



syngenta

Pulse Climate Smart Roadshow
Innovative solutions to boost

Agenda



Sustainability site project at Elveden

Application

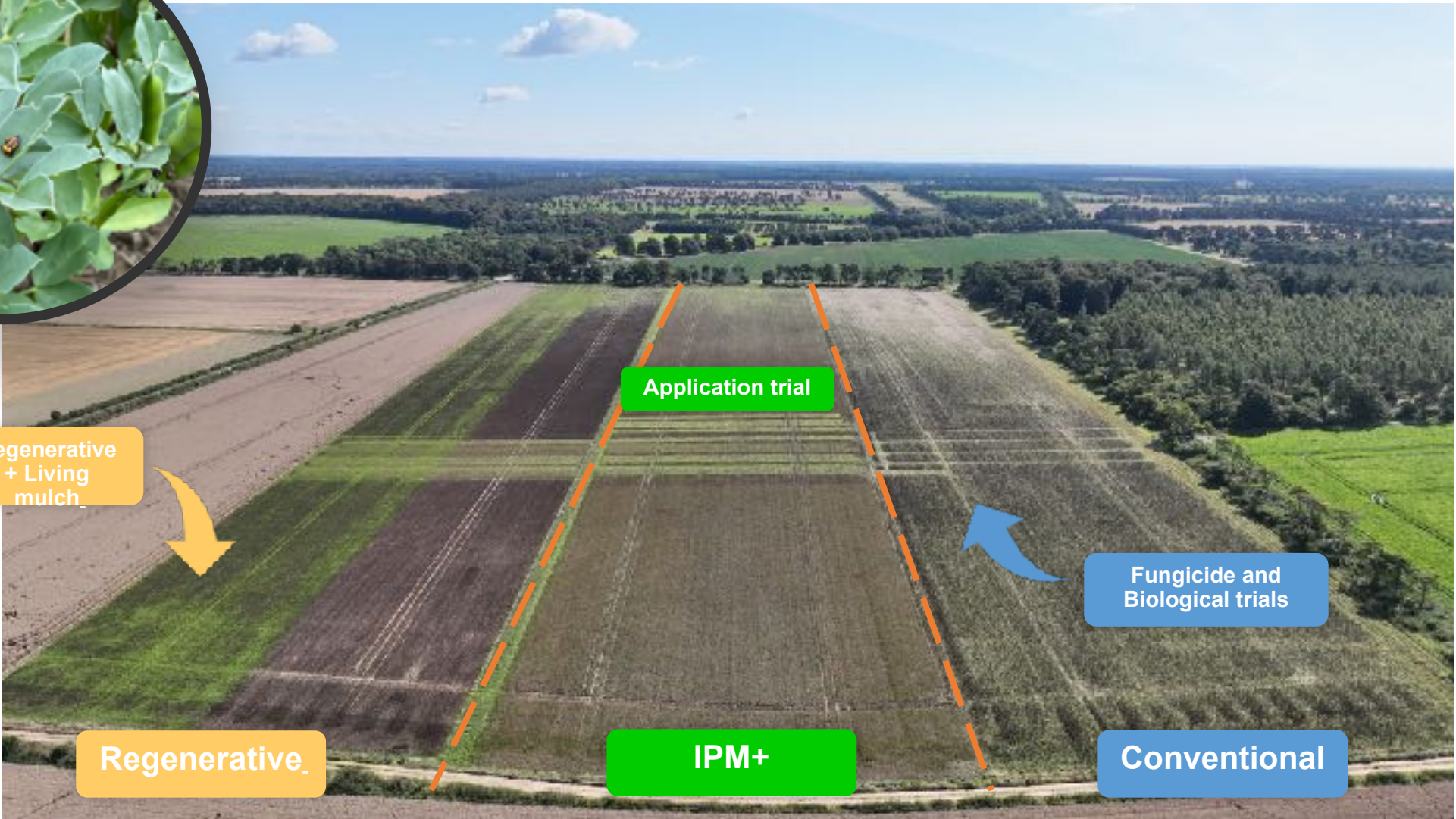
Endophyte data in beans

Fungicide data and recommendations 2024



SUSTAINABLE FARMING

syngenta.



