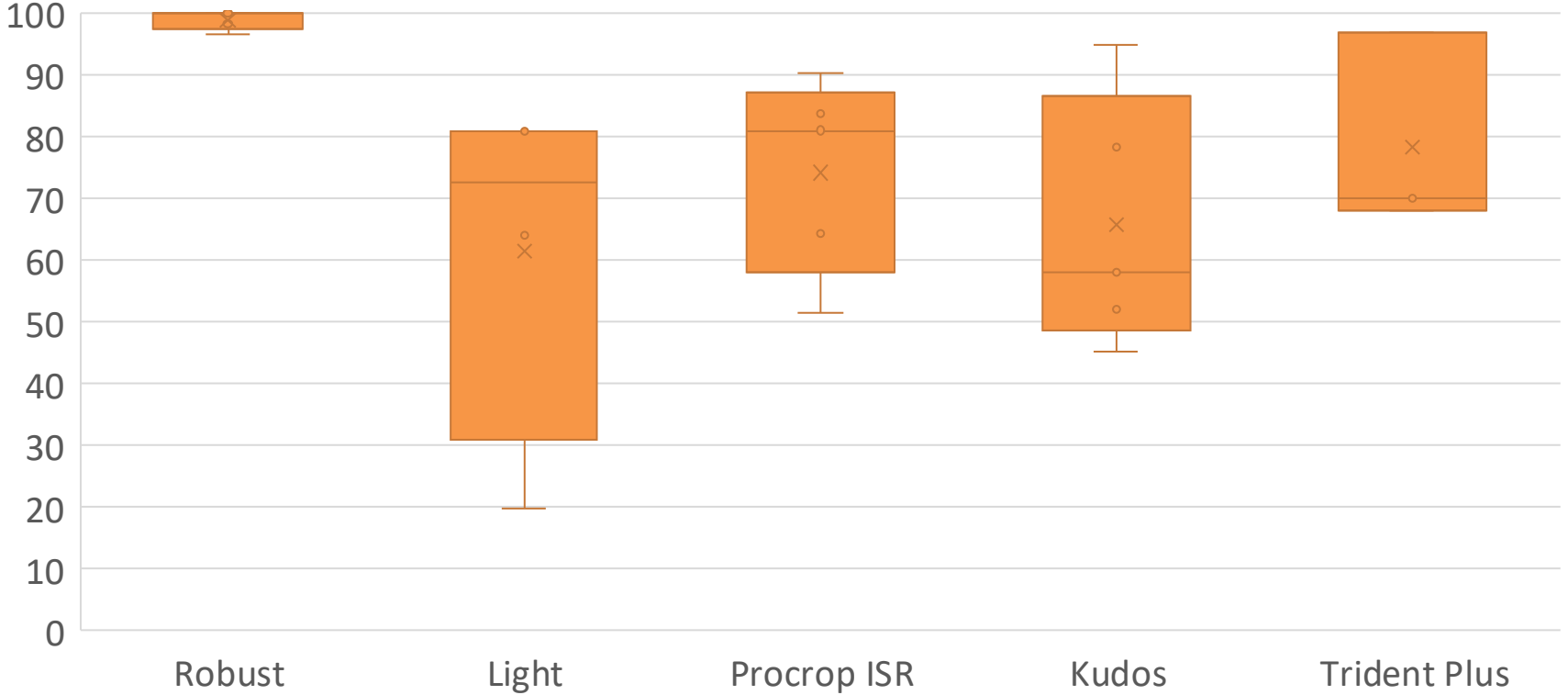
# Relative scab infection

Per cent scab in untreated plots

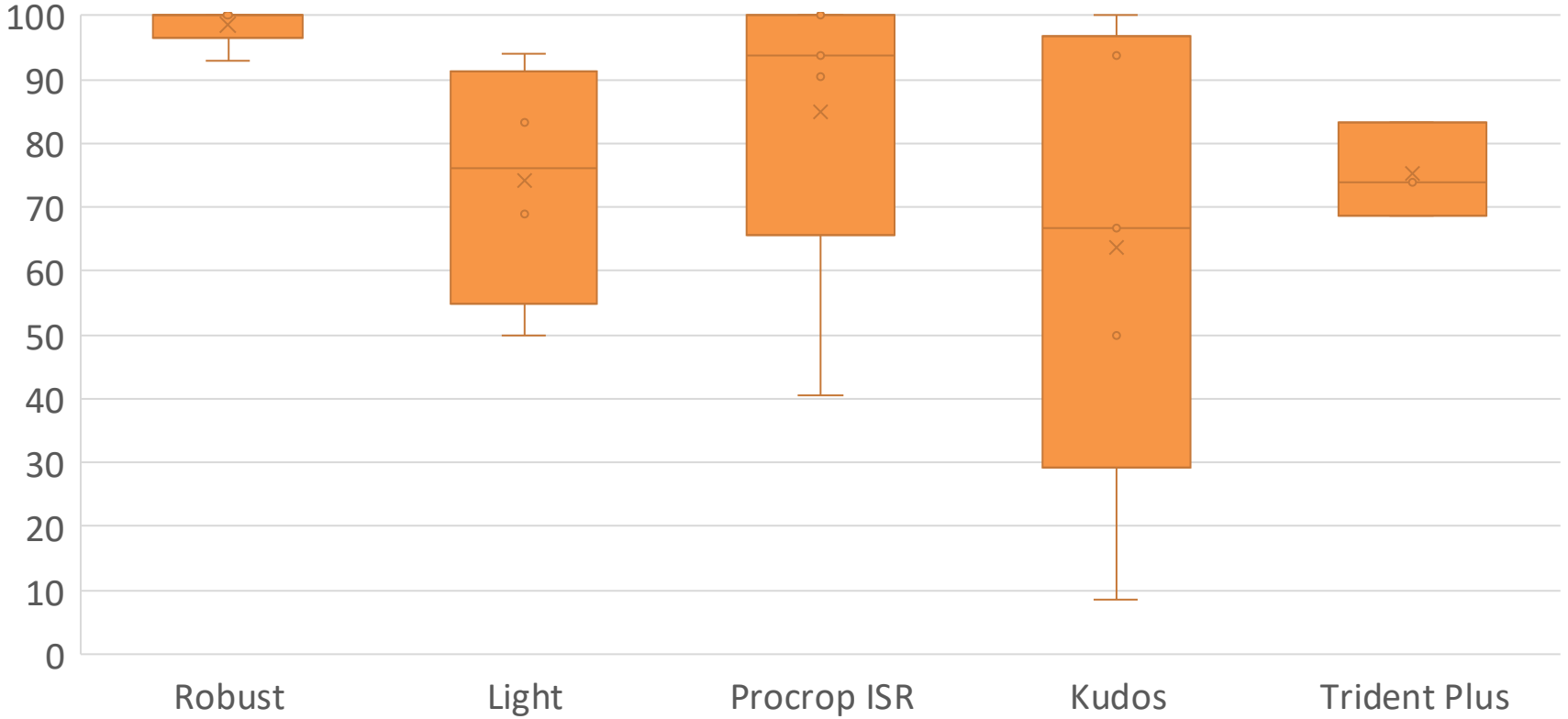


