PLUG AND PLAY

SILICON VALLEY SUMMIT

May 19-21 2026

PLUG AND PLAY

Sv summit



OPENING REMARKS

Robert Grey

Director, Sustainable Future

Plug and Play

#PNPTCSiliconValley

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Day 3 opening FIRESIDE CHAT



Saeed Amidi

Founder & CEO

Plug and Play



Ranveer Chandra

CTO, Agrifood

Microsoft

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Agrifood expo

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Agrifood team



Robert Grey

Director
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Food & Beverage, An. Health



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Ventures Associate
Food & Beverage, Agtech



Mark McAllister

Ventures Associate
Agtech, Animal Health



Anne Gunden

Sr. Program Manager
Agtech, Animal Health



Shirley Li

Sr. Program Manager
Food & Beverage

agenda

AgriFood Value Chain Introduction

Agtech

- Spotlight: Voice of the Grower
- Startup Presentations
- Case Study: ChemtechxAI Custom Program
- Startup Presentation

Animal Health

- Partnership: Hill’s Pet Nutrition / Bond Pet Foods
- Spotlight: University Engagement
- Startup Presentations

Food & Beverage

- Startup Presentations
- Bioprocessing Panel
- Startup Presentations

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Connecting the agrifood value chain

PRODUCTION → INGREDIENTS → CPG → SUPPLY CHAIN → RETAIL

Western Growers · Bayer · Givaudan · Glanbia · PepsiCo · General Mills · Bacardí · Megmilk Snow Brand · Chick-fil-A · The Jim Pattison Group

Farm Credit Services of America · Bunge · Lesaffre · Empresas Iansa · Coca-Cola · Welch's · Suntory · Tetra Pak · Little Caesars · Wakefern Food Corp.

American AgCredit · OCP · Novonesis · Hill's · Mars Wrigley · Barilla · Asahi · Logifruit · Costco Wholesale · Walmart

CoBank · Tridon · Roquette · Glico · Mondelēz International · L'Oréal · UCC Every coffee, every moment · DOT · Shamrock Foods · Red Bull Media House

... AND MANY MORE

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Fall ’26 Focus Areas — Agtech

Precision Spraying and Nutrient Placement



- Variable-Rate Prescriptions and As-Applied Documentation
- Spot Spraying (Green-on-Brown and Green-on-Green)
- On-the-Go Sensing (Spectral/Vision) Linked to Input Decisions
- Closed-Loop Efficacy and Drift Verification

Specialty-Crop Labor Automation



- Harvest-Assist and Robotic Harvesting Systems
- Weeding/Thinning Automation and Field Maintenance Autonomy
- Computer Vision for Crop Detection, Guidance, and Grading
- Teleoperation and Retrofit Autonomy Kits for Existing Equipment

Drone Systems for Scouting, Detection, and Targeted Action



- Autonomous Scouting, Mapping, and Change Detection
- Pest/Disease/Weed Identification with Prescription
- Precision Action Payloads (Spray) and DiaB Operations
- BVLOS Enablement, Remote Ops, and Compliance Tooling

Biological Crop Protection



- Biocontrols and Biological Alt Chemistry
- Biostimulants and Resilient Nutrient Input Blends
- Seed Treatment Innovation and Input-Efficiency Platforms
- Novel Pest Control Systems—Resistance and Regulation

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AGTECH INVESTMENT THESIS

Portfolio Companies

Precision Agriculture

Startups building the trusted measurement and decision rails for agriculture through sensing, imaging, spectroscopy, crop intelligence, and farm data platforms that turn soil, tissue, weather, and operational data into specific, actionable prescriptions.

BeeHero
Pollinate & Prosper

MERTANI

MAPANA
agricultural intelligence

TERRABLASTER

Ag Biotech

Startups using gene editing, advanced breeding, biologicals, enzymes, and fermentation-derived inputs to solve agriculture's constraints: input efficiency, climate volatility, quality, and regulation.

BOOST BIOMES

VIREO AG

BIOFEYN

Automation & Robotics

Startups deploying robots, drones, autonomous kits, and closed-loop control systems that solve chronic labor scarcity, reduce input waste, and create valuable operational data through repeatable field, greenhouse, nursery, and post-harvest workflows.

TRIC

Upside Robotics

BOPA
PRECISION AGRICULTURE

AMOS

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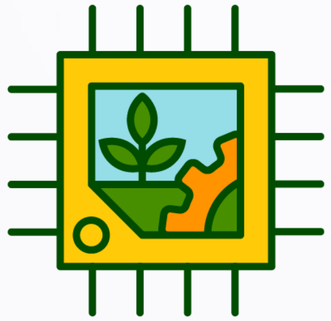
Farm Robotics Challenge AWARDS

May 21, 1:30pm, 2nd Floor

UCANR Innovate & AIFS present the



>>>{Farm_\
Robotics_\
Challenge}

supported by RESERVOIR



UC ANR Innovate
University of California
Agriculture & Natural Resources





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Ag sharks 2026

2025 Startups

LUMO

DriftSense

TRIC

MAPANA agricultural intelligence

WINNER

This Year's Sharks



Saeed Amidi

Founder & CEO

Plug and Play



Danny Bernstein

Founder & CEO

Reservoir



Kirk Haney

Managing Partner

Radicle Growth

AG SHARKS

IN PARTNERSHIP WITH PLUGANDPLAY

WESTERN GROWERS®

PLUG AND PLAY

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VOICE OF THE GROWER

Walt Duflock

VP of Innovation

Western Growers

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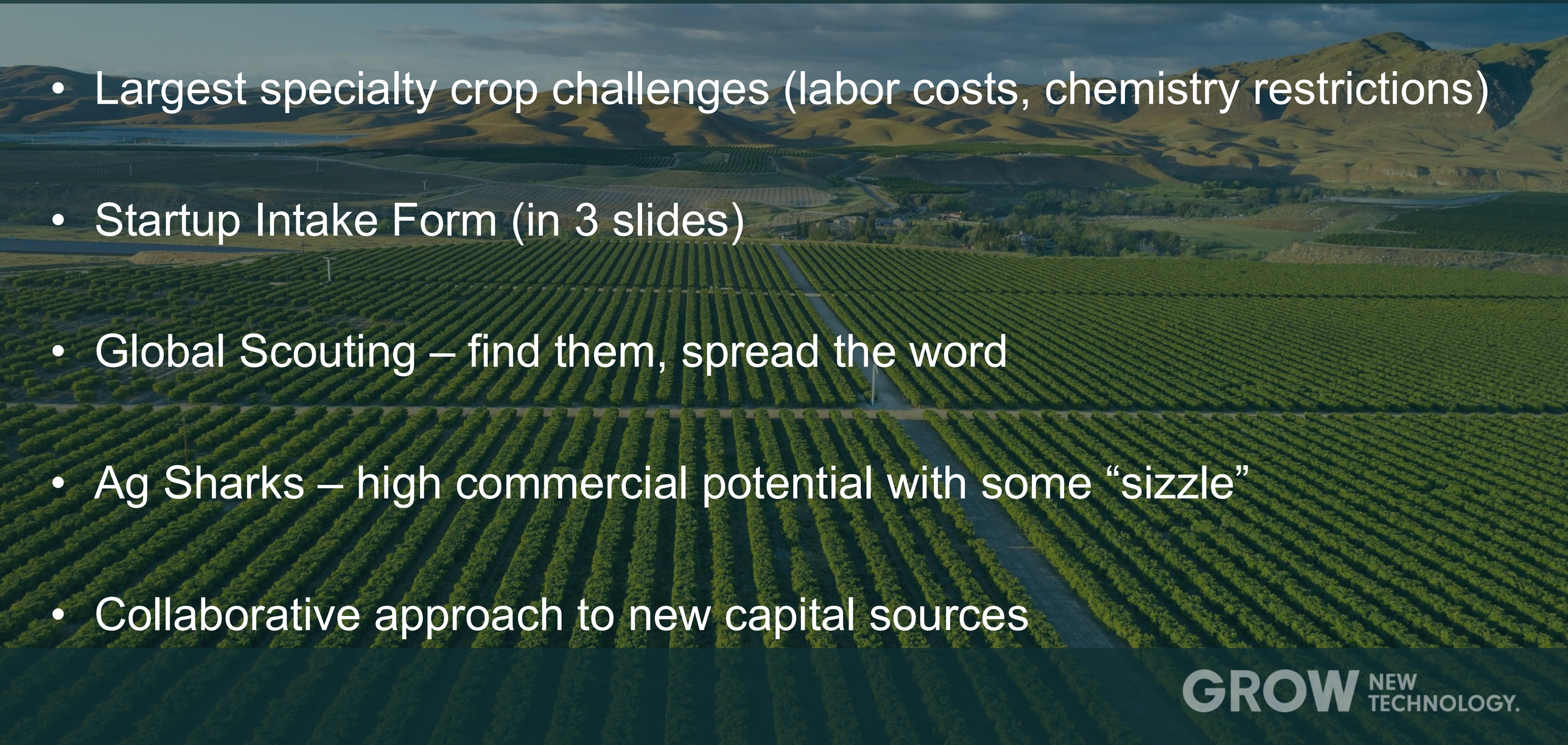
Western Growers – Plug and Play Partnership



- Largest specialty crop challenges (labor costs, chemistry restrictions)
- Startup Intake Form (in 3 slides)
- Global Scouting – find them, spread the word
- Ag Sharks – high commercial potential with some “sizzle”
- Collaborative approach to new capital sources

GROW NEW TECHNOLOGY.

The WG CENTER for Innovation & Technology™

CA GROWERS PAID $16.3 BILLION FOR 850 MILLION HOURS OF FARM LABOR IN 2024 ($61B IN AG GDP)

Non-harvest Work

1/3 of Hours

Weeding, thinning, spraying, planting, harvest assist



3-5%
Automation Now

15-20%
Target by 2030

CA Farm Labor Costs

$16-$18/hour

Domestic Workers

Harvest Work

2/3 of Hours

Picking and Harvesting



0-1%
Automation Now

3-5%
Target by 2030

CA Farm Labor Costs

$28-$30/hour

10% International Workers (including housing, transportation and food)

GROW NEW TECHNOLOGY.

AGRIFOODTECH VC FUNDING (2016-2025)

10 years of global agrifoodtech

2025

Upstream

+7% YoY

$9B VS $8.3B

Deals

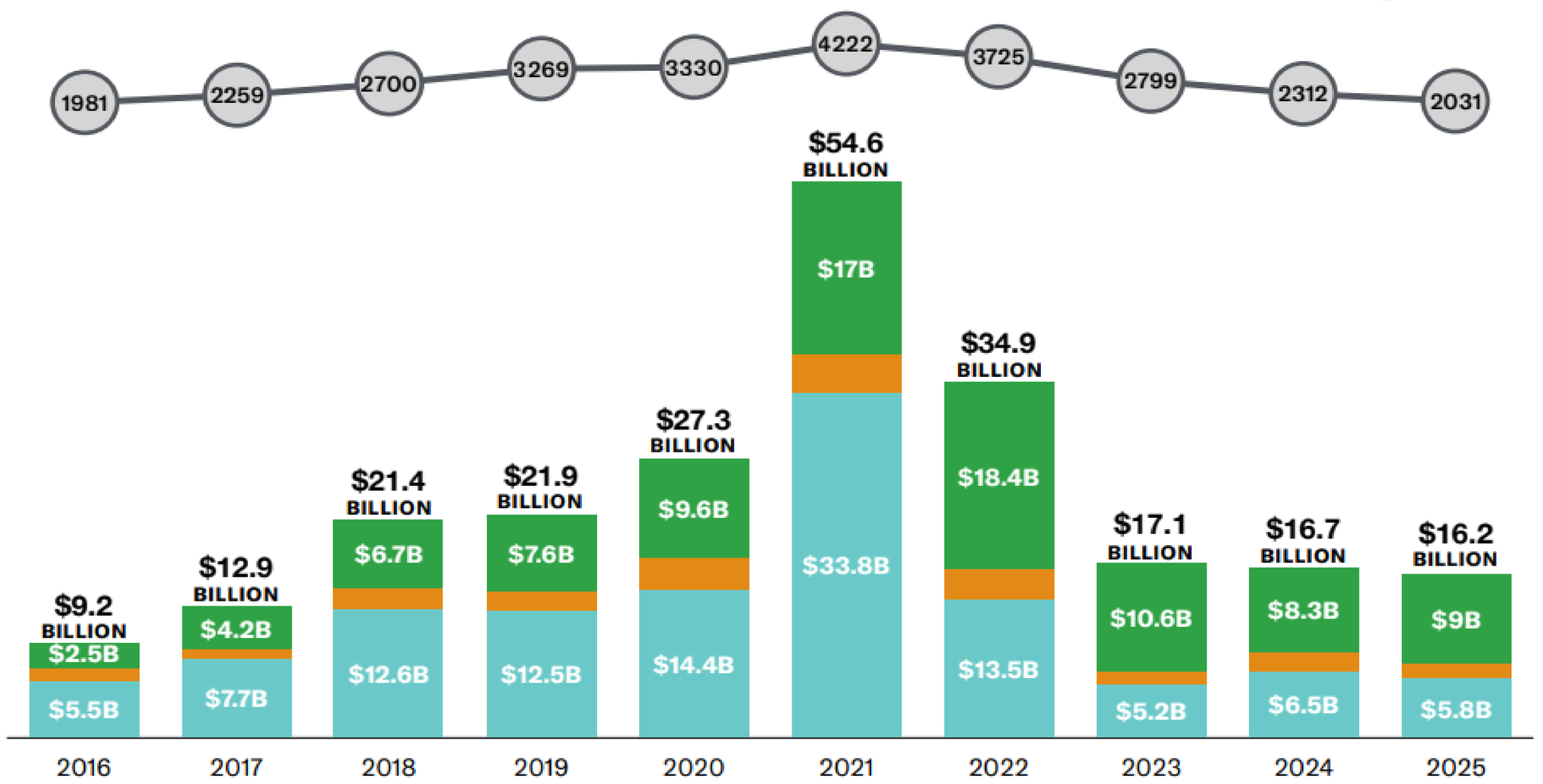
-12.2% YoY

2031 VS 2312

Median deal size

+6.7% YoY

$2.3M VS $2.2M



Startup Intake Form

- Startup Intake Form – startups front door to WG members
- https://plugandplaytc.typeform.com/western-growers
- 2,000+ automation and chemistry alternative (biological+) startups – this is the only way to scale access

Reservoir Farms – Western Growers – John Deere

- Reservoir Farms – on-farm robotics incubator launching in 3 locations in 2026 (Salinas, Sonoma, Merced)

