



# Eden Research plc

## Annual General Meeting

27th June 2024

London







EDEN

THE NATURAL SOLUTION

**Eden Research plc is an AIM-quoted company focused on sustainable biopesticides and plastic-free encapsulation technology** for use in the global crop protection, animal health and consumer products industries.



# Presentation team



**Sean Smith**

Chief Executive Officer

**Over 25 years experience in the speciality chemicals and industrial biotechnology industries**

- 9+ years as CEO
- Led business model transformation, growing the business from pre-revenue to >£3.1m (2023)
- Extensive industry experience in IP-based businesses
- Senior roles previously at Ciba (now BASF), Honeywell and Intellectual Ventures



**Alex Abrey**

Chief Financial Officer

**Experienced Financial Director to a diverse range of businesses including financial and management consultancy**

- 13+ years as CFO
- Led the admission on AIM in 2012
- Fellow of Chartered Certified Accountants





# About us

Eden is the only UK quoted (AIM: EDEN) company focused on biopesticides for sustainable agriculture



Intellectual property and expertise in plant-derived sustainable chemistry and delivery technologies



Multiple regulatory clearances (EU, US, AUS, NZ)



Strategic partnerships



Two products commercially available with a third undergoing regulatory review



Proven products

## Our partners



## Key statistics



Regulatory approvals

22

Countries have granted product authorisation



Crop uses

~100

Crop use approvals for Eden's biopesticides



Intellectual property

£18m+

Invested in IP & registrations



130

Granted and pending patents



# The drive towards sustainable agriculture



Farming practices which maintain yields while reducing harm to the environment



Embracing farming practices that mimic natural ecological processes



A reflection of society's increasing concern about the world's approach to food production and healthy eating



Pressure on productivity driven by population growth and an increase in food demand exceeding 50% by 2050



By 2050, global food systems will be responsible for feeding more than nine billion people

“

**Eden formulations are well suited for a wide range of crop protection applications. Consumer sentiment about pesticides and their potentially harmful effects is driving regulatory action,** leaving farmers with fewer conventional choices and a strong interest in finding sustainable solutions, such as Eden's products.



**Sean Smith**  
Chief Executive Officer





# Significant market potential



Crop protection products **formulated with Sustaine® and Eden's active ingredients** can help address many of these issues:



Consumer concerns over food safety



Farmers seeking effective alternatives



Increasingly challenging regulatory requirements

## \$11bn

The global biopesticides market is projected to be worth more than **\$11 billion by 2027**

## 15% pa

The biopesticides market is growing at a CAGR of approximately **15% per annum**

## \$300m

Increasing time and cost of bringing new agrochemical products to market: **10 to 12 years and around \$300 million**

## \$12.5bn

The global seed treatment market is projected to be worth more than **\$12.5 billion by 2027**





# 2023 Commercial and Operational Highlights

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- Significant milestone achieved with pre-launch of seed treatment, Ecovelex™, and the granting of a temporary approval in Italy for use in the 2024 growing season
- Expansion of regulatory approvals in the US for flagship biopesticides, Mevalone® and Cedroz™, including US national level EPA authorisation, leading to approvals in 17 states, including the key states of Florida and California
- Expanded use approvals for Mevalone in New Zealand, Italy and Poland, the latter a significant milestone for accessing Central European markets
- Significant progress on insecticide formulation, with promising field trials completed and ongoing discussions with multiple potential commercial partners
- Proceeds of £9.9m (gross) fundraising being utilised to accelerate product development, registration and commercialisation workstreams, ensuring Eden can continue its path of growth, and fully exploit opportunities available.





# Financials - 2023 Results

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	2023		2022		2021
	£m	% change	£m	% change	£m
<b>Revenue</b>	3.2	78	1.8	50	1.2
<b>Product sales</b>	2.6	63	1.6	45	1.1
<b>Operating loss</b>	(1.9)	(27)	(2.6)	(19)	(3.2)
<b>Cash at bank</b>	7.4	-	2.0	-	3.8

- **Significant increase in revenue:**
  - 78% in 2023
  - 50% in 2022
- **Significant increase in product sales:**
  - 63% in 2023\*
  - 45% in 2022
- **Strong financial position:**
  - Cash at bank at 31 December 2023 of £7.4m (2022: £2.0m)
  - Low overhead business: £3m in 2023
  - Debt free



# Upcoming news-flow

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- Mevalone approvals in Central Europe H2, 2024
- Commercial agreements for insecticide H2, 2024
- Emergency Use *applications* Ecovelex H2, 2024
- Commercial agreement(s) for home and garden H2, 2024
- Label extensions for Mevalone in various countries (e.g. Spain, France) Q2 / Q4, 2024







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# OUR PRODUCTS





# Our product focus

Our focus is on developing products based on sustainable chemistries to protect crops from pests and disease, with equal or better performance when compared with conventional pesticides.



## FUNGICIDES

Botrytis, powdery mildew, downy mildew



## NEMATICIDES

Root knot nematodes

**CEDROZ™**



## INSECTICIDES

Mites and white flies

**Under development**



## SEED TREATMENTS

Multiple targets, dependent on crop

**Ecovelex™**



## Active ingredients

Our products give growers reduced risk, increased flexibility and security.



**Exempt from pesticide residue limits**



**Allowed in EU organic agriculture**



**Can be used up to the point of harvest**



**Equally effective vs conventional chemistry**





# Product characteristics



**Enabling sustained delivery**, increasing residual efficacy and reducing use rates

**Tackling resistance build-up**

**Solvent-free, stable formulations** with high loadings of active ingredients

**Protecting plants** from potentially damaging chemicals

**Polymer-free formulation technology**

**'Residue free'**

**Low or no pre-harvest intervals** giving growers flexibility, security and control



**FiBL**



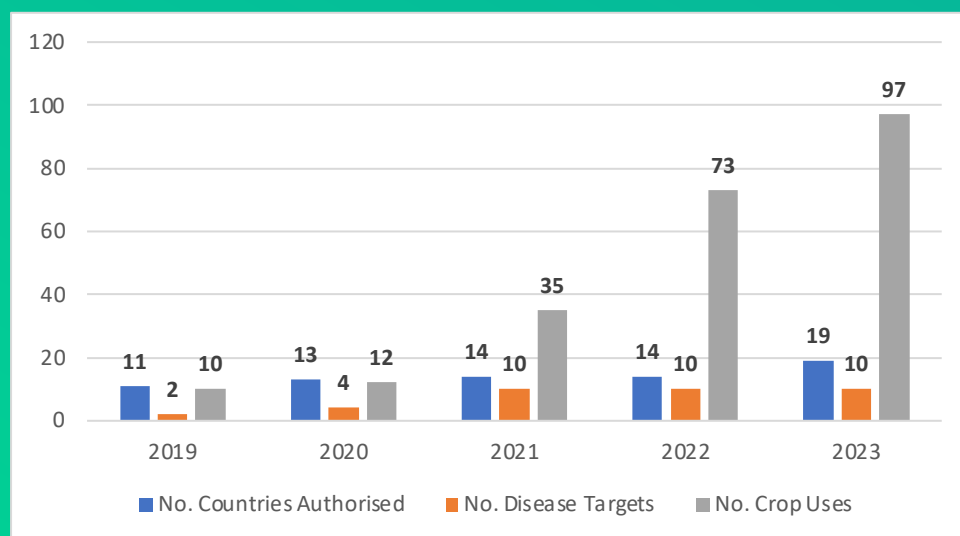


# Mevalone® Biofungicide

## Background

Mevalone is a foliar biofungicide which was **developed initially to target botrytis on grapes.**

Since its launch in the EU in 2016, the **label for Mevalone has been significantly expanded,** as shown in the table below:



## Current status



Approved in Southern EU on a wide range of targets and crops



Approved in Kenya and Australia



Approval in the US received in September 2022



Approval in Poland and New Zealand received in Q2, 2023



Approval in other Central EU countries expected in 2024



Approval in the UK expected in 2024  
– Distributor appointment pending



Submissions pending for approval in various other key markets around the world, including **Brazil, South Africa, Chile, Argentina**

## Opportunity

Opportunity	Current			Future		Total
	S.EU	ROW	US	C.EU	ROW	
Addressable market €m	101	10	94	106	271	582
Potential Eden sales €m*	3.0	0.3	2.8	3.2	5.4	14.7

\*Based on peak sales and a full label of all key target diseases and crops



## Clear results

- Mevalone™ is a proven product
- A reliable alternative to conventional control
- Phased release for prolonged effects
- Easy to use and apply
- Improved stability and shelf life compared to other biological options

## Robust efficacy

Mevalone has demonstrated comparable control to that of established products both in registration trials and commercial applications.

