Late Blight and desiccation
The importance of application technology

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Agenda

- Application fundamentals
- Nozzle performance on late blight
- Why is this happening?
- Desiccation performance

Introduction

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Harry Fordham

- Stewardship Portfolio Agronomy Manager for Europe
  - Practical tools for growers and advisors to use
  - Application technology
  - Closed transfer technology
  - Disposal of washings
- Worked for Syngenta since August 2016 starting in the sales team in South East UK
- Previously worked as a farm manager on 3000 Hectare farm in South west of UK as well as various other locations growing 300 Hectares of potatoes and onions

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It’s a compromise…

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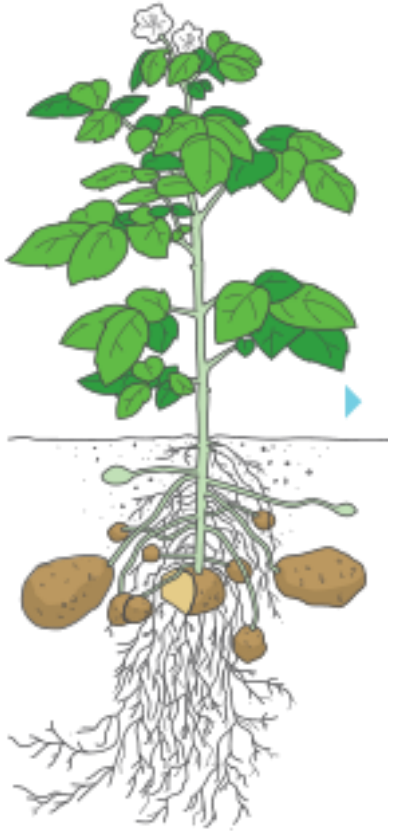
Why is application so important in potatoes?

POTATOES

- Multi-layered, dense canopy target
- Very aggressive disease pressure
- Mainly protectant products
- Variable water volumes
- Changing targets



Objective of late blight application trials

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- To establish how important droplet size and therefore drift reduction technology is in potato application
- Can we identify if some 90% drift reduction nozzles are more effective than others
- If we add a drift retardant, what is the effect on low drift nozzles and will it affect the efficacy of the applications
- How important is having an angle on the nozzle for deposition and efficacy

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The Trials – conducted over 3 years

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- Each treatment had 3 replicates
- Each plot was 4m (6 rows) wide and 11m long
- Application was done with Eurofins 12m Amazone mounted sprayer with a dosatron system

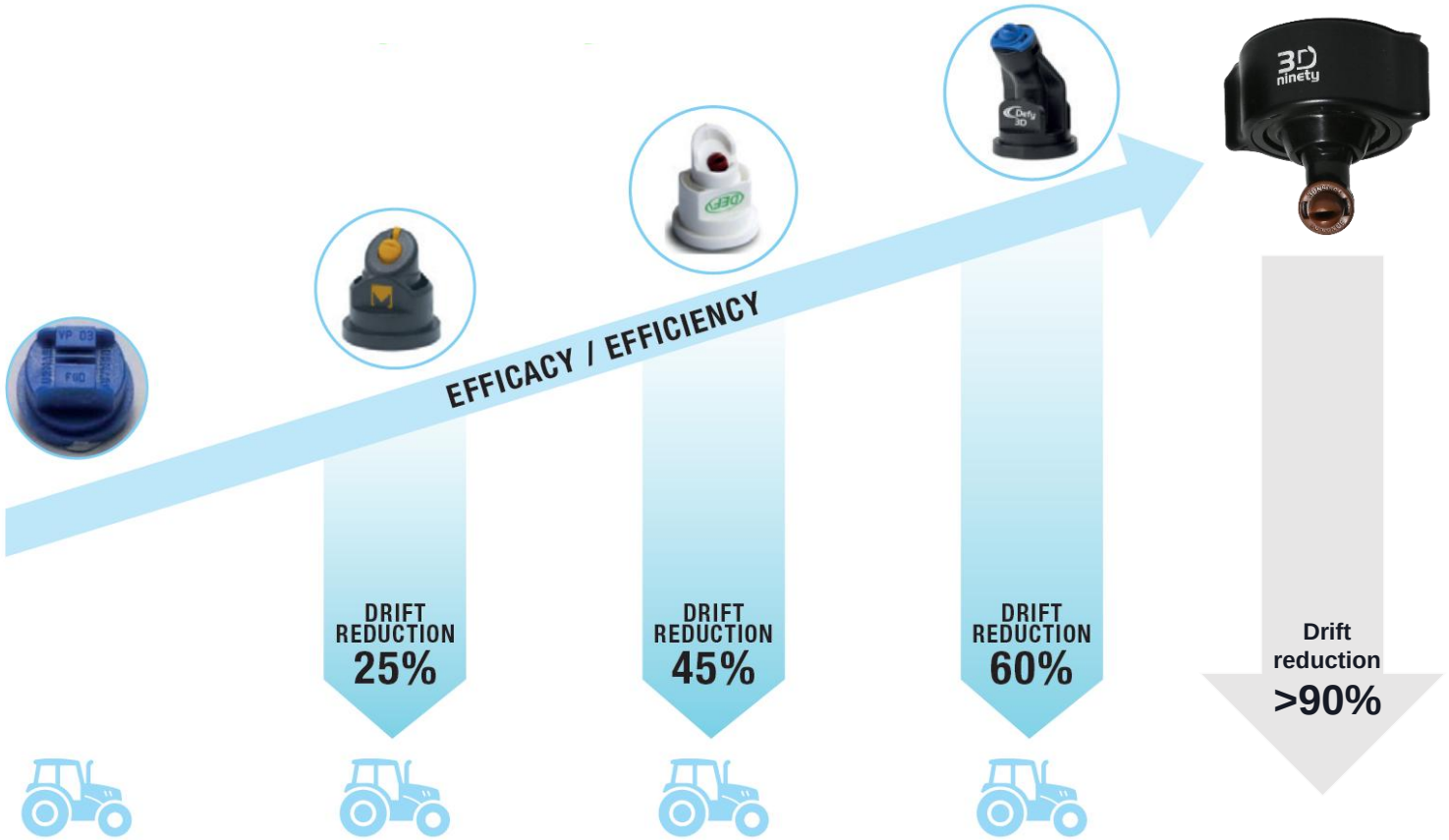
- 3 different nozzles
  - Syngenta 3D ninety
  - Lechler ID3
  - Flat fan (VP FF110)

Syngenta Angled Nozzles range

The culmination of 15 years' development

POTATOES

The Next step in 3D Technology



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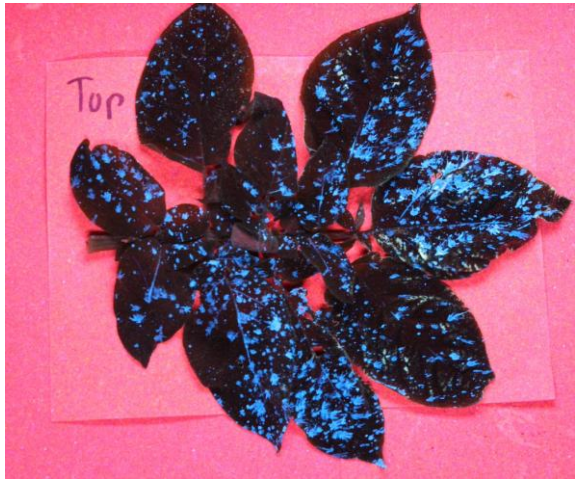
WHAT IS

