

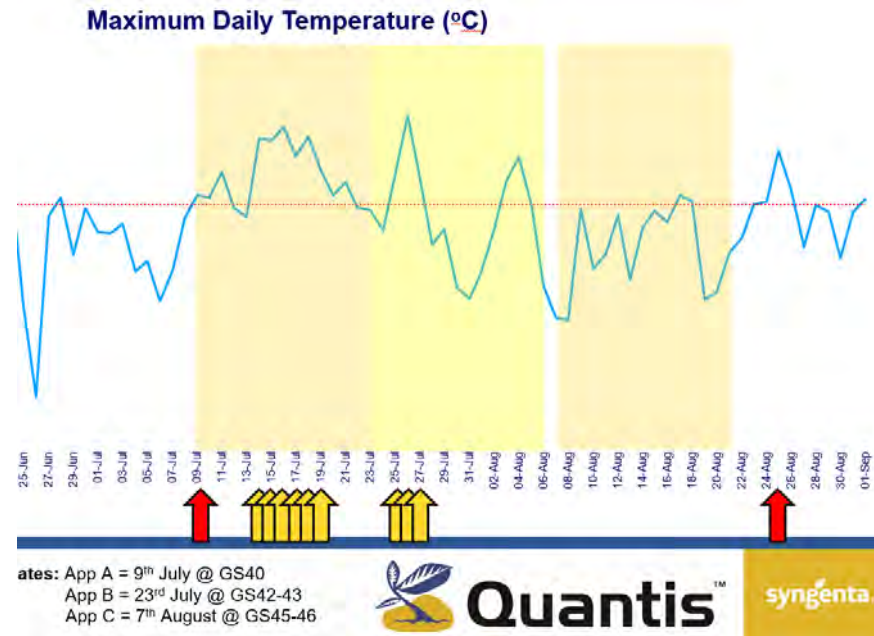


Protecting the environment and maintaining approvals

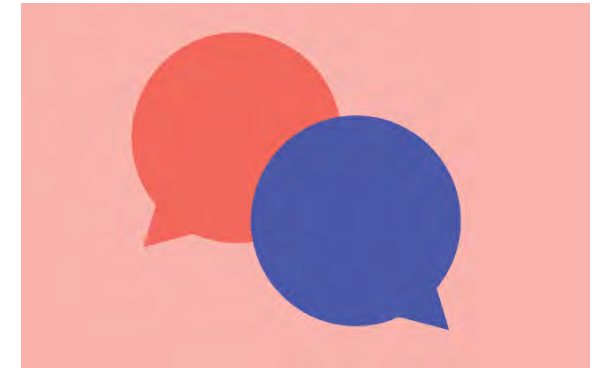
Simon Jackson

Agenda

- Challenges and grower focused solutions



- Summary of our current portfolio



APPLICATION and CLOSED TRANSFER



Stack the odds in your favour



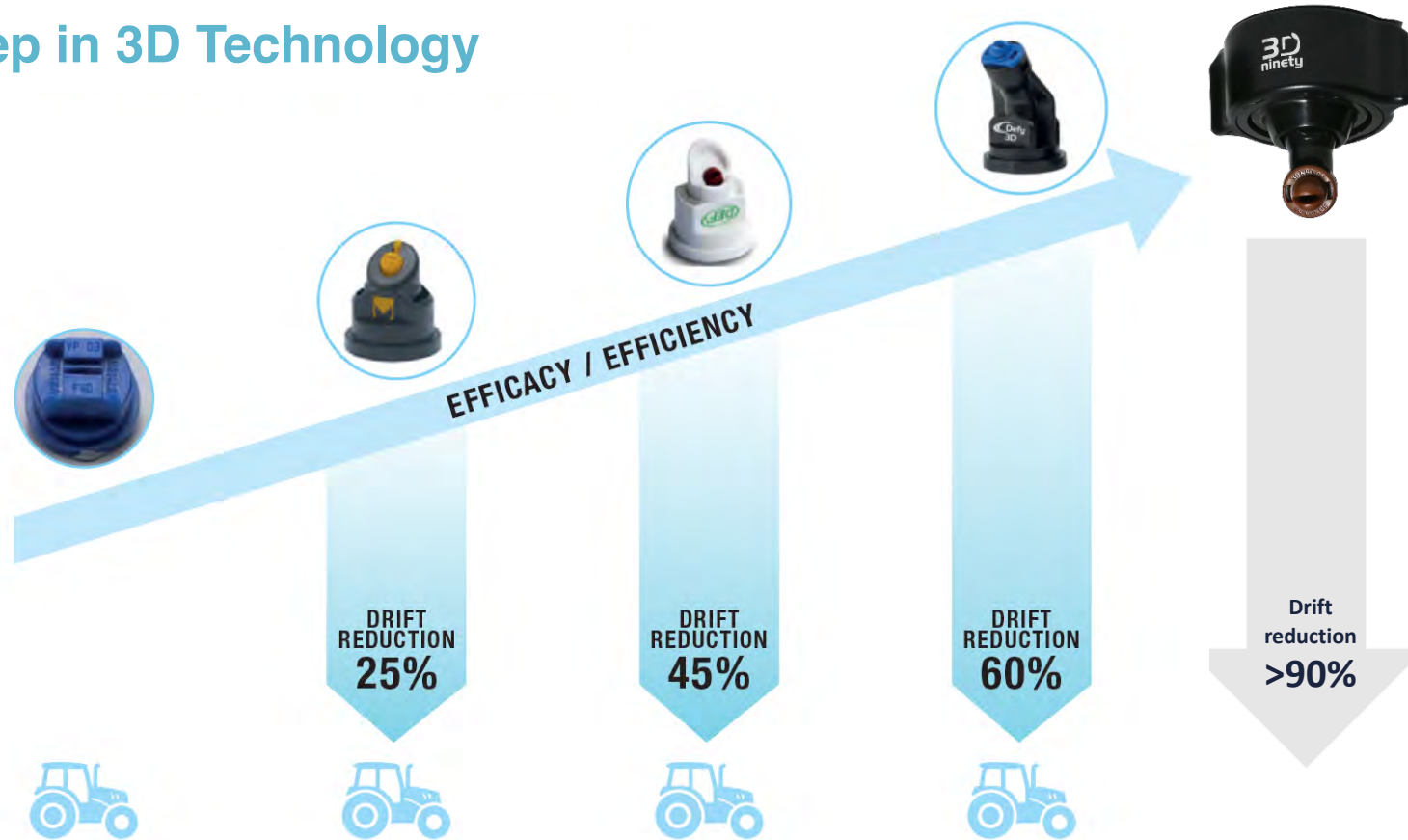
CT

Syngenta Angled Nozzles range

The culmination of 15 years' development



The Next step in 3D Technology





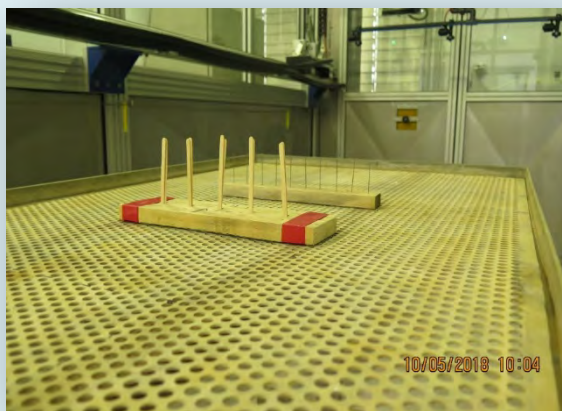
NEW FARM
TECHNOLOGIES

3D ninety