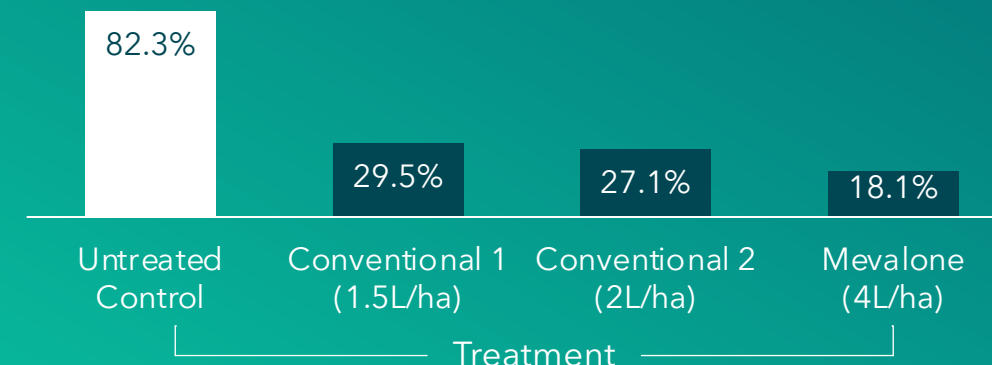
### Critically, our products are:

- Comparable to conventional fungicides
- Complementary to existing application programmes
- A valuable part of Integrated Pest Management

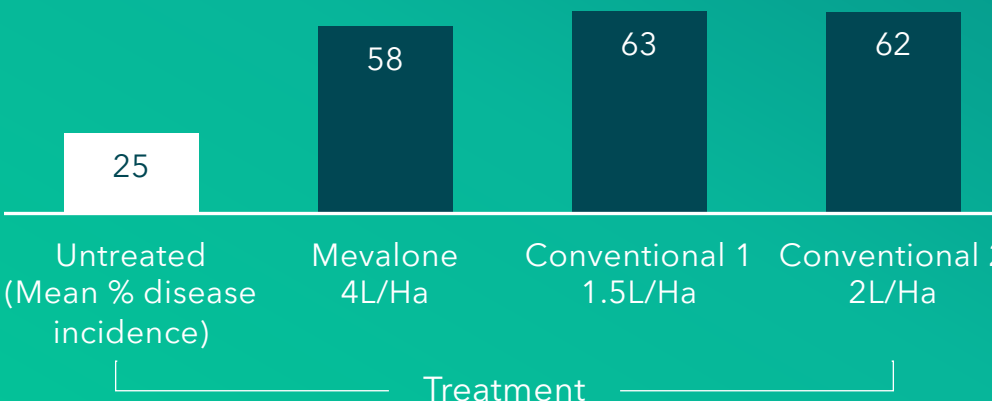


## Incidence of disease (%)

Average of 13 trials across southern Europe



## Control of Botrytis cinerea on grapes (%)





# Cedroz™

## Bio-nematicide

### Background

Cedroz is a **bio-nematicide targeting root-knot nematodes** in high value crops.


A development and **commercialisation agreement was signed with Eastman Chemical** in December 2016.

The **agreement covers 29 countries** on providing Eastman with the exclusive distribution rights.


Sales of the product began in the EU in 2020.


**Approval has also been granted in the US on all nematode species.**

### Current status

 Approved in Southern and Central EU on a wide range of high-value crops

 **Approval in the US received in September 2022**

 Strong revenue growth in 2023 (78% year over year)

 Submissions to be made for approval in various additional key markets around the world

### Opportunity

	Current		Future		Total
	EU	ROW	US	ROW	
Addressable market €m	113	8	189	301	611
Potential Eden sales €m*	2.3	0.2	5.7	6.0	14.2

\*Based on peak sales and a full label of all key target diseases and crops

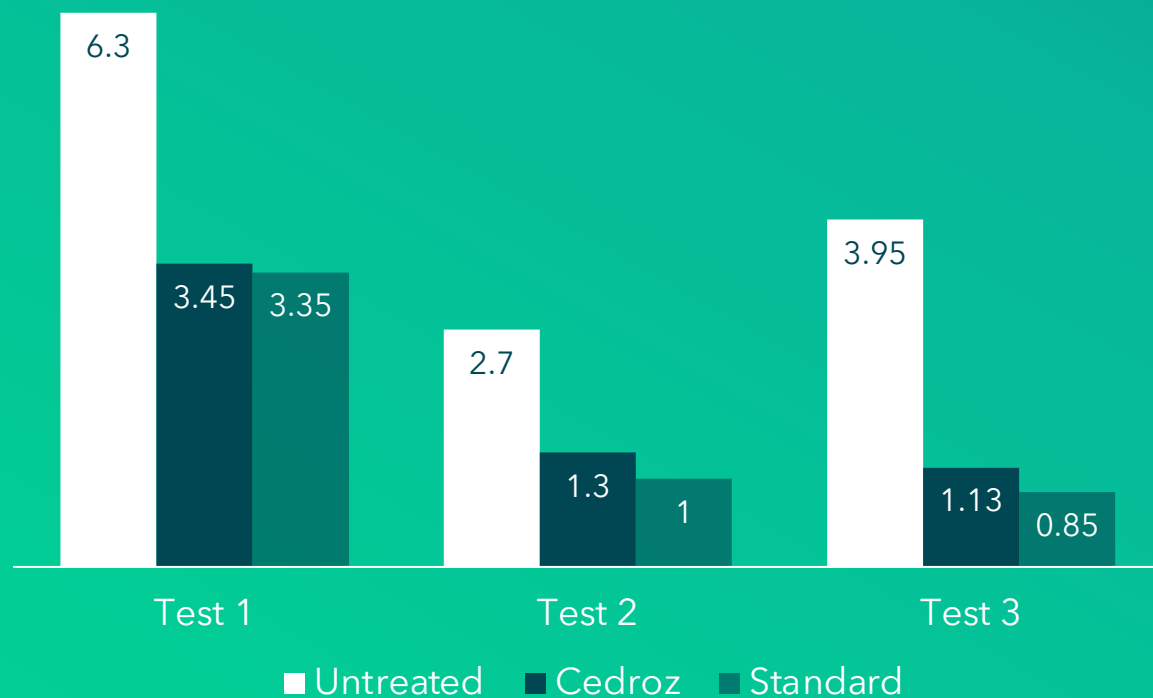




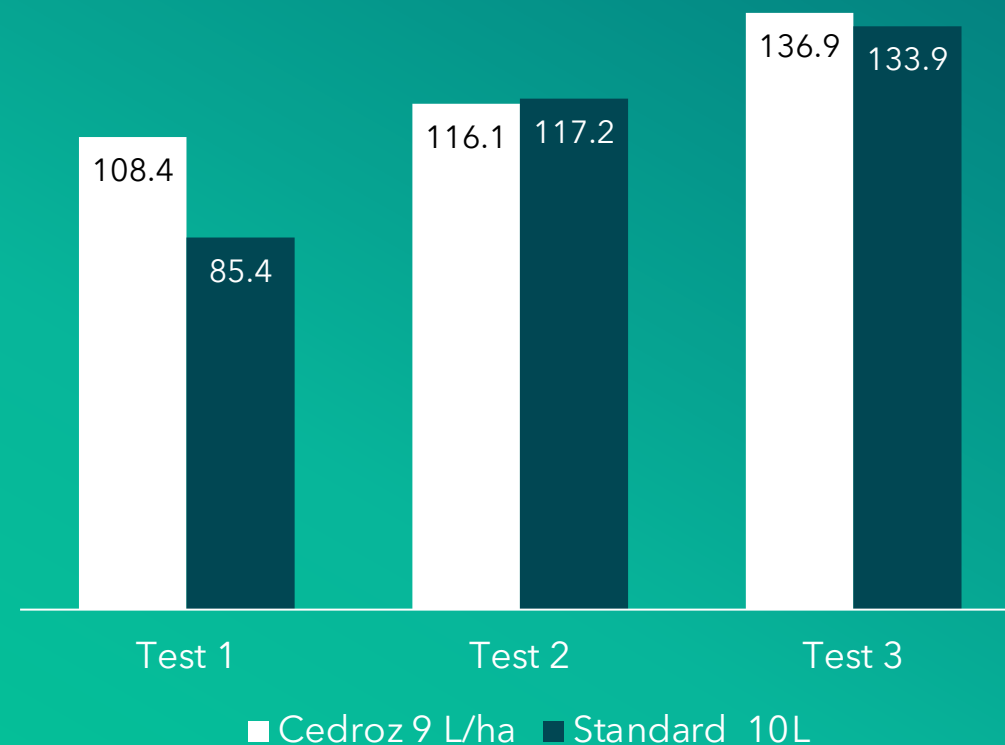


## Severity of root damage

Zeck scale 0-10



## % cumulative production compared to the untreated, which = 100





# Ecovelex™

## Bird repellent seed treatment

### Background

Ecovelex is a **biological bird repellent seed treatment** initially for use on **maize**.

**Two incumbent ingredients** used in Corteva’s seed treatment products have been, or will shortly be, **banned in key markets**.


A development and commercialisation **agreement was signed with Corteva in May 2021**.


Initial markets are the **EU**, plus the **UK**.

In time, it is expected that the product will be commercialised into other geographies, such as the US, as well as into other crops.

