

# EIR

## BIOSTIMULANT



## Formulation science, historical evidence and partnership

Updated development overview | 03 October 2026

## LEADERSHIP

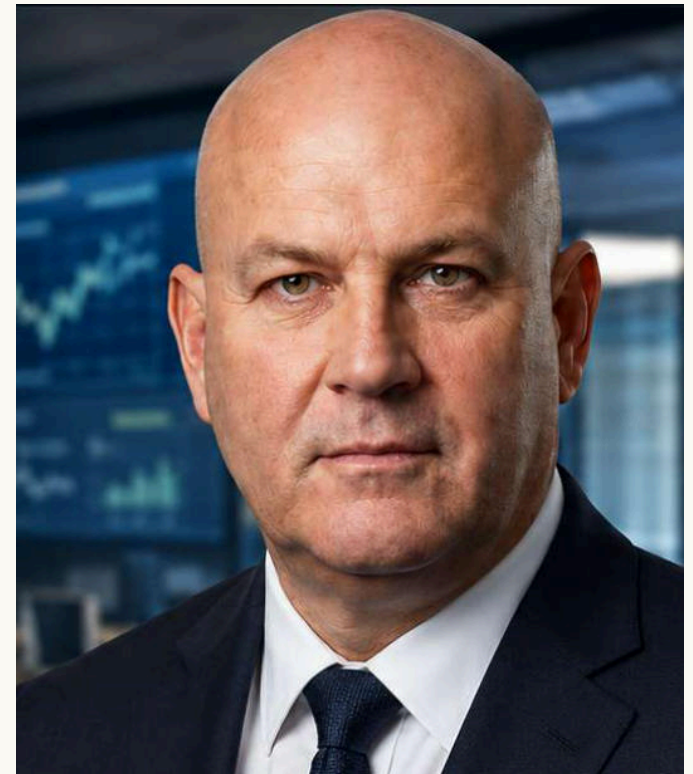
# Guy Shafrir

## Entrepreneurship and financial services

More than 20 years of experience in financial services and insurance, with a background in risk management and tailored financial planning. The source presentation describes ventures across European and Middle Eastern markets.

## Innovation and commercial execution

Experience in personalized insurance portfolios, operational technology and financial protection products. His contribution to the project focuses on business development, commercial partnerships and investment strategy.



Portrait from the supplied presentation

## LEADERSHIP

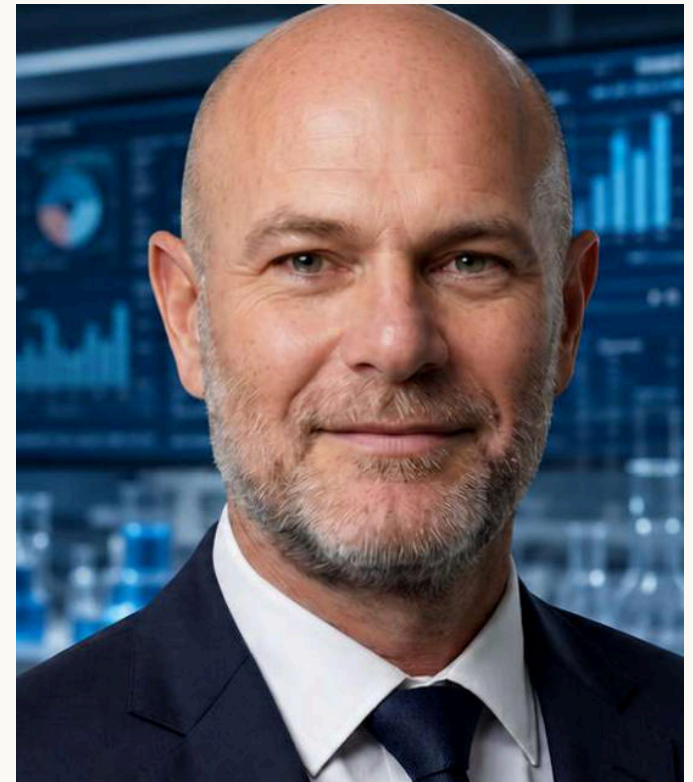
# Ido Eco Ofek

## Scientist, inventor and entrepreneur

More than two decades of work in biotechnology, formulation, agricultural science and related product development. The source presentation describes ventures and patented innovations in the United States, Israel and Asia.

## Formulation and development

Founder and Chief Scientist. His role connects formulation research with laboratory work, pilot programs and commercial execution. The source records recognition through a U.S. O-1A visa.



Portrait from the supplied presentation

## THE CHALLENGE

# Climate and crop performance

## Pressure on crop productivity

Heat, water limitation and salinity can compromise crop growth and consistency. Growers need interventions that fit their production systems and protect marketable crop quality.

## The evaluation opportunity

EIR BIOSIMULANT is being developed for crop vitality and resilience. Trials must measure its contribution to physiology, yield and quality under defined stress conditions.



Source illustration / historical study image

## THE CHALLENGE

# Sustainability and formulation reliability

## Agronomic value

The development objective is useful crop performance with a well-characterized application and environmental profile.

## Reliable delivery

A botanical formulation must disperse consistently in the spray tank and remain compatible with crop surfaces. The new emulsifier system is an experimental starting point.

## Current status

The supplied workbook describes a proposed formula that has not yet been experimentally validated. Stability, crop safety and efficacy remain development requirements.