Regenerative + Living mulch

Regenerative

Application trial

IPM+

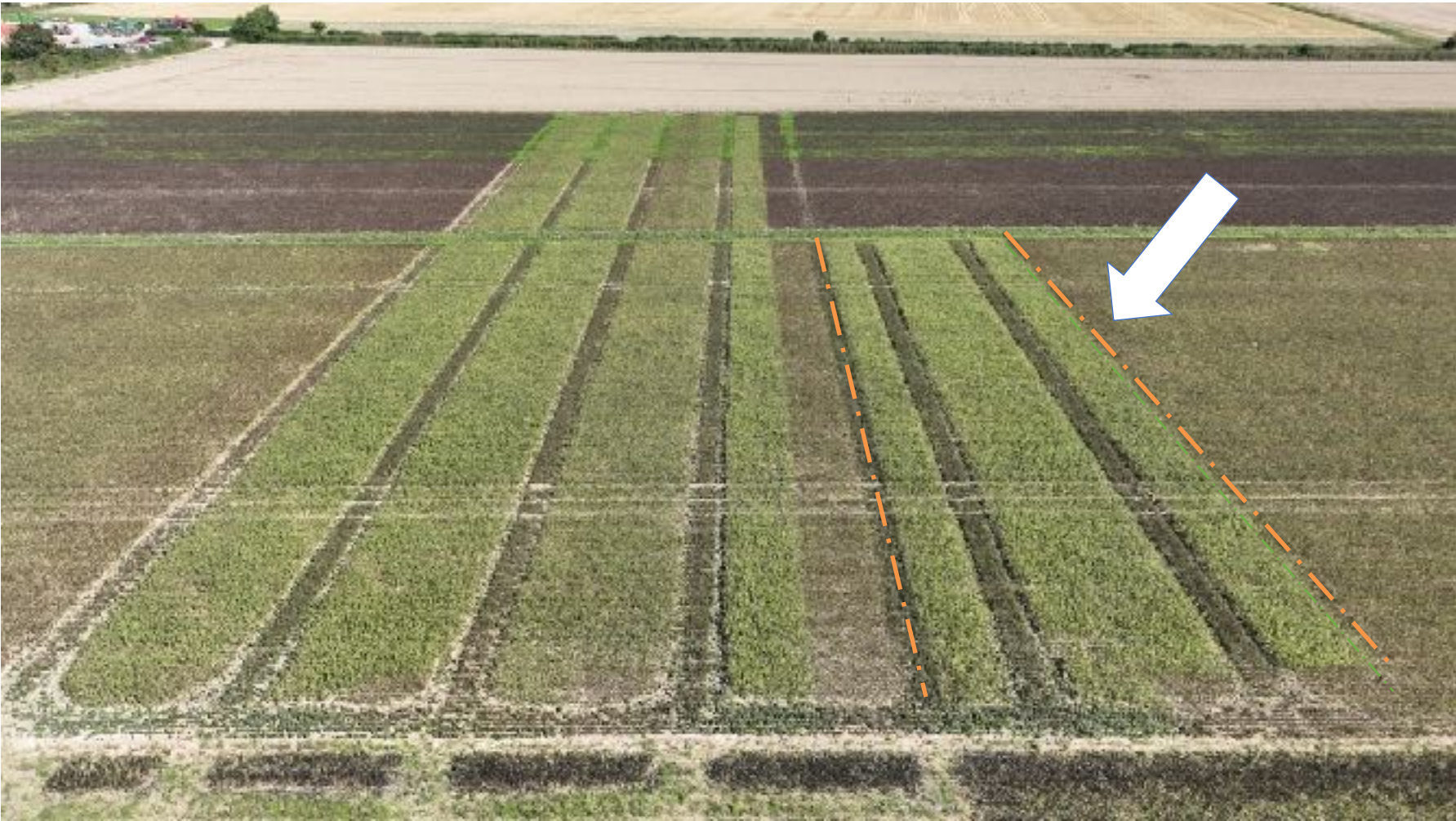
Fungicide and Biological trials

Conventional

Small plot trials, fungicide treatments and application trial



