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#### THE NATURAL SOLUTION

# Eden Research plc 2023 Annual General Meeting

29<sup>th</sup> June 2023 7-9 Tokenhouse Yard London 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.

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## **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
- Proven products
- Multiple regulatory clearances (EU, US, AUS, NZ)
- Strategic partnerships
- Two products commercially available with a third undergoing regulatory review





# **Key statistics**



Countries have granted

126

21



Crop protection



Animal health

product authorisation

Crop use approvals for

Eden's biopesticides £18m+

Invested in IP & registrations

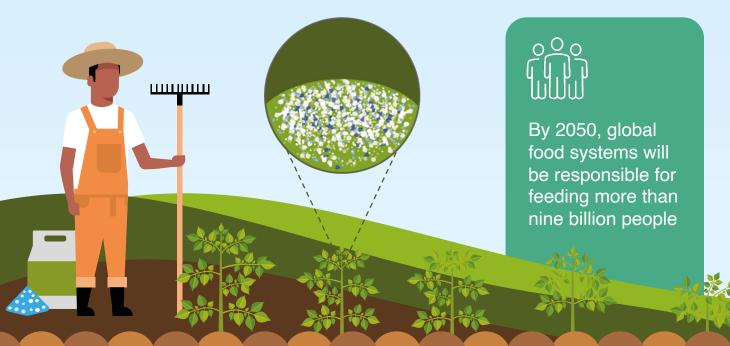
130Granted and pending patents

## The Drive Towards Sustainable Agriculture

Farming practices which maintain yields while reducing harm to the environment

A reflection of society's increasing concern about the world's approach to food production and healthy eating Embracing farming practices that mimic natural ecological processes

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



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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 CEO, Eden Research plc

# **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



Increasingly challenging regulatory requirements



Farmers seeking effective alternatives

# **\$11**bn

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

# 15% per annum

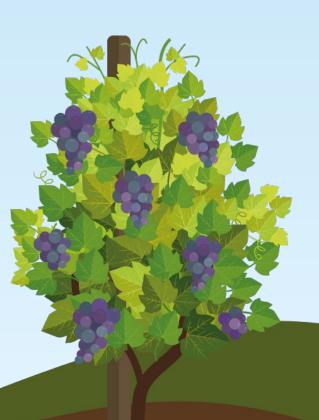
The biopesticides market is growing at a CAGR of approximately **15% per annum** 

# \$300m

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

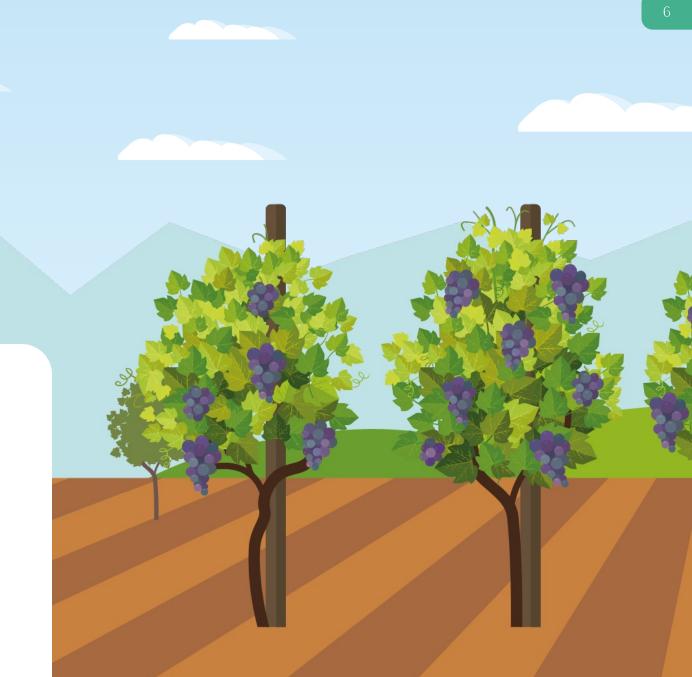
# \$12.5bn

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



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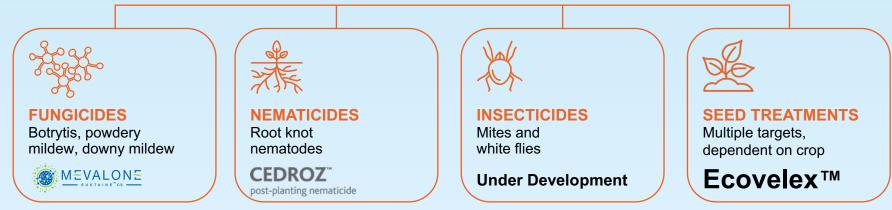
# **Our Products**