FORMULATION

Formulation overview

| Component family                        | Function / development role                  |
|-----------------------------------------|----------------------------------------------|
| Phenolic botanical components           | Core phenolic component system               |
| Salicylate ester                        | Salicylate-related signaling rationale       |
| Lecithin (phosphatidylcholine-enriched) | Co-emulsifier; possible surface contribution |
| Nonionic emulsifiers                    | Emulsifier system                            |
| Solvent and carrier system              | Solvent and oil carrier                      |

Component identities, grades and proportions are confidential and can be reviewed under a confidentiality agreement. Lecithin is the only component named in this presentation.

## FORMULATION RATIONALE

# Complementary functional roles

## Phenolic components

Phenolic botanical components provide the core component system. Published antimicrobial findings support research into membrane interactions; formulation-specific activity still requires testing.

## Contact and dispersion

Lecithin may contribute surface activity. Nonionic emulsifiers provide the emulsifier system, and a solvent and carrier system completes the concentrate.

## Plant signaling rationale

A salicylate ester provides a rationale for studying salicylate-related plant responses. It does not establish a measured biostimulant effect by itself.

## HISTORICAL DEVELOPMENT STUDY

# Pepper greenhouse evaluation

## Comparison

The source compares an earlier development formulation, untreated control and the conventional comparator Profiler in a Bangkok-region pepper greenhouse.

## Traceability

The historical treatment is presented under the updated EIR BIOSTIMULANT program name. Its composition must be mapped to the new formula before transferring performance claims.



Source illustration / historical study image

Historical study supplied by NONTOXECO; performance has not been established for the 03 October 2026 formula.

## HISTORICAL DEVELOPMENT STUDY

# Trial objectives and context

## Primary objective

Compare disease-severity trajectories under the development treatment and Profiler in pepper plants challenged by disease pressure described as *Phytophthora capsici*.

## Secondary objective

Observe the effect of repeated sprays over 29 days. The study took place in the Bangkok region, in March, on plants established during November-December.

## Study author

The source attributes the experiment and report to Ido Eco Ofek, M.Sc. in Agricultural Sciences. Plants were approximately three to four months old.

## HISTORICAL STUDY CONTEXT

# Growing environment

## Humidity and drainage

The source identifies humid conditions and drainage as important considerations for the pepper trial. *Phytophthora capsici* is an oomycete; it should not be described as a true fungus.

## Production structures

The study context includes small plastic greenhouses used in research and commercial production.

## Water and substrate management

The source discusses NFT and soilless cultivation. These background observations do not establish a treatment effect and should be evaluated for each site.

## HISTORICAL STUDY CONTEXT

# Crop calendar and trial stage

## Planting window

The source describes establishment in late November-December, with growth and production during February-April.

## Stage at evaluation

Plants were established, with vegetative to early reproductive growth, at approximately three months of age.

## Comparable assessment

Future trials should record cultivar, crop age, disease pressure, climate and irrigation so that treatment comparisons can be interpreted consistently.

## HISTORICAL COMPARATOR

# Conventional positive control

## Profiler WG

The source identifies Bayer Profiler as the commercial comparator. It records fosetyl-aluminium at 66.67% w/w and fluopicolide at 4.44% w/w in a water-dispersible granule formulation.

## Concentrations used

The reported greenhouse treatments were Profiler 0.2% and 0.3%. The untreated control received no development formulation.

## Interpretation

These details describe the product and treatment recorded in the historical study. They are not instructions to apply a pesticide; local product labels govern use.

Comparator identity and concentrations are retained from the supplied historical presentation.

HISTORICAL DEVELOPMENT STUDY

Materials and methods

| Parameter    | Source study record                                                                      |
|--------------|------------------------------------------------------------------------------------------|
| Area / zones | 250 m <sup>2</sup> ; five 50 m <sup>2</sup> zones, one per treatment                     |
| Treatments   | Control; Profiler 0.2% and 0.3%; EIR BIOSTIMULANT development formulation 0.05% and 0.1% |
| Sprays       | Day 1 and Day 14; source spray volume 50 L per dunam                                     |
| Assessment   | Image-based severity; ten leaves per treatment; 0-5 score                                |

One zone per treatment and ten assessed leaves do not establish independent plot replication. The source records sprays on Day 1 and Day 14; charts use Day 0 as baseline.

## HISTORICAL DEVELOPMENT STUDY

# Disease-severity assessment

## Recorded score

The historical results use a severity scale described as 0 = no infection and 5 = full infection, assessed by image analysis of leaves.

## Illustrated categories

The original visual guide shows approximate affected-area bins of 0-2%, 2-10%, 10-25%, 25-50% and greater than 50%.

## Measurement limitation

The illustrative bins and the 0-5 score require a documented calibration method. They should not be treated as interchangeable percentage measurements or a validated diagnostic model.



Source illustration / historical study image

HISTORICAL RESULTS

Day-29 treatment comparison

| Treatment              | Day 0 | Day 29 | Reduction from own baseline |
|------------------------|-------|--------|-----------------------------|
| EIR BIOSTIMULANT 0.1%  | 2.89  | 0.08   | 97.2%                       |
| EIR BIOSTIMULANT 0.05% | 3.03  | 0.39   | 87.1%                       |
| Profiler 0.3%          | 2.95  | 1.27   | 56.9%                       |
| Profiler 0.2%          | 3.04  | 2.03   | 33.2%                       |
| Untreated control      | 2.84  | 5.00   | Severity increased          |

Reduction is relative to each treatment's own Day-0 mean: (Day 0 - Day 29) / Day 0. Descriptive data; no inferential statistics or variance estimates supplied.