### Current status

 **Semi-field studies have shown good efficacy**

 **Field trials**, undertaken by both parties, showed **efficacy and produced successful trials**

 **Formulation testing by Corteva has been successful**

 An **application for regulatory authorisation has been submitted** to the **EU and UK authorities** with the process expected to take between 18 and 24 months

**Initial commercial sales in the 2024 growing season** due to receipt of a temporary approval in IT

### Opportunity

	Current		Future		Total
	EU, UK		EU, UK	US	
Addressable market €m	40		95	240	375
Potential Eden sales €m*	3.6		8.6	21.6	33.8

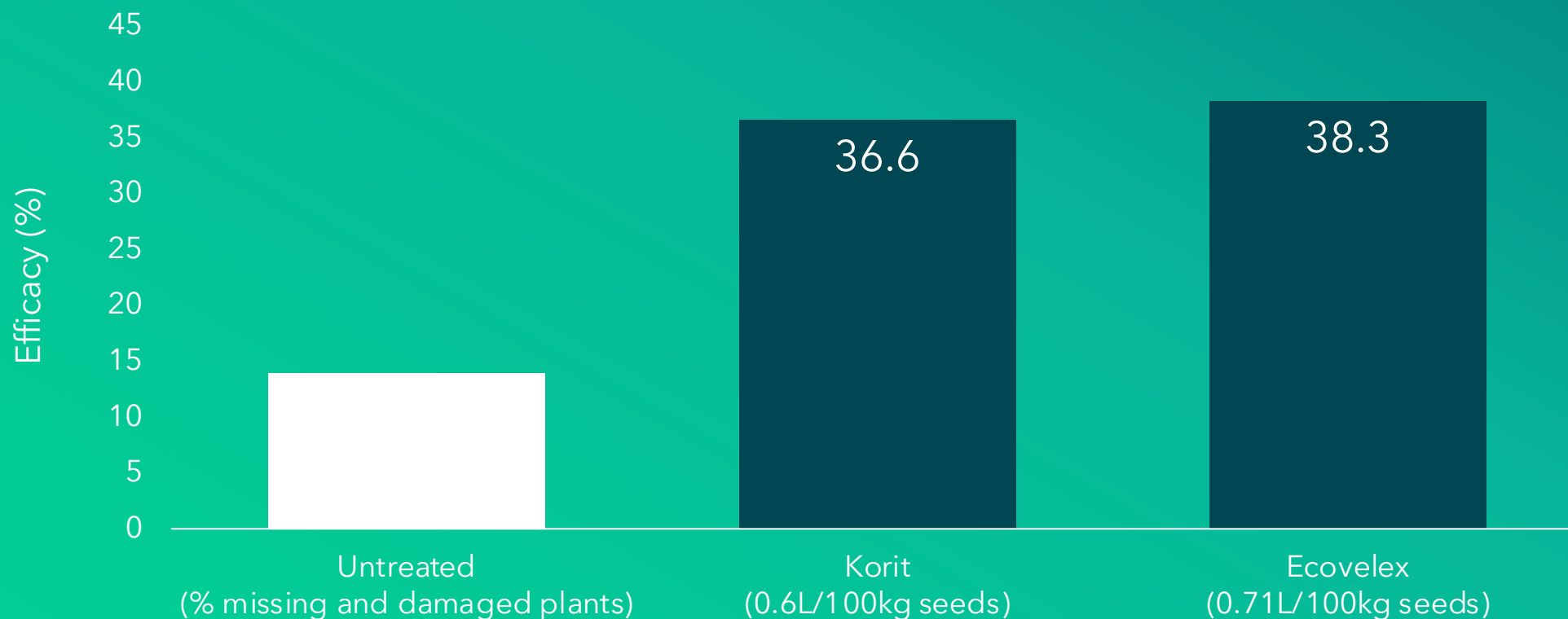
\*Based on peak sales and a full label of all key target diseases and crops



## The biological bird repellent seed treatment

### % Efficacy

BBCH 10 (6-29 days after drilling) - Summary of 16 trials





# Seed treatments

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## What are Seed treatments?



Physical, biological or chemical agents applied to seeds to provide protection and help improve overall crop performance



Treatments are typically applied either as a solid/dust or as a liquid.



Colourants are used in seed treatments to give a clear indication that a seed has been treated and to confirm uniformity of the coating.



Multiple functions: supporting greater uniformity of seed germination, plant height, vigour and biomass by protecting against pathogens and pests and/or can act as a source of crop nutrition or growth regulation.



## Major players



Crop Science



**CORTEVA**  
agriscience



**BASF**  
We create chemistry





# Insecticide

## Significant opportunities for safe effective, new products

### Background

Due to a ban on numerous insecticides, such as neonicotinoids, there **is an opportunity for effective, new products.**

Eden has developed **new formulations for use as an insecticide against at least four key target pests**, including spider mites, whitefly, aphids and thrips.

Formulation stability issues led to a change in formulation in 2020.

**Two lead formulations** were created, both of which have shown good efficacy in field trials.

Field trials of the lead formulation candidate have taken place globally with good results.

We have engaged with more than 12 potential commercial partners covering global opportunities.

### Current status



**Data** from field trials undertaken in 2023 **shows good efficacy**, consistent with that in 2021 & 2022



**Following successful trials**, Eden has provided samples of the final formulation to a **list of potential distribution partners**



It is expected that **announcements on the appointment of distribution partners will be made in due course**



**Regulatory submissions are planned for 2024 and 2025**



**Subject to regulatory authorisation, first sales of product are estimated to be 2025 in the US and 2026 in the EU**

### Opportunity

	Future			Total
	EU,UK	US	ROW	
Addressable market €m	338	237	1,320	1,895
Potential Eden sales €m*	6.2	6.8	17.4	30.4

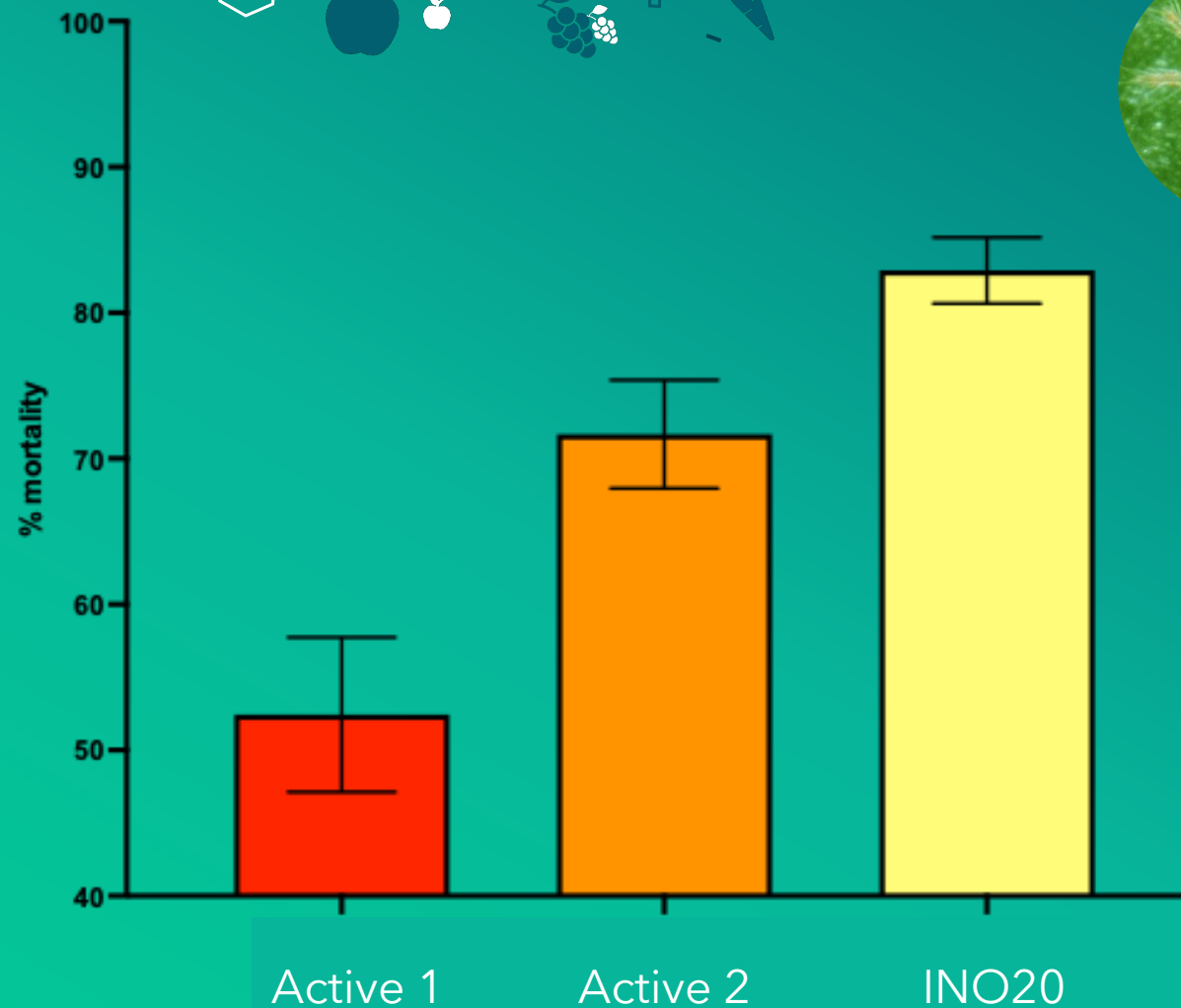
\*Based on peak sales and a full label of all key target diseases and crops



# Insecticide Efficacy Overview

Bioassays using Two-spotted spider mites have been run to compare the efficacy of the active ingredients in IN020.