## **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.





#### **Active ingredients**

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

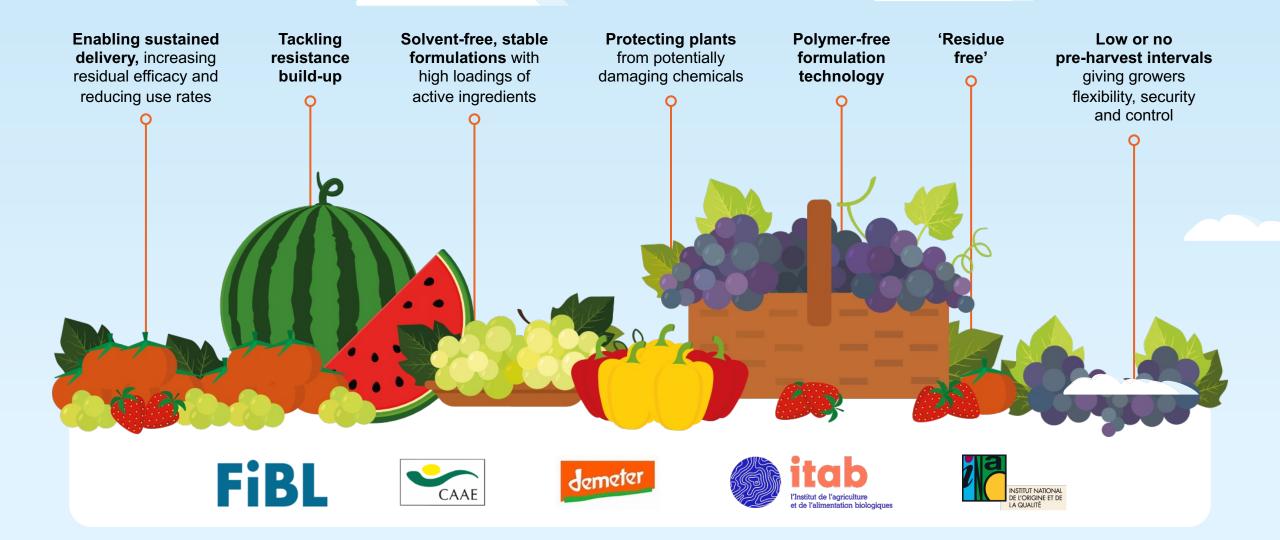




Equally effective vs conventional chemistry



### **Product Characteristics**



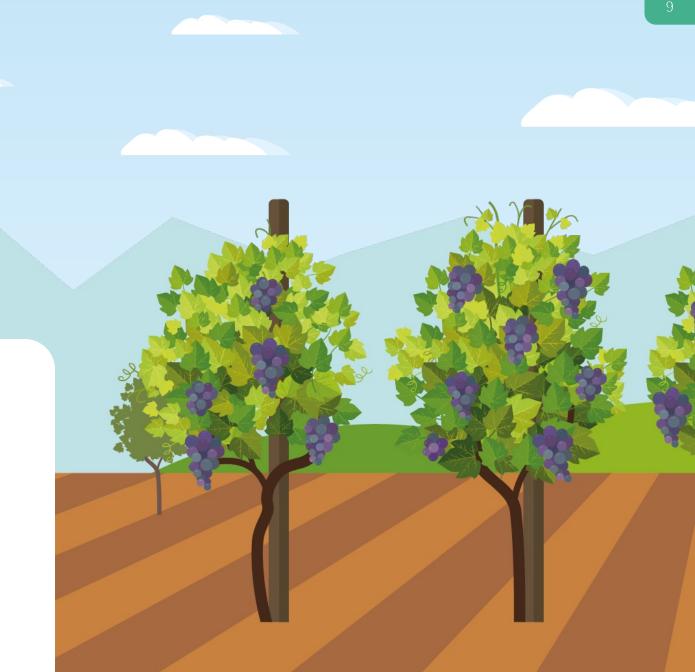
**CEDROZ**<sup>™</sup>

post-planting nematicide

MEVALONE

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# Introducing Ecovelex<sup>™</sup>



### Ecovelex<sup>™</sup> 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 authorization has been submitted to the EU authorities, with application in the UK to follow, with the process expected to take between 18 and 24 months, with the **possibility of sales in time for the 2024 growing season**, subject to emergency use authorisations

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

# **Ecovelex**<sup>™</sup>

BIRD REPELLENT SEED TREATMENT

"Don't eat me because you won't like me!"