## HISTORICAL RESULTS

# Baseline and untreated progression

## Baseline

Day-0 mean scores ranged from 2.84 to 3.04 across the five treatments. The groups began with numerically similar mean severity.

## Untreated control

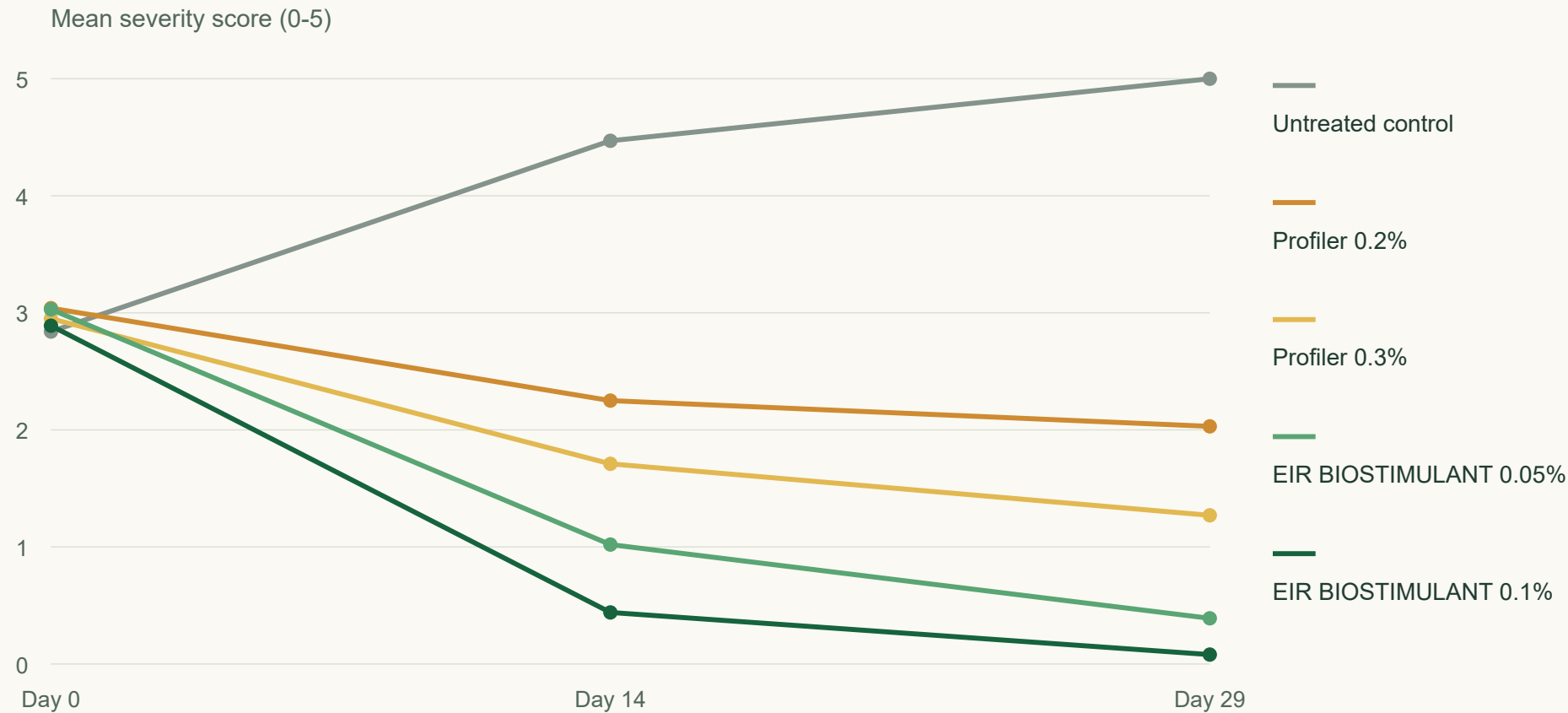
The control increased from 2.84 at baseline to 4.47 on Day 14 and 5.00 on Day 29.

## Statistical scope

Comparable means do not establish randomized or replicated treatment groups. Without independent plots and variance data, the result remains descriptive.