- Strategic Objective – reduce the time and capital needed for AgTech startups to get to MVP by offering shared commercially grown acreage, shared R&D space, and shared John Deere equipment

- WG – RF 3-Year Partnership signed this month – $1.5M (key deliverables – field demo days (July 8), tech validation analysis, WG sponsorship slots for RF members

In Remembrance



Rob Trice

Founding Partner

Better Food Ventures & The Mixing Bowl

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STARTUP PRESENTATION

Ada Labs

ADA LABS

Solving labor crisis & data blindness in protected ag with robots

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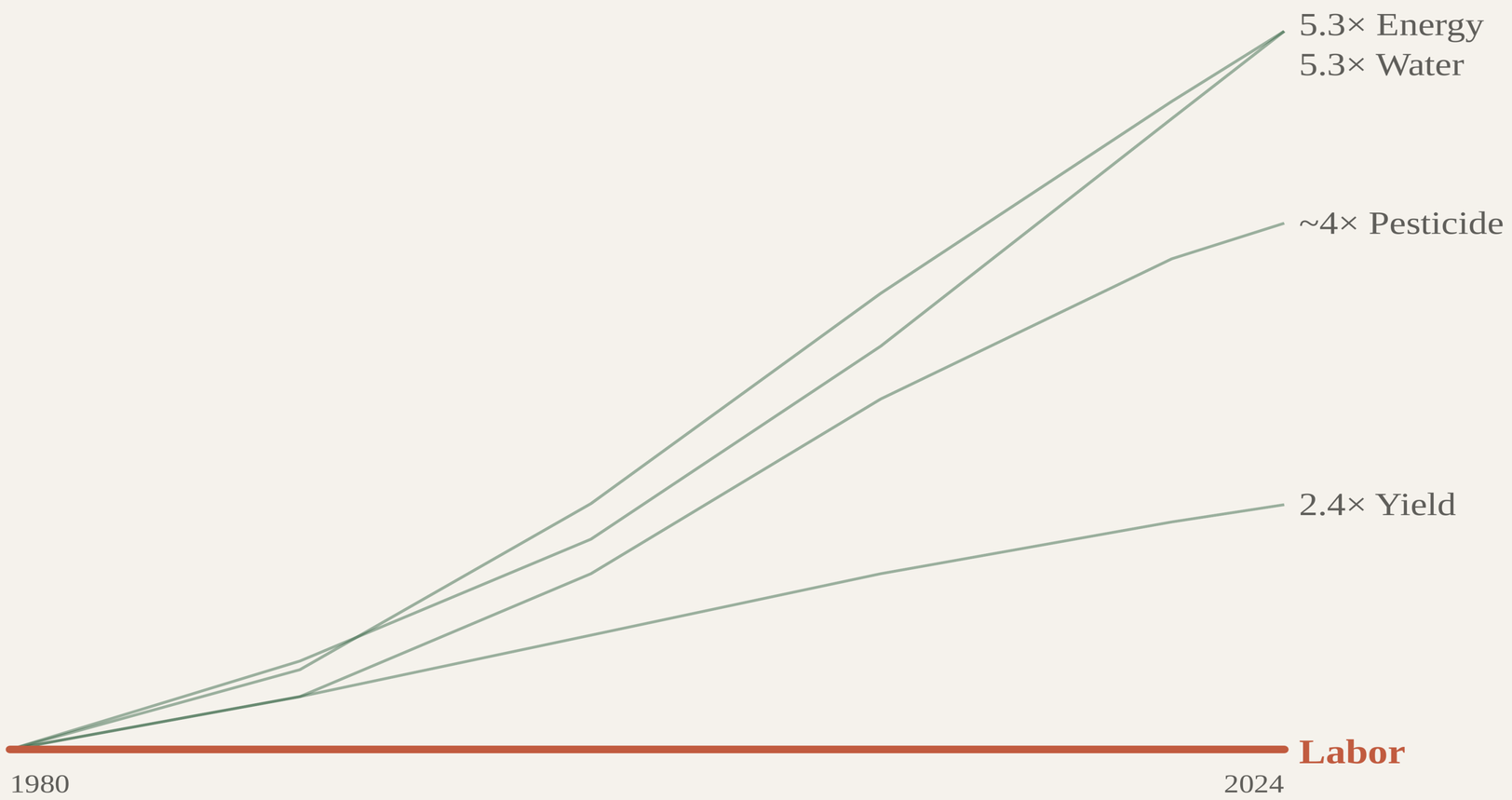
DA
LABS
The Autonomous Workforce
for Protected Agriculture

PRODUCTIVITY · 30 YEARS

Every input in agriculture got better in the last 30 years. Labor didn't.



0×

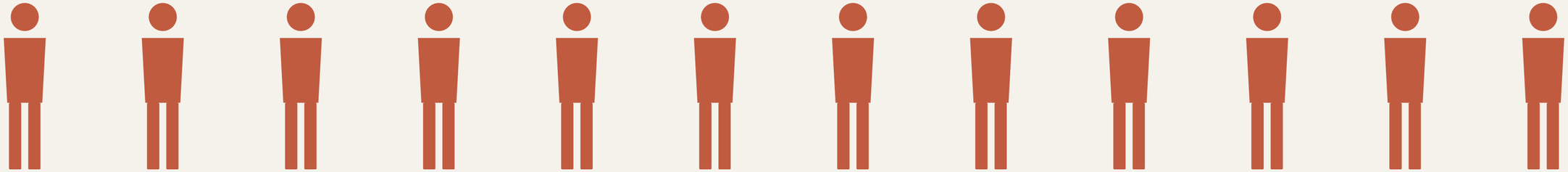
in 30 years

GREENHOUSE LABOR

Labor is the only input the grower can't fix.

12

workers per hectare



40% of OPEX · <1% of plants scouted

WHY NOW · LAST 3 YEARS

Three things changed.

CHEAP

100×

AI performance vs 5 years ago. **Robotics-as-a-Service finally works — zero CapEx for the grower.**

SMART

Frontier VLMs

The robot reasons like an agronomist. Capability that didn't exist 24 months ago. **We plug into the leap.**

DEXTEROUS

Teach, don't code.

Building manipulation used to take years. Now it takes demonstrations. **Every hectare we scout today is tomorrow's training data.**

The tools just arrived.

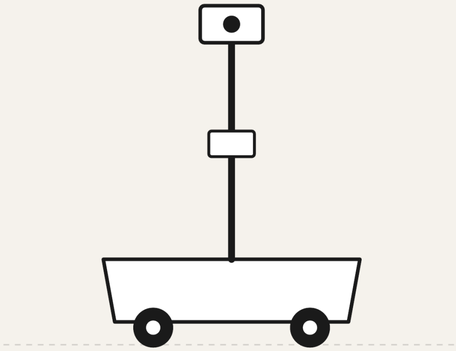


OUR ANSWER

Not a sensor network.
Not a dashboard.
A workforce.

MODULAR BY DESIGN

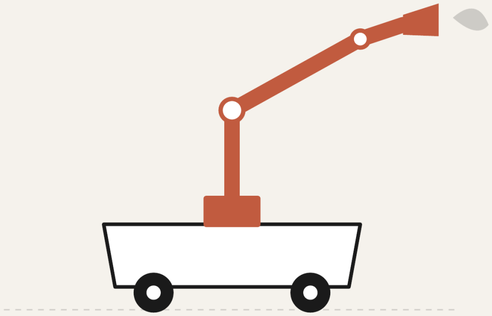
One body. Three skills.



LIVE

Scouting

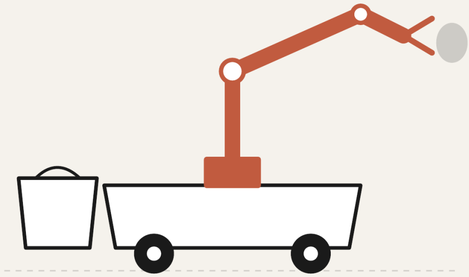
Every plant. Every shift.



IN DEVELOPMENT

Defoliation

Manipulation arm bolts on.



ROADMAP

Harvesting

Pick by size, shape, color.

The fleet compounds in capability — not in CapEx.



TRACTION · TODAY

Scouting is live and running.

4

Signed LOIs

40 ha

Contracted

$150K

ARR pipeline

500 ha

Expansion runway

THE PRIZE

The largest unautomated labor pool in commercial agriculture.

$36.8B

854K hectares · 63% labor displacement


Andres Islas
Full stack roboticist
BSc. Mechatronics
Daniel Yanez
Ag Ops
ex-prospera &
tomato grower
Vic Enriquez
Ms.c Mechatronics
ITESM Professor
Hec Monarrez
CEO
3x founder, 1 exit

ASK

$2.5M *seed*

→ **24 months of runway to Series A.**

500 hectares deployed · $2.5M ARR

CAPITAL

**If you invest,
let's talk after.**

Round open.

OPERATORS · SUPPLY CHAIN

**90-day pilot. Zero upfront.
You only pay if it works.**

Mexico + US.

hec@adalabs.ai

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STARTUP PRESENTATION

Mafix

MAFIX

Making fertilizers that can enhance yields crop yields and remove CO2

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Mafix

Grow More Food, Remove More CO_2. Skip the FOAK.

Mafix

MINERAL CONVERSION TECHNOLOGY

Abundant rocks

limestone + magnesium silicates

Monti

a fertilizer + CO_2 removal solution

Scalable production utilizing existing assets

Less input. Better results. Farmers first.



Status



GREENHOUSE TRIALS

50% increase *in grain yield*
3x more plant available *silicon compared to premium products*



FIELD TRIALS

13 deployment sites *across the USA + Germany*

10% increase in corn grain yield *in Iowa*

2023

CHEMISTRY DISCOVERY
0.1 g-SCALE

Full carbon removal in 7 weeks

SPRING 2024



kg-SCALE

In-house production of 100 kgs

FALL 2024

Publication in nature

MARCH 2025



TON SCALE

Produced 2 tons *at a toll manufacturer*

Q3 2025

PRESENT

Forbes 30 UNDER 30 ASIA 2021

PARTNERSHIPS & OFFTAKES

AMRIZE ***partnership*** *to scale to* **1000 TONS**

Terraset ***offtake***

Trials

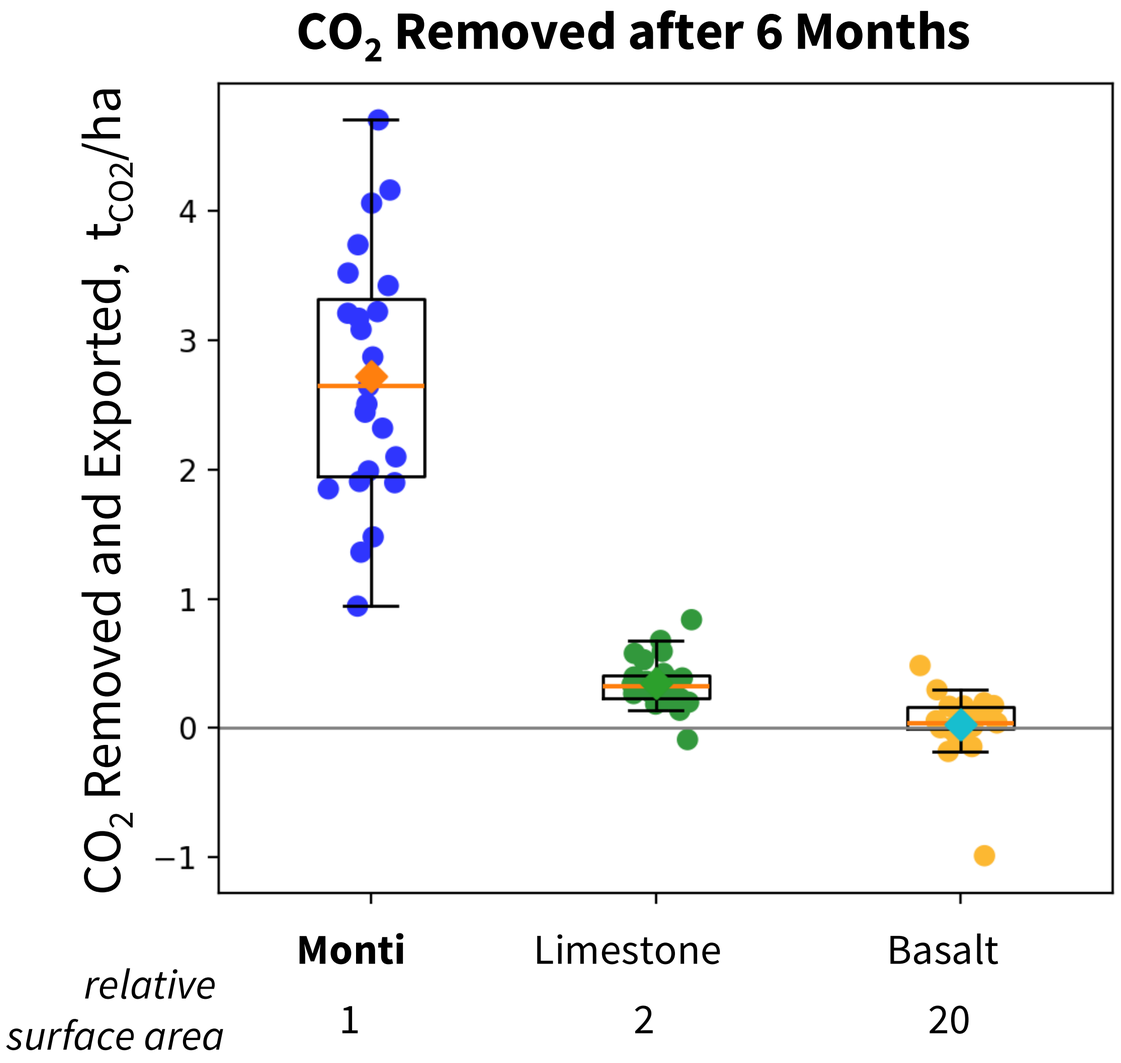






Testing initiated in June 2025 to compare Monti with conventional Enhanced Rock Weathering (ERW) feedstocks across 22 different soil types

Results

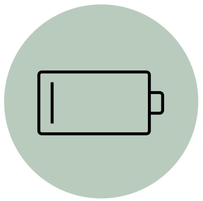


Over 6 months, **Monti shows unprecedented CO_2 removal and export across 22 different soils** even with a much lower surface area

Limestone had 87 % less removal while basalt's mean removal was negligible (~0.03 tons / ha)

LET'S TALK

We're especially excited to connect with:



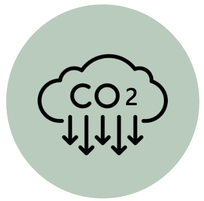
Industrial Partners

Cement or mineral processing facilities with spare capacity that could host Mafix's thermochemical conversion process



Agricultural Leaders

Agricultural operations seeking ways to improve crop resilience, reduce NPK dependency, and build soil health



Carbon Buyers

Organizations with net-zero mandates needing permanent, measurable CDR credits delivered within a single operating year

Reach out: jade@mafix.ag

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STARTUP PRESENTATION

Reveal

REVEAL

A proprietary antibody platform that scales chemical contaminant detection.