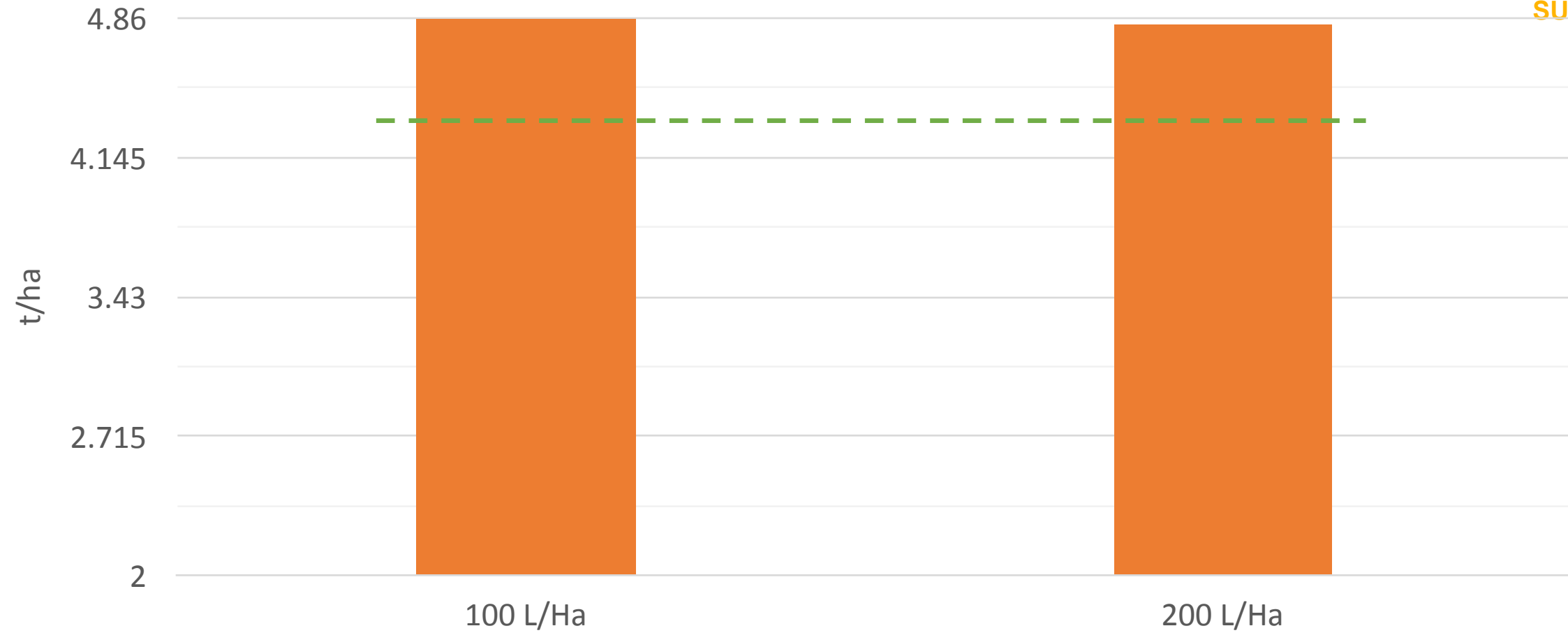
SUSTAINABLE FARMING



Water volume



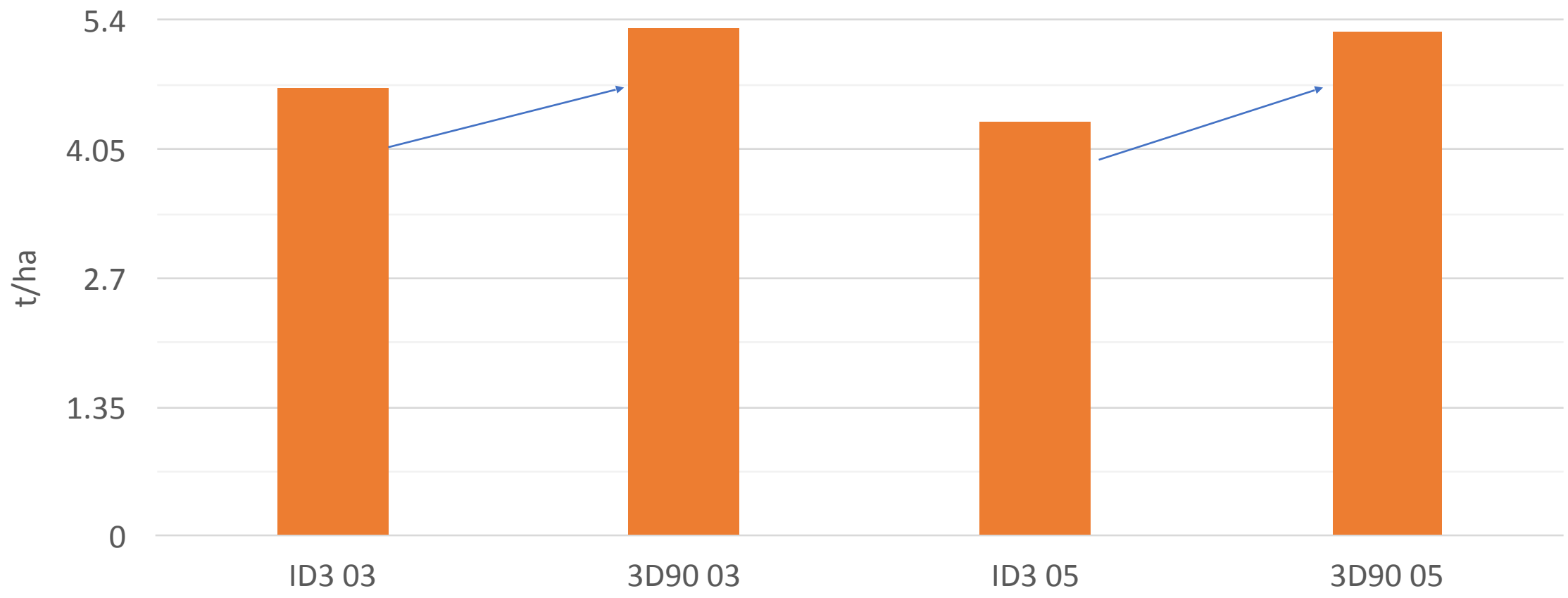
SUSTAINABLE
FARMING



Angled vs Vertical 90% DRT



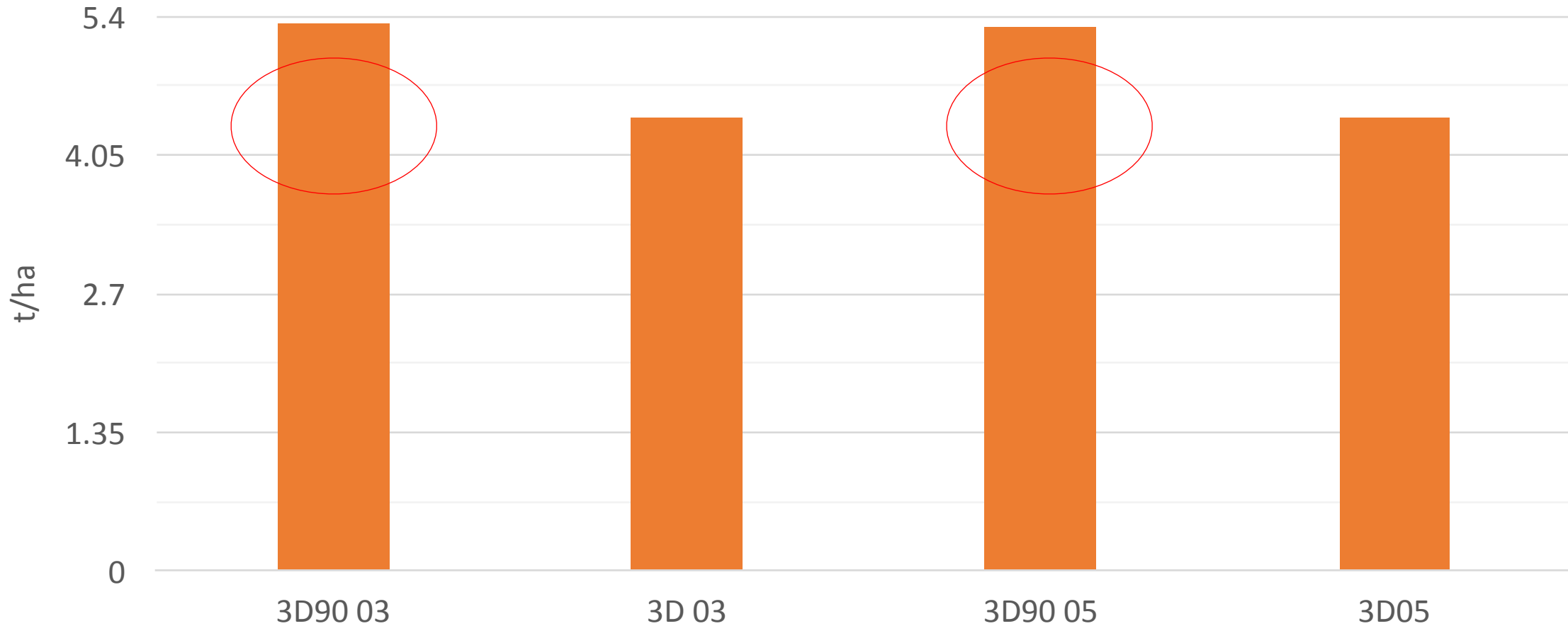