- 90% drift reducing up to 5 bar pressure
- 55 degree angled nozzle – optimises deposition on front and back of

  targets
- Sizes: 03, 035, 04, 05, 06, 08
- Pre-em herbicides
- Potato fungicides
- Pre-orifice nozzle
- PWM Compatible
- Integrated snap-lock cap

Product Deposition
Lechler ID3
Revus solo

POTATOES



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Product Deposition
Syngenta 3D ninety
Revus solo

POTATOES

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Product Deposition
Lechler ID3
Revus + Drift retardant

POTATOES

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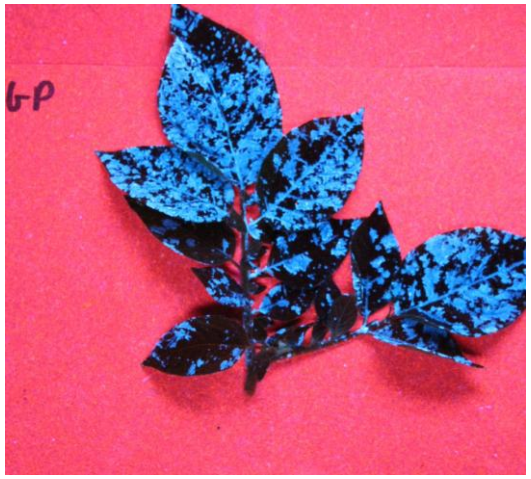
Product Deposition
Syngenta 3D ninety
Revus + Drift Retardant

POTATOES



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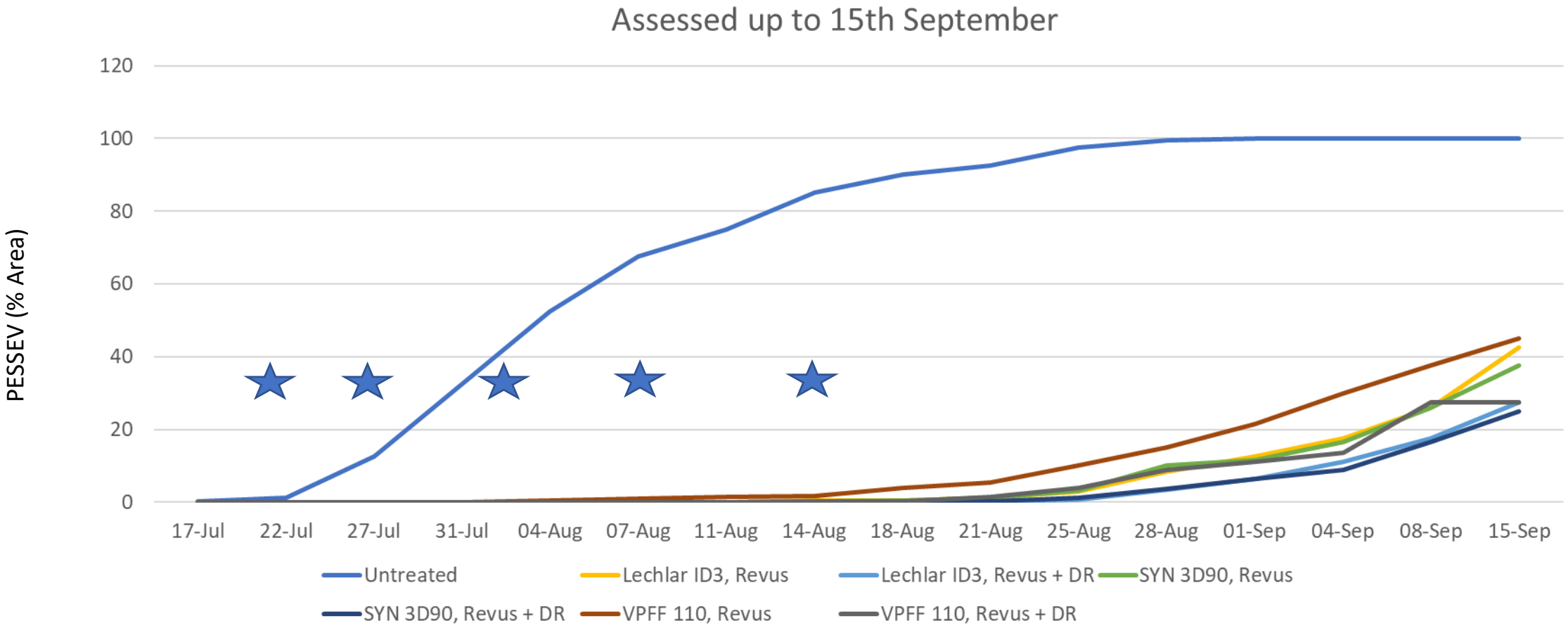
The impact of the choice of spray Nozzles on late blight control

POTATOES



Trial Code: S20-05021-01

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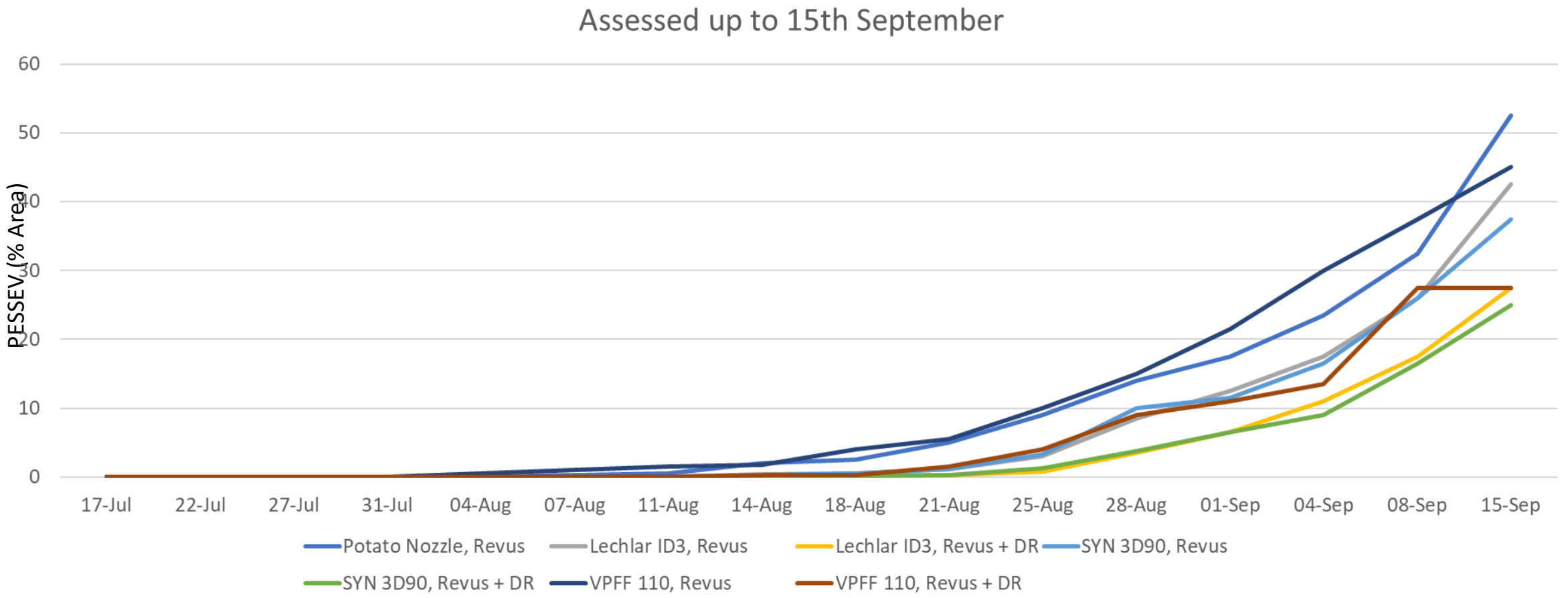
The impact of the choice of spray Nozzles on late blight control