#PNPTCSiliconValley

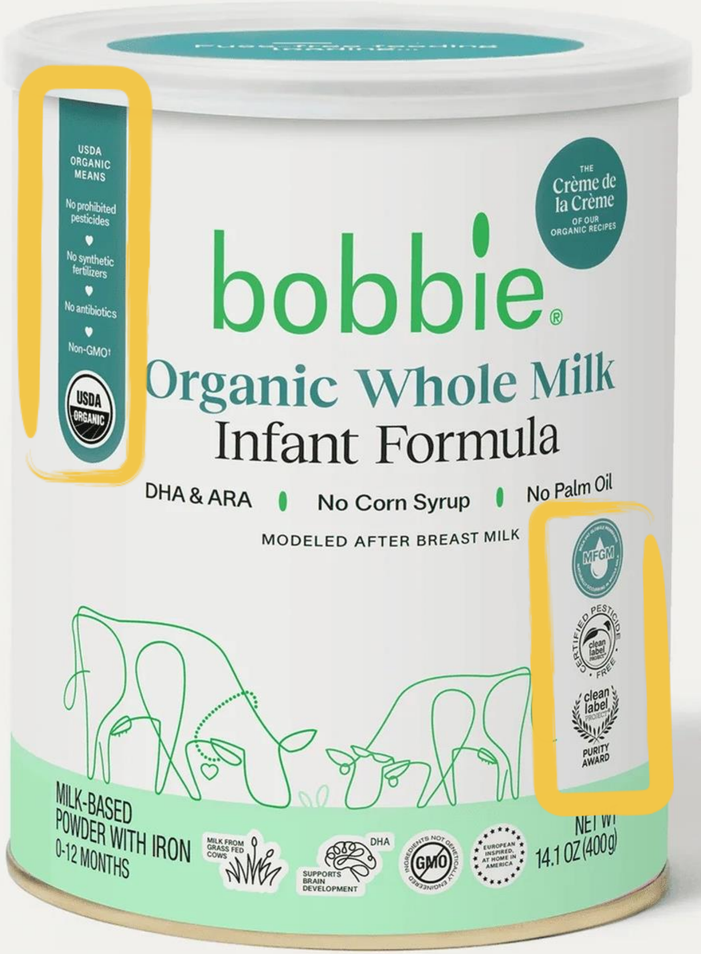
Join us at pnptc.com

Reveal

Scalable lab-quality testing for chemical contaminants

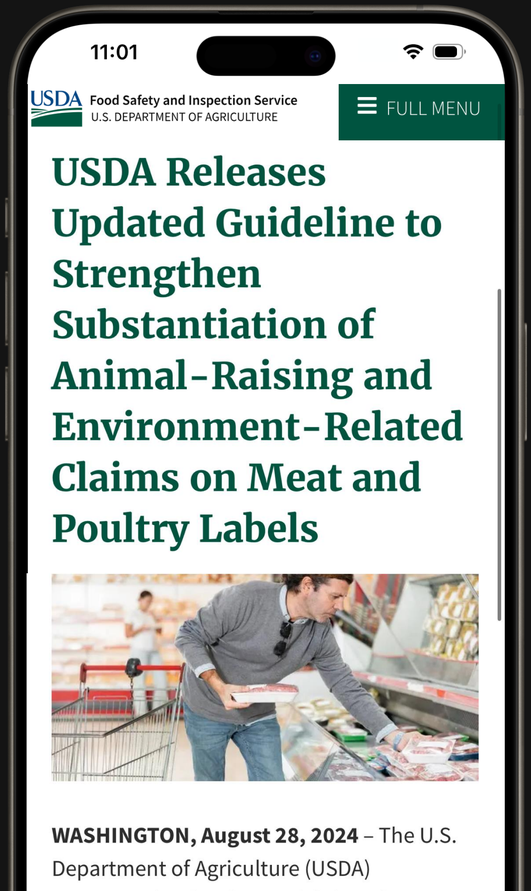
Nima Majd
Co-Founder and CEO
nima@revealfoods.com

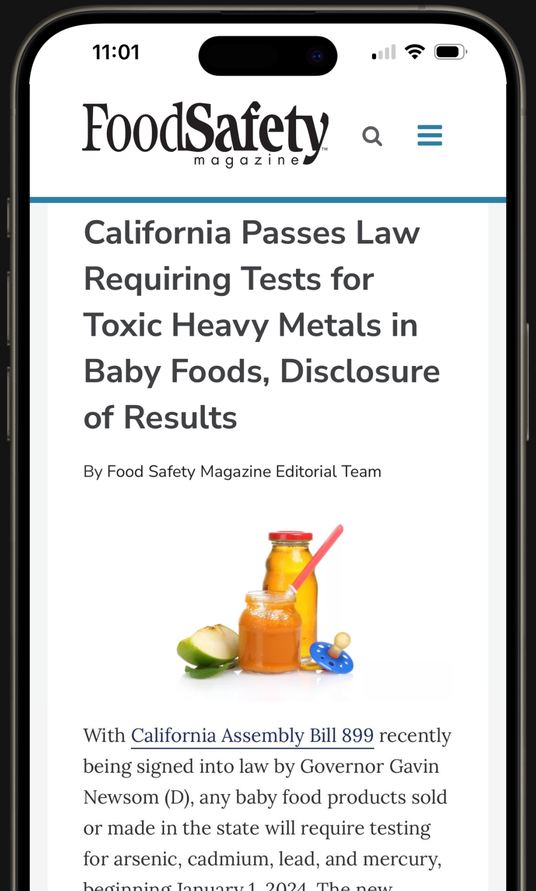

KIRKLAND Signature
ITM. / ART. 598881
USDA ORGANIC
Organic
GROUND BEEF
Raised Without Antibiotics
No Added Growth Hormones
U.S. INSPECTED AND PASSED BY DEPARTMENT OF AGRICULTURE
NET WT 21.44 OZ (1.34 LB) 610 g


USDA ORGANIC MEANS
No prohibited pesticides
No synthetic fertilizers
No antibiotics
Non-GMO!
USDA ORGANIC
THE Crème de la Crème OF OUR ORGANIC RECIPES
bobbie®
Organic Whole Milk Infant Formula
DHA & ARA • No Corn Syrup • No Palm Oil
MODELED AFTER BREAST MILK
MFGM
clean label PURITY AWARD
MILK-BASED POWDER WITH IRON
0-12 MONTHS
MILK FROM GRASS FED COWS
SUPPORTS BRAIN DEVELOPMENT
DHA
GMO
NET WT 14.1 OZ (400g)


LOWEST MERCURY OF ANY BRAND
Safe Catch®
CERTIFIED SUSTAINABLE SEAFOOD MSC www.msc.org
24G OF PROTEIN PER POUCH
ONLY BRAND TO TEST EVERY TUNA
Mercury average is 25X below FDA Limit
Wild ELITE PURE TUNA
NON GMO Project VERIFIED nongmoproject.org
American Pregnancy Association OFFICIAL TUNA
WHOLE 30 approved
CERTIFIED P PALEO
NET WT 307 (85g)

Regulators are increasing chemical contaminant testing.





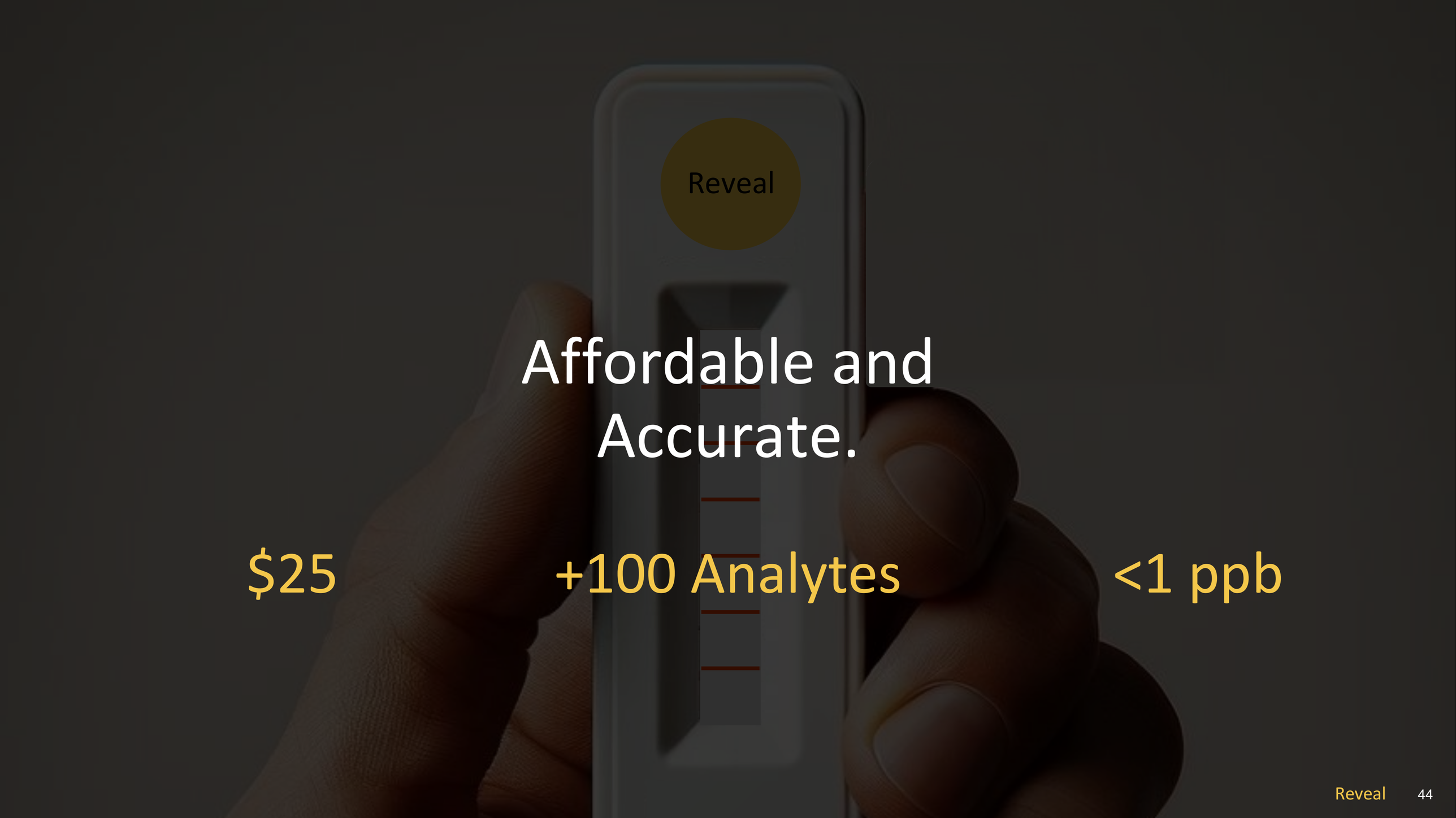




Cheap but inaccurate.

Expensive and slow.


Reveal



Affordable and Accurate.

$25

+100 Analytes

<1 ppb

Reveal scales lab-quality testing



Make decisions in real time
Results in 20 minutes

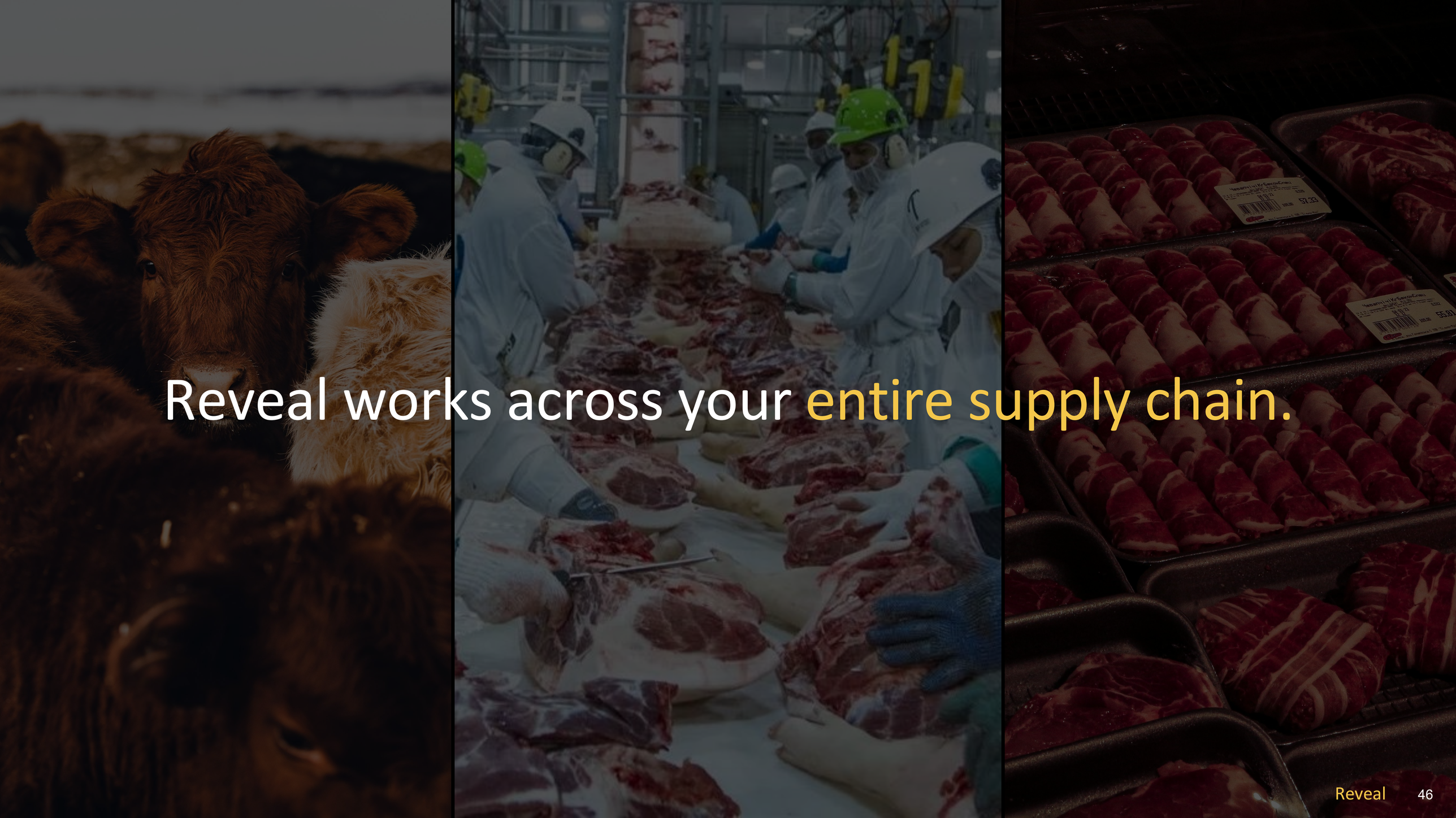
Test without impacting margins
$25 per test

Cover more contaminants
100+ analytes

Detect what others miss
Lab-level sensitivity (<1 ppb)

Track results in real time
Integrated digital tracking and audit platform

Note: Image and product is not based on real photographs and should be viewed as a conceptual visualization.