Fruit scab not  
assessed in 2021

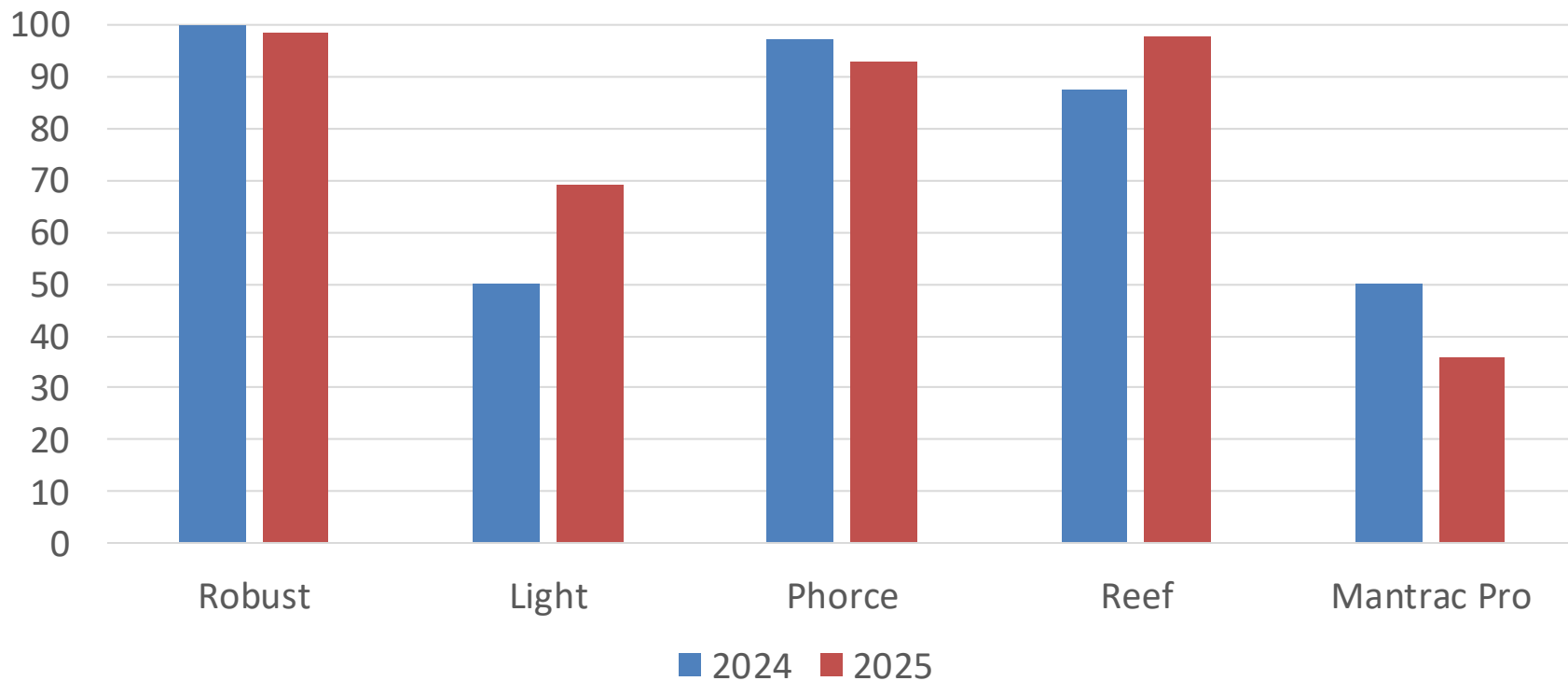
Per cent control of leaf scab  