The next step in 3D Technology

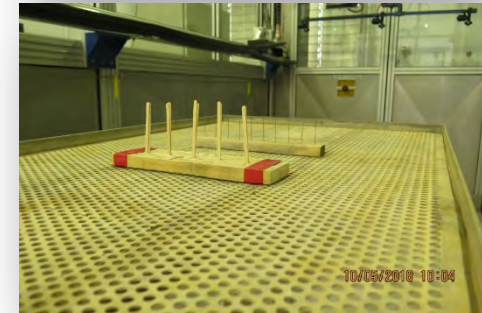
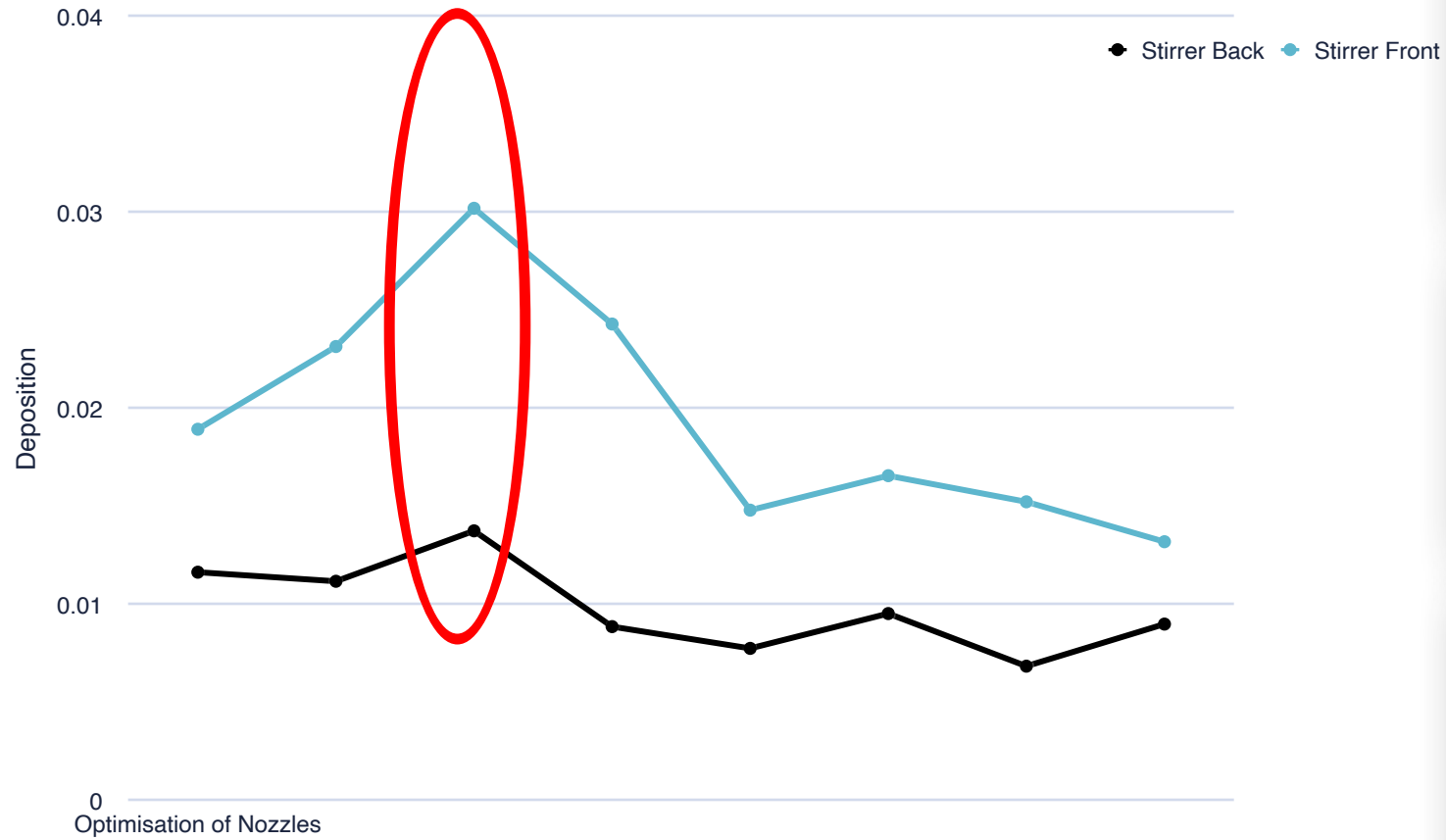


How we identified the angle

1. Fluorescein dye was mixed with water and sprayed on various targets at different angles:
 - Piece of flat paper
 - Coffee stirrers, facing front and back
 - 1mm thick metal rods
2. The targets were then individually put into bottles and washed with water to collect all the dye sprayed
3. Each sample was then put through a fluorimeter to determine the amount of dye deposited on the target.