Reveal works across your entire supply chain.

A platform that detects the most critical chemical contaminants.



Antibiotics

(First device)



Heavy Metals



Mycotoxins



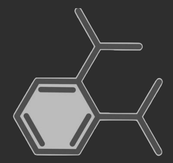
Allergens



Pesticides



PFAS



Phthalates



Microplastics

Reveal is faster, cheaper, and better.

A comparison with the leading antibiotic-residue screening device used in the USA.

	Leading Competitor	Reveal	Δ
Total Analytes Tested	32	+110	*+3x more coverage*
Limit of Quantitation (LOQ)	30 ppb - 50 ppm*	< 1 ppb	*+1000x more sensitive*
Run Time	3 hours	20 minutes	*6x faster*
Total Est. Cost of Testing (device + labor)	$50+	<$30	*+40% more affordable*



As easy as a COVID test

1

Collect a Sample

From raw milk, meat tissue, blood/urine, grain, or grocery-store finished products.

2

Run Test

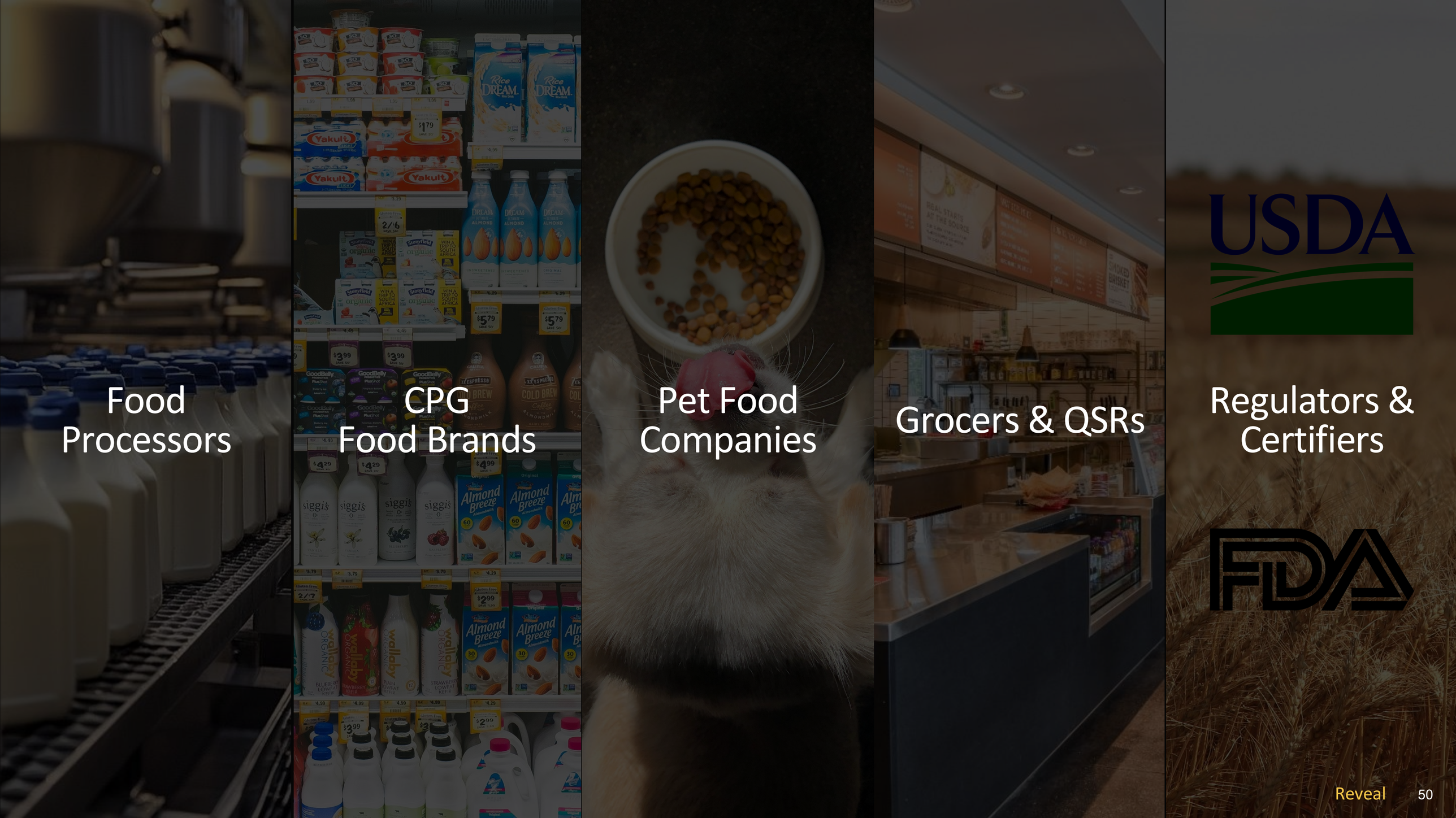
Place the sample in a provided vial, shake, then add the solution to the port.

3

Get Results

Insert into a handheld reader and see results in 20 minutes.

Note: Image and product is not based on real photographs and should be viewed as a conceptual visualization.


Food Processors
CPG Food Brands
Pet Food Companies
Grocers & QSRs
Regulators & Certifiers
USDA
FDA

Why companies are adopting better testing.

1

Reduce Risk

2

Protect Brand

3

Scale Operations

Start testing your supply chain with Reveal

Join Pilot Program (limited)

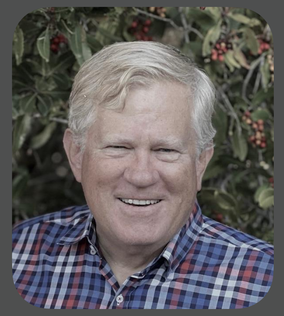
First devices available end of 2026

Public Launch

Industry-wide rollout begins in 2027

Our Team

30+ years of Science, Agriculture, and GTM expertise



Co-Founder and Chief Scientific Officer

Dr. Dan Denney, PhD

- 3x Founder (including IPO)
- PhD Stanford Medical School
- Created diagnostics used by the USDA



Co-Founder and Chief Executive Officer

Nima Majd

- 10+ years globally at Apple
- Led GTM
- Managed partnerships with Walmart, Amazon, and Costco

Advisors



Bill Niman

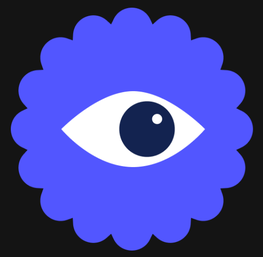
Founder of Niman Ranch



Charles Benbrook

Former Executive Director of National Academy of Sciences, Board on Agriculture

Our Investors



Long Journey

PLUGANDPLAY

Reveal

Scalable lab-quality testing for chemical contaminants

Nima Majd
Co-Founder and CEO
nima@revealfoods.com

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Sv summit

STARTUP PRESENTATION

Sultech™ 16

SULTECH

Sultech is redefining sulphur and transforming nutrient delivery.

#PNPTCSiliconValley

Join us at pnptc.com

Sulphur.
Made Better.

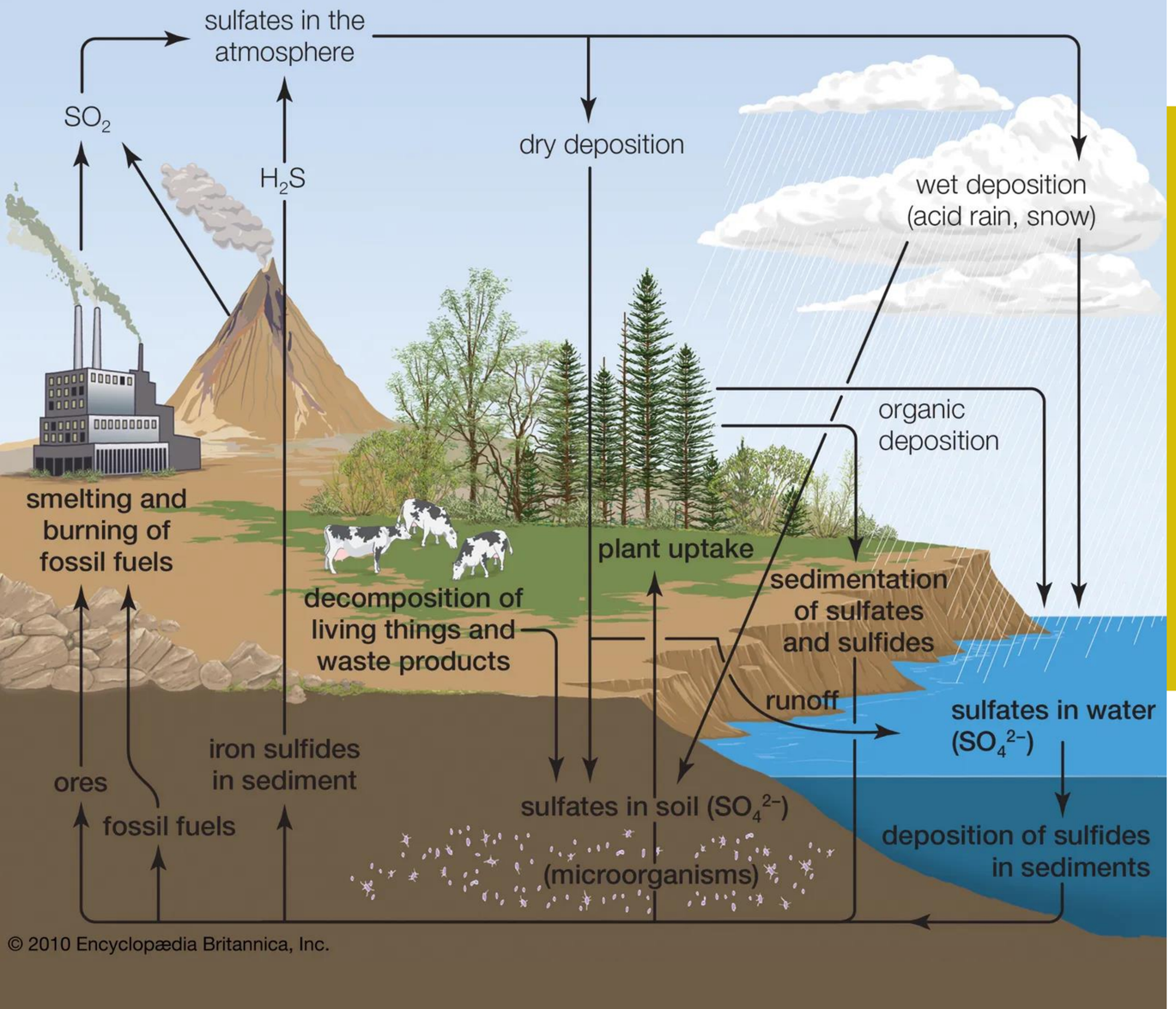




This Photo by Unknown Author is licensed under CC BY-NC

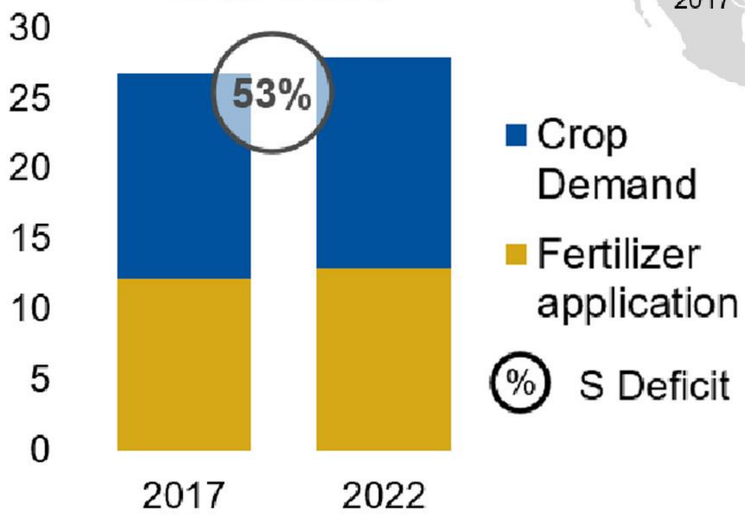
- In the 80's Industrial Chlorofluorocarbon (CFC's) created holes in our ozone
- International ban on CFC's followed
- Result? Ozone layer now on track to be repaired over the Antarctic by 2045

Acid Rain

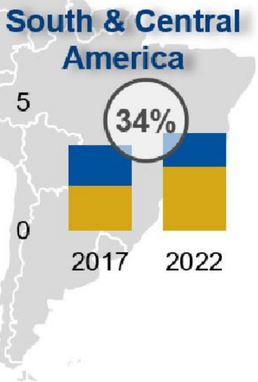


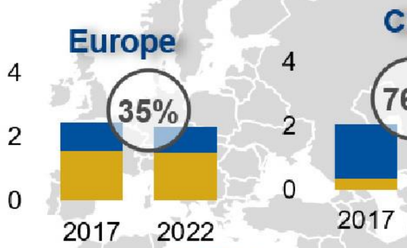
- Industrial expansion created ecological disasters
- Helsinki Protocol (21 nations) commit to 30% reduction of SO_2
- Eastern Canada Protocol to reduce SO_2 by 50%
- Result – loss of major source of sulphur for soil!