SUSTAINABLE FARMING



New 3D ninety vs Old 3D nozzle



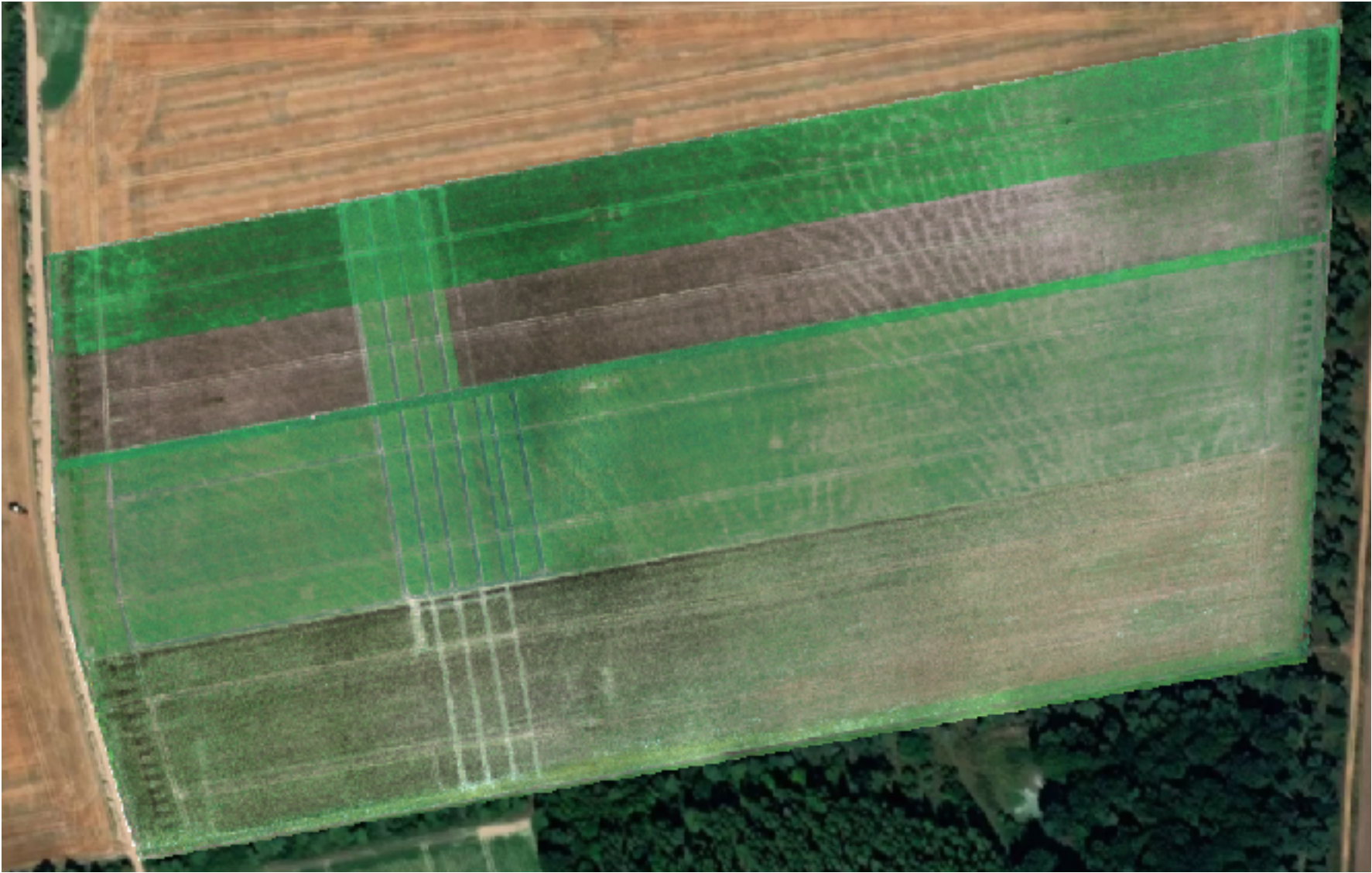
SUSTAINABLE
FARMING



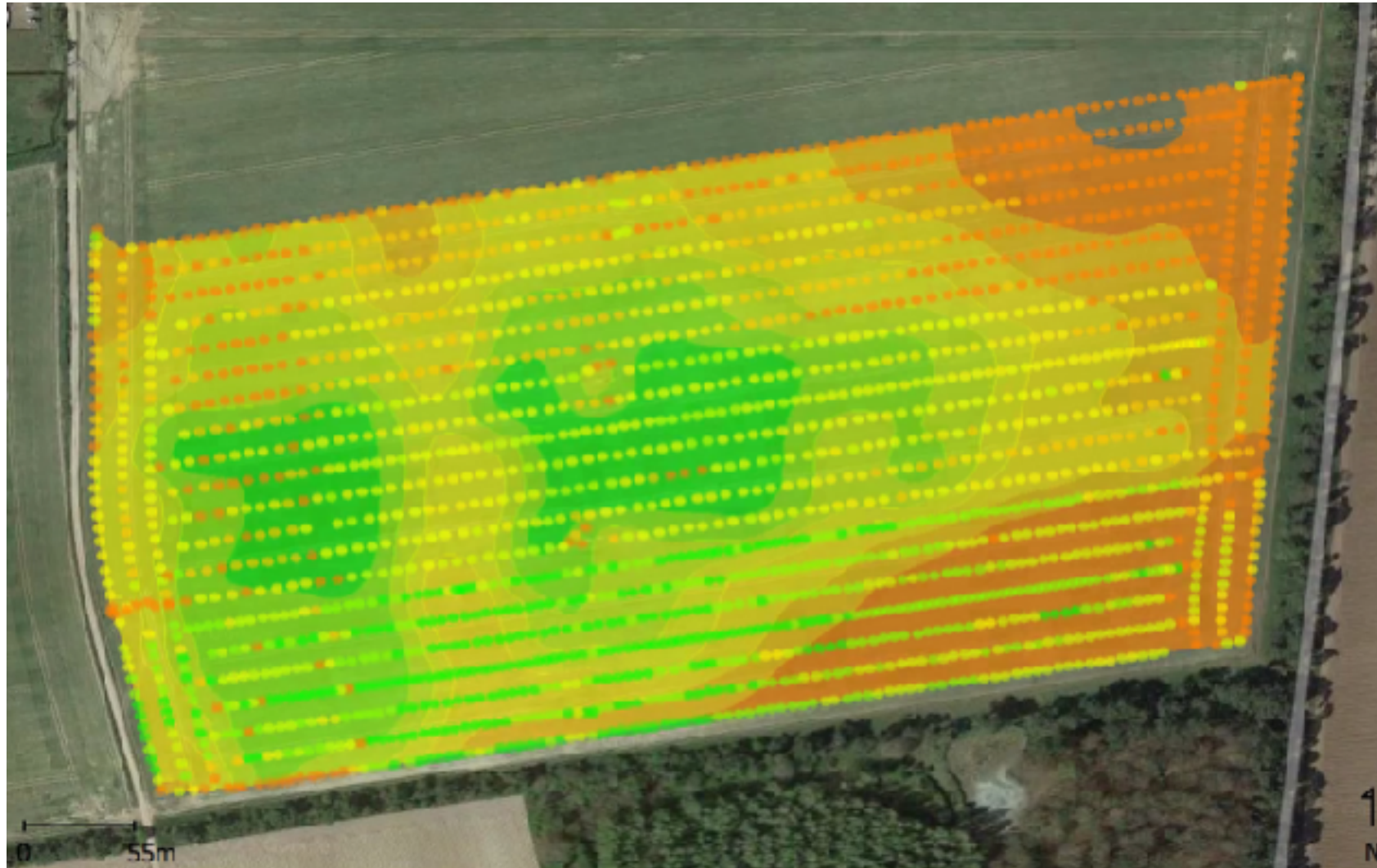
18.05.2023 - Regenerative area (living mulch vs no living mulch)