August assessment



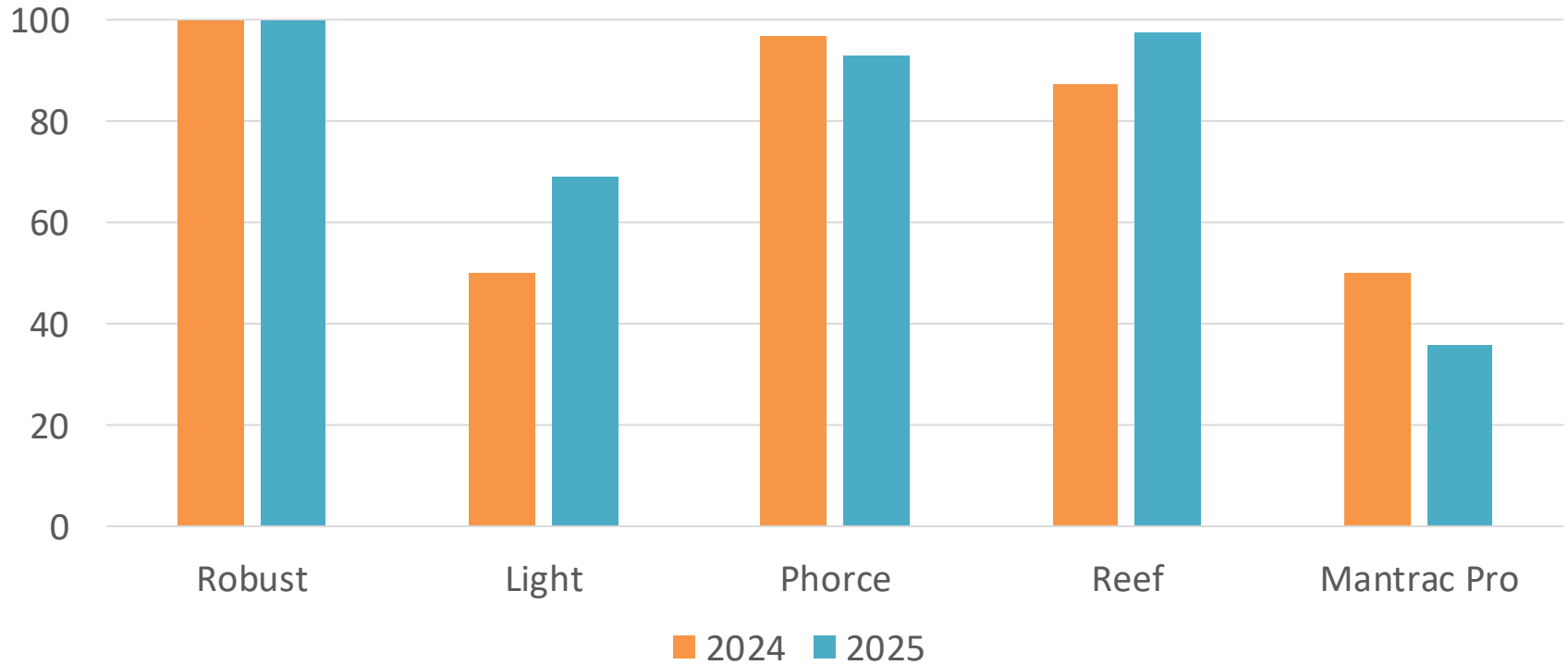
# Per cent control of fruit scab August assessment