POTATOES



Trial Code: S20-05021-01

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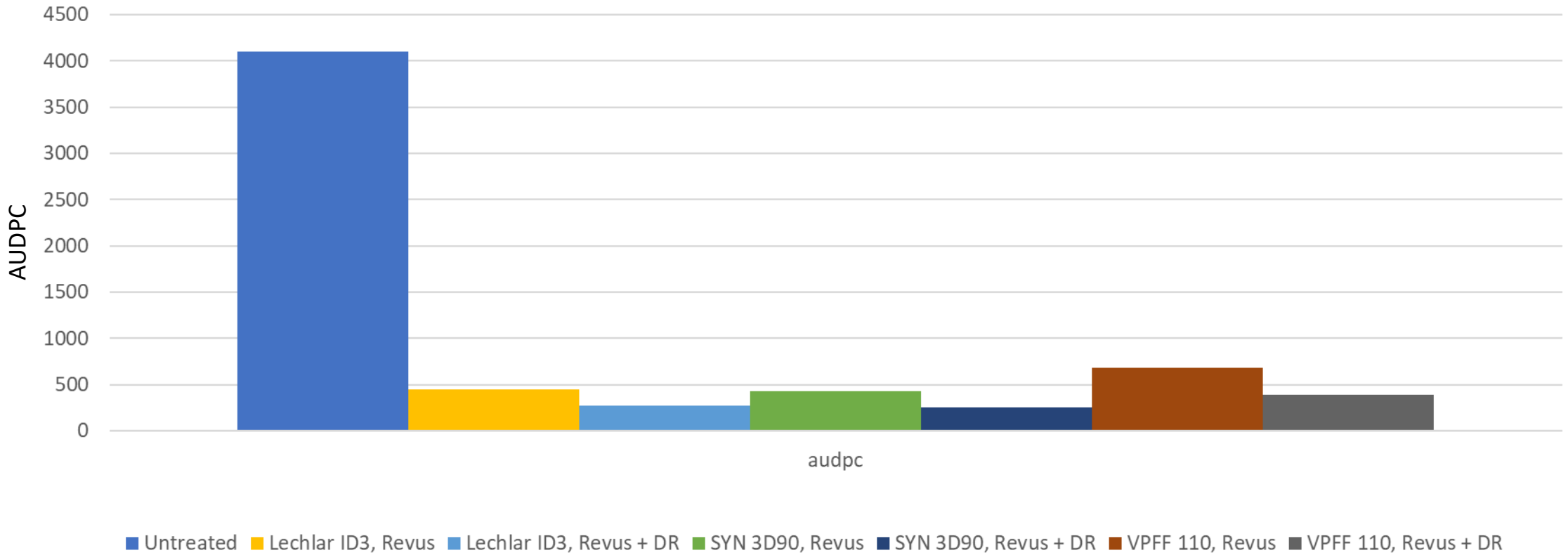
Assessment of Nozzle type and fungicide using AUDPC

POTATOES



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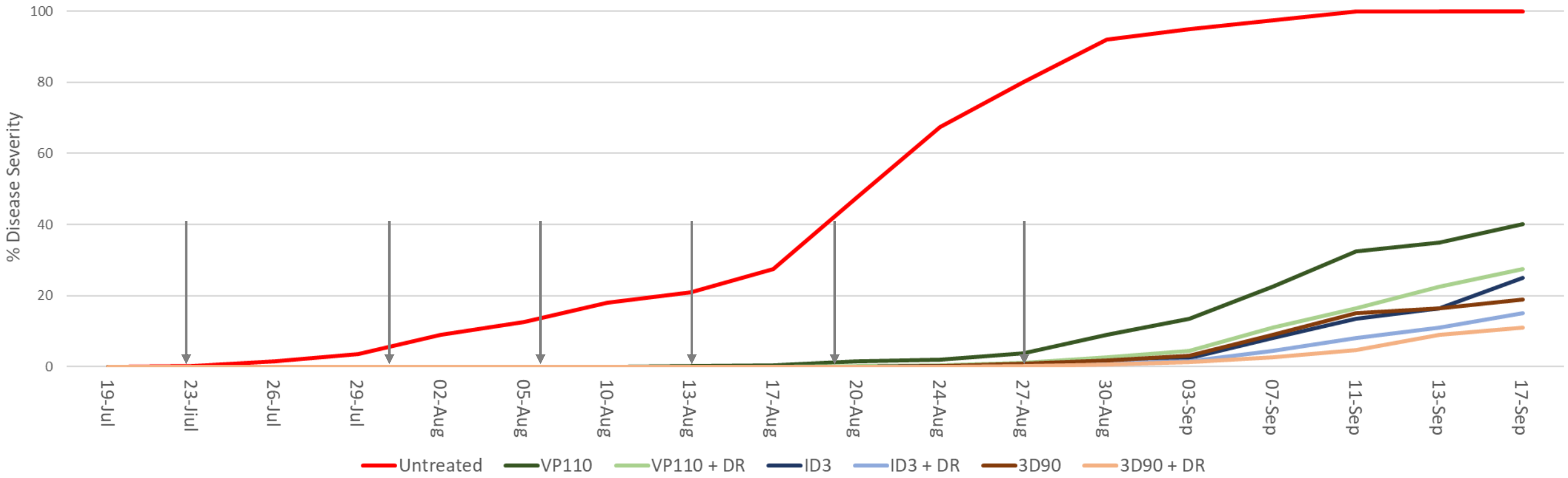
Development of late blight in the application study