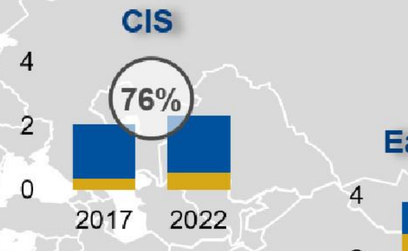
A Global Need for Sulphur

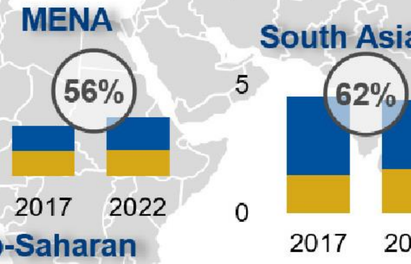


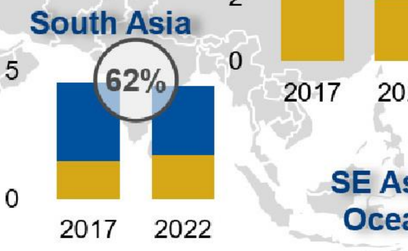


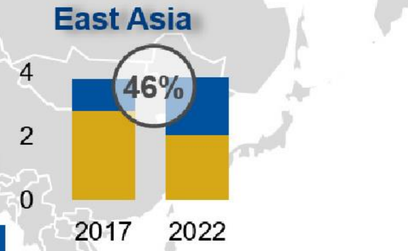


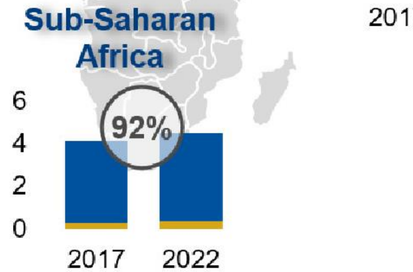














DATA: CRU

Presented at TSI Sulphur World Symposium, April 2024, by Peter Harrison, Principal Analyst for Sulphur and Sulphuric Acid, CRU.

Nutrient Cycle

When the natural nutrient cycle is not optimized, fertilizers need to be added to soils





Over the last 70+ years, the level of vitamins and nutrients in food has drastically decreased

Healthy soils are the **basis** to produce **sufficient safe** and **nutritious food**



What if there was a Better Sulphur Solution?

Sultech™



Sultech is Sulphur. Made Better.

- Micronized Particle Size
- Outperforms Synthetic Fertilizer
- Readily Available Sulphates
- Lower Cost to Farmers
- Minimal GHG Emissions
- Energy Efficient Production

IP Protected Patented Process



High Pressure Pump



Nozzle Target Vessel

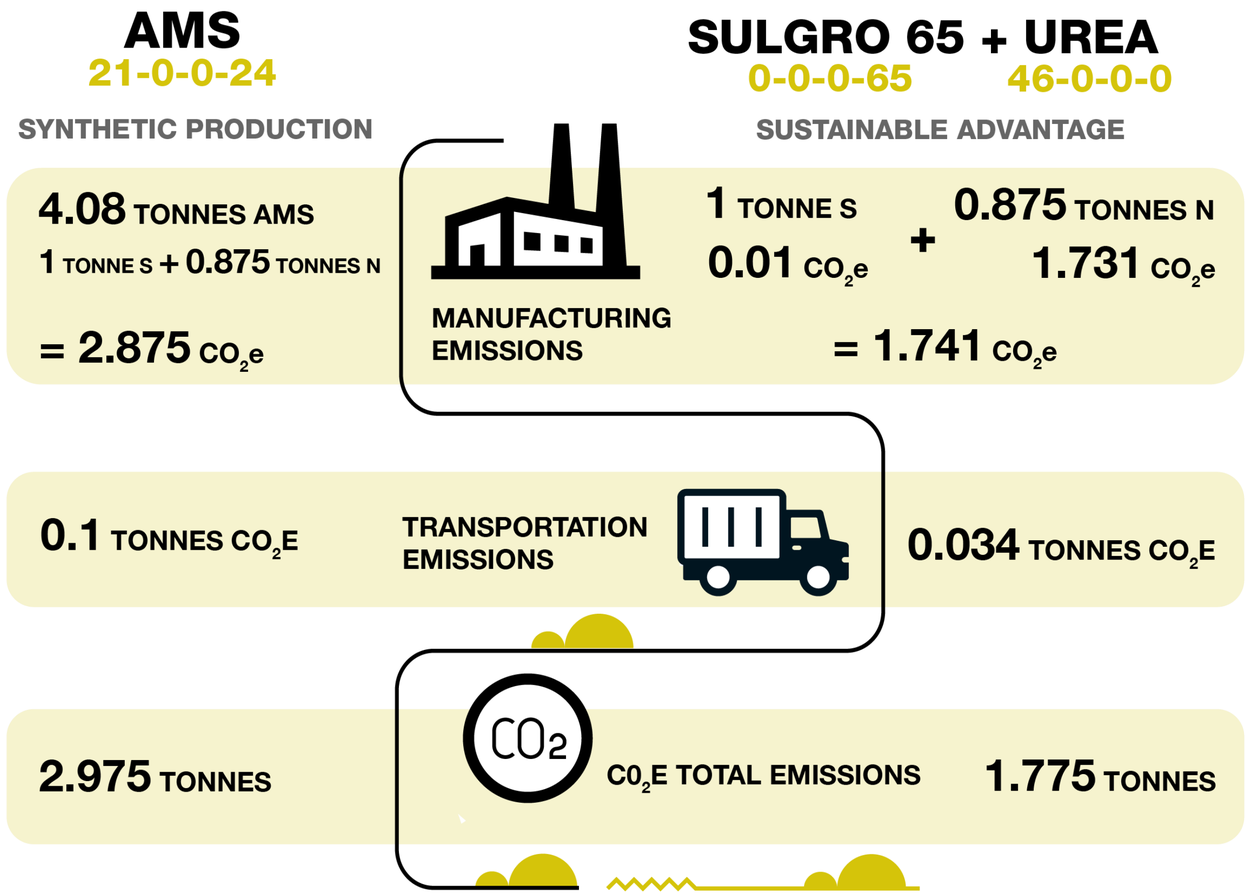


Screener



Centrifuge

GHG Emissions Advantage over Synthetic Fertilizer



SULTECH PRODUCTS RESULT IN **GHG EMISSION ADVANTAGE OF 1.2 TONNES** OF CO_2E PER TONNE OF S^O PRODUCED VS. AMS

Source: Company management, ERA Greenhouse Gas Quantification Assessment Report prepared by Brightspot Climate Inc. (April 8, 2024)

Series A Raise

- Sultech is raising C$15M-C$13.5M at C$4.00 per share
- C6 Capital Holdings is leading the round.

Sources & Uses

Uses of Cash ($MM)			Sources of Cash ($MM)		
Required Financing					
	C$	US$		C$	US$
Alberta Plant #1 Construction	$12.5	$8.9	ERA Grant[1]	$5.0	$3.6
U.S. Plant #1 Construction	$12.5	$8.9	Convertible Debenture[2,3]	$7.0	$5.0
Working Capital/ Transaction Fees	$5.0	$3.6	**Series A Equity**	**$18.0**	**$12.9**
Total Uses	**$30.0**	**$21.4**	**Total Sources**	**$30.0**	**$21.4**

Committed Sources of Capital

Investor	Funds (C$MM)	Description
C6 Capital Holdings LLC	$7.0	Unsecured Convertible Debenture from existing investor
EMISSIONS REDUCTION ALBERTA	$5.0	Government grant based on reimbursement of eligible costs[1]
Total	**$12.0**	