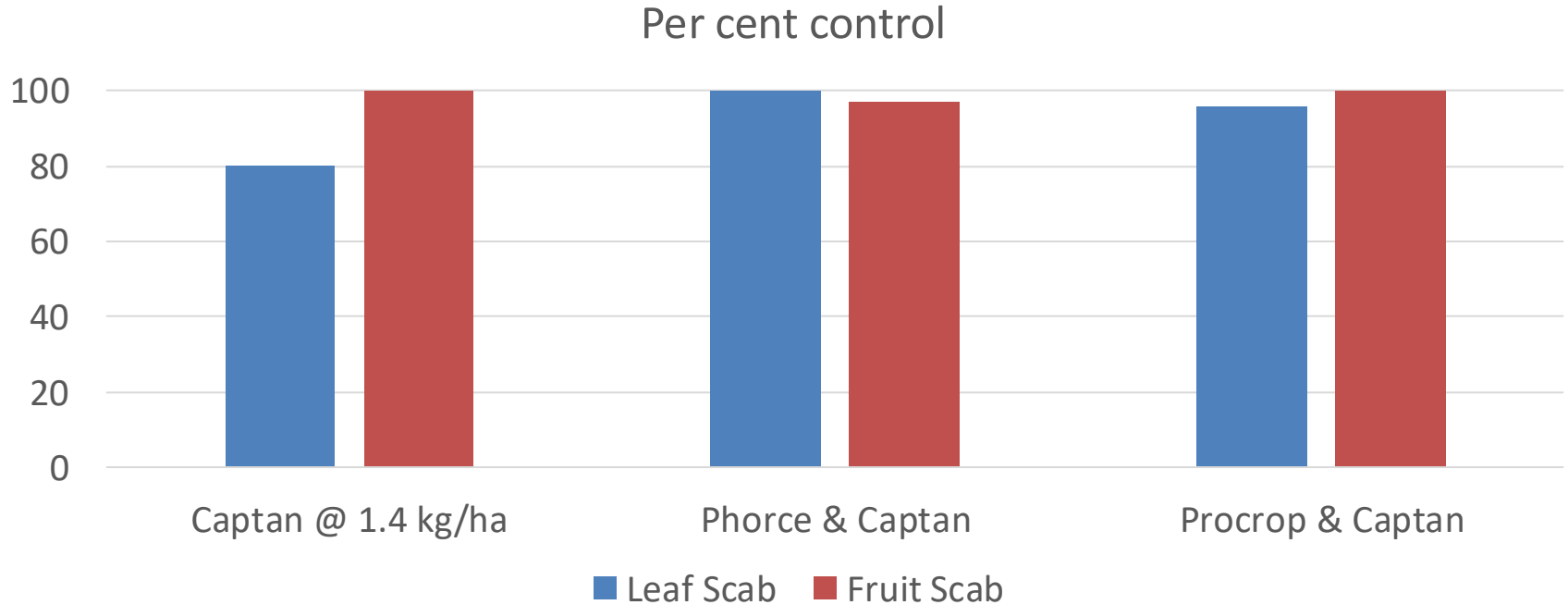
## Per cent control of leaf scab August assessment



## Per cent control of fruit scab August assessment



# Improving lower dose captan



# Other data collected

- Harvest yields and fruit size
  - Small plots
  - Stats not helpful
  - Big variations year-to-year
- Russeting at harvest
- Insect damage at harvest

# Measuring Biostimulant efficacy using specific wavelengths



# Points to ponder

- None of the disease differences reached statistical significance in any year
- We haven't done a multi-year analysis (yet)
- Trends are consistent
- Products are already being successfully used in commercial spray programmes

# Further points of note

- Scab pressure has varied from year to year
- Disease levels have varied around the trial
- RIMPRO has not correlated well with infections found
  - Backed by spore trapping



# Thanks for listening