Deposition on Coffee Stirrers at Different Angles



Drift reduction technology

- Not all drift reduction nozzles are the same
- Traditionally drift reduction is achieved using air induction
- 3D ninety is a pre-orifice nozzle and so is PWM compatible



Helios pre-em data

Shading in and around clods visible on straight down and shallow angle nozzles



Flat fan

3D ninety

IDTA

WHAT IS



- 90% drift reducing up to 5 bar
- 55° nozzle – optimises deposition on back of targets
- Field trials confirm maintain efficacy vs 3D and exceed other 90% DRT
- Sizes: 03, 035, 04, 05, 06, 08+
- Pre-em herbicides
- Potato fungicides
- Spring post-em herbicides, T0 and T3 cereals,
- Pre-orifice nozzle
- PWM Compatible
- Integrated Snaplock cap



2ND NOVEMBER 2022

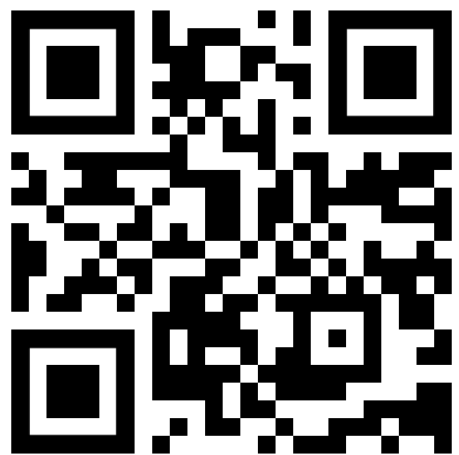
UK Digital Ag Update

Ed Flint



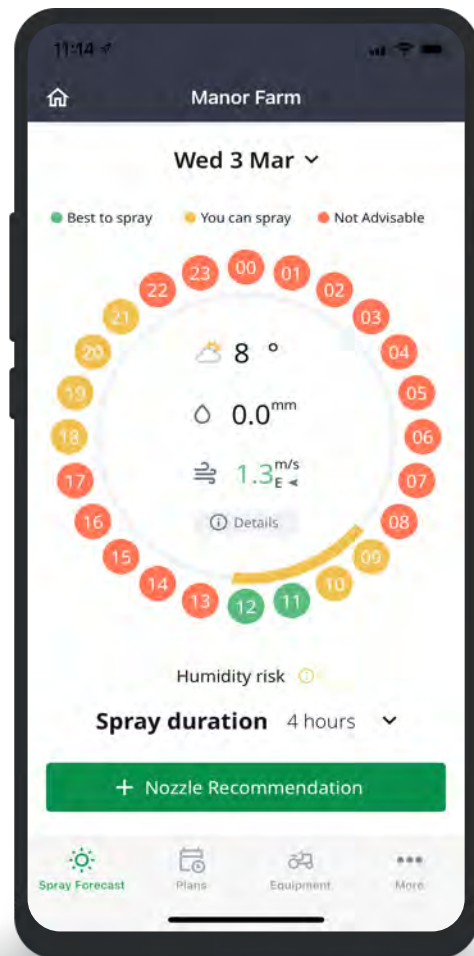
Spray Assist

Syngenta Spray Assist is an app created to help sprayer operators to select the most appropriate application techniques on-the-fly.

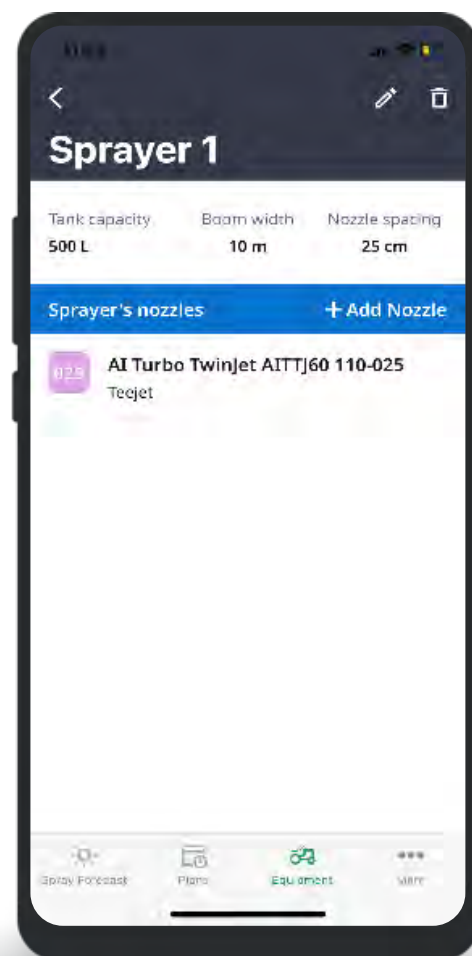


Scan here

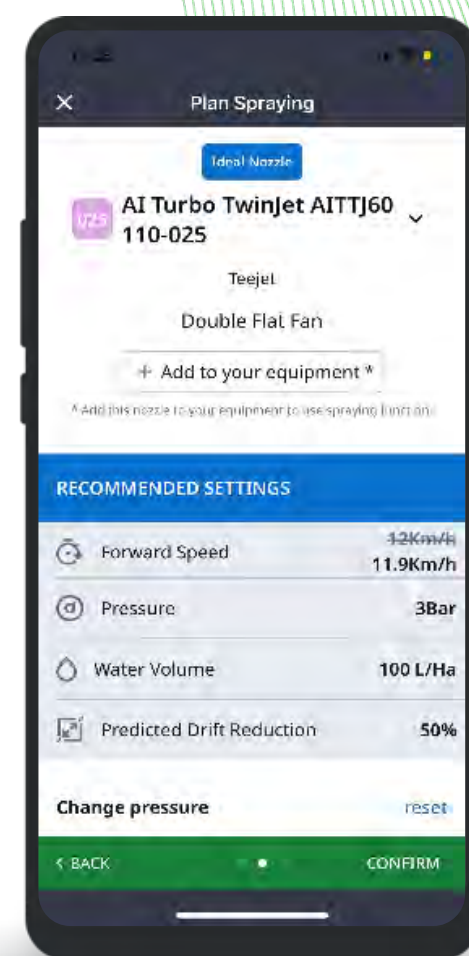
The Spray Clock gives you a simple red, amber or green indicator of the weather conditions throughout your selected day