HISTORICAL RESULTS

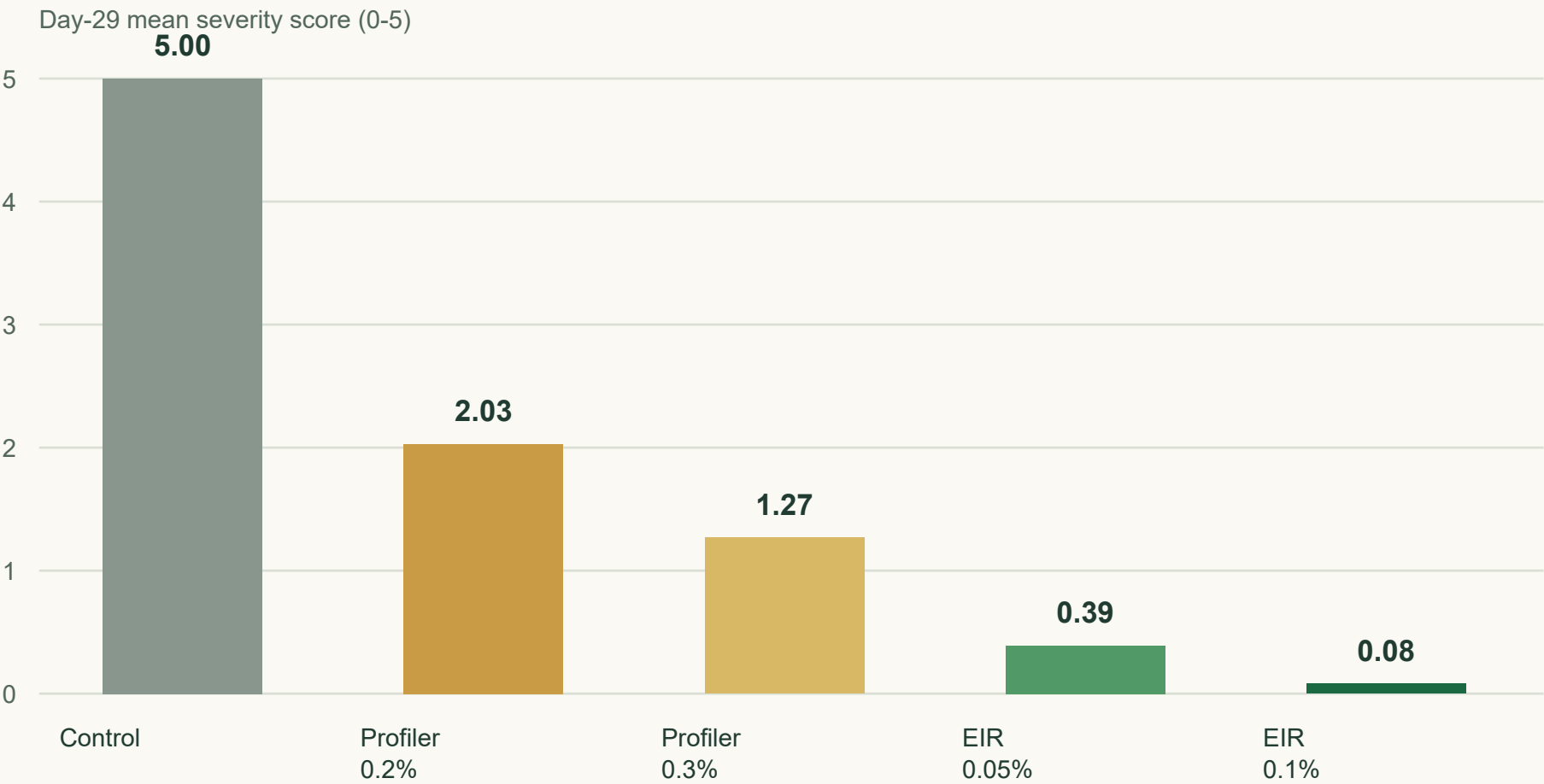
# Severity over 29 days



Historical formulation. Source means reproduced without error bars because variance and independent plot replication were not supplied.

HISTORICAL RESULTS

# Final disease-severity scores



At Day 29: 5.00 control; 2.03 Profiler 0.2%; 1.27 Profiler 0.3%; 0.39 EIR BIOSTIMULANT 0.05%; 0.08 EIR BIOSTIMULANT 0.1%. Historical formulation.

## HISTORICAL RESULTS

# Study summary

## Observed ranking

The historical 0.1% development treatment had the lowest mean severity on Day 29; the 0.05% treatment also declined substantially. Profiler improved after repeated treatment.

## Repeated sprays

Severity fell after the second assessment interval in treated zones. This is consistent with a cumulative treatment response, but the design does not isolate additivity or the best interval.

## Current formula

The results provide a starting point for a new trial. They do not demonstrate equivalent efficacy after the ingredient and emulsifier changes.

## DEVELOPMENT NEXT STEPS

# Application schedule for further testing

## Historical schedule

The source used two foliar treatments approximately two weeks apart. That schedule can inform a new protocol.

## Re-evaluation

The new formula should be assessed at agreed concentrations and intervals, with untreated, vehicle and suitable reference controls.

## Agronomic measurements

Disease scores should be accompanied by crop-safety observations and direct measurements of biomass, yield, quality and stress recovery.

## DEVELOPMENT STATUS

# Evidence and development conclusions

## Evidence in hand

The historical pepper observations support further study of the program. They measure disease severity, rather than yield, nutrient-use efficiency or abiotic-stress resilience.

## Updated formulation

The formula contains phenolic botanical components, a salicylate ester and lecithin, with a solvent system and nonionic emulsifiers.

## What remains

Stability, formulation-specific mechanisms, crop safety, environmental behavior and commercial product performance need dedicated validation.

## TECHNICAL DEVELOPMENT

# Delivery and formulation engineering

## Technical challenge

Limited water solubility and unstable dispersions can reduce consistency of botanical applications.

## Current system

The formula uses nonionic emulsifiers together with lecithin as a co-emulsifier, in a solvent and carrier system.

## Required measurements

Evaluate concentrate homogeneity, dilution stability, droplet size where measurable, wetting, rainfastness and compatibility with crop tissue. No validated shelf life or HLB balance is claimed.

## TECHNICAL DEVELOPMENT

# Development advantages and open requirements

## Existing starting point

The program combines formulation know-how, historical trial observations and a defined ingredient-based research plan.

## Scale and cost

The composition can be used to obtain supplier quotations and plan pilot production. Low cost and commercial scalability remain to be demonstrated with qualified raw materials.