$20.6M

CONSTRUCTION COST

2 X 50,000 MT or
1 X 100,000 MT
PRODUCTION FACILITY



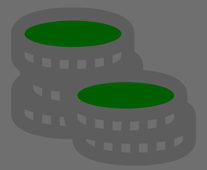
$26.3M

REVENUE

THE COMMERCIAL PRODUCTION FACILITY WILL GENERATE $37M IN GROSS REVENUE

$18.5M

EBITDA

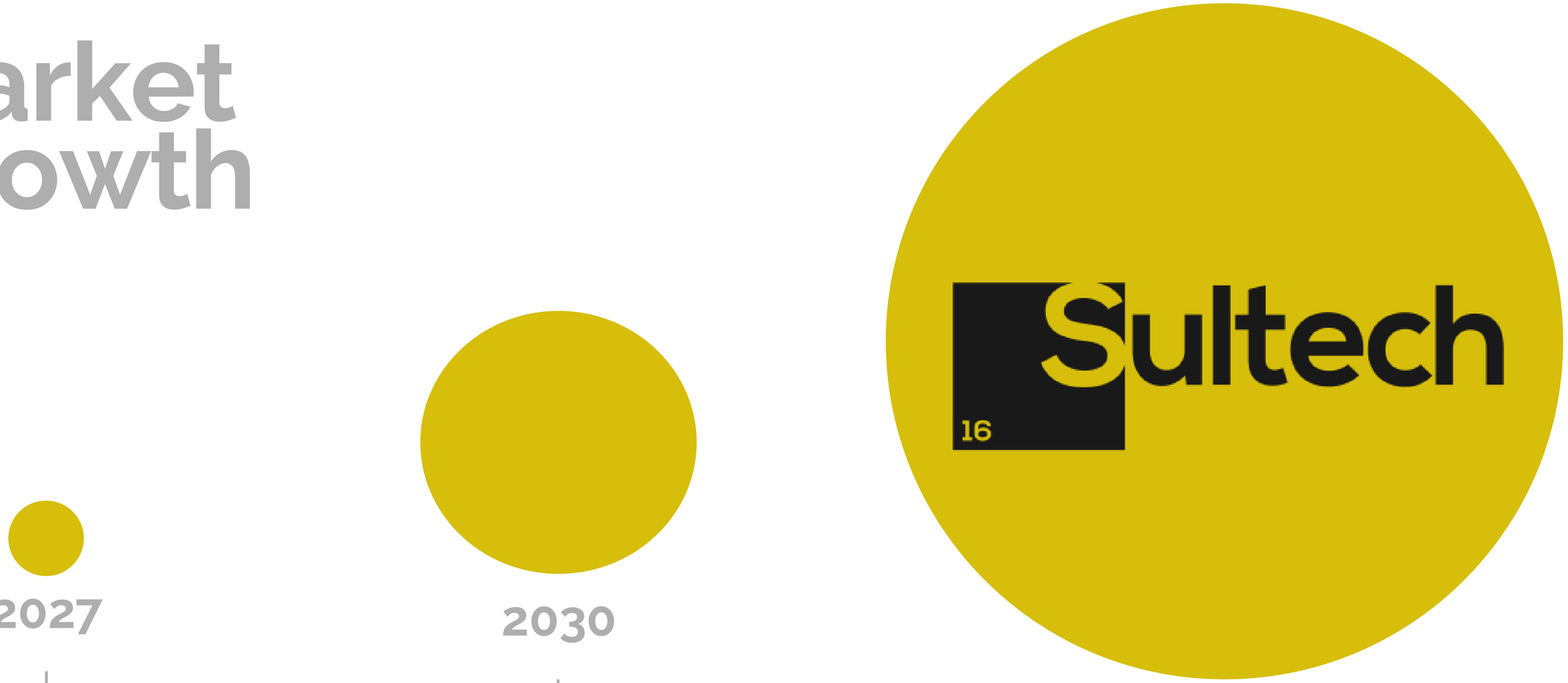


$13.7M

CASH FLOW

FREE CASH FLOW OF $19M PER ANNUM

Market Growth



2027

50k

MT/YEAR

2030

550k

MT/YEAR

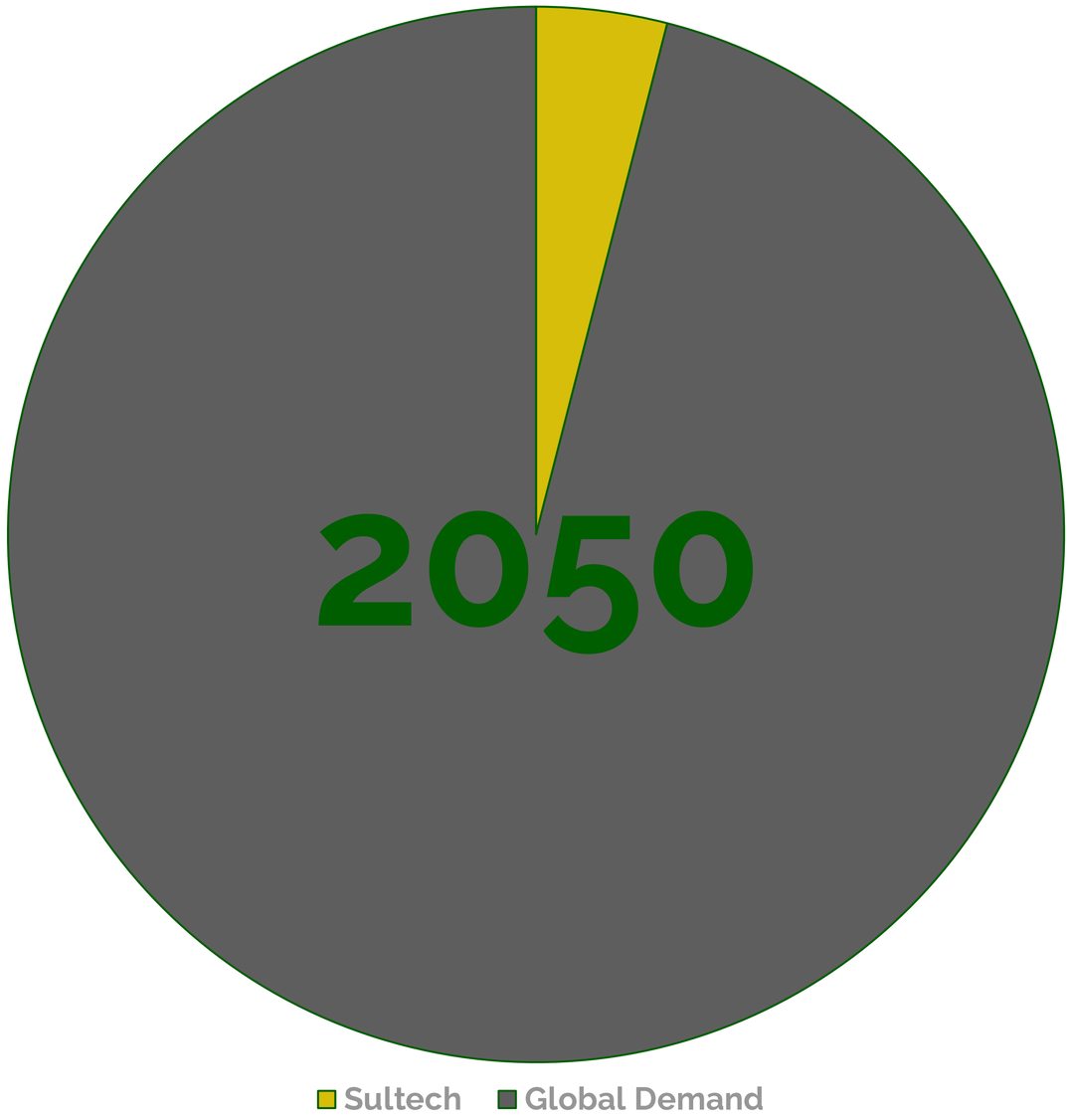
2050

3M

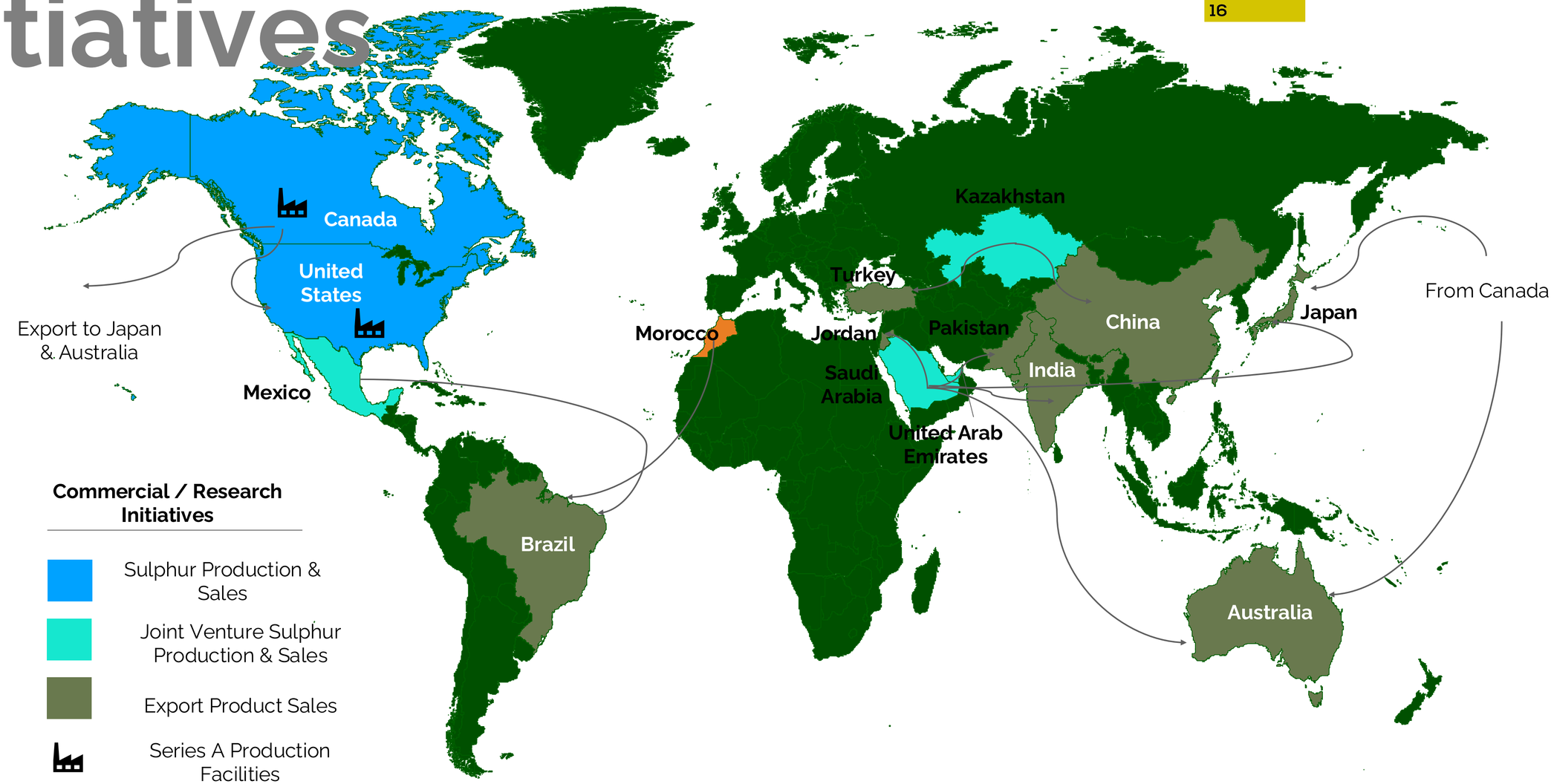
MT/YEAR

Share of Sulphur Fertilizer Market

Sulphur demand for fertilizers is projected to reach approximately **72 million metric tons by 2050**



Ongoing Initiatives



The Team



Murray MacKinnon

FOUNDER, CEO



Mark Rossano

CFO



Carolyn Lemoine

VP MARKET DEVELOPMENT & SUSTAINABILITY



Brad Fournier

VP STRATEGIC RELATIONSHIPS

ADVISORS:
DR. RIGAS KARAMANOS, DR. RAY DOWBENKO, DR. MICHELLE KONSCHUH, PAMELA COLLINS, GRAEME MANNING


Sulphur.
Made Better.
OMRI
LISTED
For Organic Use · OMRI.org



Let’s Connect

Brad Fournier

VP Strategic Relationships

bfournier@sultechglobal.com

Sultech™

16

sultechglobal.com

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Sv summit



CORPORATE CASE STUDY

Lindsay Lebahn

Director, Agtech, Animal Health

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CASE STUDY CHEMTECHXAI CUSTOM PROGRAM



Abla Benkirane

Chief Transformation Officer, Chief of Staff - SPS

OCP Group



Omar Abderrazik

Chief Strategy Officer - SPS

OCP Group



OCP | SPS

Chemtech x AI

Open Innovation Program

Connecting chemistry, artificial intelligence and industrial transformation.

OCP | SPS

Chemtech x AI

Open Innovation Program

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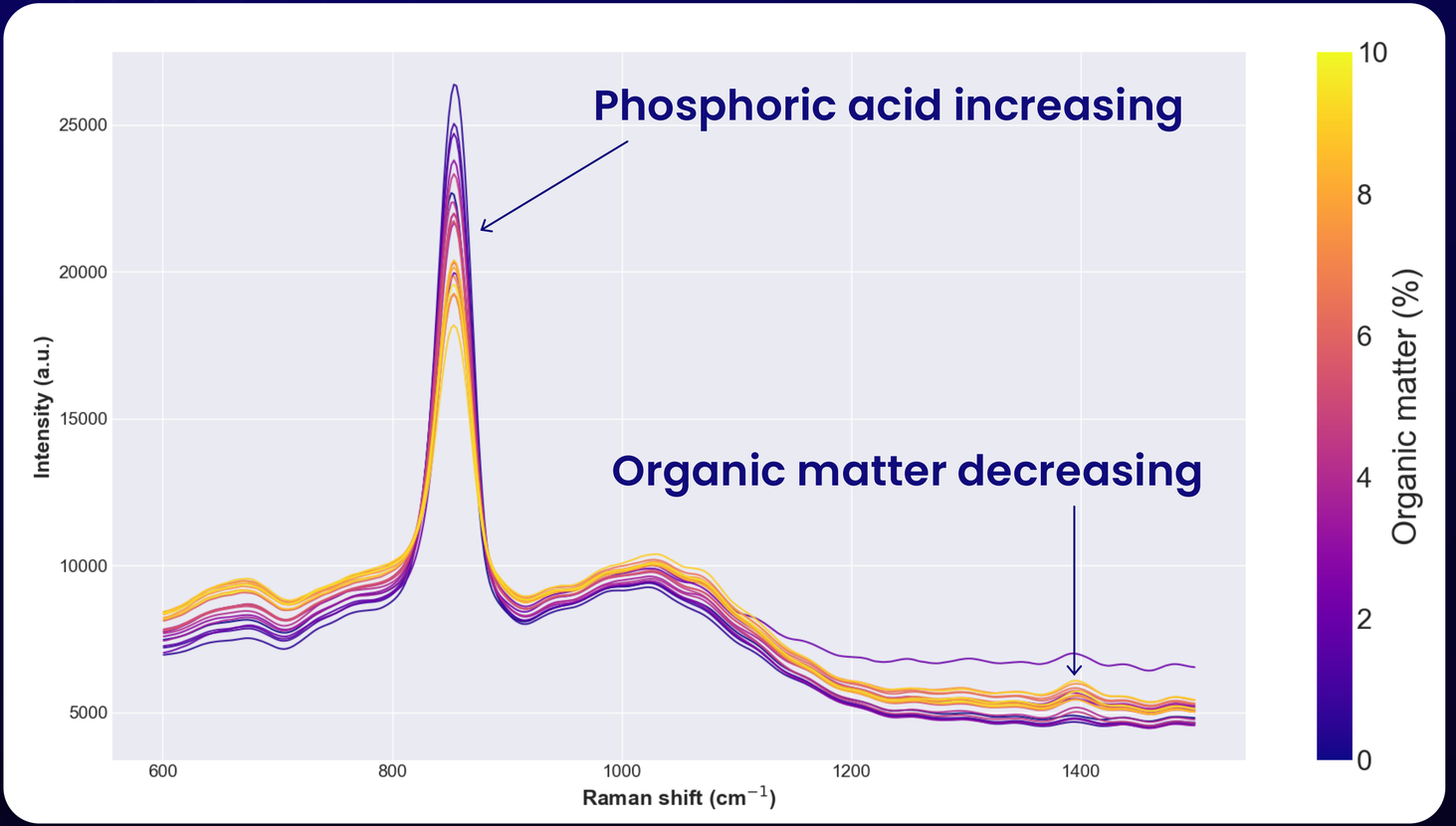
Real-time tracking of phosphoric acid process



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inSpek

INSPEK

Optimizing bioprocess with real-time multi-parameter sensors

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Join us at pnptc.com

inSpek

ENLIGHTENING YOUR PROCESSES



PLUGANDPLAY
SILICON VALLEY
SUMMIT

Jérôme Michon
Co-founder & CEO

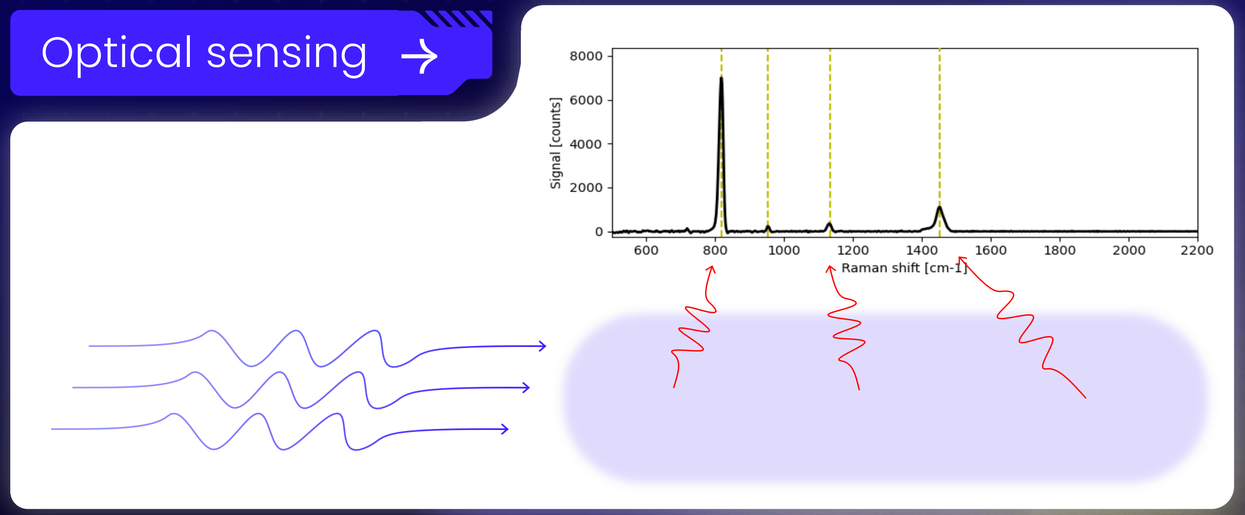
Real-time process visibility with a multi-sensing platform

How to improve process development?

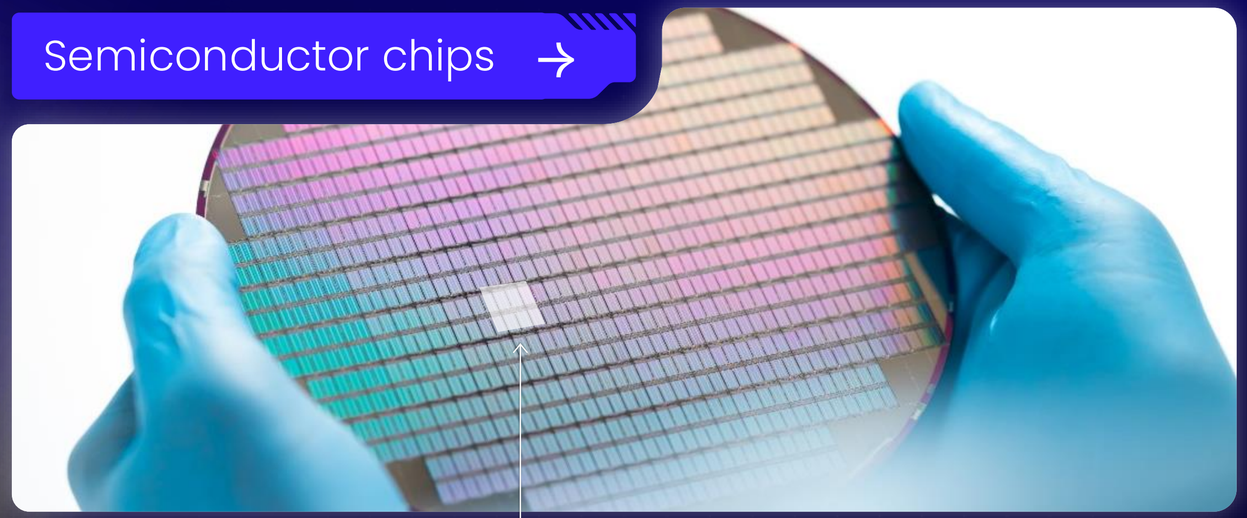


The best of both worlds, optics & chips...