- Water based, does not contain solvents
- Does not contain any candidates for substitution
- Does not contain any nanomaterials
- Does not contain any polymers or microplastics
- Efficacy proven in field studies
  - A sustainable solution based upon plant chemistry

## **Seed Treatments**



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

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.

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

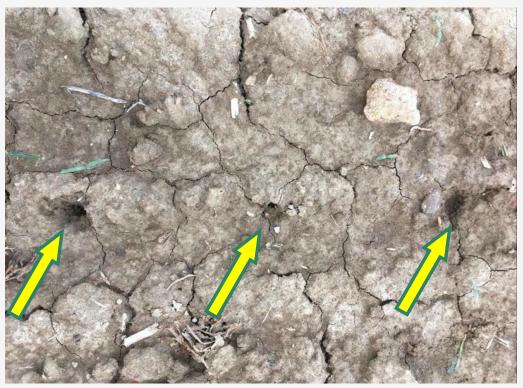
Colourants are used in seed treatments to give a clear indication that a seed has been treated and to confirm uniformity of the coating.







# **Bird Damage in Maize**



Missing plants caused by birds picking seeds



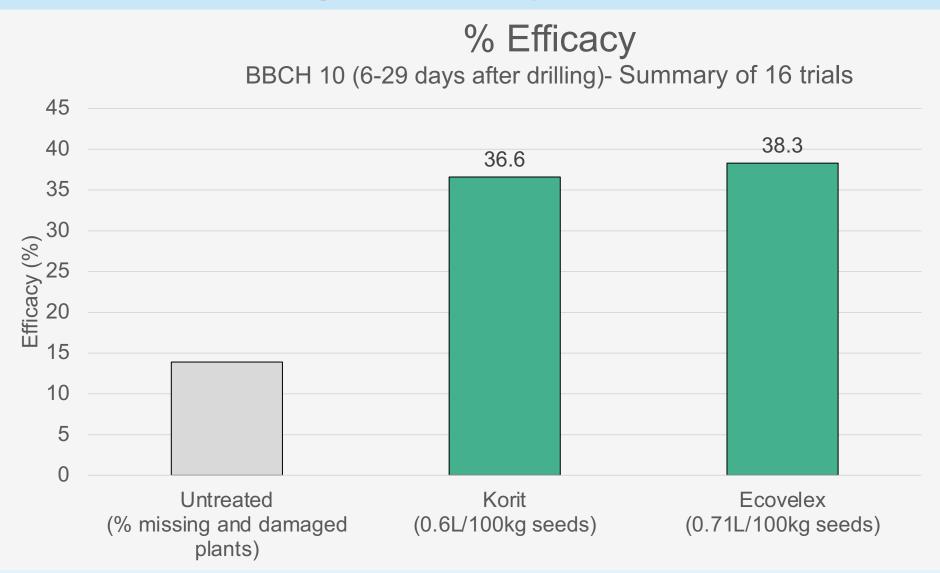
Plant pulled out by birds to eat remaining cotyledon