## Crop performance

Historical activity at 0.05% cannot be assumed for the new formula. Claims of plant friendliness, resilience and environmental benefits require measurements.

## EIR BIOSTIMULANT

# Product value proposition

## Commercial objective

A liquid concentrate intended for evaluation in crop vitality and resilience programs, with complementary plant-health capabilities under study.

## Value to growers

The proposed benefit is consistent application performance and measurable improvements in relevant crop endpoints.

## Demonstration plan

Replicated testing should establish whether the new formula delivers useful performance, an acceptable crop-safety margin and a competitive cost per application.

COMMERCIAL PLANNING

# Market opportunity

| Historical category estimate | 2020            | 2028 scenario |
|------------------------------|-----------------|---------------|
| Fungicides                   | ~\$20 billion   | ~\$30 billion |
| Biostimulants                | ~\$2.5 billion  | ~\$7 billion  |
| Combined categories          | ~\$22.5 billion | ~\$37 billion |

Figures are historical planning estimates retained from the source deck. The source does not identify a market-research report; they are not independently verified current estimates.

## COMMERCIAL PLANNING

# TAM, SAM and early penetration

## Historical planning scenario

The source combines fungicide and biostimulant categories into a 2028 TAM of approximately \$37 billion and a SAM of approximately \$17 billion across selected markets.

## Arithmetic

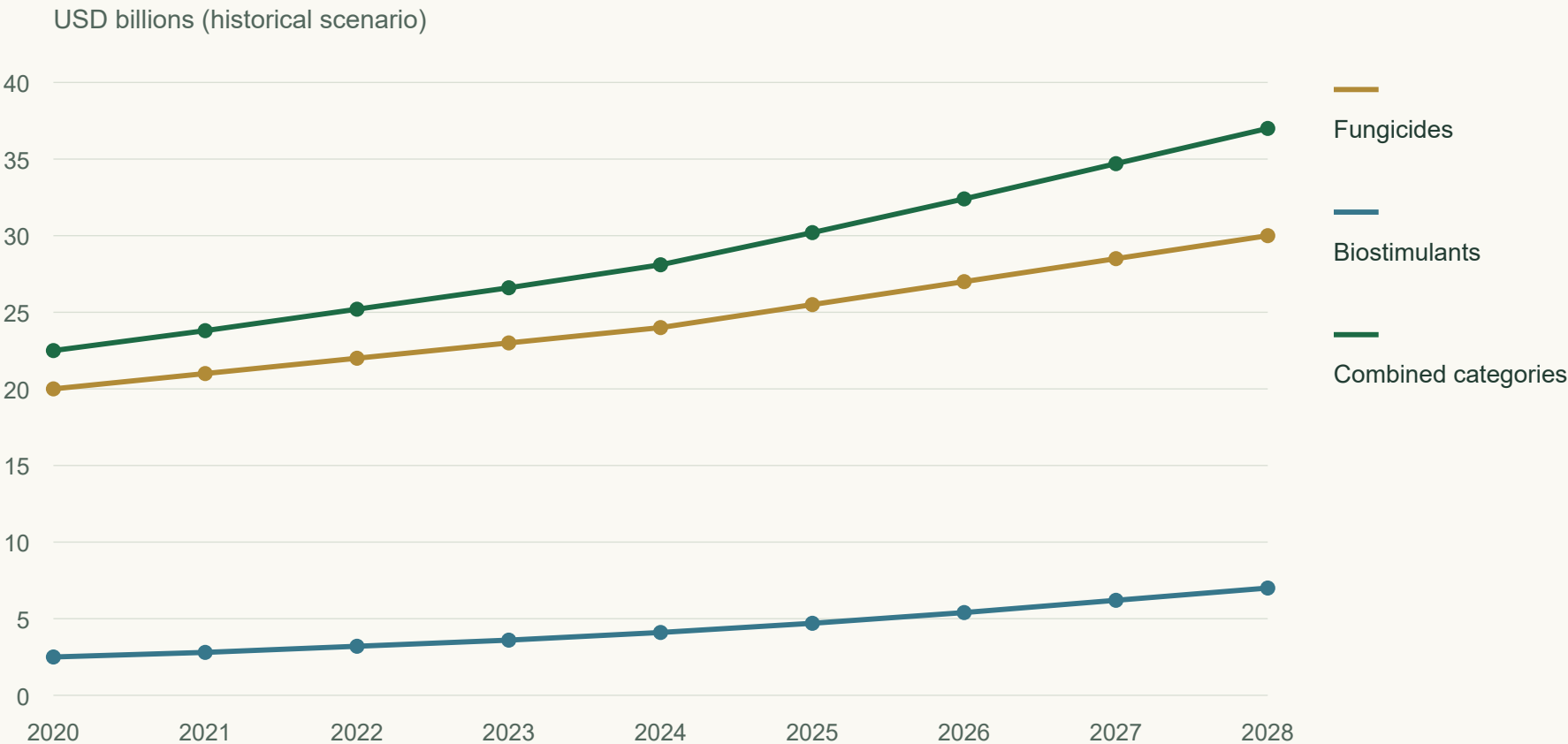
A 0.1% share of a \$17 billion SAM equals \$17 million in annual revenue. The original Year-5 revenue target is more than \$30 million.

## Commercial interpretation

Category totals may overlap and product eligibility depends on claims and registration. These figures are scenario inputs, not a validated obtainable market for the current formula.