POTATOES



Trial Code: S21-03721 Variety: Maris Piper Blight Strains: EU 37_A2 & EU 36_A2

Location: Barrow-Upon-Trent Planting Date: 14th June 2021

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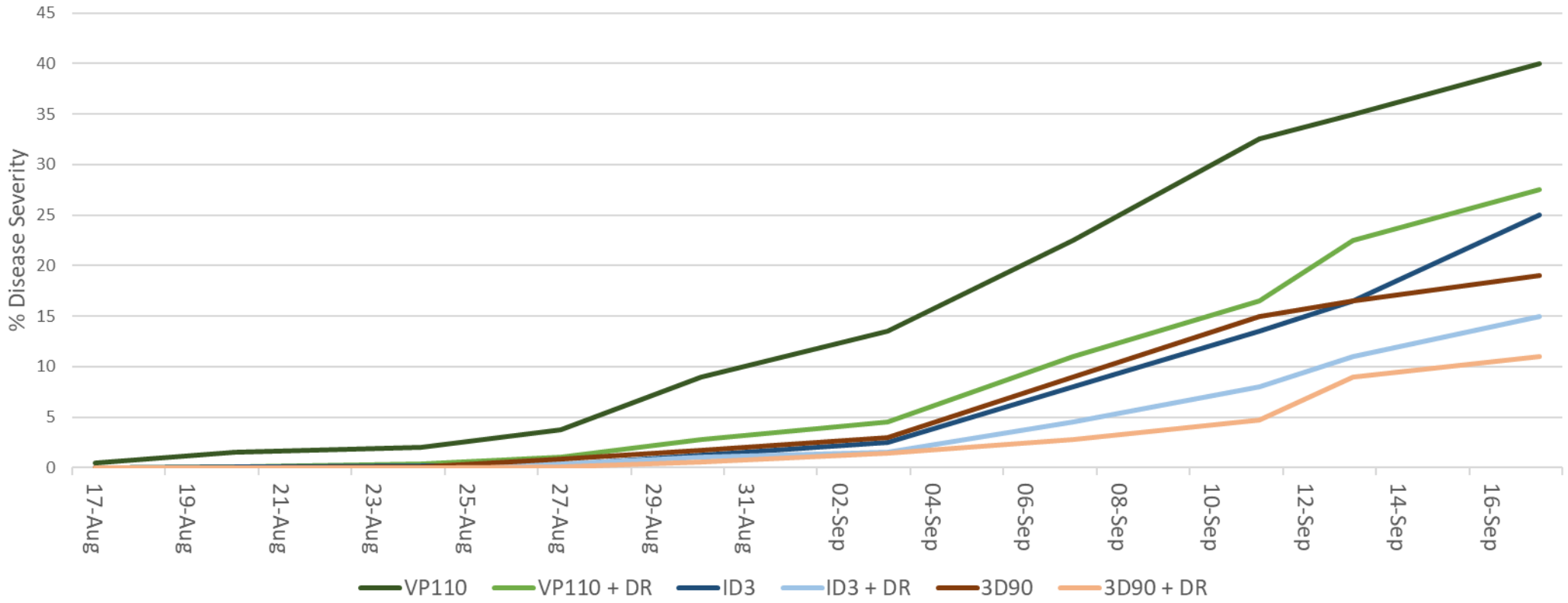
Development of late blight in the application study

POTATOES



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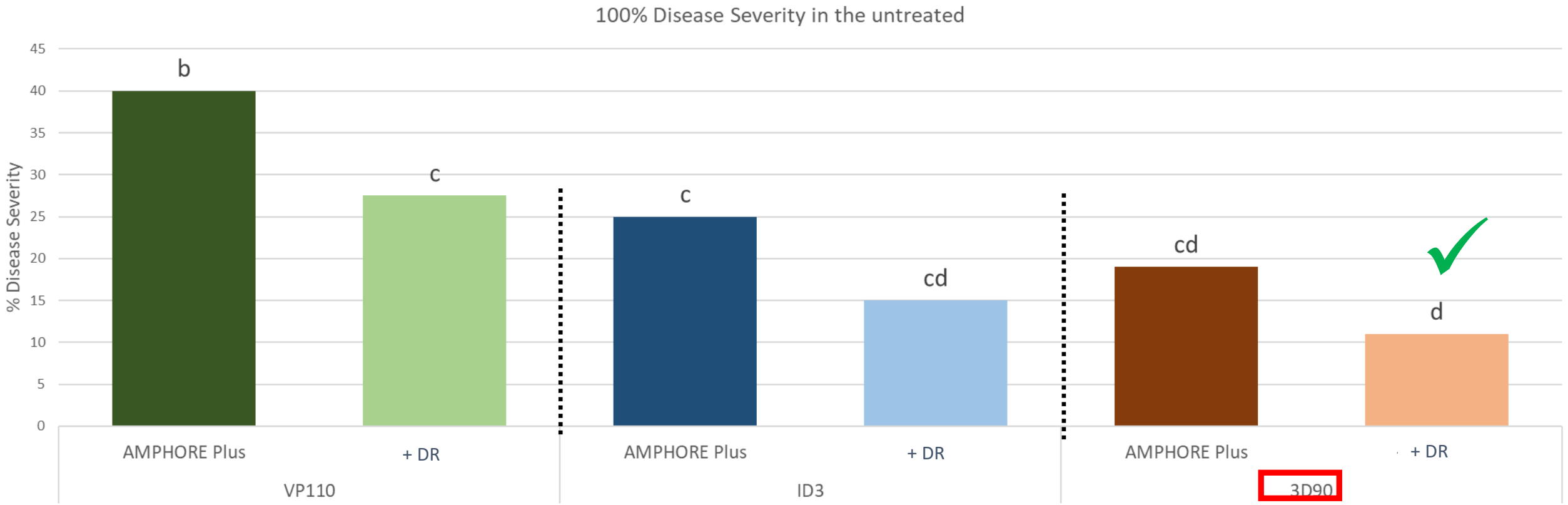
Late blight control in the application study
Final assessment 17th September

POTATOES



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AUDPC - Late blight control in the application study

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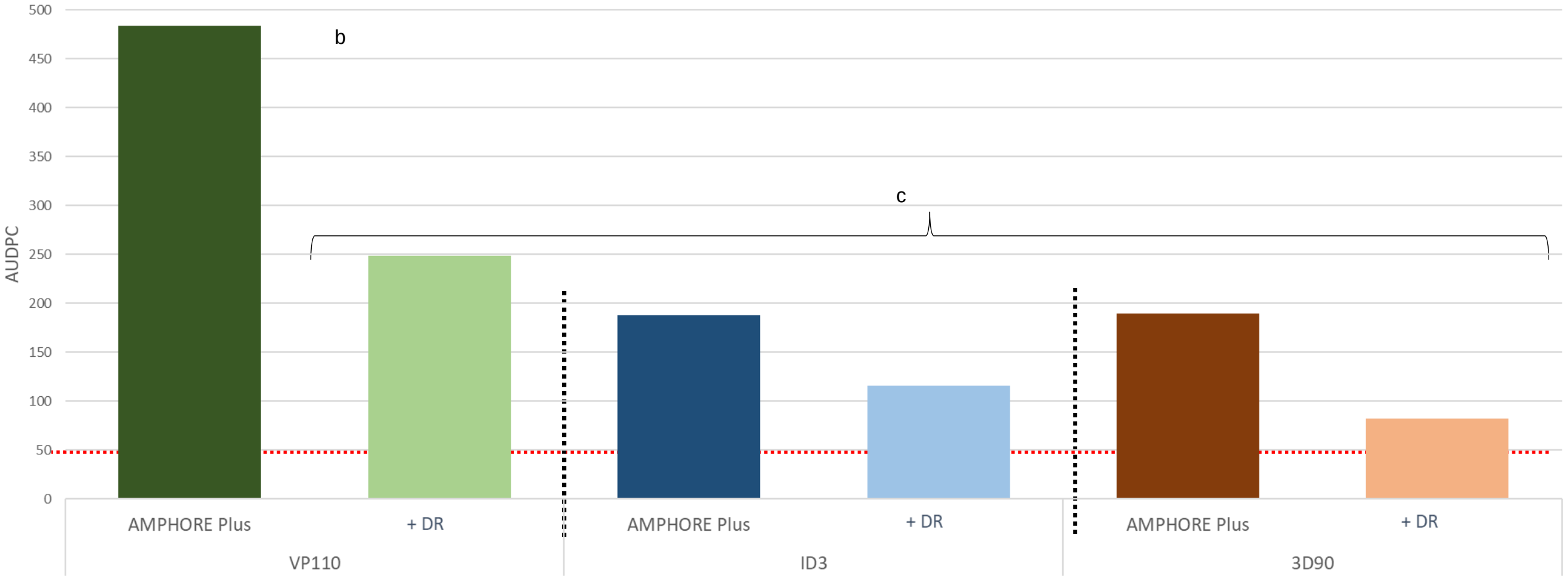