# **Ecovelex<sup>™</sup> - The Biological Bird Repellent Seed Treatment**



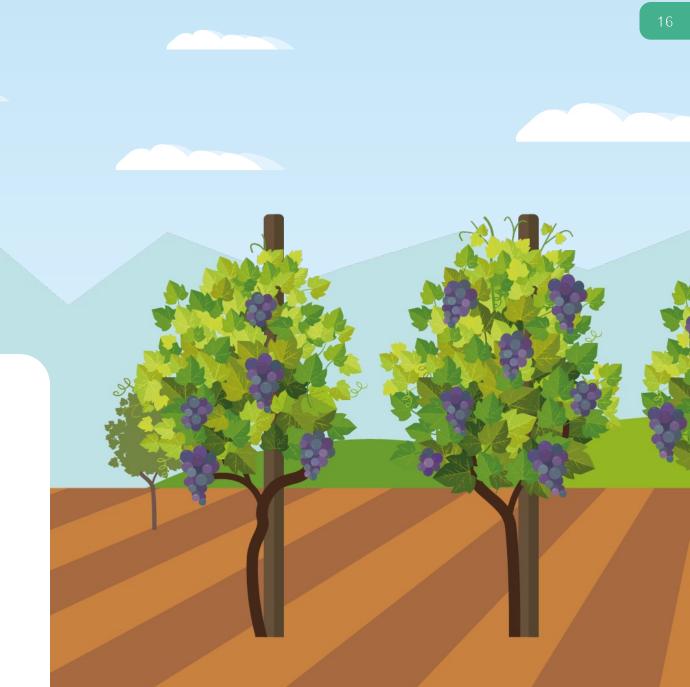


# **Ecovelex<sup>™</sup> - The Biological Bird Repellent Seed Treatment**



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# Commercial Product Update

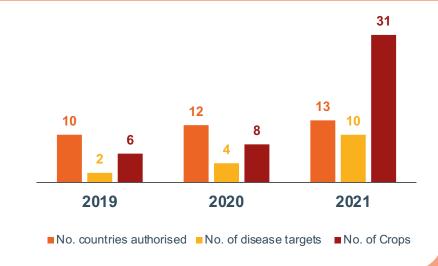


## Mevalone<sup>®</sup> Biofungicide

#### 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 2023

Approval in the UK expected in 2023 – Distributor appointment pending

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

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

MEVALONE



# **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**

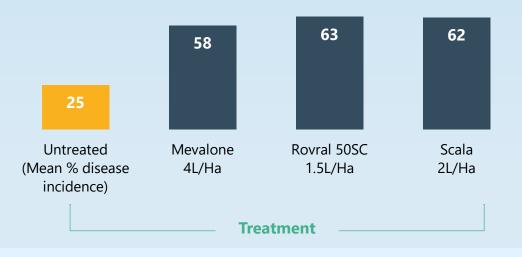
Mevalone has demonstrated comparable control to that of established products both in registration trials and commercial applications.

#### Critically, our products are:

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



#### **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

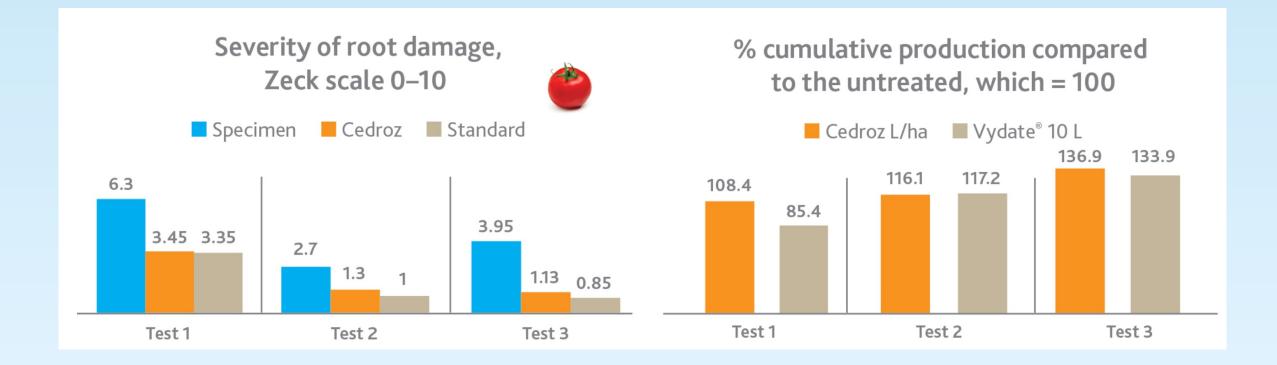
Sales growth expected to be strong in 2023