Drone scan – 28.07.23

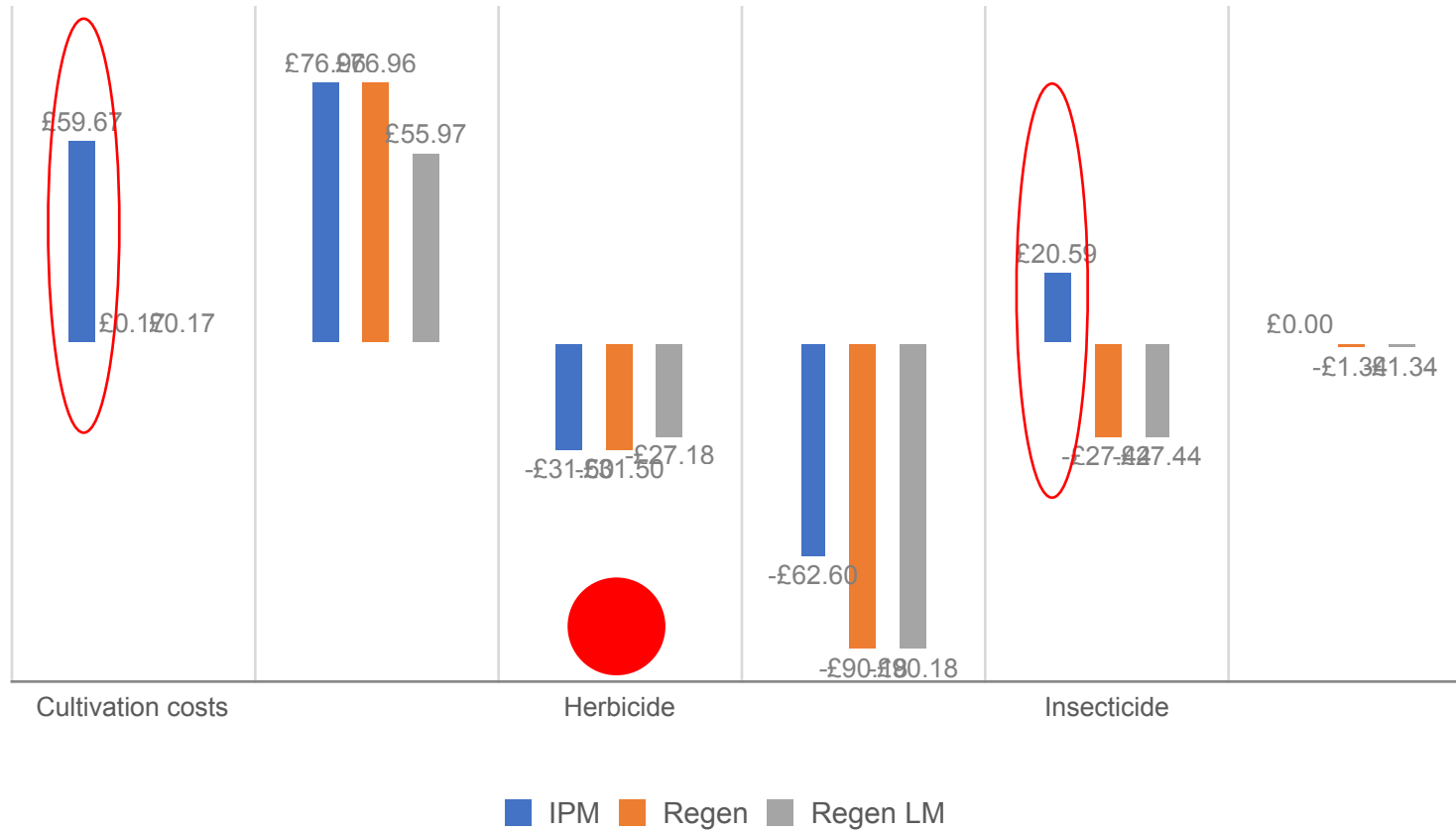


Yield map from combine

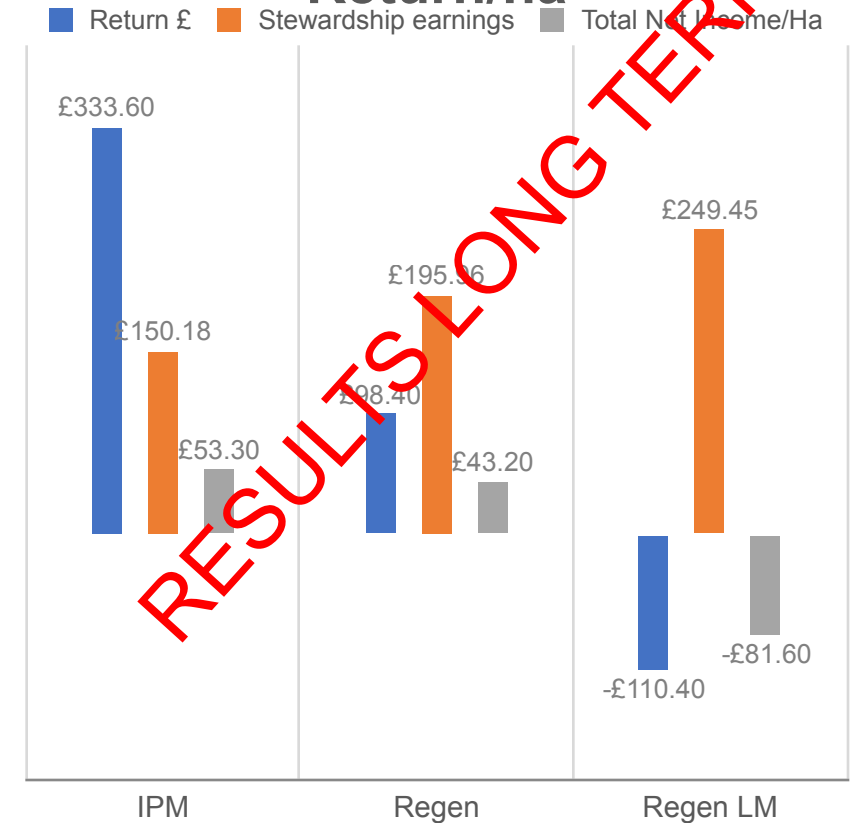


Summary of results – Comparison to conventional system (Winter beans)

Costs/ha



Return/ha



9th August 2023



Fungicide and
Biological trials

Small Plot Trial



**SUSTAINABLE
FARMING**



Small plot application details

Untreated

ELATUS® Era 0.66 l/ha

AMISTAR® 0.75 l/ha

Signum 0.5 l/ha

ELATUS® Era 0.66 l/ha + MAXICROP Conc 1.5 l/ha

ELATUS® Era 0.66 l/ha + QUANTIS® 2.0 l/ha

ELATUS® Era 0.66 l/ha + VIXERAN® 50g/ha

ELATUS® Era 0.66 l/ha + YIELD ON®



Single application at T1.5 timing (22nd June)

syngenta.

Vixeran® Technical Update



syngenta.

Vixeran[®] Product Profile

Strain	<i>Azotobacter salinestris</i> EXCLUSIVE SYNGENTA
Formulation	Solid, powder
Crops	Field crops
Dose	50 g/ha
Composition	Min. 10 ⁷ CFU/g
Time of application	Apply during periods of active crop growth See label for crop specific timings
Application	Foliar. Good compatibility with CP & fertiliser products
Action	Biological N-fixation (leaves/roots/rhizosphere)
Shelf-life	24 months (at room temperature); longer in cold storage



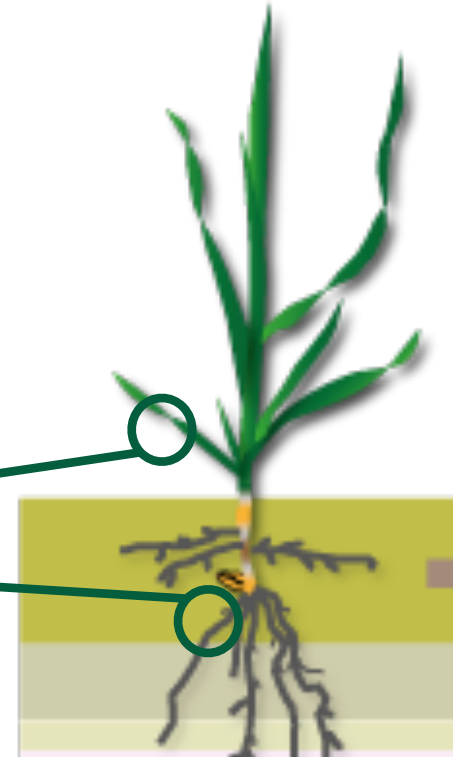
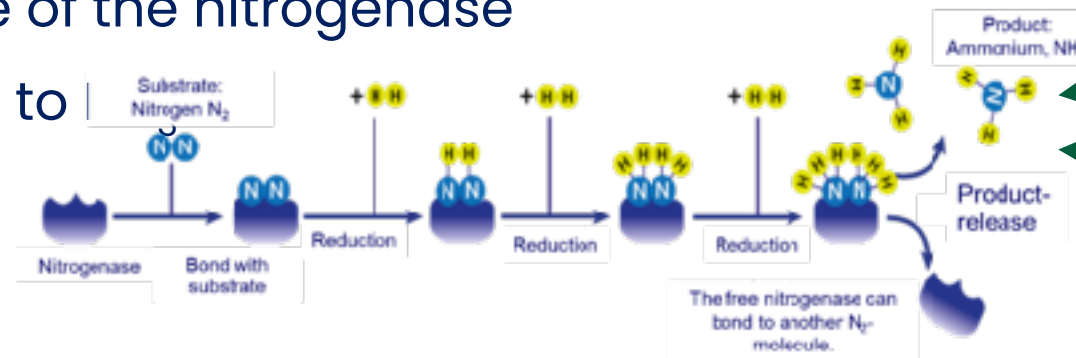
Nitrogen fixing mechanism

Biological nitrogen fixing at foliar and root level

 The enzyme complex nitrogenase is involved in N fixing

 Enzymatic reaction of nitrogenase:

- Atmospheric nitrogen uptake
- Binding of the nitrogen molecule (N_2) to the multi-metal catalytic centre of the nitrogenase
- Reduction of N_2 to



Vixeran[®] on Beans

Since beans are a leguminous plant and can provide their own nitrogen... how can VIXERAN[®] help??

If you think about how a bean plant fixes nitrogen...

The N-fixing nodules on the roots are formed 3 to 5 weeks after emergence and will then actively fix nitrogen.