Trial Code: S21-03721 Variety: Maris Piper Blight Strains: EU 37_A2 & EU 36_A2

Location: Barrow-Upon-Trent Planting Date: 14th June 2021

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Conclusions for the application study

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- Even when applying a coarser droplet efficacy was not compromised – if anything it increased
- 3D ninety nozzle with a pre-orifice and angle performed much better than the Lechler ID3
- Drift retardant had an increase in efficacy – more work required to evaluate why this is the case
- Angled nozzles proving extremely important in terms of maximising coverage and therefore increasing efficacy

Application technology and desiccation

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Desiccation trial overview

- High water volume application (<400 l/ha)
- Key target is to hit the stems of the plant to accelerate burndown
- Timeliness of application is key and so application method needs to account for that
- Trial completed over 2 years in Scotland
- Products used were Spotlight Plus + Infinito
- Assessment technique was using Helios dye and black light photos

Nozzles

3D90 05

LERAP 4* up to 5 Bar

Alternate forwards and backwards

FF 04

Lechler IDTA 04

LERAP 3* between 2.01-4 Bar

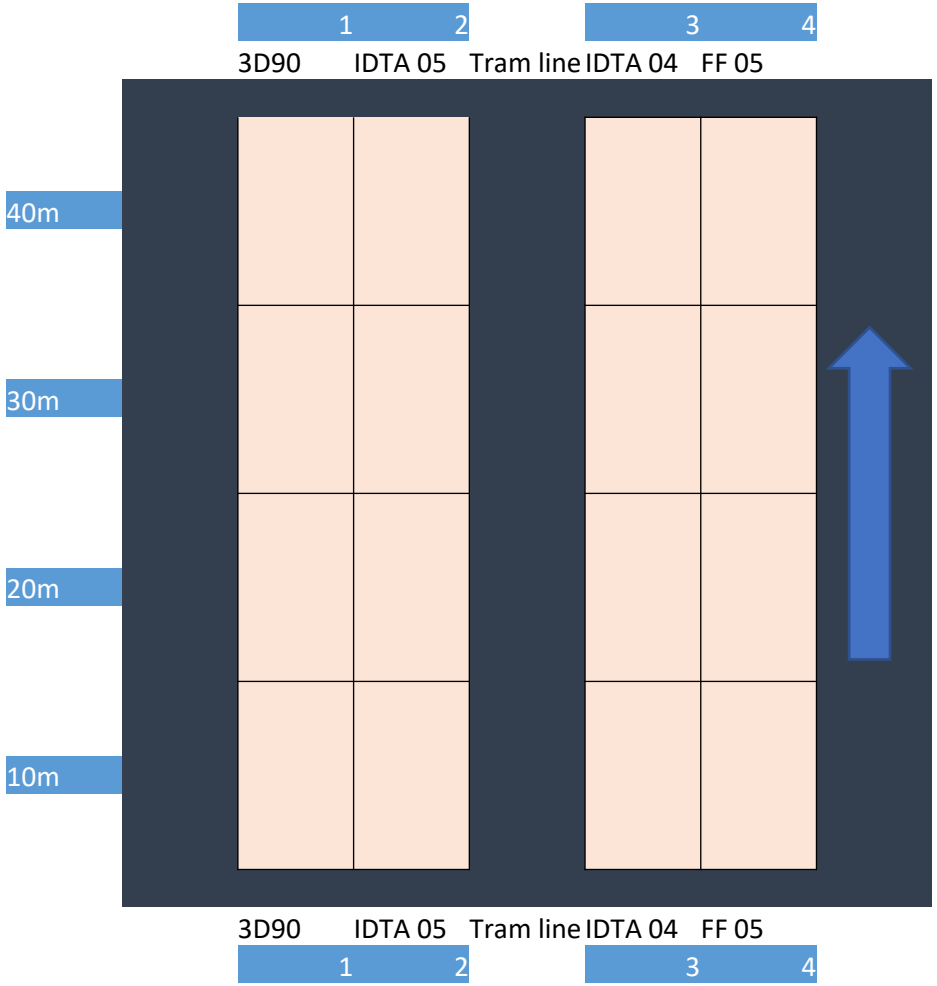
Lechler IDTA 05

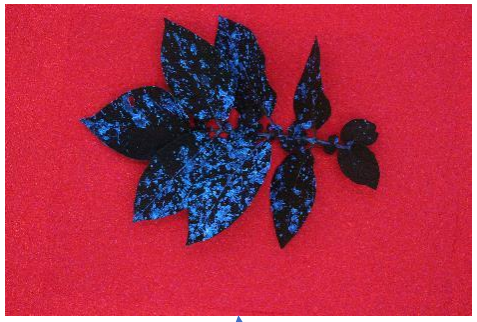
Weather and plant conditions on the day of trial

The plants were in good condition, no lodging was encountered nor areas of disease.

Weather conditions were good. Wind speeds of 7.7kph and temperatures of 18˚C.