IN020 is more efficacious than its component parts – a critical characteristic for successful registration





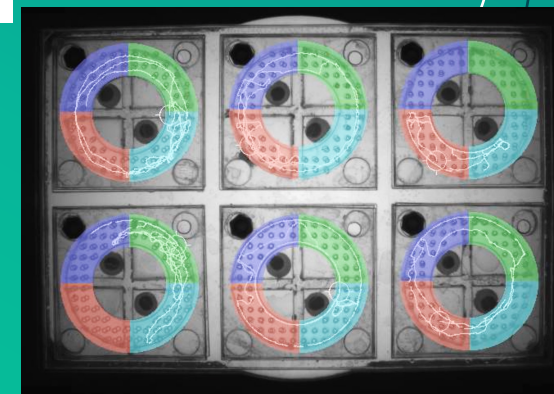
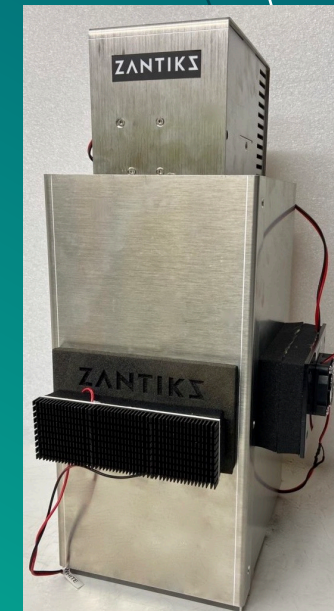
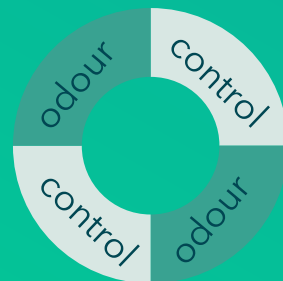
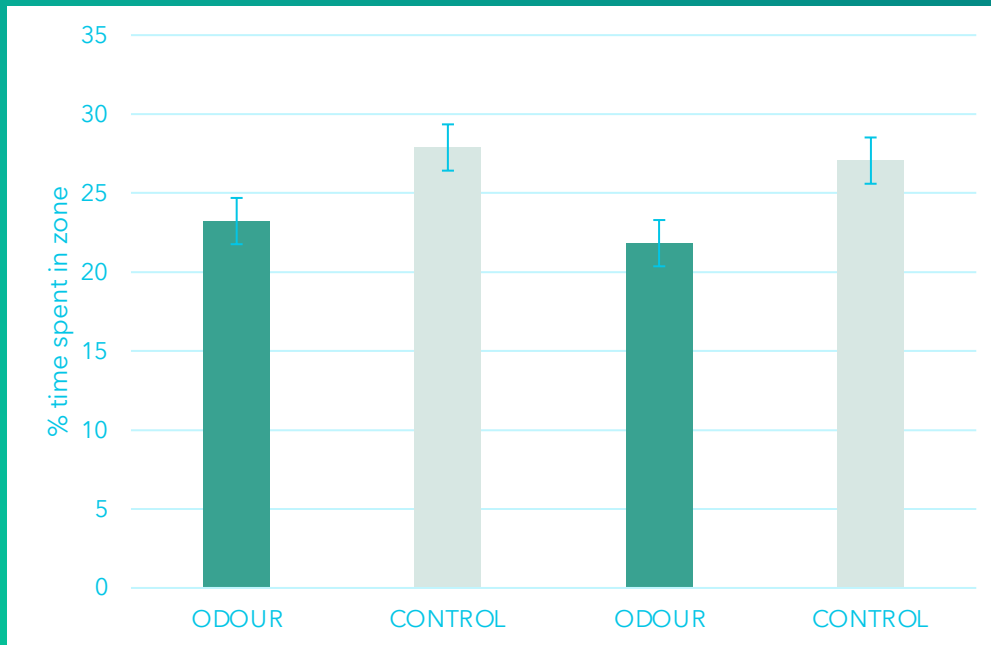
# Research Tools

## Olfactometry

Tracking individual aphids to look for behavioural differences – time spent in the odour zones vs time spent in the non-odour zones.

The olfactometer is a tool that can be used to study insect behaviour in response to chemical stimuli. These bioassays will be key in characterising the function of terpenes in product formulations.

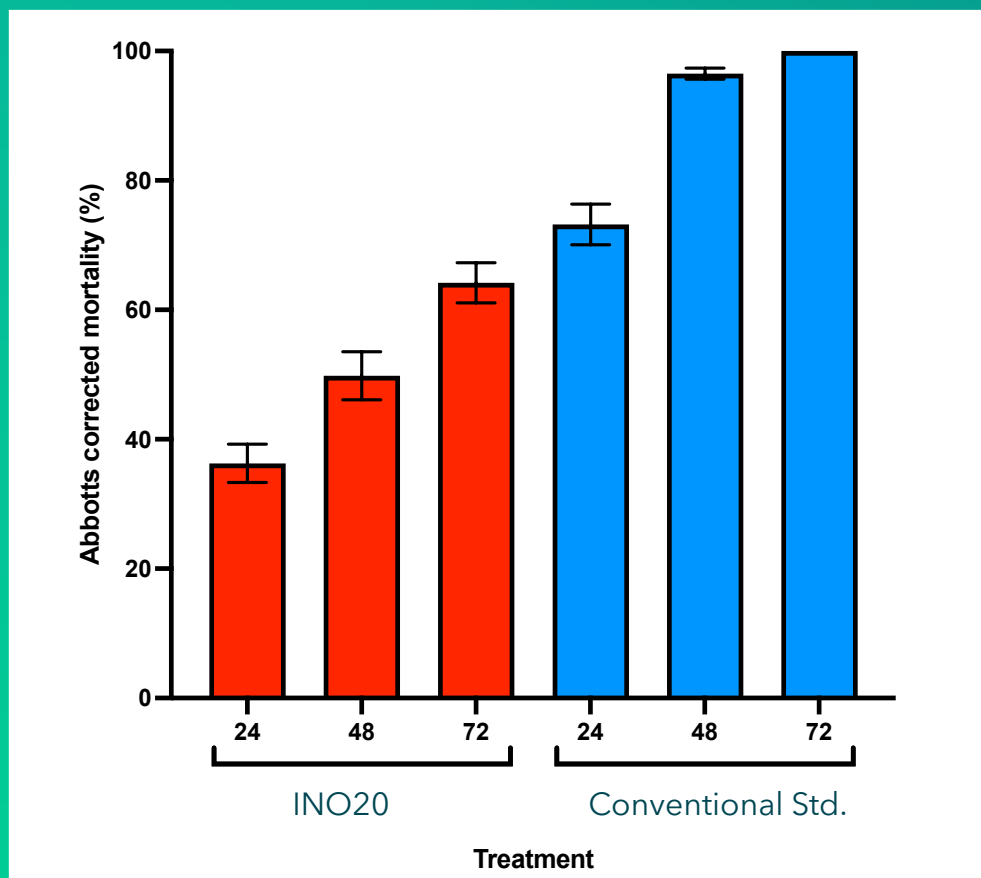
**Understanding product characteristics and performance is essential for commercial and regulatory success!**



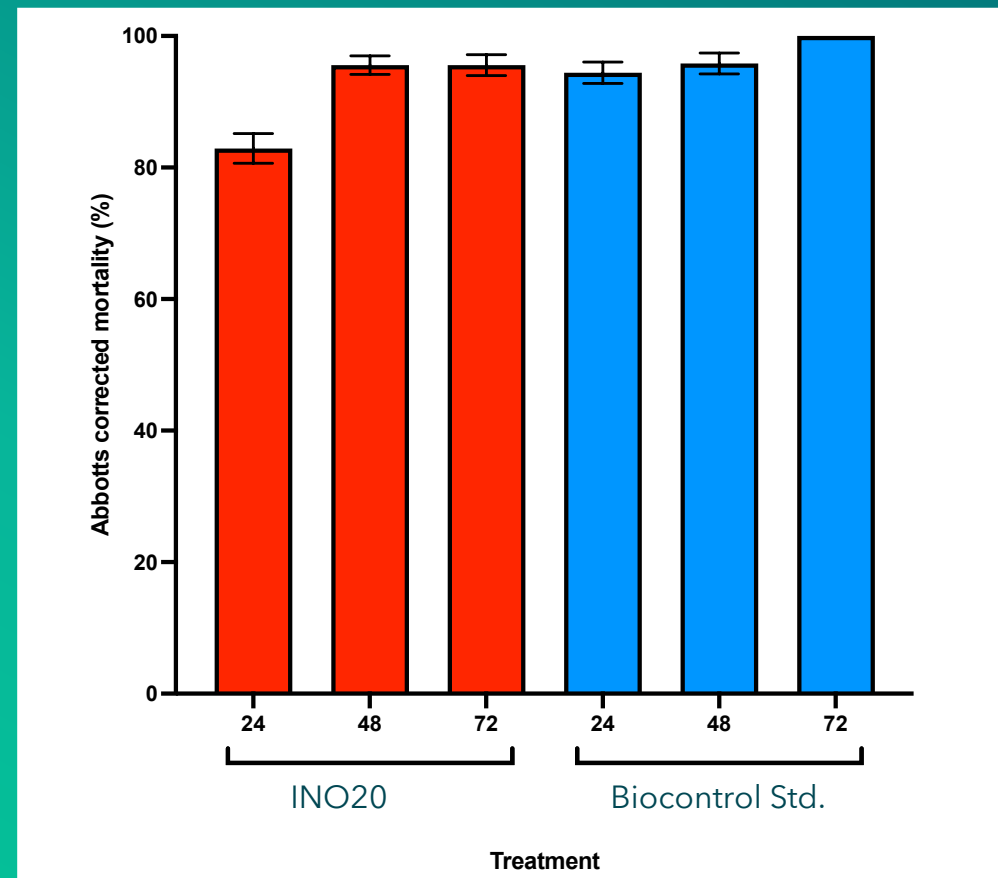


# Insecticide

## Eden laboratory trials



Efficacy (%) against aphid - adults  
(Summary of 6 trials, error bars = standard error)