However, the nitrogen demand from a bean crop is HIGH:-

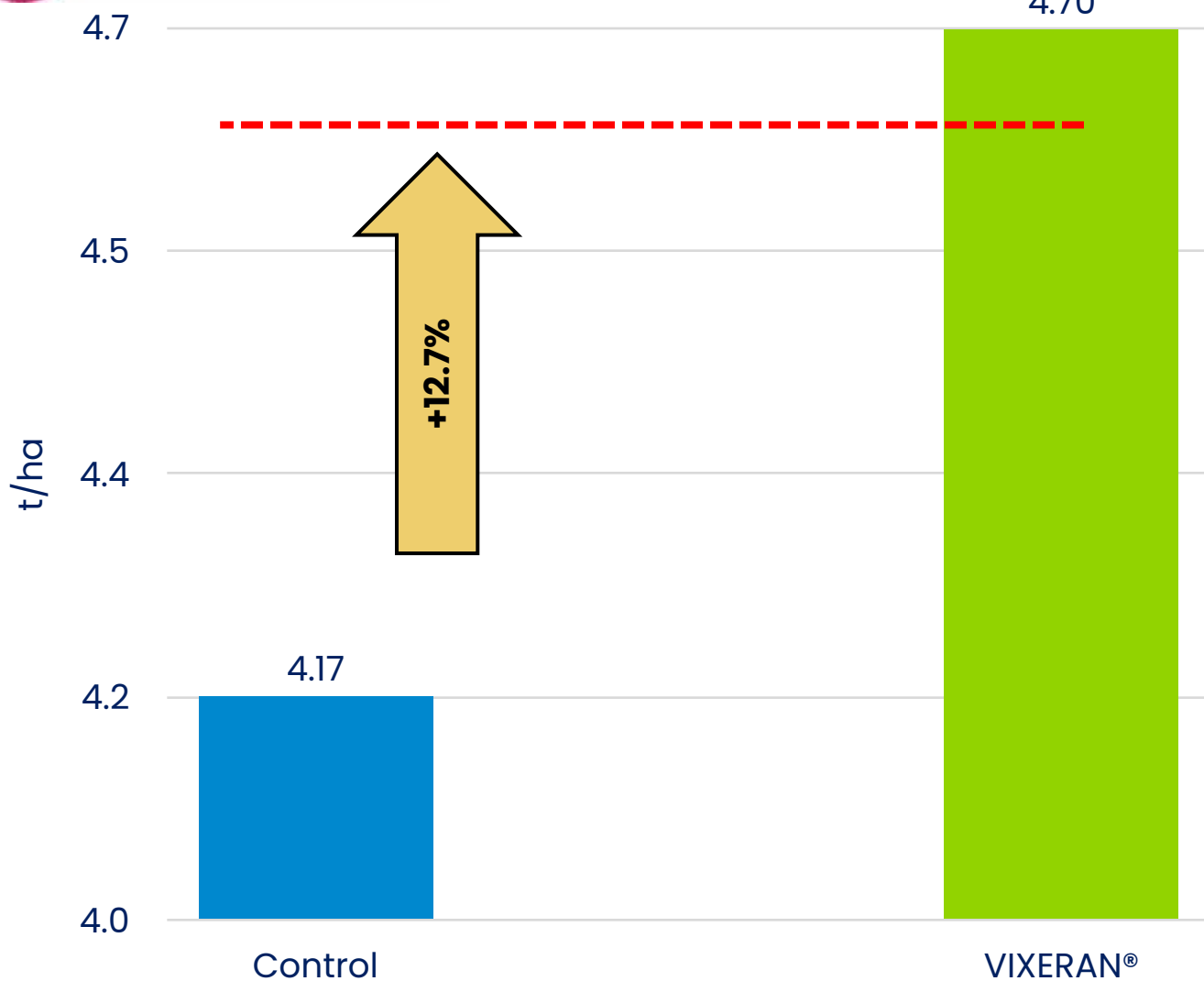
- Beans are a good source protein and the demand for nitrogen is highest when filling the seed
- At pod fill – the plant directs sugars away from the nodules bringing a decline to the symbiotic relationship – The root nodules are then no longer fixing nitrogen... and gradually senesce around the time of pod filling
- As a result, the crop uses nutrients from senescing leaves



- By supplementing the nitrogen need with VIXERAN[®], it reduces the burden by the leaves and therefore the plant can photosynthesise more and in turn increase yield



Vixeran[®] on beans – Across 4 trials (Yield)



Location	Crop	Variety	Yield difference + VIXERAN [®] (t/ha)
Elveden	Spring beans	Lynx	+0.82
Elveden	Winter Beans	Vespa	+0.31
Doncaster	Spring beans	Yukon	+0.28
Warwick	Winter beans	Wizard	+0.68
Average			+0.52 t/ha

Current price of beans/ton: £220

220 x 0.52 = £114.4



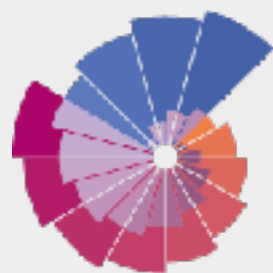
Vixeran[®]

syngenta[®]



is now approved for restricted use in organic systems





Elatus™ Era

syngenta.

After high levels of chocolate spot early, a dry May and June helped reduce disease progression



April 2023

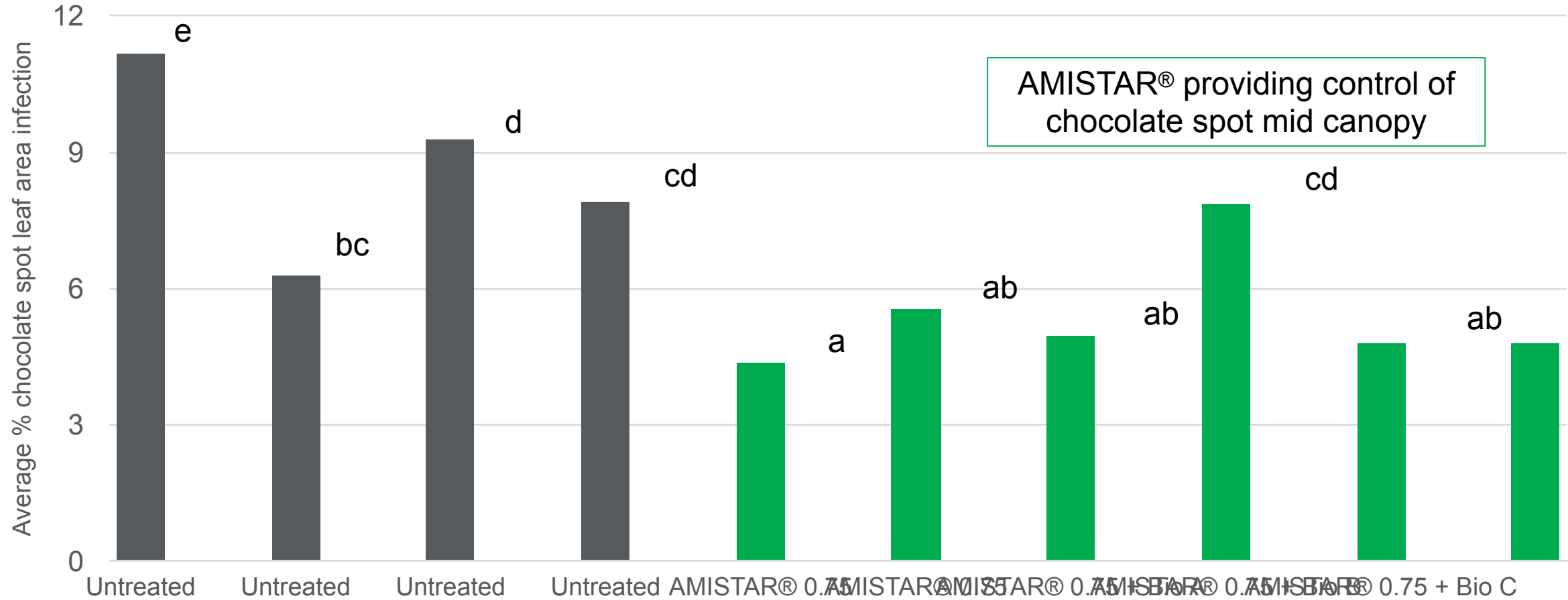


Mid-May 2023



Mid-June 2023

PGRO 2023 Winter beans – Chocolate spot, middle canopy (1st June – 18DAA)