Trial Layout





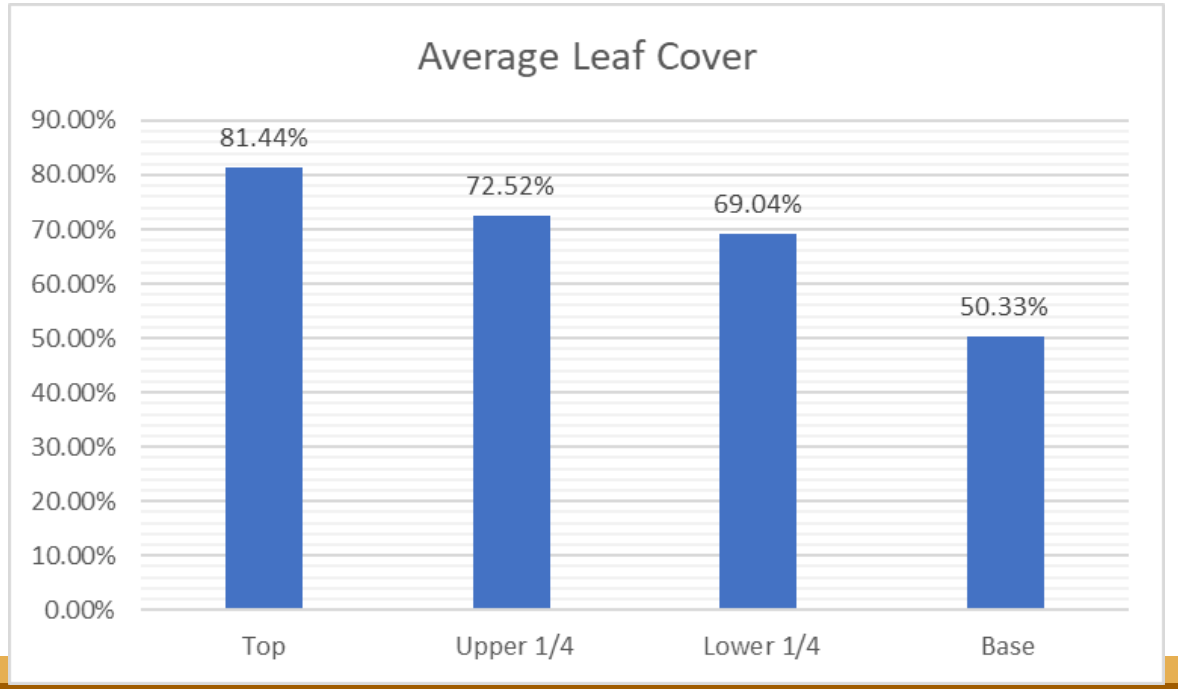
3D9005

Top

Upper 1/4

Lower 1/4

Base



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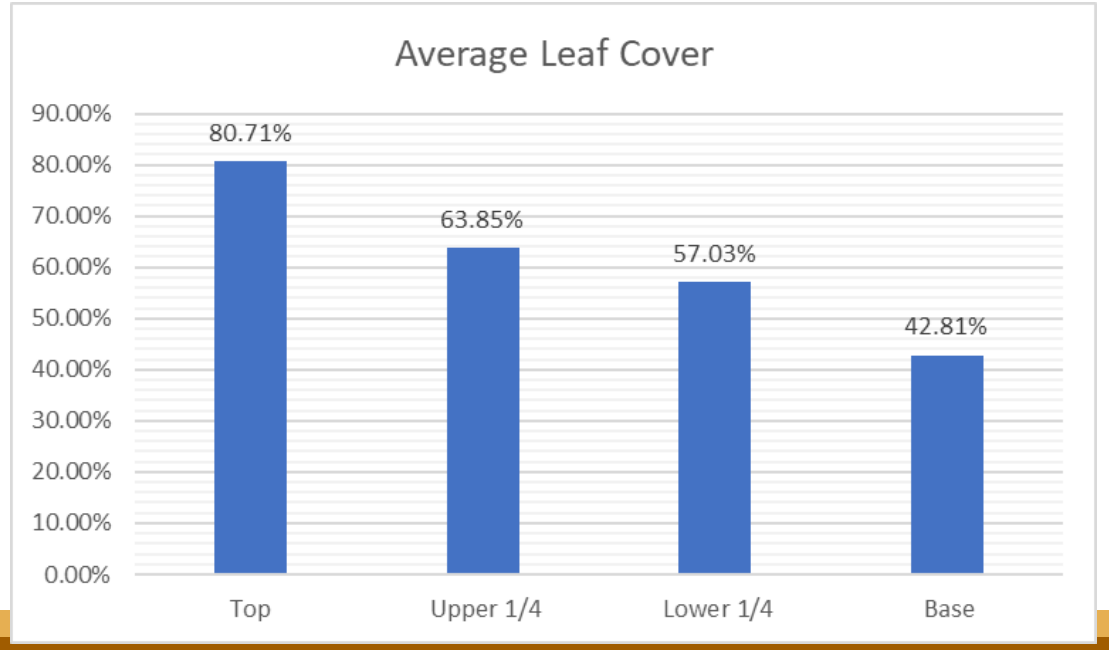
IDTA 05

Top

Upper 1/4

Lower 1/4

Base



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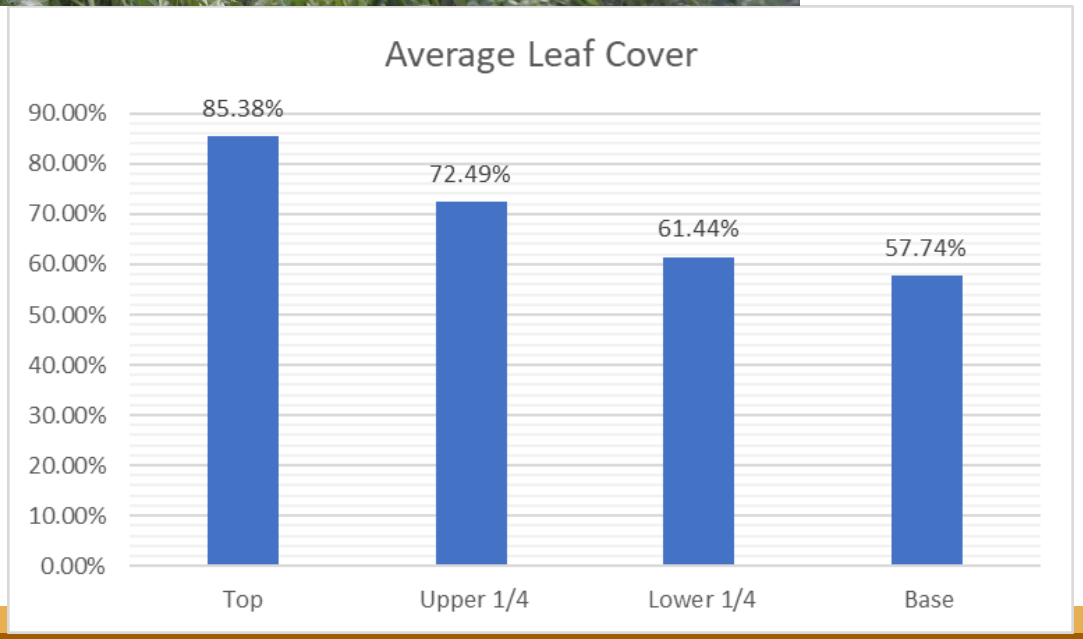
IDTA 04

Top

Upper 1/4

Lower 1/4

Base



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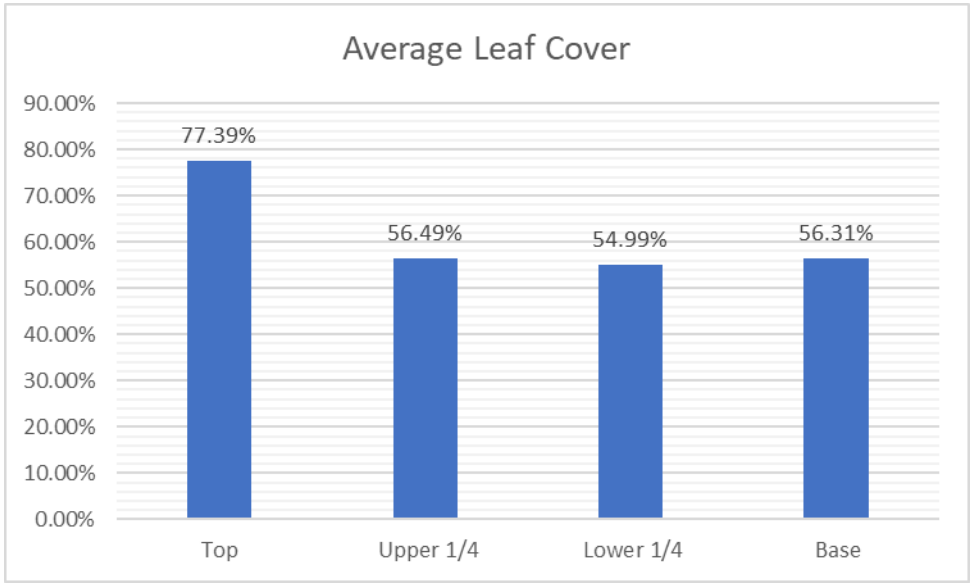
FF
04