COMMERCIAL PLANNING

# Market-size scenario, 2020-2028



Historical illustrative estimates from the source deck, USD billions. Retained for continuity; market categories, geography and methodology require independent confirmation.

## COMMERCIAL PLANNING

# Business model

## Routes to customers

Distribution partnerships in the United States, Europe and Asia; direct sales to greenhouse and high-value crop producers; alliances with seed companies and crop-input suppliers.

## Product format

The source proposes sales of concentrated formulation in 1 L and 5 L containers, with recurring demand linked to crop cycles and repeat applications.

## Execution conditions

Commercial supply requires an agreed formulation, validated stability, packaging, permitted claims and a distribution model suited to each territory.

COMMERCIAL PLANNING

Application economics for the new formula

| Scenario at 500 L spray volume / ha | Concentrate volume       | Ingredient mass                                                        |
|-------------------------------------|--------------------------|------------------------------------------------------------------------|
| 0.10% v/v reference                 | 0.50 L/ha                | With density r kg/L: 500r g of concentrate per hectare                 |
| 0.15% v/v workbook reference        | 0.75 L/ha                | Mass requires measured density and specified raw-material activity     |
| 0.20% v/v workbook reference        | 1.00 L/ha                | Mass requires measured density and specified raw-material activity     |
| Costing                             | Accepted quotes required | Include carrier, losses, processing, packaging and delivered logistics |

For v/v dilution, density must be measured before converting concentrate volume to ingredient mass. No \$100/ha or \$0.20/L cost is asserted: accepted supplier quotes are absent from the workbook.

## COMMERCIAL PLANNING

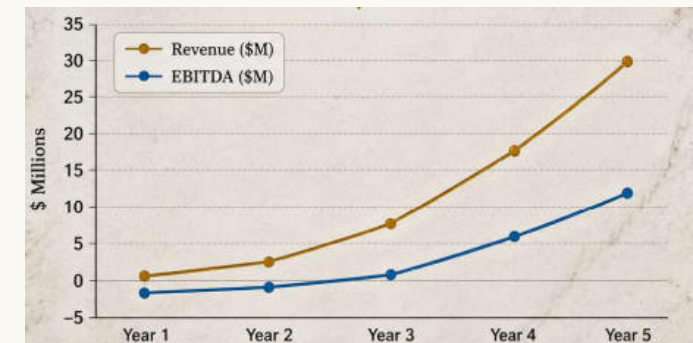
# Five-year financial scenario

## Source scenario

The original graph targets approximately \$30 million in Year-5 revenue and positive EBITDA during the planning period.

## Rebuild before investment use

Pricing, product eligibility, qualified ingredient costs, field-validation costs and manufacturing yield must be updated for the current formula.



Illustrative historical scenario, not a current forecast. The original text anticipates break-even in Years 3-4; the plotted EBITDA appears positive in Year 3.

COMMERCIAL PLANNING

Milestones and roadmap

| Source planning horizon | Milestone / decision                                                             |
|-------------------------|----------------------------------------------------------------------------------|
| Year 1                  | Laboratory validation, pathway assessment and pilot manufacturing                |
| Year 1.5                | Replicated trials across selected regions; regulatory submissions as appropriate |
| Year 2                  | Manufacturing scale-up and launch if technical and regulatory gates are met      |
| Year 2.5                | Additional Asian markets, including China, India and Thailand                    |
| Year 5                  | Global market development; original revenue target >\$30 million                 |

Timing is retained as an illustrative schedule measured from project funding. Commercial launch and expansion depend on technical results and market-specific approvals.

## REGULATORY DEVELOPMENT

# Product pathway and permitted claims

## Positioning

EIR BIOSTIMULANT is the updated program name. Product classification depends on intended use and claims, as well as composition and market.

## Ingredient qualification

Some of the emulsifiers are EO-based. The formula is not described as all-GRAS, PEG/EO-free or a registered finished product.

## Planning

Partner regulatory teams should assess the product pathway and required data. The original 12-18-month expedited-registration assumption is not substantiated for this formula.

Current formula qualification: supplied workbook, Formula sheet. Jurisdiction-specific advice and registrations require a separate assessment.

## COMMERCIAL PLANNING

# Go-to-market priorities

## Initial crops

The source prioritizes peppers, tomatoes and cucumbers in greenhouse and high-value vegetable systems in Thailand and Southeast Asia.

## Additional segments

Vineyards in Europe, leafy greens and specialty crops in the United States, followed by opportunities in China and India.

## Sequence

The historical plan envisages Thailand/ASEAN in Years 1-2, U.S./EU partners in Year 3, and China/India in Years 4-5. These remain conditional planning milestones.

## COMMERCIAL DEVELOPMENT

# Formulation know-how and intellectual property

## Current technical scope

The formula combines phenolic botanical components, a salicylate ester, lecithin and a nonionic emulsifier system. Ingredient identities and proportions are held as confidential know-how.

## Protection strategy

Composition, processing and application know-how may be managed through confidentiality and a patent review. The source discusses a planned provisional filing.

## Required review

Patentability, filing status and freedom to operate require confirmation. A formulation change does not establish granted protection, non-infringement or faster registration.

## COMMERCIAL DEVELOPMENT

# Partnership and investment

## Invitation

NONTOXECO invites investors, strategic partners and distributors to evaluate the EIR BIOSTIMULANT development program.

## Structure

Investment size, equity participation, entity structure and jurisdiction are matters for negotiation. Collaboration may include evaluation, joint development, manufacturing, licensing or distribution.