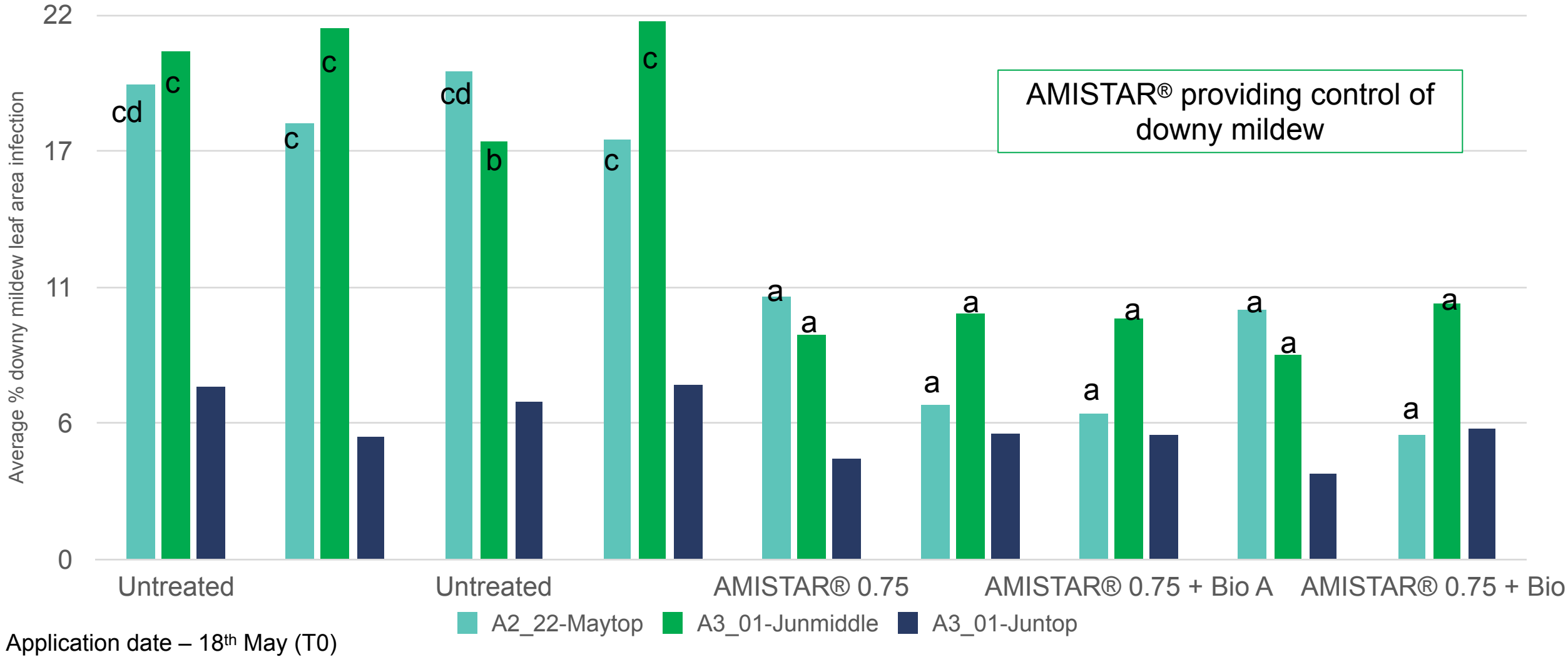


AMISTAR® providing control of chocolate spot mid canopy

Application date – 18th May (T0)

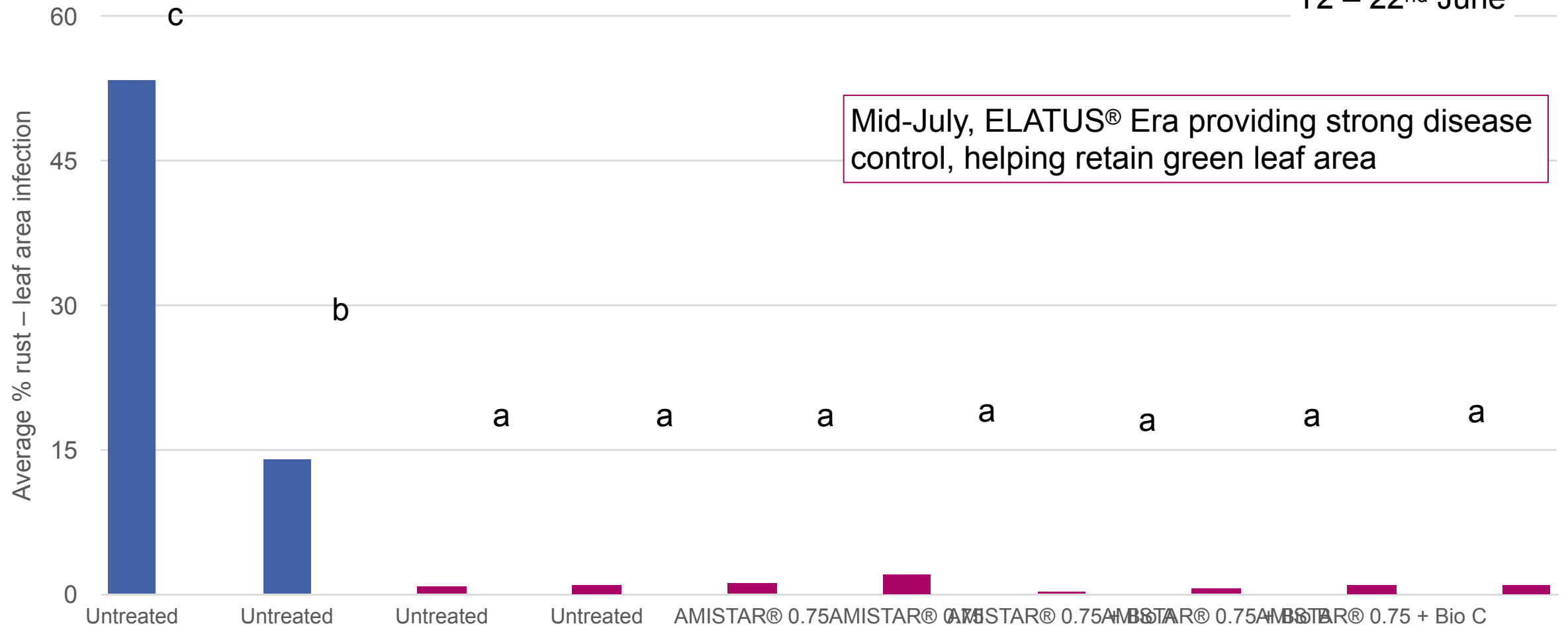
Bio products included to show expanded data set.
Bio B effect on efficacy?