Top

Upper 1/4

Lower 1/4

Base



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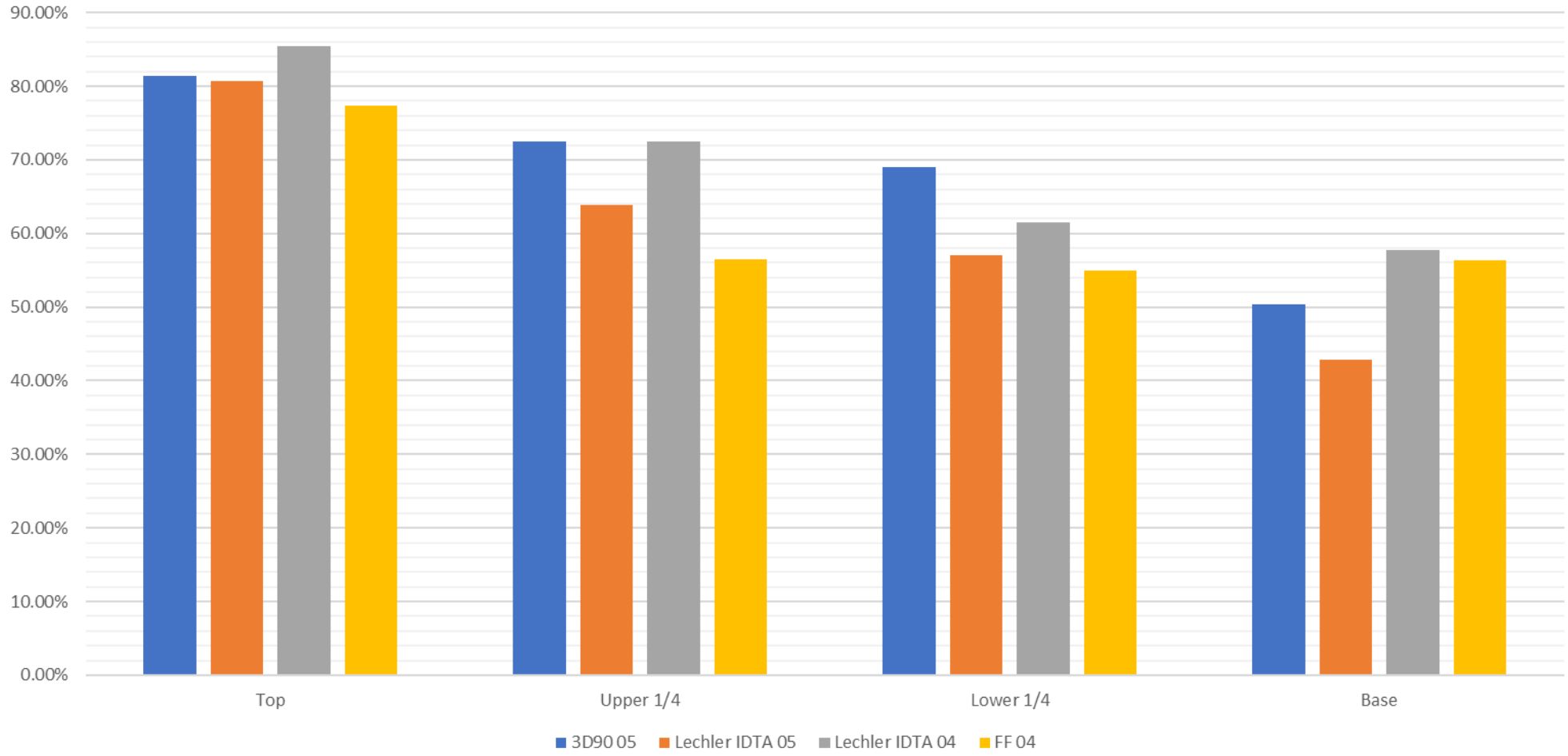
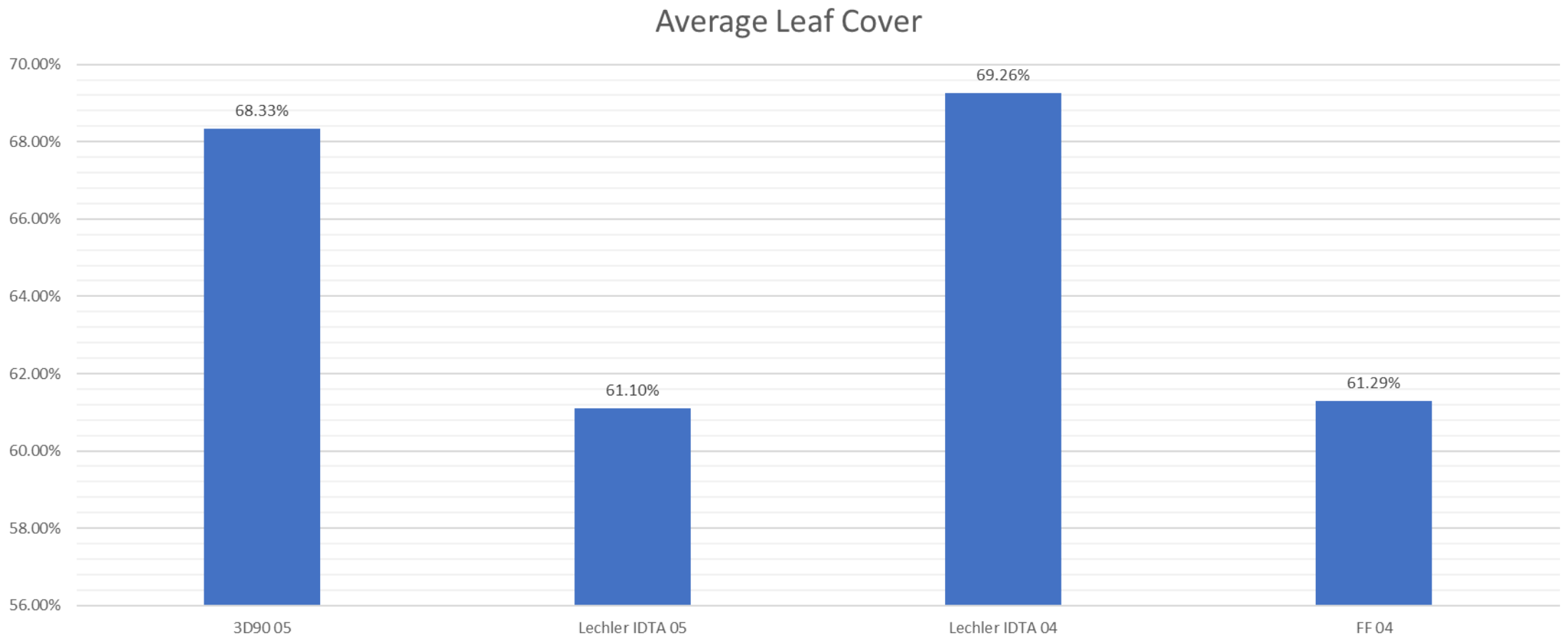
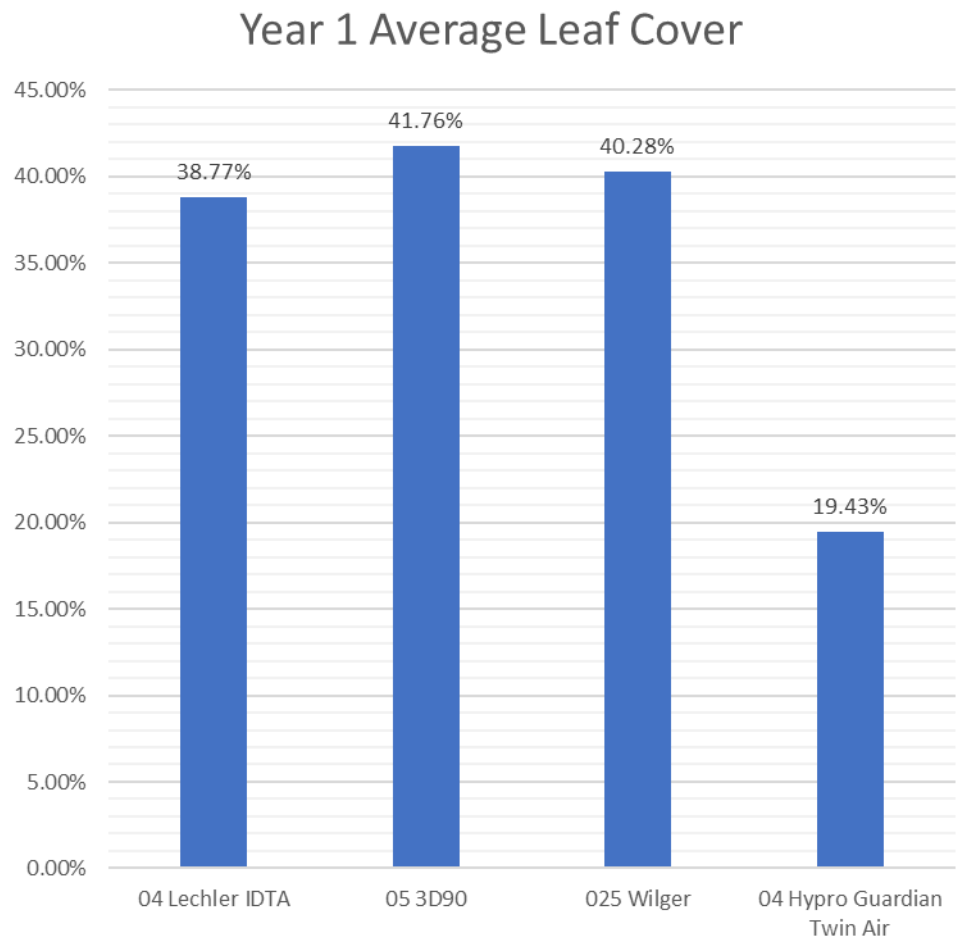
Segmented leaf coverage