## Development priorities

Funding supports formulation qualification, replicated crop trials, product-pathway assessment and manufacturing validation. Thailand is a proposed production base, subject to qualification.

COMMERCIAL PLANNING

# Proposed use of funds

| Category                       | Proposed allocation |
|--------------------------------|---------------------|
| Field trials                   | 25%                 |
| R&D and laboratory             | 20%                 |
| Regulatory                     | 15%                 |
| Manufacturing and scale-up     | 15%                 |
| Payroll                        | 15%                 |
| Sales and business development | 5%                  |
| Legal / IP                     | 3%                  |
| Contingency                    | 2%                  |

Original allocation retained: 100% in total. Investment amount, spending schedule and milestone gates are to be agreed with partners.

## COMMERCIAL PLANNING

# Thailand as a proposed development base

## Manufacturing and logistics

The source proposes Thailand for raw-material access, manufacturing and regional export logistics.

## Commercial opportunity

Local greenhouse crops provide a setting for pilot development and partner engagement, with potential links to ASEAN markets.

## Qualification

Facility capabilities, costs, trade terms, quality systems and applicable approvals need to be established with local partners before scale-up.



Source illustration / historical study image

## SCIENTIFIC RATIONALE

# Formulation science

## Current ingredient system

Phenolic components, lecithin, a salicylate ester and the defined solvent/emulsifier package are the basis of the updated research rationale.

## Evidence levels

Ingredient literature supports selected biological hypotheses. Historical crop data concern earlier formulations. Direct proof for the new formula requires testing.

## Research focus

The following slides distinguish surface interactions, microbial effects and salicylate-related plant responses from measured product performance.

## FORMULATION SCIENCE

# Lecithin: Surface Activity and Potential for Plant Disease Suppression

## Role in the formulation

Lecithin is a phospholipid mixture containing both water-attracting and oil-attracting structures. In EIR-BIOSTIMULANT, phosphatidylcholine-enriched lecithin is intended to act as a co-emulsifier, supporting oil-water interfacial organization and dispersion alongside the other surfactants.

## Published evidence

Published studies on soybean lecithin provide evidence of activity against cucumber powdery mildew. Reported effects include reduced fungal filament growth, impaired formation of spore-producing structures, and reduced spore production and dispersal. Direct treatment also inhibited conidial germination under specific experimental conditions.

## Method and timing

These effects depend on application method and timing: an earlier preventive-treatment study found limited inhibition of initial spore germination, while observing interference with subsequent fungal development and sporulation. Lecithin is therefore better described as a potential contributor to disease suppression than as a universal spore-killing agent.

## What this supports

This research supports investigating lecithin as a dual-purpose formulation component: a co-emulsifier with potential complementary effects on fungal development. The performance of the selected phosphatidylcholine-enriched grade in EIR-BIOSTIMULANT must be established at the intended application dilution; published findings on soybean lecithin do not by themselves demonstrate efficacy of the finished formulation.

### References:

Homma et al. (1977), Journal of Pesticide Science, 2:33-40. DOI: 10.1584/jpestics.2.33.  
Homma, Arimoto & Misato (1984), Japanese Journal of Phytopathology, 50:31-38. DOI: 10.3186/jjphytopath.50.31.

**PROPOSED MECHANISM**

# Contact with the arthropod surface

## Working hypothesis

The emulsified formulation may contact waxy cuticle and sensilla. Lecithin may contribute interfacial behavior alongside the other surfactants.

## What is unproven

Strong adhesion to sensory hairs, persistence of a film and physical blockage of signal entry have not been demonstrated for the new formula.

## Evaluation

Compare the complete formula, vehicle and selected component omissions. Measure wetting and retention, and inspect treated cuticle and sensilla by microscopy.

## PROPOSED MECHANISM

# Sensory and behavioral effects

## Normal function

Arthropod sensilla receive chemical and environmental cues that contribute to feeding, movement and other behaviors.

## Research question

If deposits change cue access, sensory responses may change. This is a testable hypothesis; receptor blockade, neural impairment and spiracle closure are not established findings.

## Discriminating tests

Use controlled behavioral and sensory measurements to separate contact effects from toxicity. Demonstrate a response before assigning a sensory mechanism.

## PROPOSED MECHANISM

# Response under environmental conditions

## Exposure conditions

Temperature, humidity, rain and drying can affect deposition, persistence and contact activity.

## Separate hypotheses

Phenolic components may contribute biological activity. Whether altered sensory responses increase drying-related or water-related mortality remains untested.

## Field evaluation

Test efficacy under defined conditions and measure crop injury, residues and non-target effects. A lower environmental burden cannot be inferred from botanical components alone.

## FORMULATION SCIENCE

# Phenolic interactions with microbial membranes

## Current components

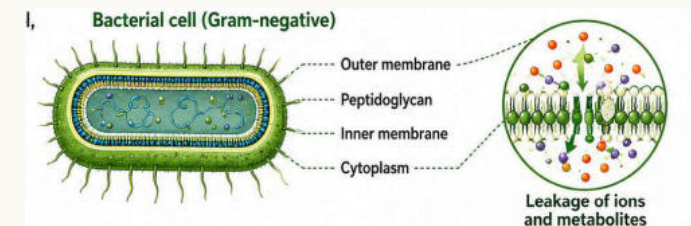
The formula includes phenolic botanical components.