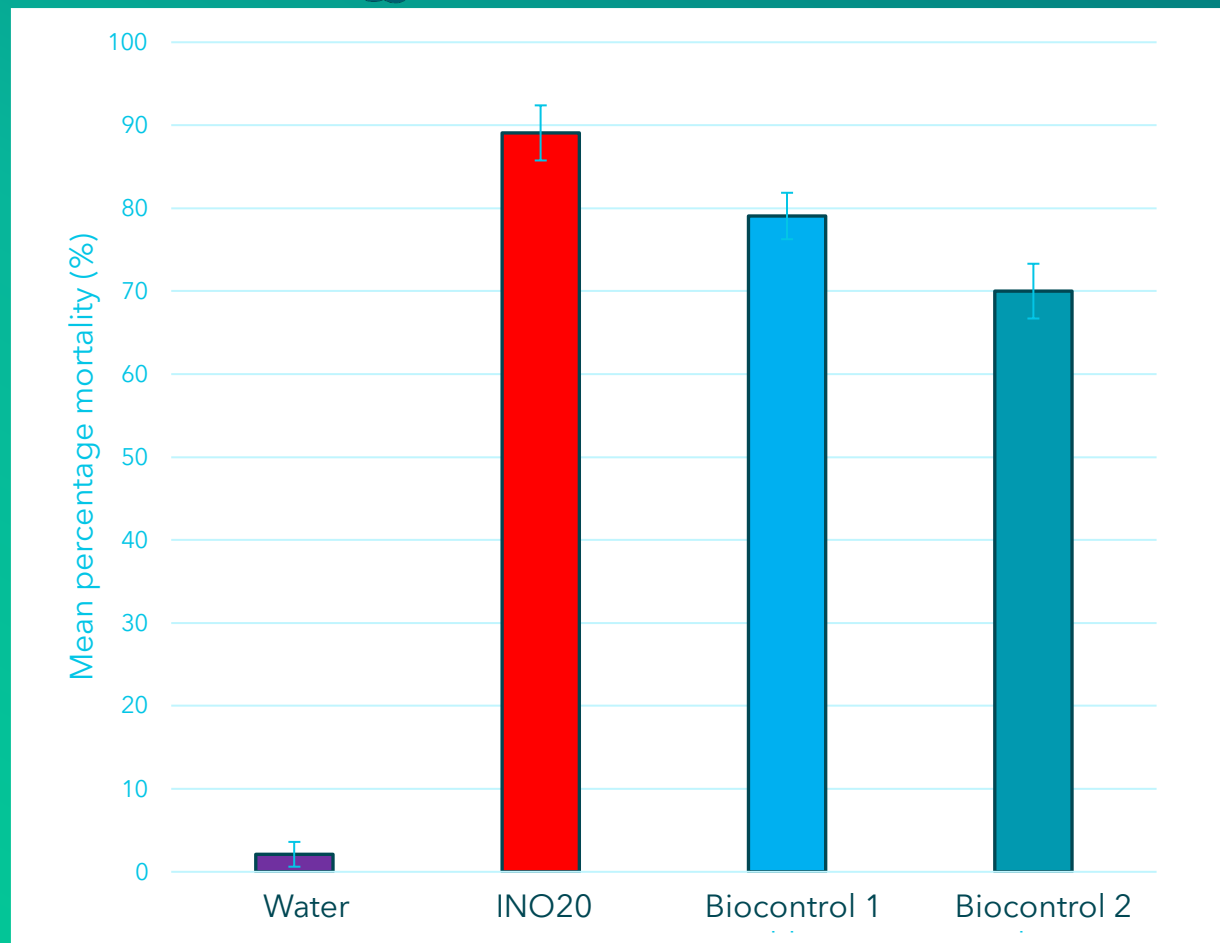
Efficacy (%) against spider mite - adults  
(Summary of 3 trials, error bars = standard error)



# Insecticide

## External laboratory trials

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Efficacy (%) against thrip - adults  
(Summary of 2 trials, error bars = standard error)

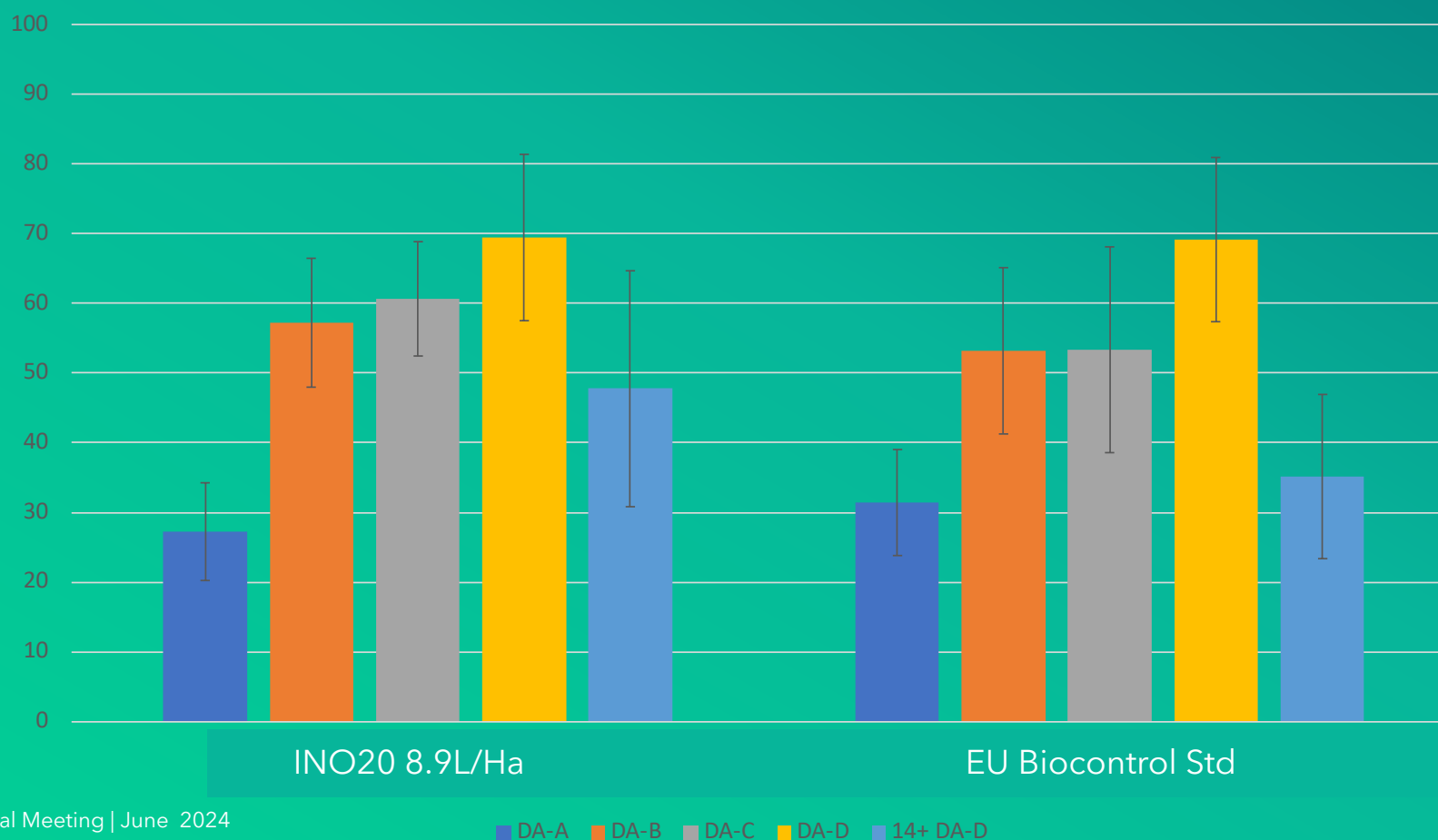


# Insecticide

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## HT Efficacy (%) against Spider mite - eggs

(Summary of 4 trials, 4 applications at 7-day interval, error bars = standard error)

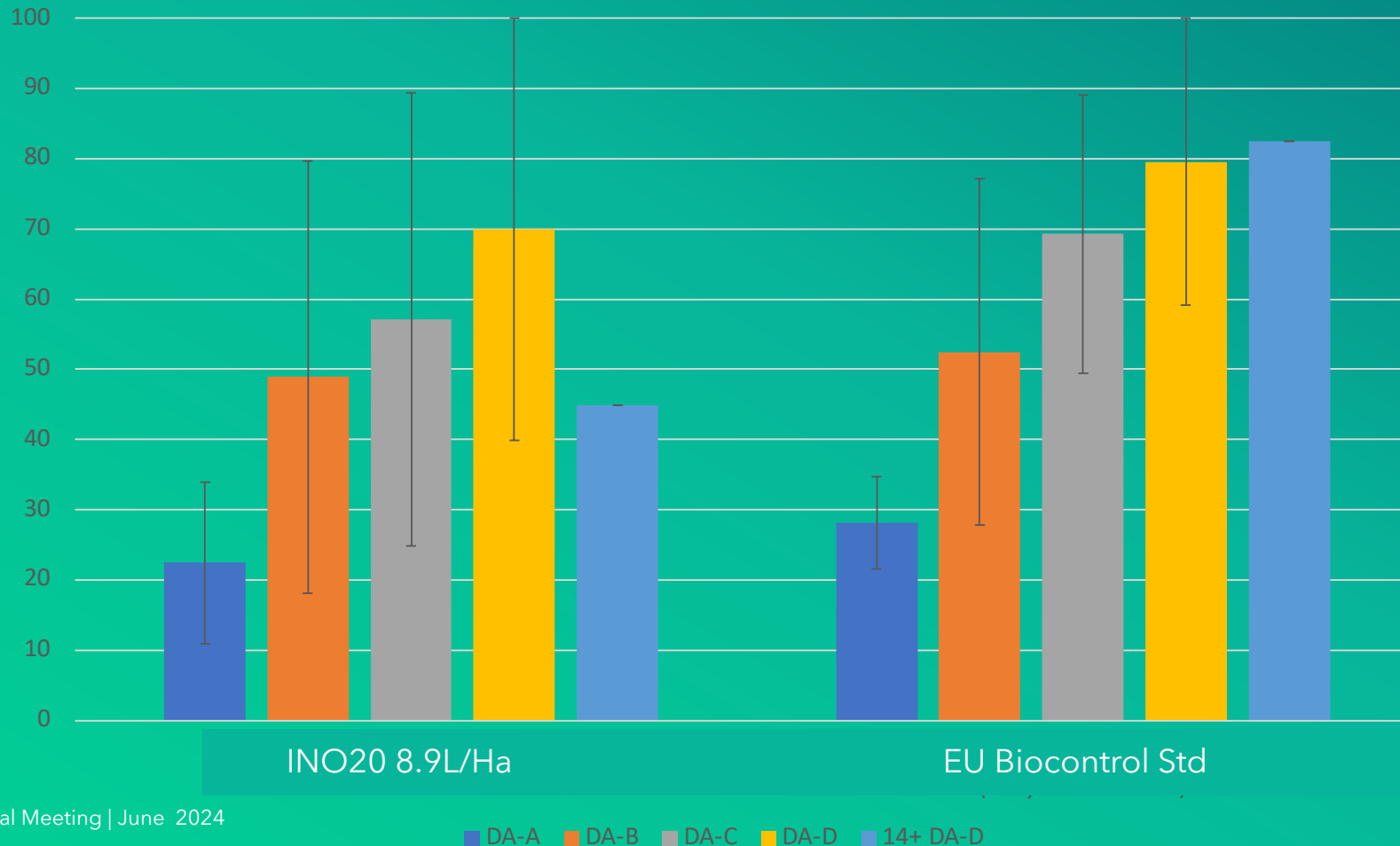




# Insecticide

## HT Efficacy (%) against Spider mite - nymph

(Summary of 2 trials, 4 applications at 7-day interval, error bars = standard error)