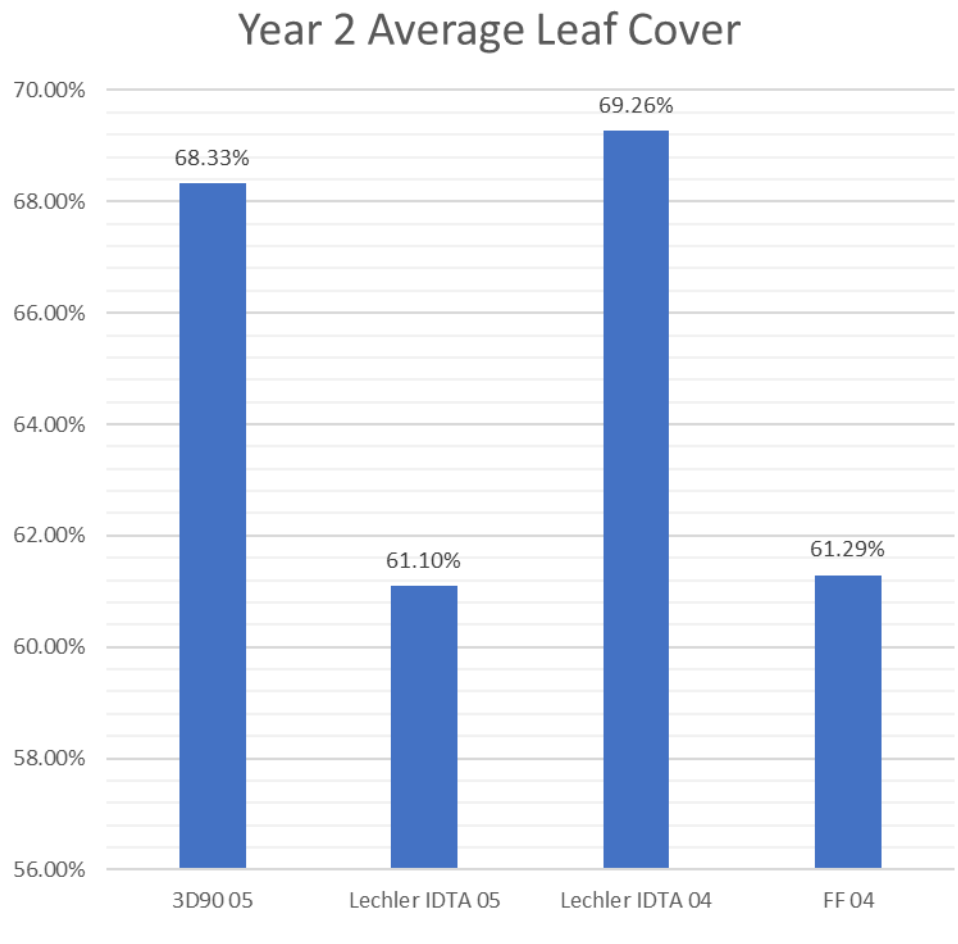


Total average leaf cover



Comparison of year 1 & year 2 trial





Conclusion

- Low drift angled nozzles (IDTA 04 & 3D90 05) with larger droplet sizes have produced better results in both trials compared to finer droplet sized nozzles.
- A lower speed increases coverage significantly
- The difference in % coverage between the two trials is due to increased canopy cover in Year 1.
- Important to remember that the weather conditions were good in this trial – in compromised conditions the results may have been different
- Do not be nervous about using drift reduction technology!

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Thank you for your time
Any questions?

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