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

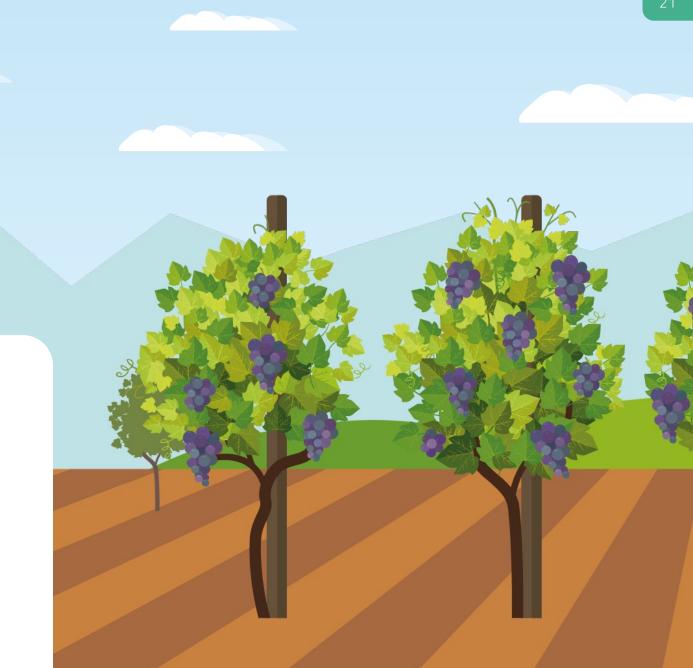
CEDROZ<sup>™</sup> post-planting nematicide





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# Developing Opportunities



# Positive Outlook for Growth



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:

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

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



# **Downy Mildew** Filling a gap in the market

#### 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 in the past 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	<b>S.EU</b> (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



## **Insecticide** Significant opportunities for 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 current formulations have taken place in 2021 and 2022.

#### **Current status**

Initial data received from the field trials undertaken in 2022 shows good efficacy, consistent with that in 2021

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

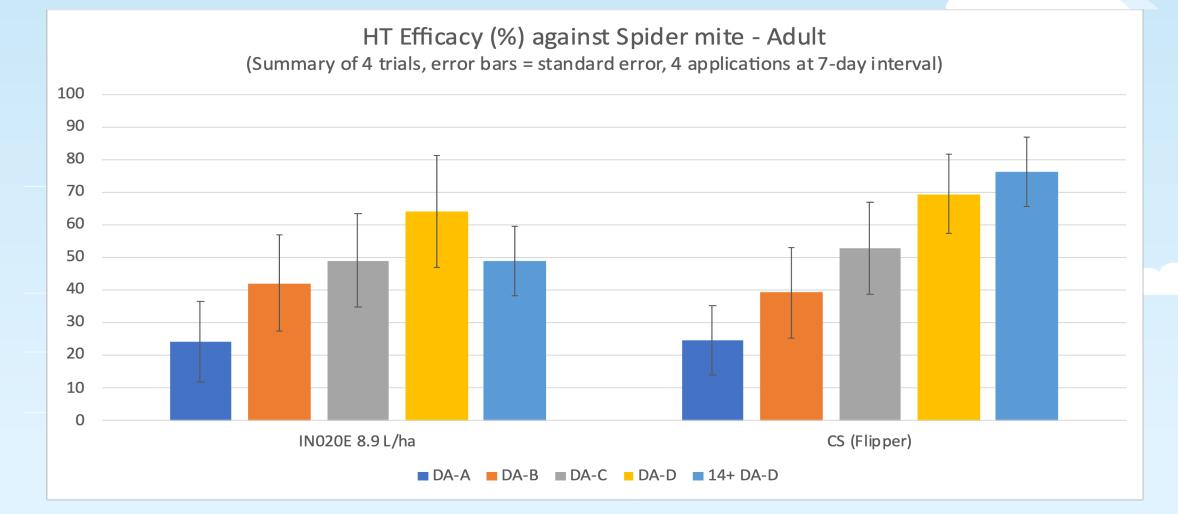
It is expected that announcements on the appointment of distribution partners will be made in due course

Regulatory submissions are planned for 2023/4 in both the US and EU

Subject to regulatory authorization, first sales of product are estimated to be 2024/5 in the US and 2025/6 in the EU

Opportunity		Future		
	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

Insecticide



## Sustaine<sup>®</sup> Projects 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 likely timescales for the ban on the use of intentionally added microplastics in agchem.