Add details of the equipment and nozzles that you use



Using the Crop, Target and Timing details you will be shown recommendations for optimal nozzles and spray parameters





EASYCONNECT UPDATE

January 2023



AN INTRODUCTION TO EASY CONNECT

- We are an open group and invite other interested companies to join
- Coupler technology manufactured by Pentair under the brand Cleanload Nexus. Sprayer manufacturers will be offering the CTS as an optional extra
- Convenient pre-fitted Easyconnect screw-cap
- Easy to connect and operate
- Fast emptying of all liquid formulations
- Integrated rinsing
- Resealable and leak-proof – essential for part pack emptying
- Compatible with standard recycling schemes

**EASY
CONNECT**



HOW IT WORKS



- The easyconnect system consists of two components: a **unique screw cap** – pre-fitted on the containers – and a **coupler**, which together establish the CTS.
- This approach ensures the best convenience and fastest emptying and rinsing.
- It significantly reduces operator exposure and environmental risks from splashing or spilling.



GET INTO THE FIELD FASTER WITH

EASY  **NNNECT**

We have adapted our packaging features in many ways to create a more modern, ergonomic design.



Summary



WEATHER MITIGATION and CROP SUPPORT

Potatoes

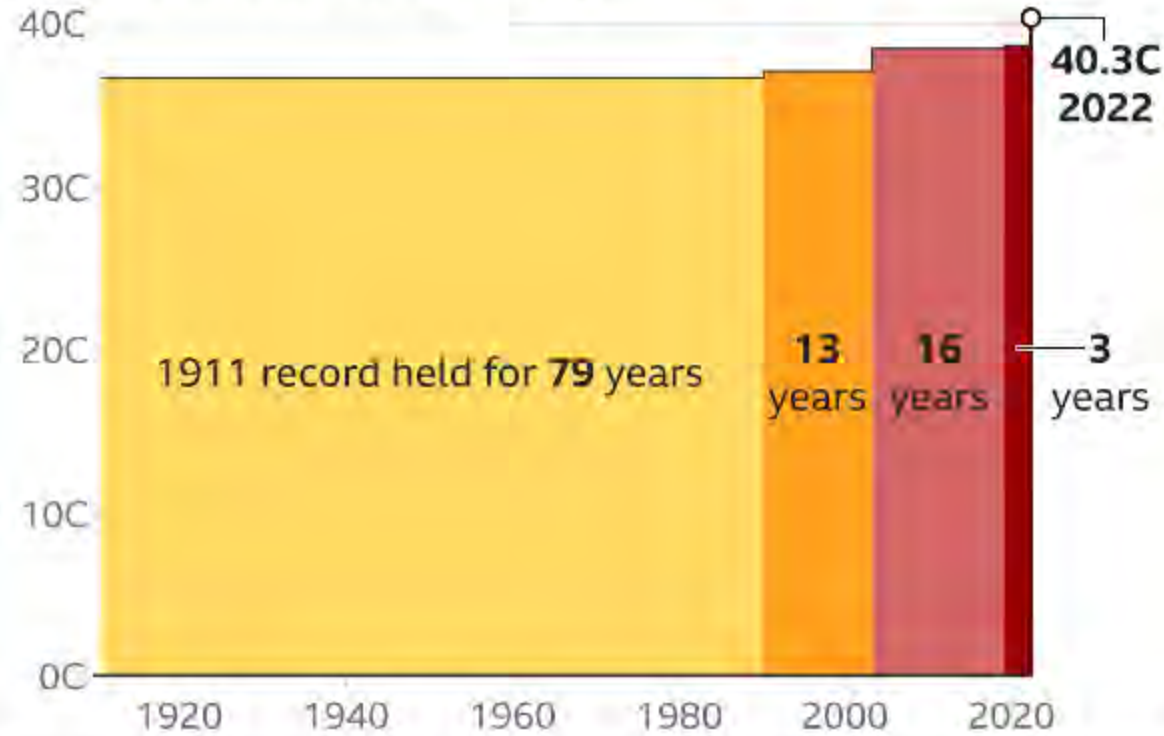
**10 hottest years
on record in UK
all occurring
since 2000**



syngenta.

Review of Summer 2022

UK's national temperature record is being broken more frequently



Source: Met Office



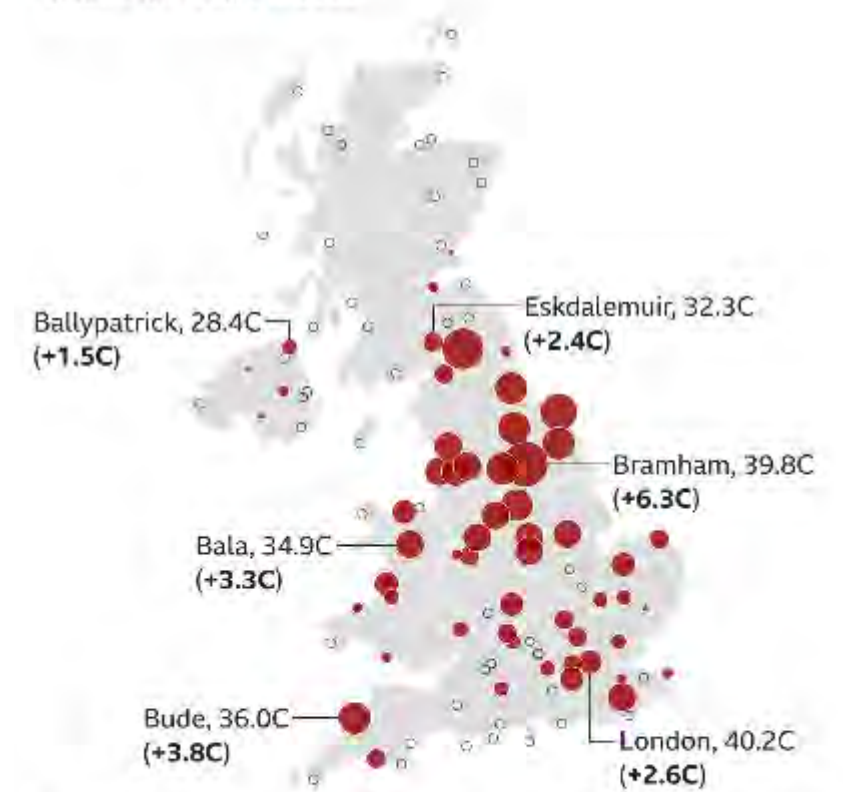
The new UK high of 40.3°C was recorded at Coningsby in Lincolnshire on 19th July 2022