PGRO 2023 – Downy mildew



PGRO 2023 – Rust Total, 17th July (25 DA T3)


T0 – 14th May
T1 – 8th June
T2 – 22nd June



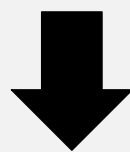
Advised ELATUS Era and AMISTAR timing in field beans 2024

AMISTAR® 0.75 l/ha
GS51
Start of flowering
Spring beans – mid-May
Winter beans – early May

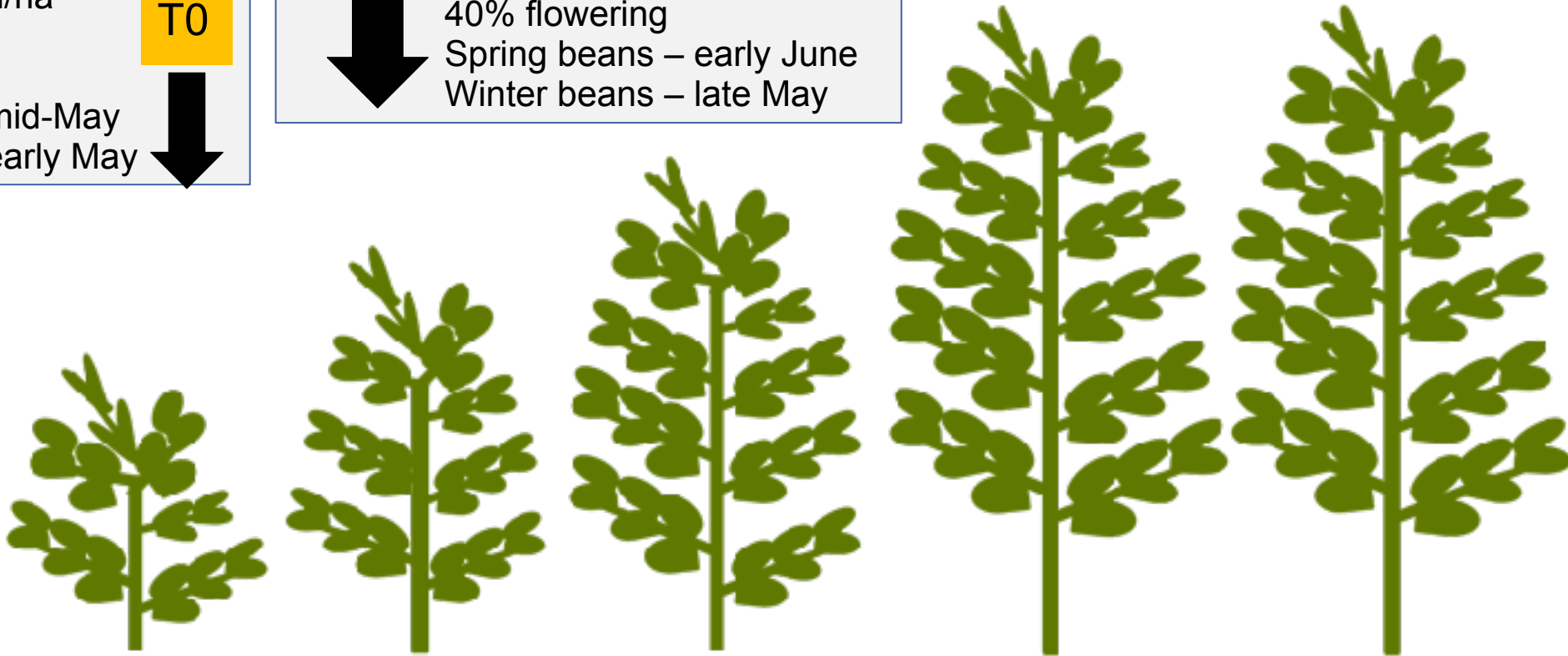
T0



T1 ELATUS® Era
GS61-65
10% to approx.
40% flowering
Spring beans – early June
Winter beans – late May



T2 AMISTAR®
GS69-70
End flowering
Spring beans – end of June
Winter beans - Mid-June

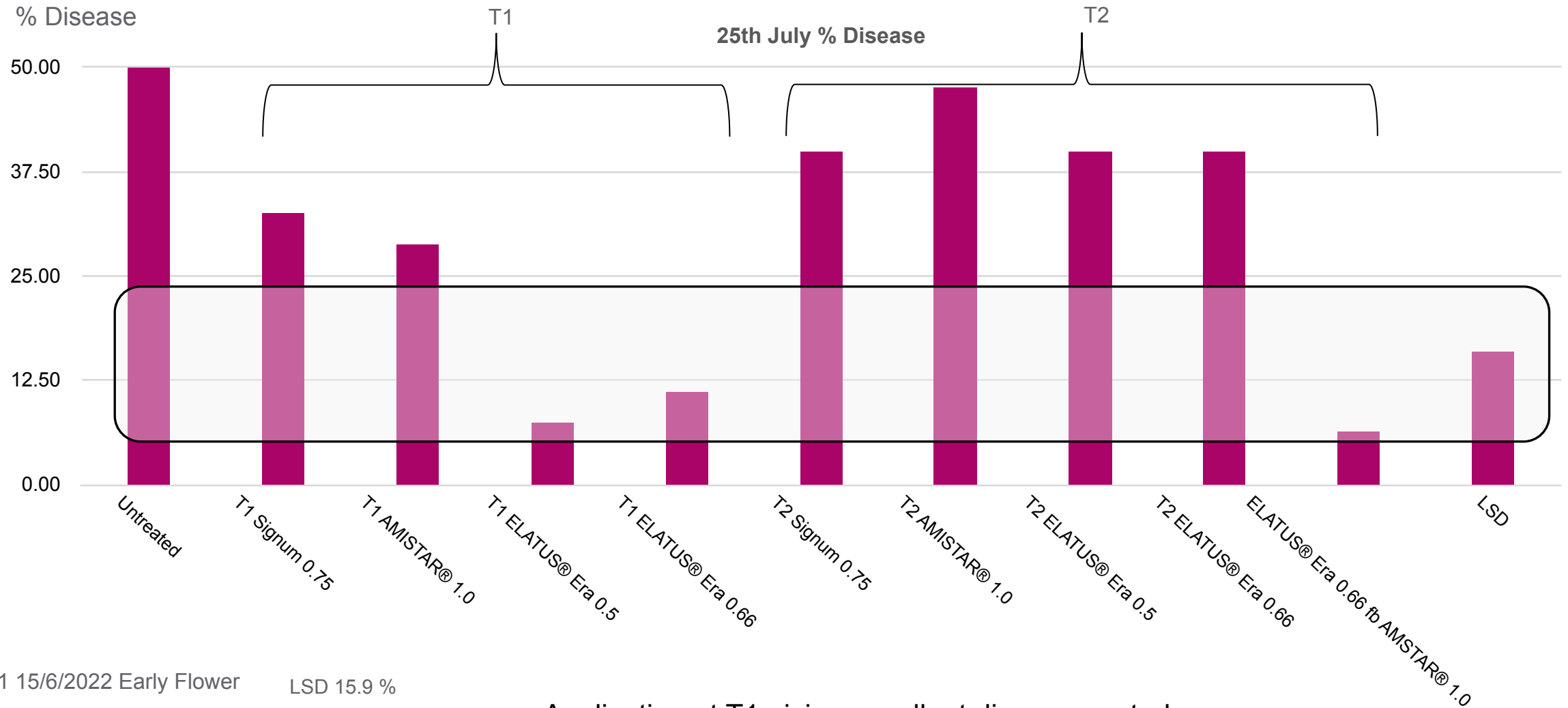


Label claims for ELATUS® Era on legumes and linseed

Crop and disease	Level of control
Field Beans	
<i>Uromyces sp</i> (Rust)	Control
<i>Botrytis sp</i> (Chocolate spot)	Useful control
Combining peas	
<i>Ascochyta pisi</i>	Useful control
<i>Uromyces sp</i> (Rust)	Moderate control
Linseed/flax	
<i>Mycosphaerella linicola</i>	Moderate control
<i>Golovinomyces orontii</i> (Powdery mildew)	Moderate control

- Dose rate for all these crops is 0.66 l/ha
- Other specific restrictions
 - The earliest time of application on pulses is GS51

2022 Powdery mildew - pea trial - Doncaster



T1 15/6/2022 Early Flower

LSD 15.9 %

T2 4/7/2022 Full Flower

Application at T1 giving excellent disease control

Bringing plant potential to life