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



# Significant Additional Growth Opportunities

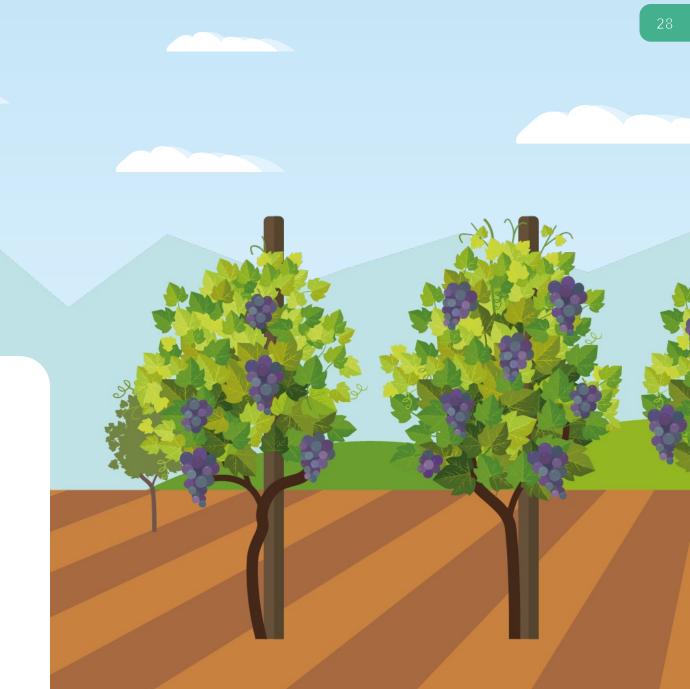
Evaluations in additional areas of significant commercial potential include:

- Black sigatoka (banana)
- Potato blight
- Wire worm
- Potato cyst nematodes
- Combination products

In each case, the initial evaluations have produced encouraging results.

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Regulatory and Commercial Status



## **Regulatory Position**



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.



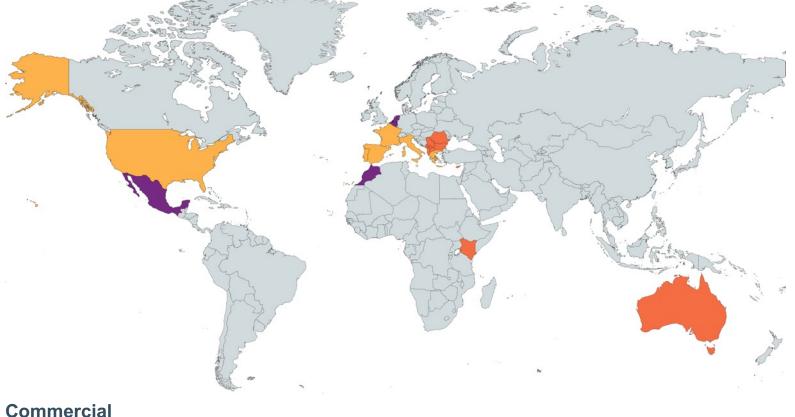
- The latest news is that EPA has approved Eden's three active ingredients, as well as Mevalone and Cedroz in September 2022.
- This allowed for some sales of Mevalone, in particular, in 2022, but should result in meaningful sales in 2024 and beyond.



#### **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.

## **Commercial Footprint**



#### Commercia Approval



CEDROZ<sup>™</sup> post-planting nematicide

> MEVALONE & CEDROZ post-planting nematicide

Our presence in Europe grew in 2021-22 through new authorisations for both Cedroz<sup>™</sup> and Mevalone<sup>®</sup>, and we anticipate further approvals in Europe and further abroad in 2023.

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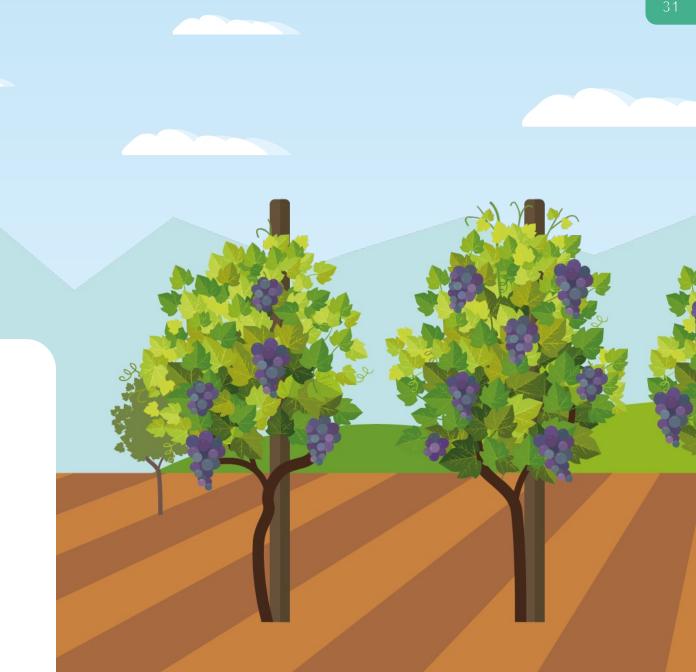
Our US EPA approval for the sale of Mevalone<sup>®</sup> and Cedroz<sup>™</sup> was granted in September 2022.