Northern England experienced the largest gaps from previous records

Difference between 2022 record and previous maximum

● +1C ● +3C ● +6C

○ Other stations that did not break their record in 2022



Only includes active weather stations with at least 50 years of observations

Source: Met Office



Quantis™

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Estimates of optimal temperatures (in °C) for maximum rates of different processes in the potato plant.

Sprouting	16–20
Sprout growth	20–25
Emergence	20–25
Early shoot growth	24
Leaf primordial development	35
Leaf appearance	28
Individual leaf growth	25
Leaf area development	20–25
Stem elongation	> 25
Shoot growth	32
Progress to flowering	30?
Photosynthesis leaf	24
Whole plant photosynthesis	20–24 ^a
Dry matter production	20
Stolon initiation	25
Stolon growth	25
Stolon branching	25
Tuber induction	15
Tuber initiation	22
Tuber set/onset of tuber growth	15
Dry matter partitioning to tubers	20
Tuber bulking	14–22
Tuber yield	20–24
Starch synthesis	21.5, 25 or > 35?
Breaking of dormancy	28

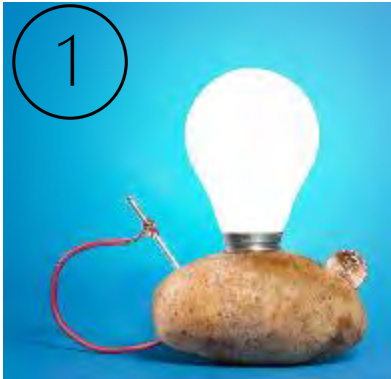
^a Higher during early part of the growing season than during the late part (Timlin et al., 2006).



QuantisTM

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- **QUANTIS** is a biostimulant containing metabolites from **yeast production** plus a combination of **organic carbons, potassium, calcium & amino acids**
- **QUANTIS** stimulates the plant to combat abiotic stresses & help maintain yield that might otherwise be lost

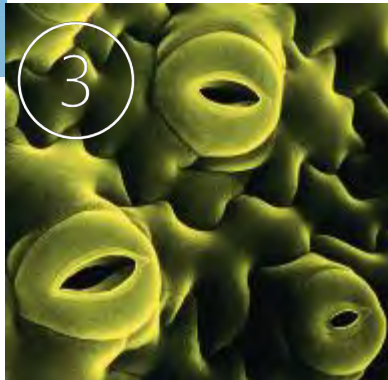


1 Organic carbons (sugars, organic acids), can be used directly by the plant as an energy source during photosynthesis



2 Calcium (Ca^{2+}) is acting as a stress signaller, upregulating enzymes that break down harmful oxidative molecules (ROS) that significantly increase when the plants are under stress

Metabolites (e.g. Protein-Betaine) act directly on & reduce levels of ROS



3 Potassium & Calcium content acts as an osmoprotectant maintaining the turgidity of the stomata and allowing transpiration and CO_2 uptake to continue... meaning photosynthesis can continue when it would otherwise have stopped.



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Monitored a stressed plant over a 7 day period
Photosynthesis
Hormone
Yield

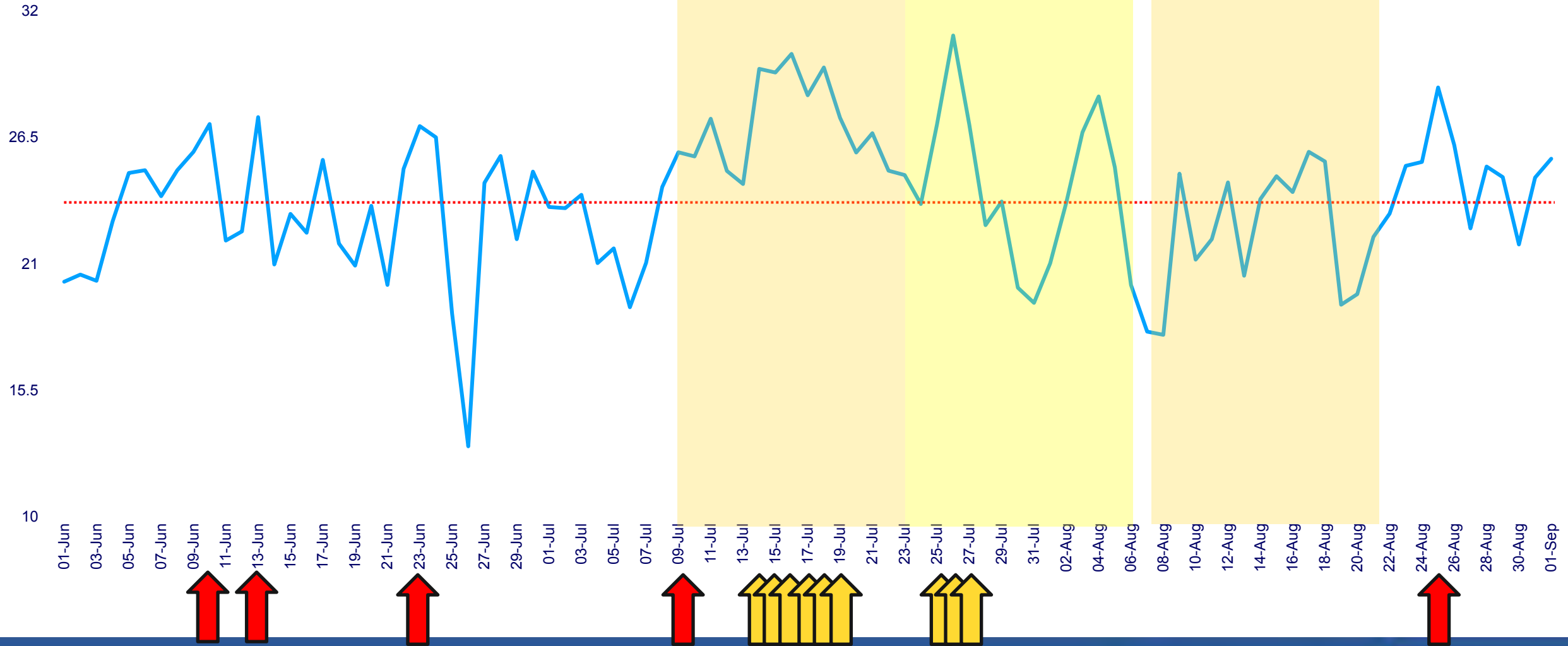
Heat stress applied 24 hours **after** an
application of QUANTIS