Optical sensing

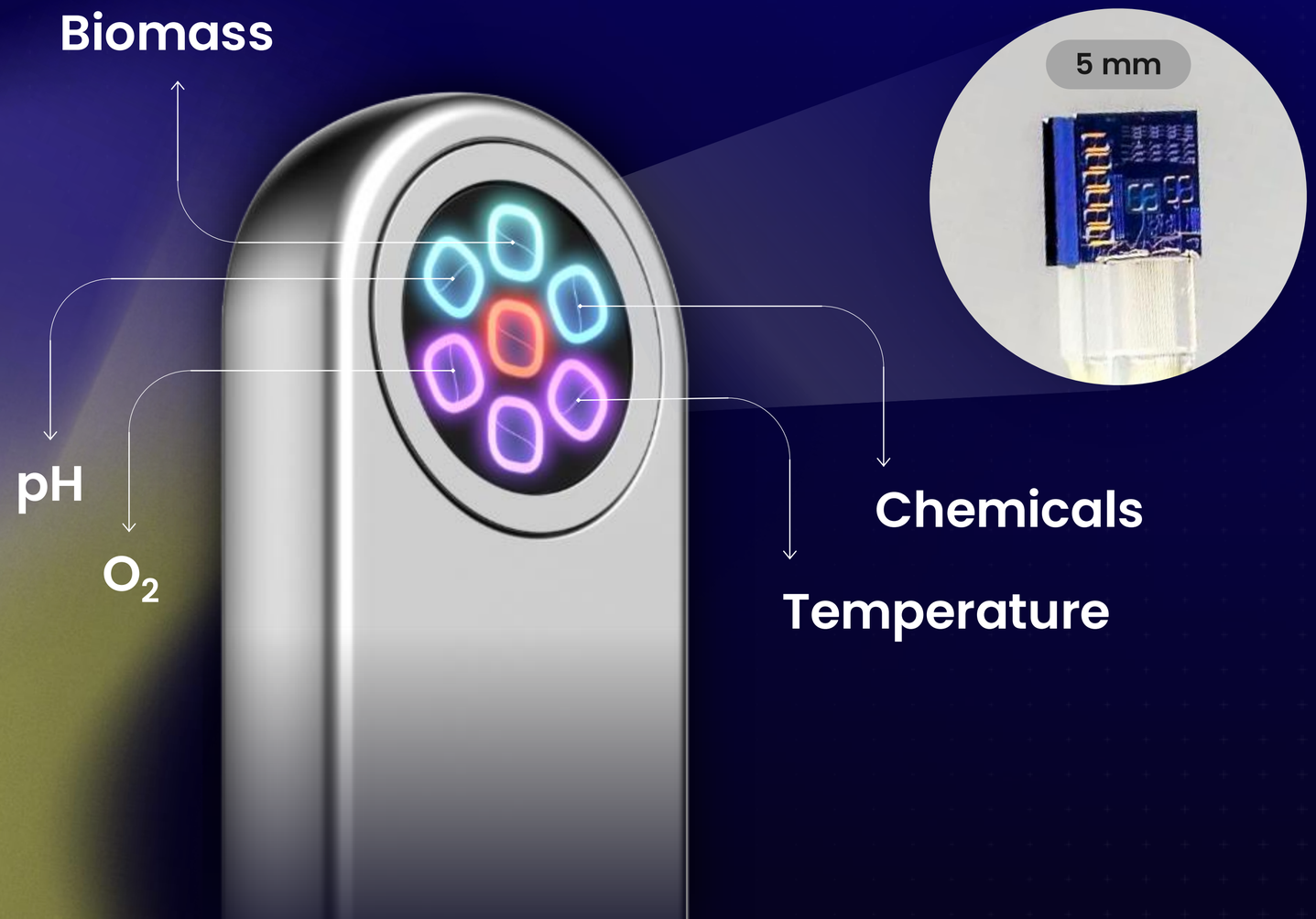


Semiconductor chips



IP portfolio | including 2 MIT & 3 InSpek exclusive patents

… to build a multi-parameter probe



A team of experts in photonics, bioprocessing, and data



Jérôme Michon, PhD
Co-founder & CEO



Yasmine Ibrahimi, PhD
Photonics Lead



Ivan-Lazar Bundalo, PhD
Co-founder & CTO



Christopher Lieutaud, PhD
Biochemistry Lead

16 FTEs
(inc. 7 PhDs)

Scientific advisors →



Juejun Hu, PhD



Laurent Vivien, PhD



Derek Kita, PhD

Business advisors →



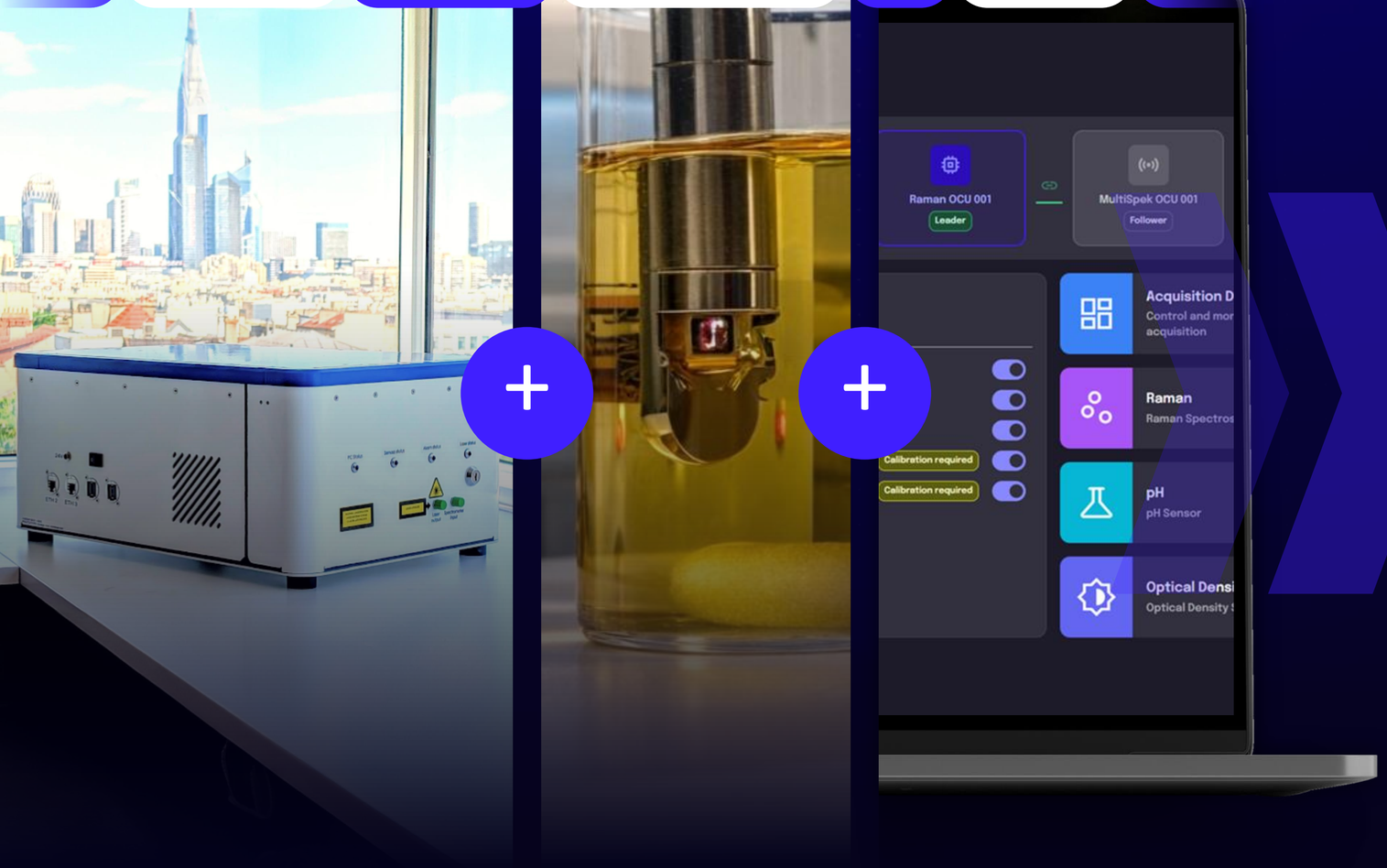
Andrea de Souza



Quentin Vicard

Our system

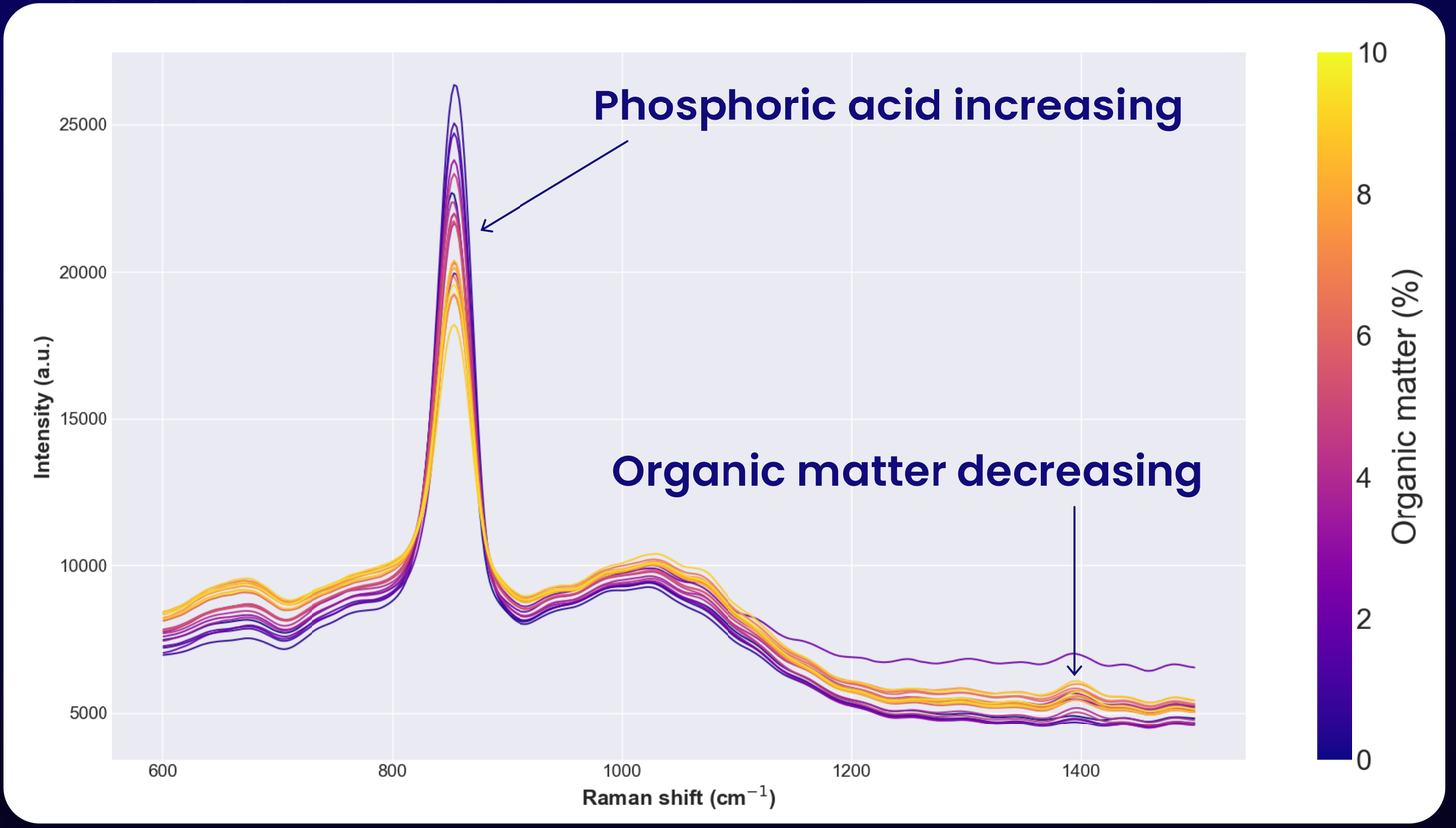
Control unit + Microchip sensor + Software



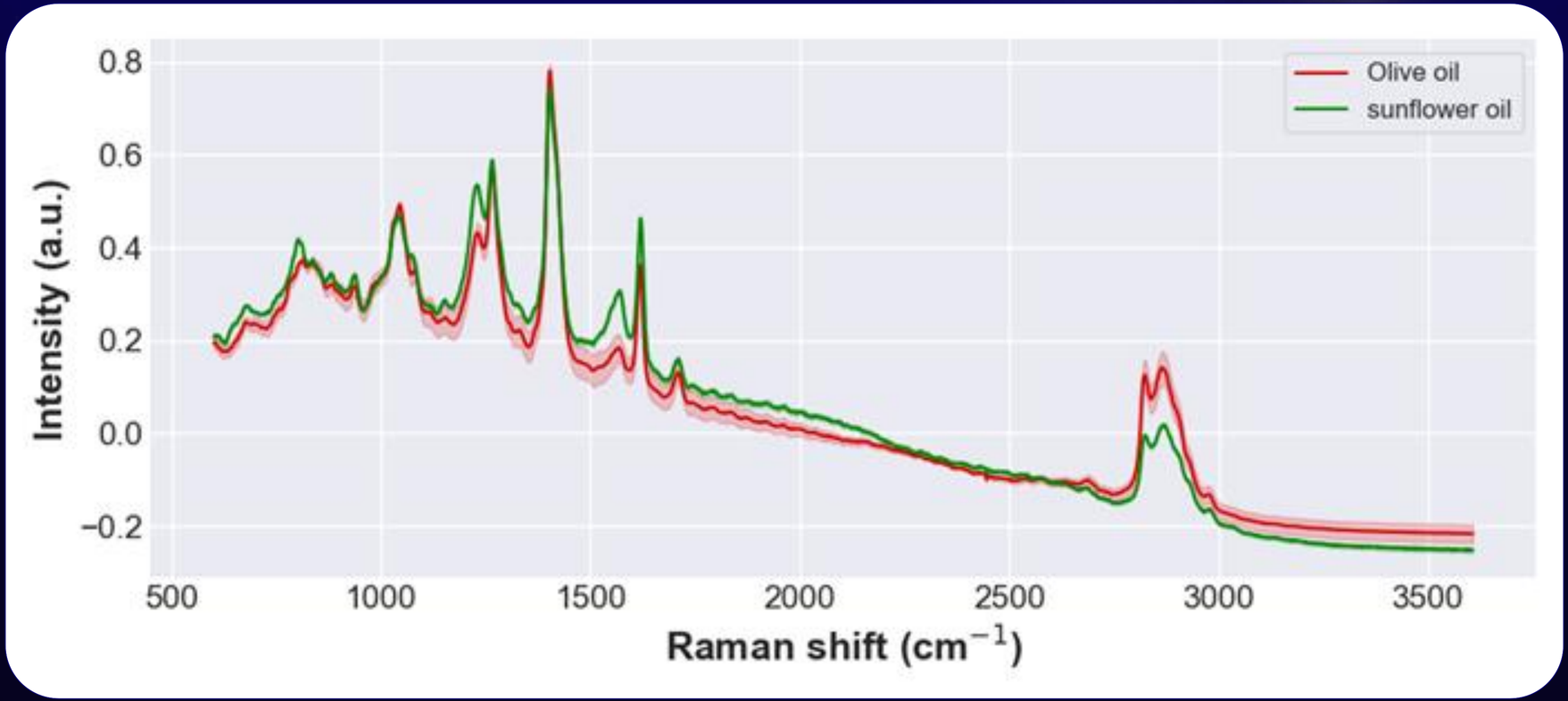


OCP | SPS

Real-time tracking of phosphoric acid process



Oil differentiation: sunflower vs. olive oil



We are starting sales in selected markets

BREEGA WIND QUANTO NATION

European Innovation Council

Seed — Series A

3.5M€

2024 — 2025 — 2026 — 2027

PoC — v1 — v2

Development partnership with a **Tier-1 equipment manufacturer**

inSpek

ENLIGHTENING YOUR PROCESSES

Enabling Manufacturing 4.0 with comprehensive, high-quality data.