## Published observations

Primary studies of essential-oil components report membrane perturbation and increased permeability in tested bacteria. Effects vary with compound, concentration and organism.

## Product evaluation

Assess the new formulation against crop-relevant organisms, with vehicle controls and appropriate endpoints for inhibition, viability and membrane effects.



Source illustration / historical study image

Cristani et al., J. Agric. Food Chem. 55 (2007), 6300-6308; doi:10.1021/jf070094x

## FORMULATION SCIENCE

# Lecithin in the delivery system

## Defined material

Match the lecithin grade to its specification and certificate of analysis. Phosphatidylcholine content differs between grades.

## Formulation contribution

Its surface activity may support contact and dispersion. Its contribution and its interaction with the other emulsifiers are grade-dependent and unmeasured.

## Validation

Do not assign an assumed HLB or use studies of other lecithin grades as direct proof. Measure concentrate homogeneity, dilution behavior and contact properties.

Development formula records; lecithin references on slide 39

## FORMULATION SCIENCE

# Downstream microbial effects

## Possible consequences

Membrane perturbation can be investigated alongside ion leakage, membrane potential and energy-related responses in exposed microorganisms.

## Current formulation

Any such effects must be attributed through experiments with the actual phenolic and delivery system.

## Measurement plan

Test viability, ATP, leakage and appropriate germination or biofilm endpoints where relevant. Do not present all pathways as confirmed effects of the formulation.

Cristani et al. (2007), membrane-interaction study; product-level effects require confirmation.

## FORMULATION SCIENCE

# Complementary action and synergy testing

## Different research roles

The phenolic system provides an antimicrobial rationale; lecithin and the emulsifiers provide a delivery rationale; the salicylate ester provides a plant-signaling rationale.

## Synergy is a measurement

Complementary roles do not prove synergy. Component controls and an agreed combination-analysis method are needed to show an effect beyond the expected combined response.

## Mechanistic scope

Gene-expression, virulence and adaptation effects remain research endpoints. They should not be asserted as measured properties of the new formula.

## BIOSTIMULANT RATIONALE

# Salicylate ester and plant signaling

## Formula identity

The formula includes a salicylate ester. Free salicylic acid is not a listed formulation ingredient.

## Biological rationale

Primary tobacco research identifies a volatile salicylate ester as a mobile defense signal, with conversion to salicylic acid involved in the receiving tissue.

## Crop-specific validation

This provides a rationale for evaluating defense-related responses. It does not establish the same response in every crop or prove biostimulant performance of this formulation.

Park et al., Science 318 (2007), 113-116; doi:10.1126/science.1147113

## BIOSTIMULANT EVALUATION

# Water relations and recovery after stress

## Target conditions

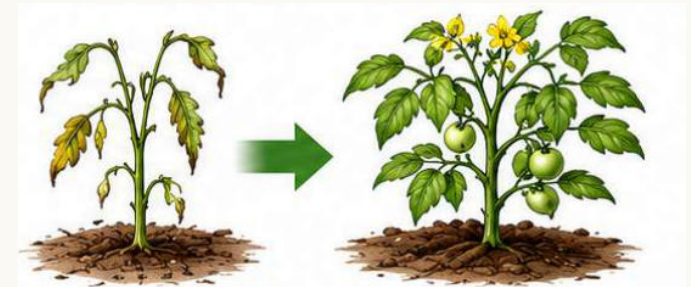
Evaluate the development formulation under controlled heat, restricted irrigation or salinity, alongside normal growing conditions.

## Physiological endpoints

Measure water status, stomatal conductance, chlorophyll fluorescence, membrane injury and biomass. Include recovery assessments after the stress period.

## Agronomic endpoints

Follow crop uniformity, flowering, fruit set, marketable yield and quality. Better recovery and yield are development objectives, rather than established benefits.



Source illustration / historical study image

## BIOSTIMULANT RATIONALE

# Defense priming and oxidative balance

## Defense priming

Salicylate-associated responses provide a research basis for testing whether treated plants respond differently to a subsequent challenge.

## Oxidative stress

Measure reactive oxygen species and antioxidant indicators such as SOD, catalase and peroxidase alongside injury and growth.

## Interpretation

An altered marker alone does not demonstrate beneficial resilience. The response must be related to dose, timing, crop safety and an agronomic outcome.



Source illustration / historical study image

Plant-signaling rationale: Park et al. (2007); product-specific priming and oxidative responses remain unmeasured.

## BIOSTIMULANT EVALUATION

# Signaling and plant-level outcomes

## Species and conditions matter

Salicylate-ester signaling is not identical across plants. Primary Arabidopsis work found that production of the salicylate ester was not essential for systemic acquired resistance under the conditions tested.

## Performance endpoints

Evaluate roots, canopy growth, nutrient uptake, biomass, marketable yield and quality using independent replicated plots.

## Product claim development

Connect measured physiological changes to meaningful crop outcomes before claiming improved nutrient-use efficiency, stress tolerance or yield.



Source illustration / historical study image

Attaran et al., Plant Cell 21 (2009), 954-971; doi:10.1105/tpc.108.063164

NONTOXECO LABS

# Let's explore collaboration

We invite investors, strategic partners, distributors and research organizations to explore the EIR BIOSIMULANT development program.

## ECO@NONTOXECO.ECO

Phone (Thailand): 06-12962109

A technical conversation can define target crops, evaluation endpoints and a joint program. Detailed formulation and study materials can be reviewed under agreed confidentiality arrangements.