- Application tuber initiation



Newport on Tay – weather details

Maximum Daily Temperature (oC)



Weather Station:
Newport on Tay, Fife

Application Dates: App A = 9th July @ GS40
App B = 23rd July @ GS42-43
App C = 7th August @ GS45-46

Source: Metoblue



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Newport on Tay – number of tubers/size grade



Location: Newport on Tay, Fife **Variety:** Cultra **Planting Date:** 26th April 2021

Application Dates: App A = 9th July @ GS40
App B = 23rd July @ GS42-43
App C = 7th August @ GS45-46



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QUANTIS in summary

- To help crops maintain growth through periods of high temperatures stress
- A decision support tool will be available

- Good data for potatoes
- For more details contact your local area manager or sign up for one of our potato science live meetings



Quantis[™]

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Elatus™ Era

Outstanding disease control

syngenta®

ELATUS ERA pulse approvals

Crop/s	Max dose/ha	Max No. treatments/crop	Latest time of application	Aquatic buffer zone
Field beans and combining peas	0.66 l/ha	1	Up to and including 20% of pods have reached typical length (GS72)	6 m

- The earliest time of application on pulses is GS51

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

Outstanding data on control of bean rust control in field beans

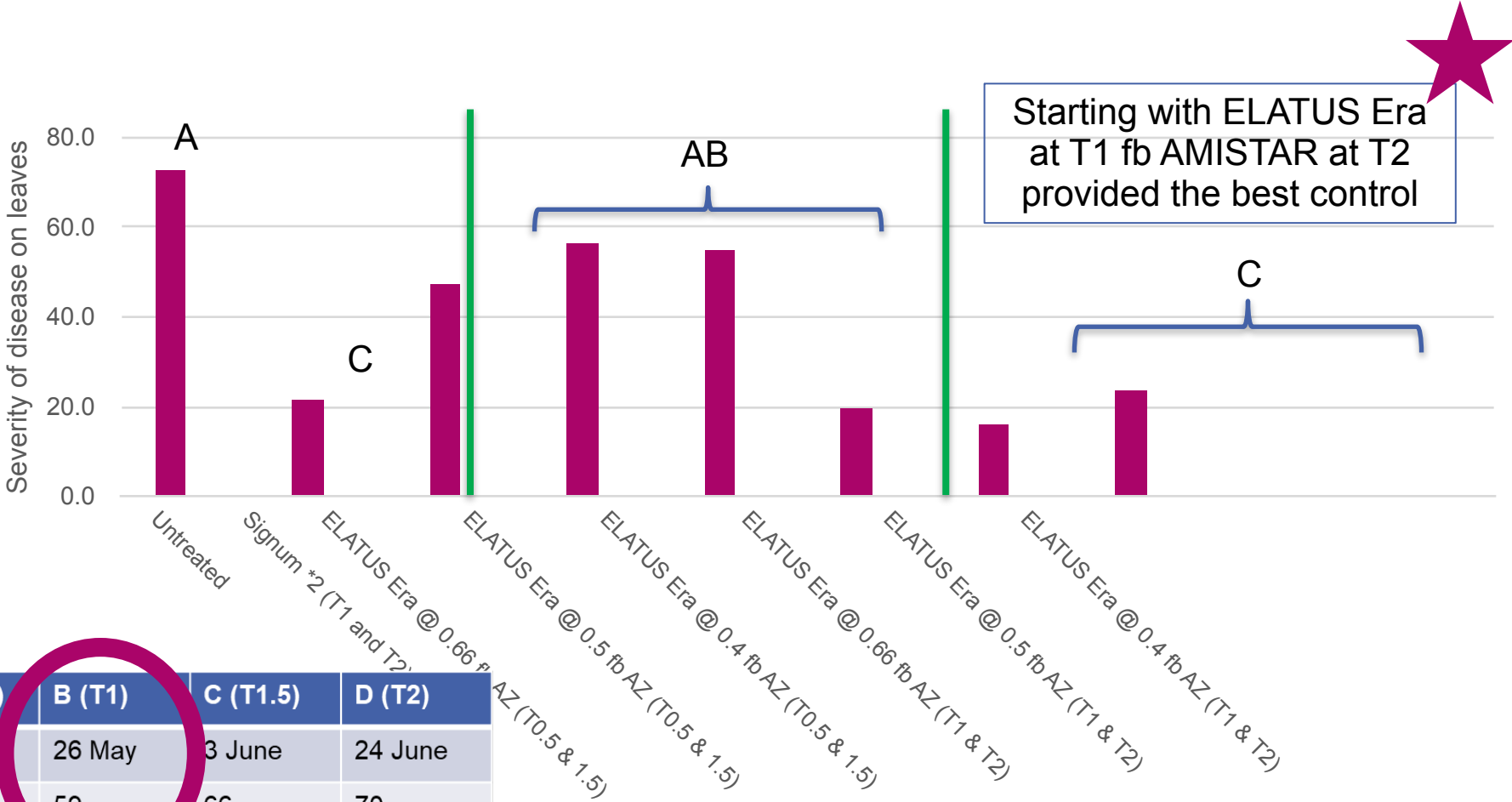


Untreated



ELATUS Era at T1 fb AMISTAR at T2

Clear result showing that the later timings give better control of bean rust, assessed 11th August