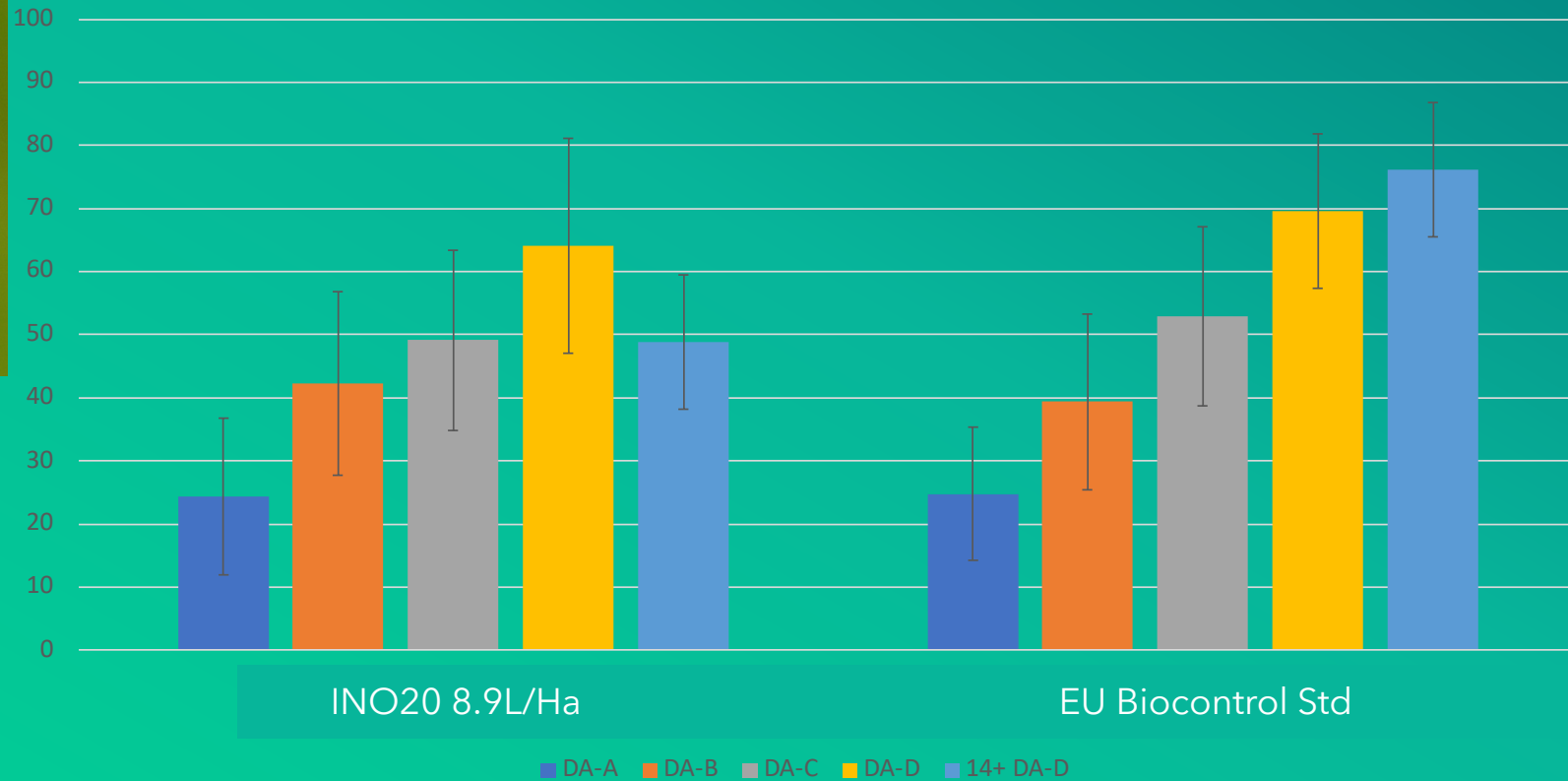




# Insecticide

## HT Efficacy (%) against Spider mite - adult

(Summary of 4 trials, 4 applications at 7-day interval, error bars = standard error)

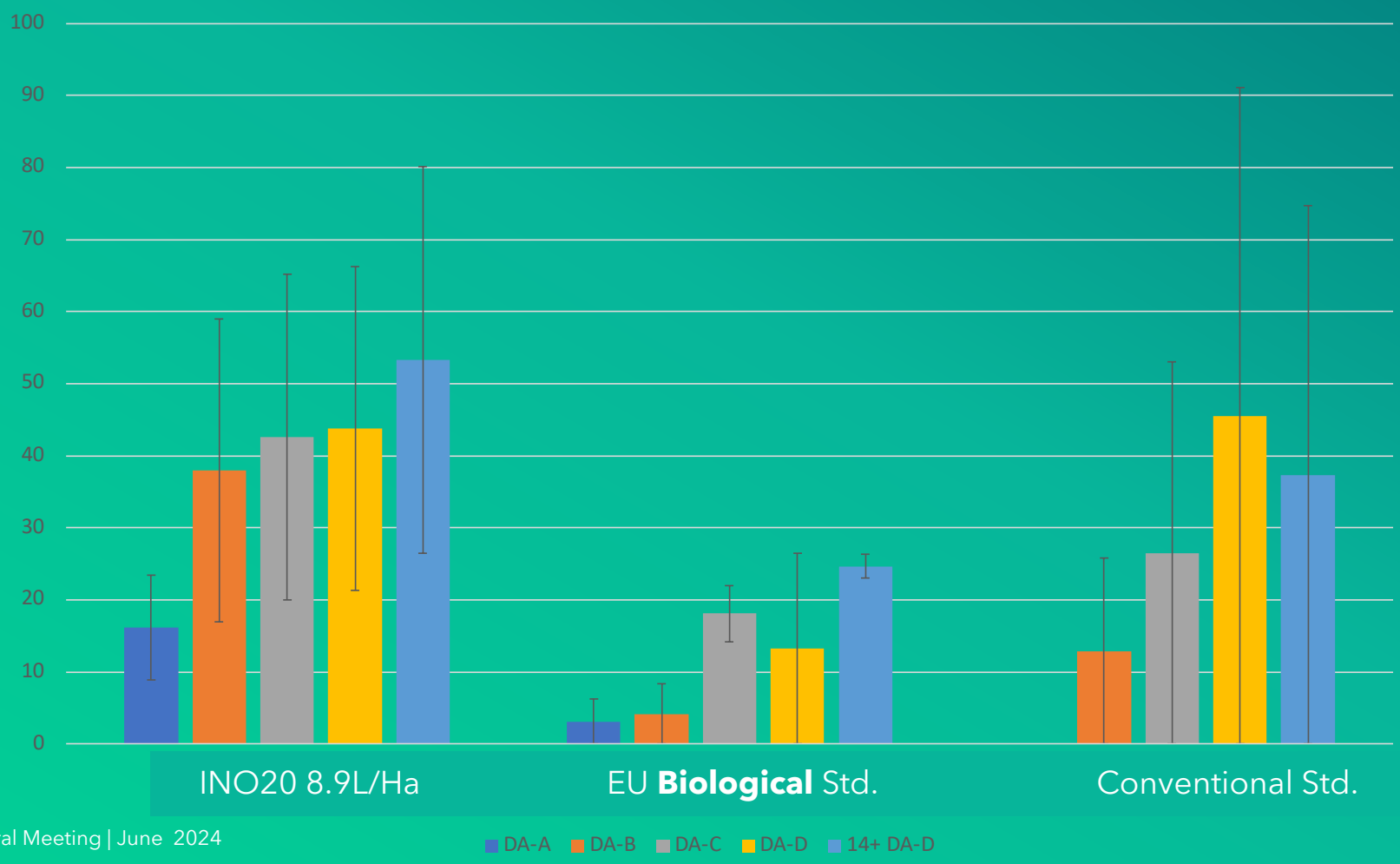




# Insecticide

## HT Efficacy (%) against Whitefly - eggs

(Summary of 3 trials, 4 applications at 7-day interval, error bars = standard error)