We have commercial partners in place across six continents to support future expansion.

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# Strategy and Innovation



# **Our Strategy**



- 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)





- 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



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



- 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







### **Innovation Capacity**

Development of in-house R&D – reduces dependency on 3<sup>rd</sup> parties, CROs, etc.

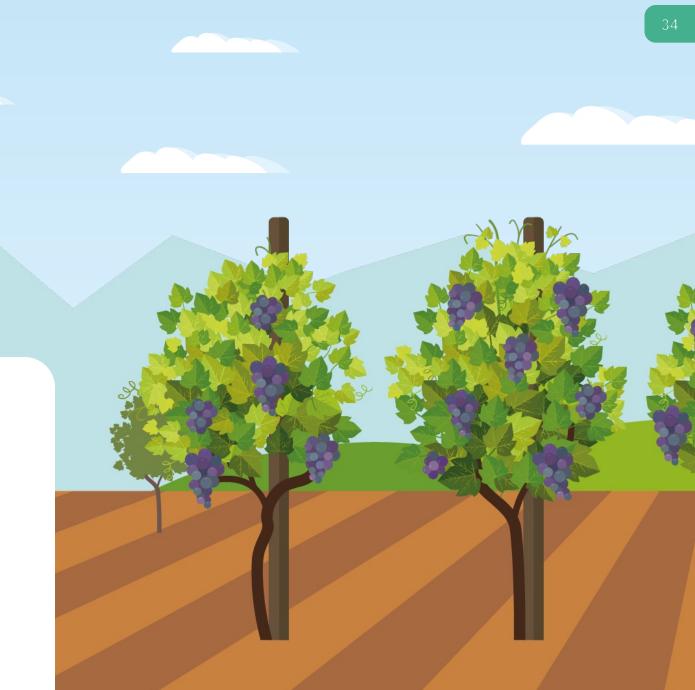
In-house capabilities now include formulation, microbiological screening, plant and seed evaluations and analytical work. Laboratories are now GLP-ready and operating to this standard adding credibility and opportunities for cost savings and revenue generation.

Costs partially offset by reduced external spend on CROs, significantly reduces development cycle time, enables new IP development. Eden's product development platform consists of three registered active ingredients and its patented, plastic-free microencapsulation system that forms the basis of its first two commercial products

The Company's patent portfolio, including new patent filings, is managed by D Young & Co.

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# Financials and news-flow



# 2022 Financial Highlights

	audited	audited	
Revenue	£1.8m	£1.2m	
Product sales revenue	£1.6m	£1.1m	
Other revenue	£0.2m	£0.1m	
	_		
Loss before tax	£2.6m	£3.4m	

2021

2022

Notes:
 Revenue for the year increased by approximately 50% to £1.8m, £0.1m, or 6%, ahead of market expectations of £1.7m (FY2021: £1.2m)

- Product sales increased by approximately 45% to £1.6m, £0.2m, or 14%, ahead of market expectations of £1.4m (FY2021: £1.1m)
- Loss before tax was £2.6m, £0.5m, or 16%, ahead of market expectations of £3.1m loss (FY2021: £3.4m loss)
- Cash position at the year-end was £2.0m, £0.2m, or 9%, below market expectations of £2.2m (31 December 2021: £3.9m)

### **Newsflow**

### Recent

- US EPA national approval received for Mevalone®, Cedroz<sup>™</sup> and three active ingredients in 2022
- Initial US state approvals received in 2022 with additional approvals expected in 2023
- First sale of Mevalone to Sipcam Agro USA made in December 2022 in support of commercial sales in 2023, subject to state approvals
- Corteva France appointed as exclusive distribution partner for Mevalone in France; a key growth opportunity

### Coming up

- Approval of Mevalone in California, the largest market opportunity in the US (Q3/4, 2023\*)
- First commercial sales of Ecovelex in the EU/UK (Q4, 2023/Q1, 2024\*)
- Appointment of distributor(s) for insecticide product

\* Subject to regulatory clearance