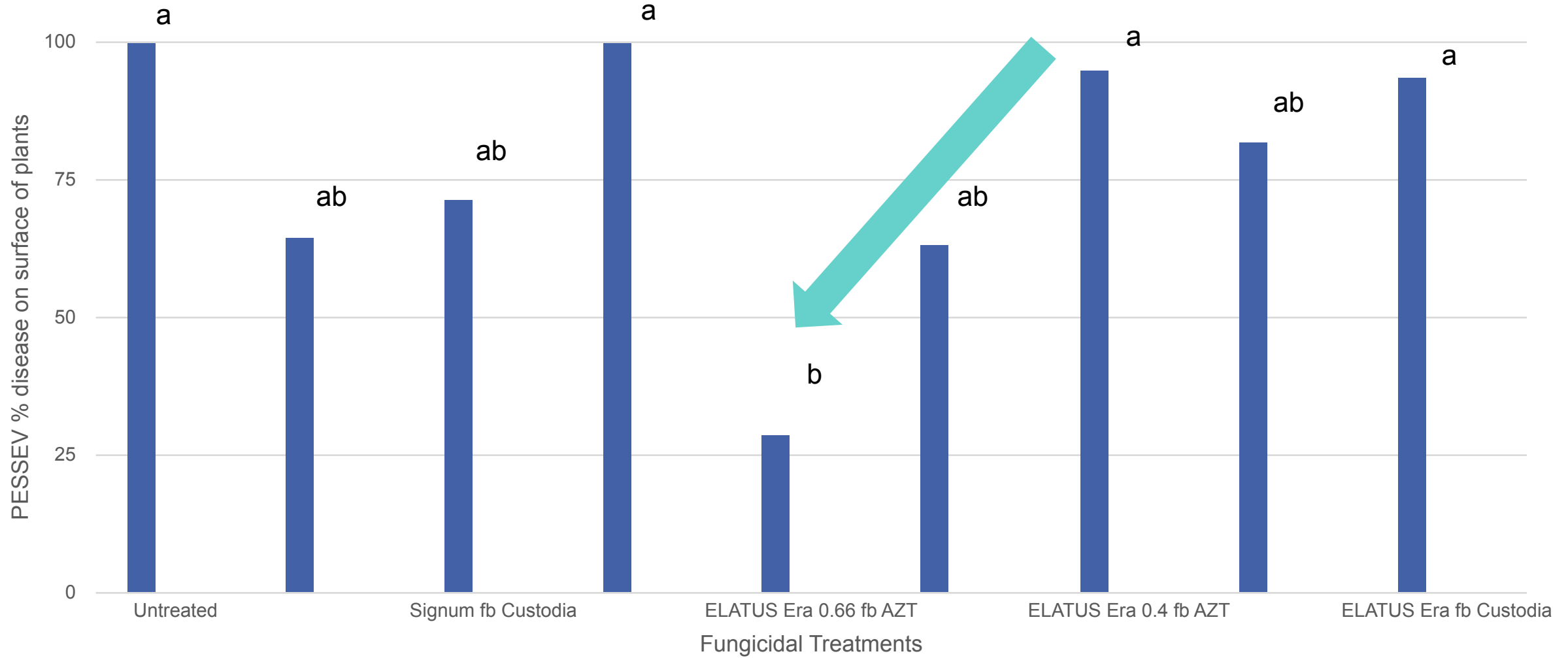


Timing	A (T 0.5)	B (T1)	C (T1.5)	D (T2)
Date	6 May	26 May	3 June	24 June
BBCH	51	59	66	70