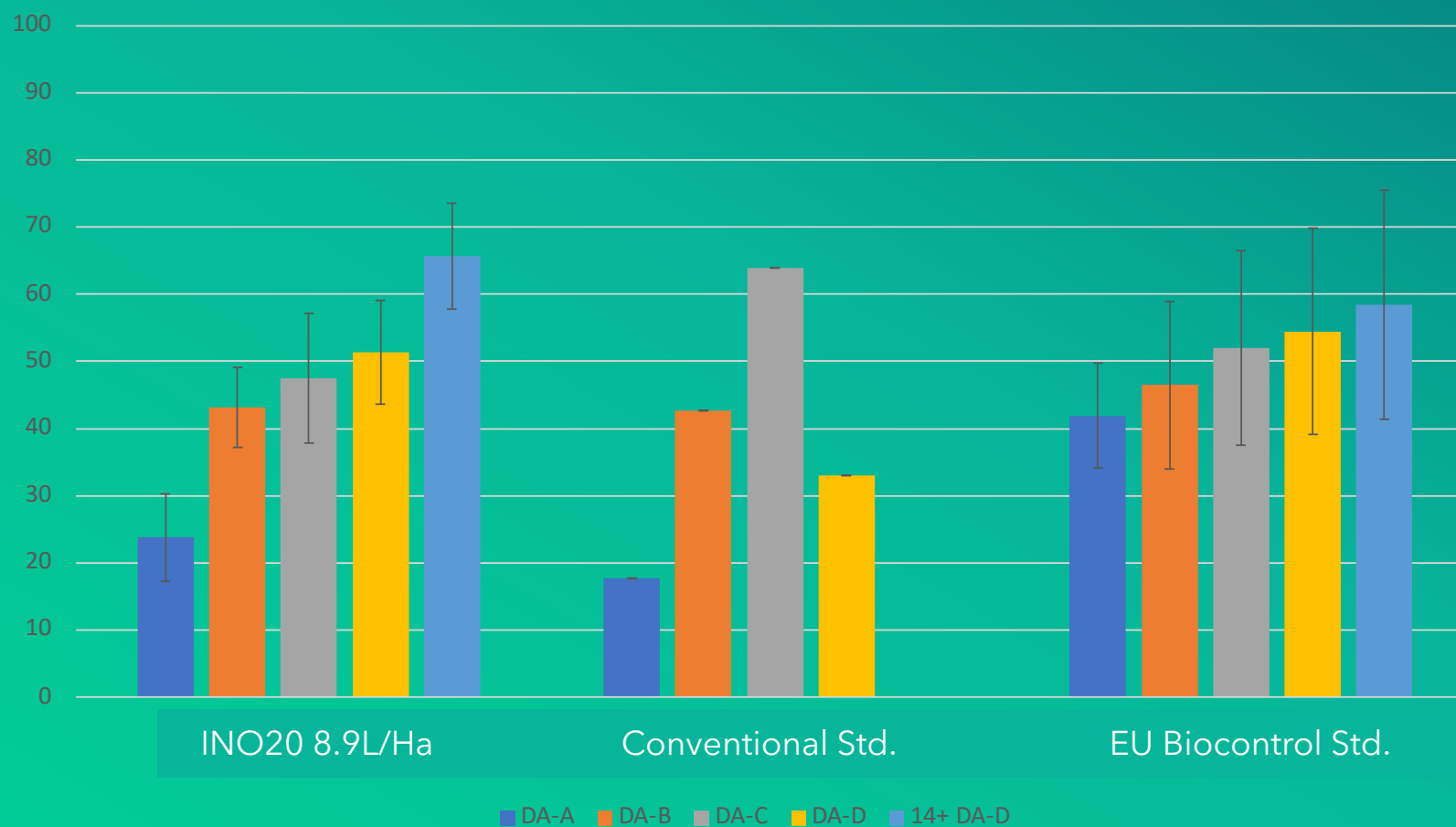




# Insecticide

## HT Efficacy (%) against Whitefly - nymph

(Summary of 7 trials, 4 applications at 7-day interval, error bars = standard error)

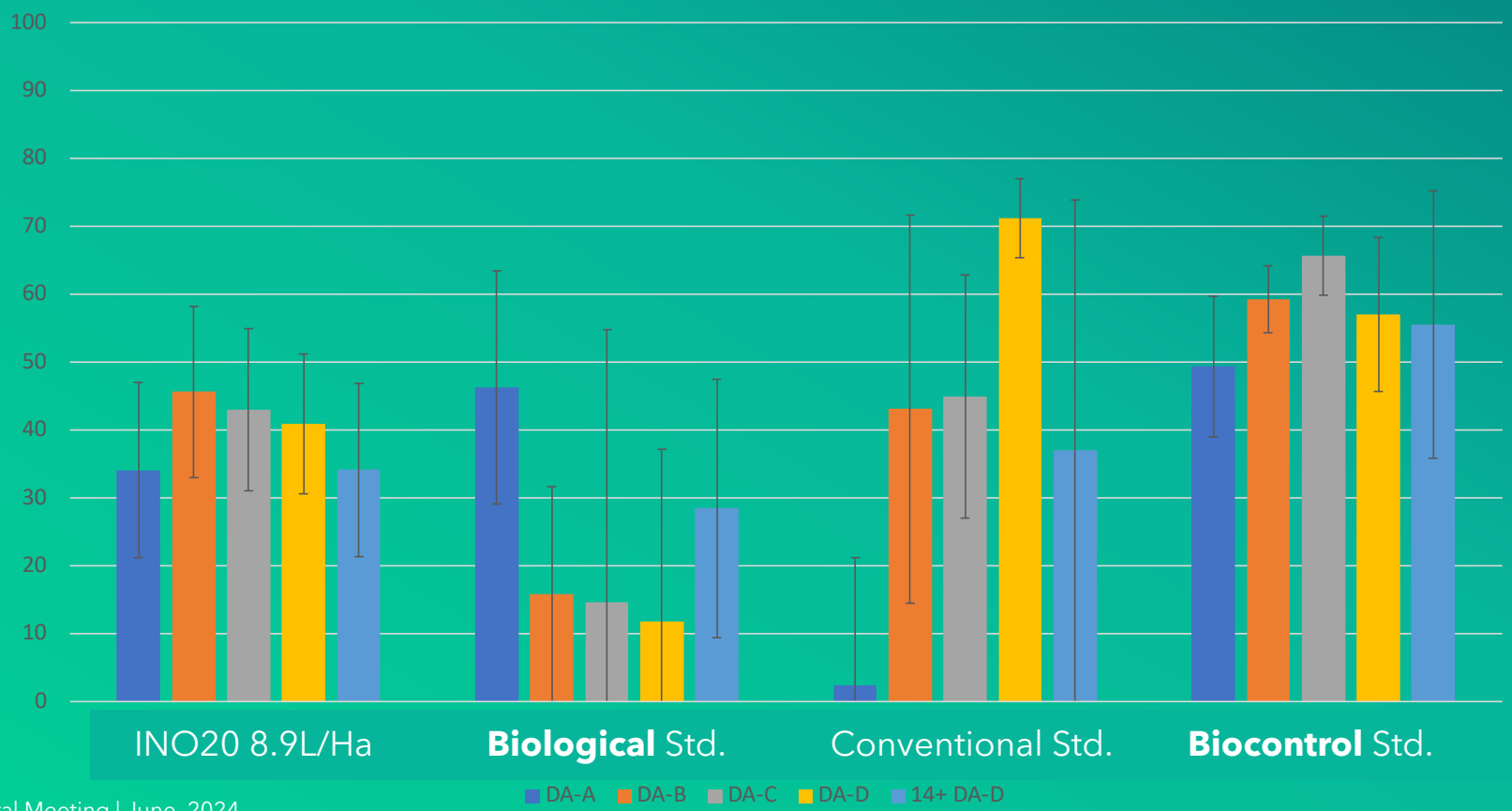




# Insecticide

## HT Efficacy (%) against Whitefly - adult

(Summary of 7 trials, 4 applications at 7-day interval, error bars = standard error)




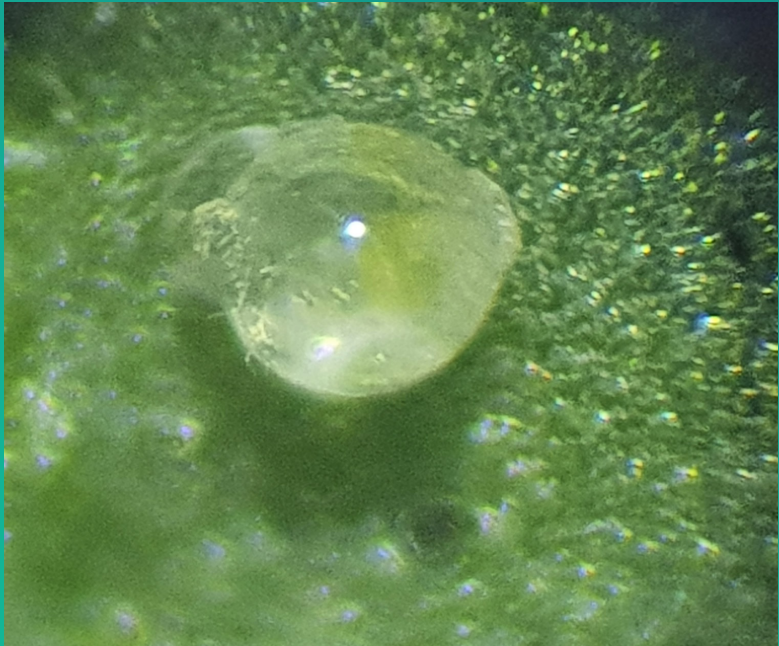


# Insecticide



## Mode of action

Healthy versus treated white fly scales

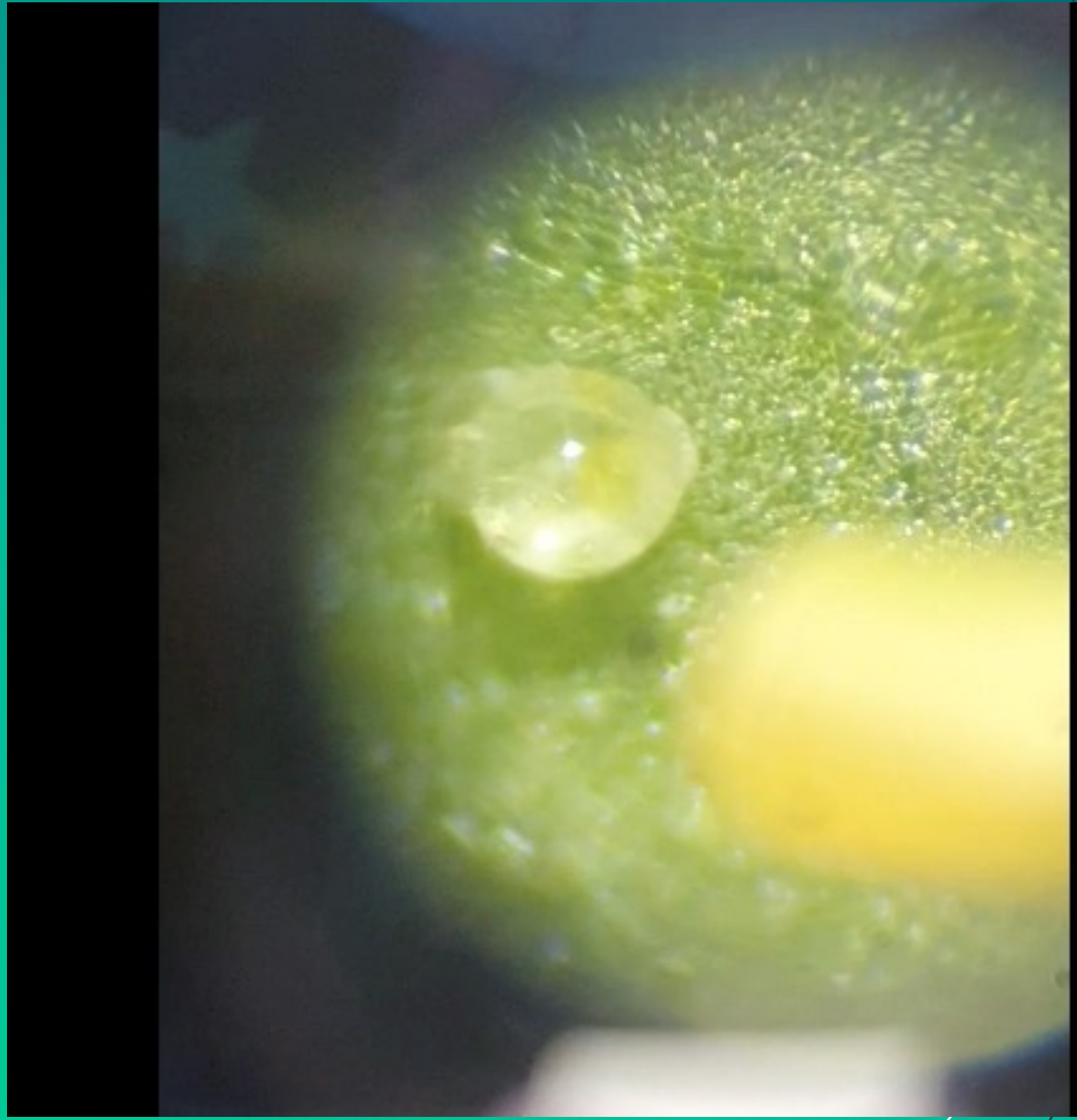
Healthy Whitefly Scale	IN020
	



# Insecticide

## Mode of action

Treated white fly scales







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# COMMERCIAL POSITIONING





# Regulatory position

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## EFSA (EU)

Application for the renewal of Eden's three active ingredients (eugenol, geraniol and thymol) has been submitted to EFSA for its review.

The renewed approvals will provide an additional ten years of data protection.

Much of the newly submitted data will likely be useful for active ingredient and product registrations in other parts of the world.



## Organic (EU)

All three of Eden's active ingredients have been approved as inputs for organic agriculture in the EU.

The organic market in the EU is expanding at a faster pace than any other part of the agrochemicals sector and, as such, the ability to sell inputs for organic agriculture is a valuable tool for Eden.



## EPA (US)

The latest news is that EPA has approved Eden's three active ingredients, as well as Mevalone and Cedroz in September 2022.

This allowed for some sales of Mevalone, in particular, in 2023, but should result in meaningful sales in 2024 and beyond.

**California has now granted authorisation as of February 2024!**



## Rest of the World

Eden is working with Sipcam Oxon to expand registration in key territories around the world, including **Brazil, Argentina, Chile and South Africa.**

Authorisation received for Mevalone in **Poland and New Zealand in Q2, 2023** and anticipated in **other central EU countries** in due course.









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# STRATEGY AND GROWTH OPPORTUNITIES



# Our strategy

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## Business line diversification

- Pursuit of opportunities in seed treatments
- Development of insecticides
- Ongoing opportunities in consumer products and animal health
- Significant expansion of crops and diseases treated
- Geographic diversification (seasonal and climate variation)



## Research, development and operations

- Supply chain optimisation
- Expansion of in-house screening and field trials capability
- Accelerate commercialisation of Sustaine® for conventional actives
- Increasing self-reliance for R&D
- Reduce time to market



## Commercial growth

- Regulatory clearance in new countries, crops and diseases
- Accelerate Sustaine® development
- Partnerships for Mevalone® in new territories
- Pursue collaboration with majors and select national partners
- Route to market optimisation



## Strengthening and growing the team

- Added capacity in R&D, including microbiology, plant biology, agronomy, and analytical chemistry
- Robust approach to data quality
- Expand commercial team
- Addition of in-house regulatory expertise – accelerating time to market and reducing regulatory costs





# Positive outlook for growth



## How growth will be achieved

The team at Eden now has the necessary capabilities to formulate, develop, test (up to pot plant level) and register products that it has created.

**Label extensions and country approvals of Mevalone and Cedroz continue to increase**, which **directly increases the Company's addressable market**.

**Numerous applications for regulatory approval of Mevalone and Cedroz are pending** around the world in key markets:

- UK, Germany, Morocco, Tunisia, etc.

**The pipeline of products that Eden is developing covers the following addressable markets/applications:**

- Seed treatment
- Cannabis
- Insecticide
- Potato Cyst Nematodes
- Downy mildew
- Potato Blight

**Projects with multiple partners are underway using Eden's Sustaine** encapsulation technology with third party active ingredients, tackling the ever-increasing issue of intentionally-added microplastics.



# Downy mildew

## Addressing an unmet need

### Background

Due to the recent restriction of a number of key downy mildew products, there is a **strong need for replacement products.**

Eden has **already tested Mevalone against downy mildew with encouraging results.**

Now that key competitor products are being removed from the market, the **opportunity to sell Mevalone as part of an integrated pest management programme has arisen.**

**The key market, in the first instance, is France.**



### Current status



**Second year regulatory field trials are complete** with good results received.



Corteva has been appointed as our new distribution partner in France.



**The regulatory submission for powdery and downy mildew label extensions has been made in France.**



### Opportunity

	Future				Total
	France	S.EU (exc. France)	US	ROW	
Addressable market €m	272	592	144	1,392	2,400
Potential Eden sales €m*	8.2	11.8	4.3	13.9	38.2

\*Based on peak sales and a full label of all key target diseases and crops



# Significant additional growth opportunities

Evaluations in additional areas of significant commercial potential include:



**Black sigatoka  
(banana)**



**Potato  
blight**



**Wire  
worm**



**Potato cyst  
nematodes**



In each case, the initial evaluations have produced encouraging results



# Addressing the rising microplastics issue

## Background

In addition to using microencapsulation system, Sustaine, in our in-house developed products, such as Mevalone and Cedroz, **it is possible to use Sustaine with third-party active ingredients.**

Using **Sustaine brings multiple benefits including formulation stability, residual effect and patent protection.**

More recently, the **issue of microplastics**, which are currently used in agrochemical formulations has **created a new demand for plastic-free, sustainable alternative encapsulation systems.**


Eden has received numerous enquiries about using Sustaine with third party active ingredients.



## Current status

 **Field trials underway** with multiple industry partners.

 **Decisions regarding future evaluations** based upon current trials are expected in due course.

 **The EU has recently provided timescales for the ban on the use of intentionally added microplastics across multiple industries.**

## Opportunity

	Future			Total
	EU	US	ROW	
Addressable market €m	TBC	TBC	TBC	TBC
Potential Eden sales €m*	TBC	TBC	TBC	TBC

\*Based on peak sales and a full label of all key target diseases and crops



# Innovation capacity

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# Investment summary

**01 Commercialisation**  
Eden well-placed to further commercialise multiple products in order to accelerate growth

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**02 Technology exploitation**  
Ability to exploit Eden's core technologies beyond biopesticides and crop protection

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**03 Focus on biological solutions**  
Eden is the only UK quoted company with a focus on biological solutions in the crop protection market

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**04 Regulatory drivers for sustainable solutions**  
Regulatory developments are driving the expansion of Eden's addressable market

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**05 Increase number of commercial partners**  
Opportunity to increase the number of commercial partners and diversify product range

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**06 Intellectual property portfolio**  
Patents and registrations enable strong technological defensibility

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**07 Revenue growth**  
Ability for Eden to generate significant additional revenue in the medium term

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**08 Corteva agreement**  
Opportunity for significant revenue in a limited number of geographies, with upside potential

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THANK YOU

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