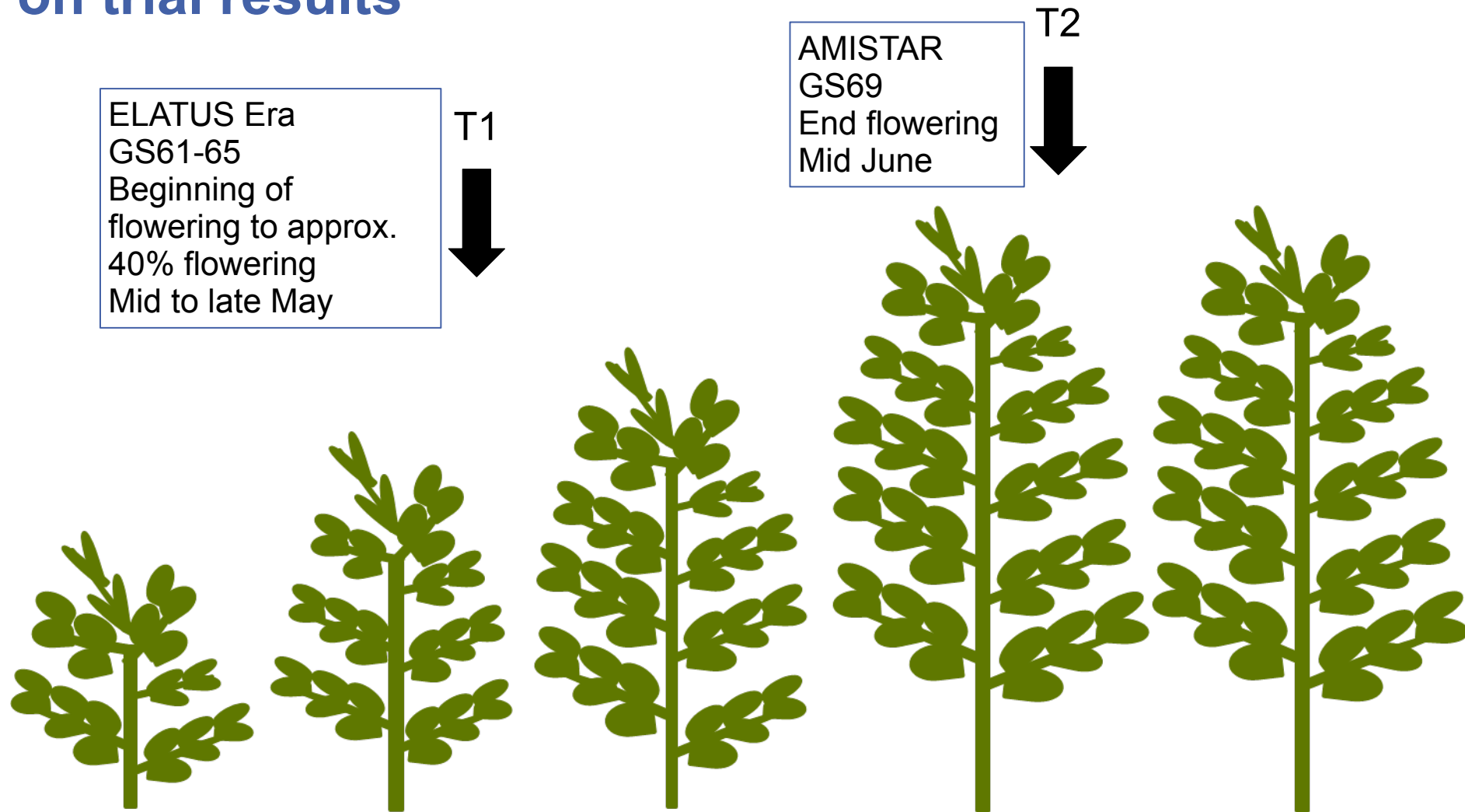
Source: SYN_GBACTF0132020



ELATUS Era fb AMISTAR gave excellent control of chocolate spot when assessed in the middle canopy at the Rougham trial site



Advised ELATUS Era and AMISTAR timing in winter field beans based on trial results



First season of UK trials in combining peas



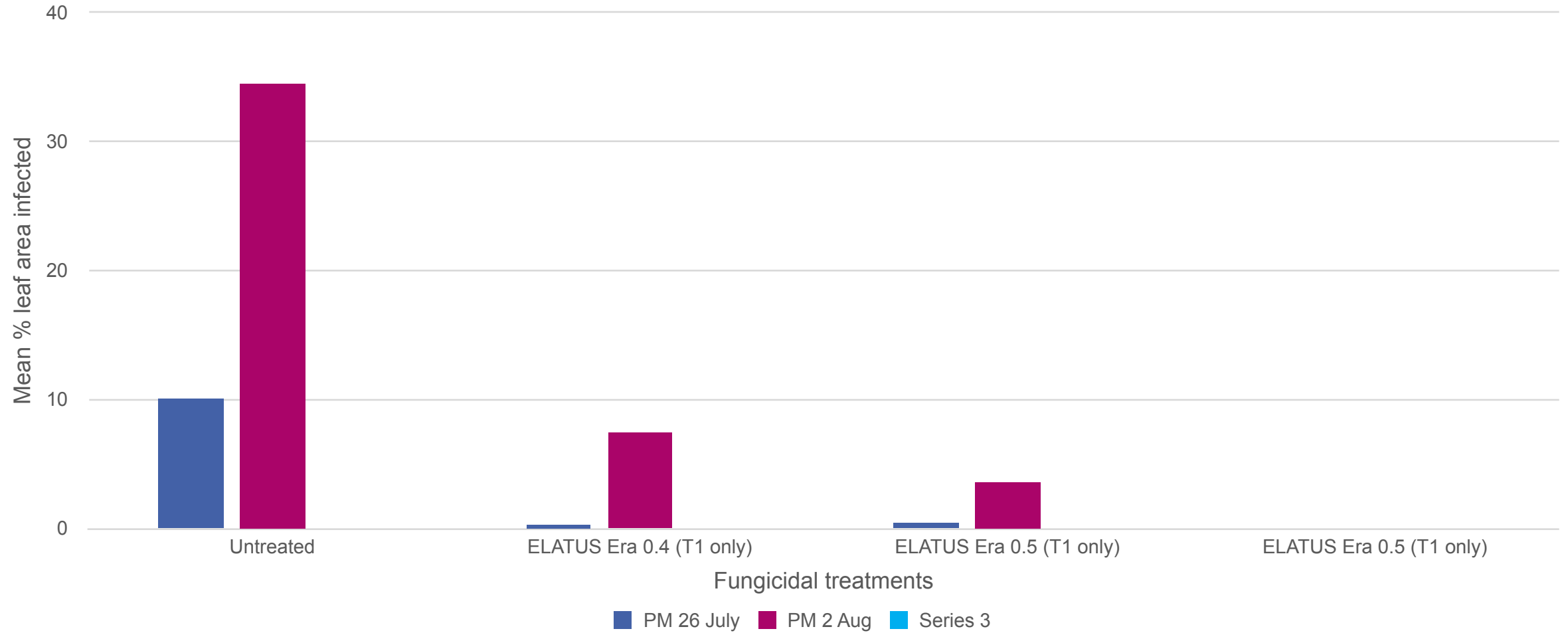
Current label in combining peas covers:

- *Ascochyta pisi*
- *Uromyces sp* (Rust)
- Not currently a big issue
- First trials to test activity against powdery mildew

Treatments:

- Untreated
- ELATUS Era 0.4 l/ha *1
- ELATUS Era 0.5 l/ha *1

ELATUS ERA delivers excellent one-shot control of powdery mildew in combining peas



ELATUS Era - Summary



- Outstanding new product for control of bean rust
- Excellent efficacy seen in winter and spring beans
- Good control of chocolate spot comparable to Signum
- Better value for money than the market leader against rust and chocolate spot
- Ideal to partner with AMISTAR in a two-spray programme in field beans
- Promising first results against powdery mildew in combining peas
- Flexible product can be used effectively in a number of crops

Bringing plant potential to life