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ANIMAL HEALTH

Lindsay Lebahn

Director, Agtech and Animal Health

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SPOTLIGHT HILL'S PET NUTRITION



Dr. Sue Wernimont

Director, Research and Innovation

Hill's Pet Nutrition



Karlyn Kubin

Brand Manager, Innovation

Hill's Pet Nutrition

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PARTNERSHIP

Hill's Pet Nutrition and Bond Pet Foods Receive FDA no-objection letter for first animal protein produced via precision fermentation for pet food.

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University Engagement

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University Spotlight:

KANSAS STATE UNIVERSITY

9 Startups
14 Projects
4 Colleges at K-State



CASE STUDIES:

Archway- Needed a supplier to set up a test run for a new formulation of kibble. The KSU extrusion lab team produced and packaged the product over a three-day period.

Seismi – Obtained a USDA Phase 1 SBIR with KSU Vet Med to develop the bovine sensor. Currently making another grant application to the USDA in conjunction KSU Beef Cattle Institute.

Medi Pups – Completed the literature review for all of the ingredients to highlight the health benefits associated with each of them. Enabled Medi Pups to establish proven health benefits without having to go through the expensive of a full blown feeding study.

University Spotlight:

TARLETON STATE UNIVERSITY
Member of The Texas A&M University System

The small town of Stephenville had startups from around the globe, local industry professionals, students, and university research leaders at a focused half-day event exploring the technologies and market trends shaping the future of dairy highlighting innovations in nutrition, herd health, diagnostics, and performance analytics.

Dairy Innovation Day





Participating Startups:

Cattle Verify

agscent

TRIPLEBIO

Spade

PLUG AND PLAY

Sv summit

STARTUP PRESENTATION

Spore.Bio

SPORE.BIO

Microbiology, reinvented - detect, quantify, identify. In minutes.

Spore.Bio

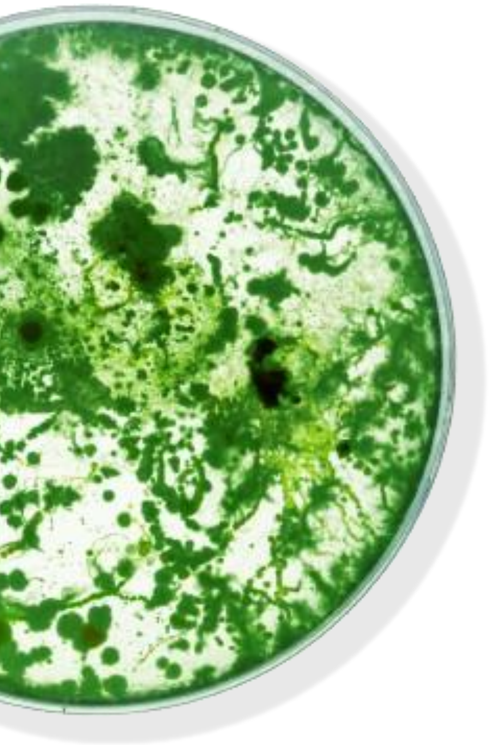
Plug & Play - Silicon Valley Summit

05/21/2026

Camille Gollety

TODAY

The current burden of quality control is immense



Time-consuming

Created in 1887, Petri dish tests are the standard for microbial detection. While every moment counts in the race to safeguard lives, it takes **2 to 14 days** to get the results depending on the pathogen searched. More than 95% of the world's factories still rely on it

Restrictive

These tests represent cross-contamination risks. Most food factories don't do them onsite, which increases the waiting time and can be up to **20 days** for some factories.

Poor Alternatives

For decades, alternative technologies have attempted to replace the Petri dish. For example, PCR still takes days - **up to 48 hours** - and is costly in Opex (many consumables)
We are still using 19th century tools to make 21st century products safe.

OUR SOLUTION

We believe it’s time to change the industrial microbiology industry

World's first AI-native microbiology platform. Detects, quantifies, and identifies live microorganisms

REAL TIME
Results in 10 min

ON-SITE
Testing directly at the factory site.

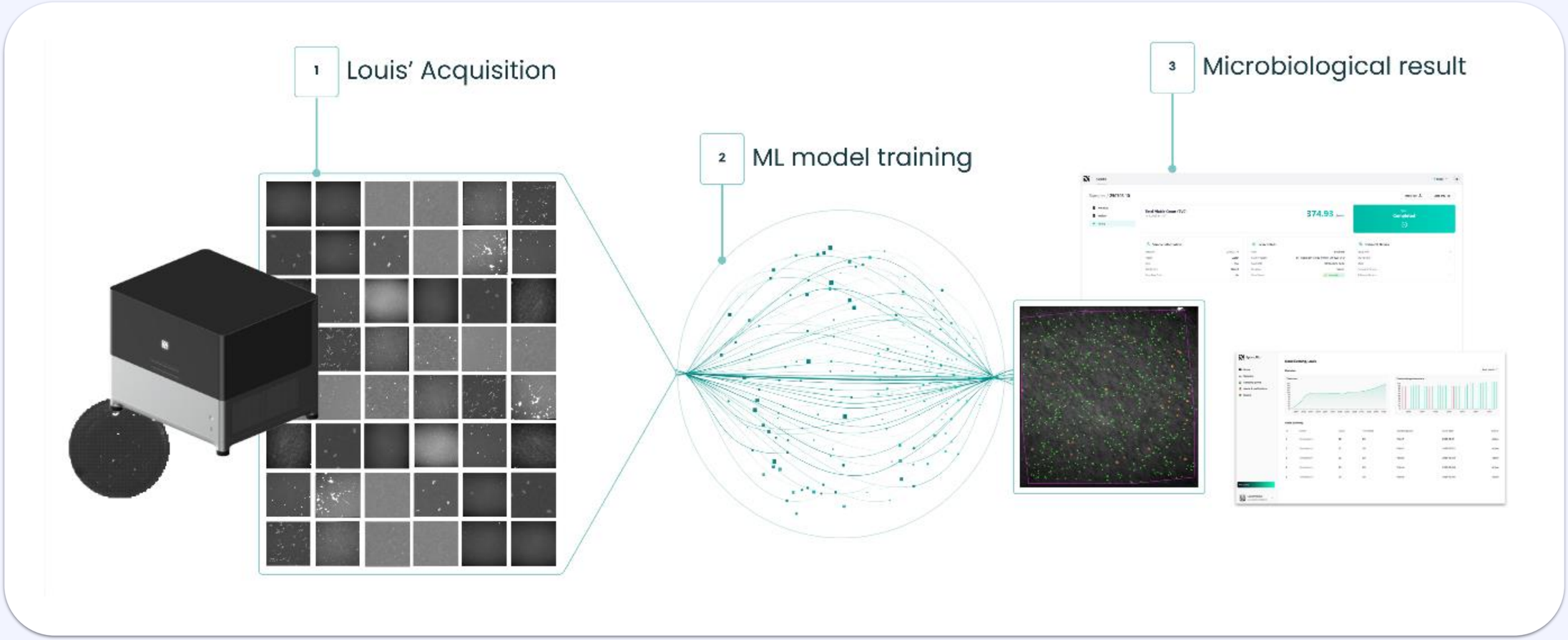
LABEL FREE
No culture, without any chemicals or reagents

DIRECT METHOD
Detect and quantify bacteria straight from the sample wit
standardized results in CFU/(mL·cm²·g)



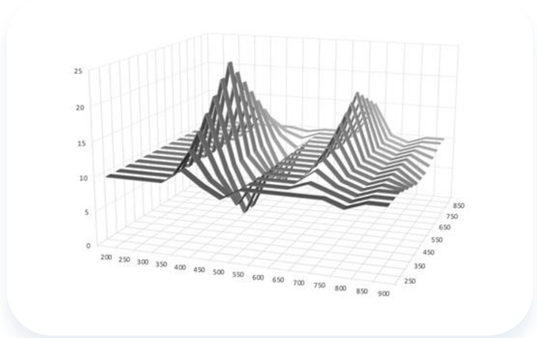
OUR SOLUTION

We’ve developed a multi-modal hardware platform combining biophotonics and AI

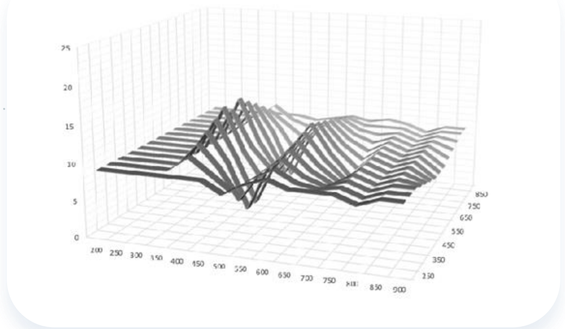


Spore.Bio’s technology captures two layers of information at one

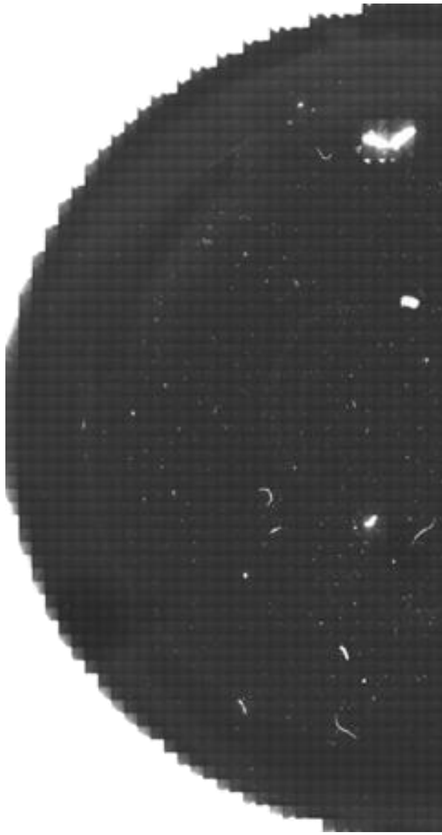
Every microorganism has its **own** spectral signature



By combining **biophotonics** and **deep learning models**, we quantify on-the-spot bacterial presence

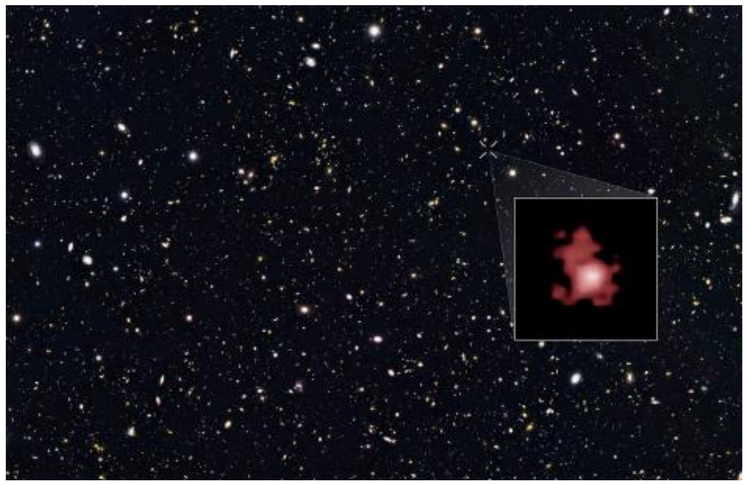


No culture, no enrichment - just a simple workflow for a **reactive** response



We’re building the world’s largest spectral library of microorganisms

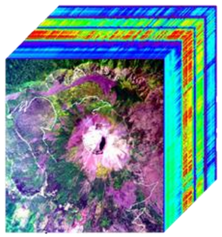
Training our AI model in real-world complexity



+8k

SAMPLES TESTED

Massive and continuous data generation to train robust AI models.



+200

BANKING STRAINS

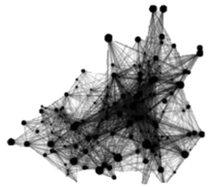
Strain-by-strain validation in partnership with the world-renowned Institut Pasteur

INSTITUT PASTEUR

+10

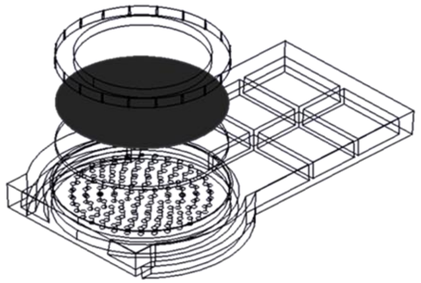
INDUSTRIAL PARTNERS

Real-life factory samples integrated directly into our spectral library



OUR SOLUTION

We have built a full end-to-end solution for rapid microbial detection



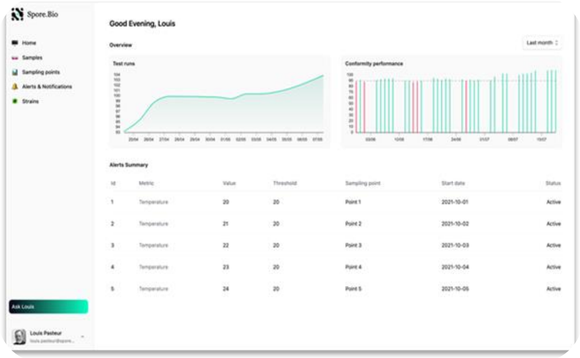
Pre-treatment

A ready-to-detect device, directly compatible with our system



Hardware

The first ever microbiology biophotonic device



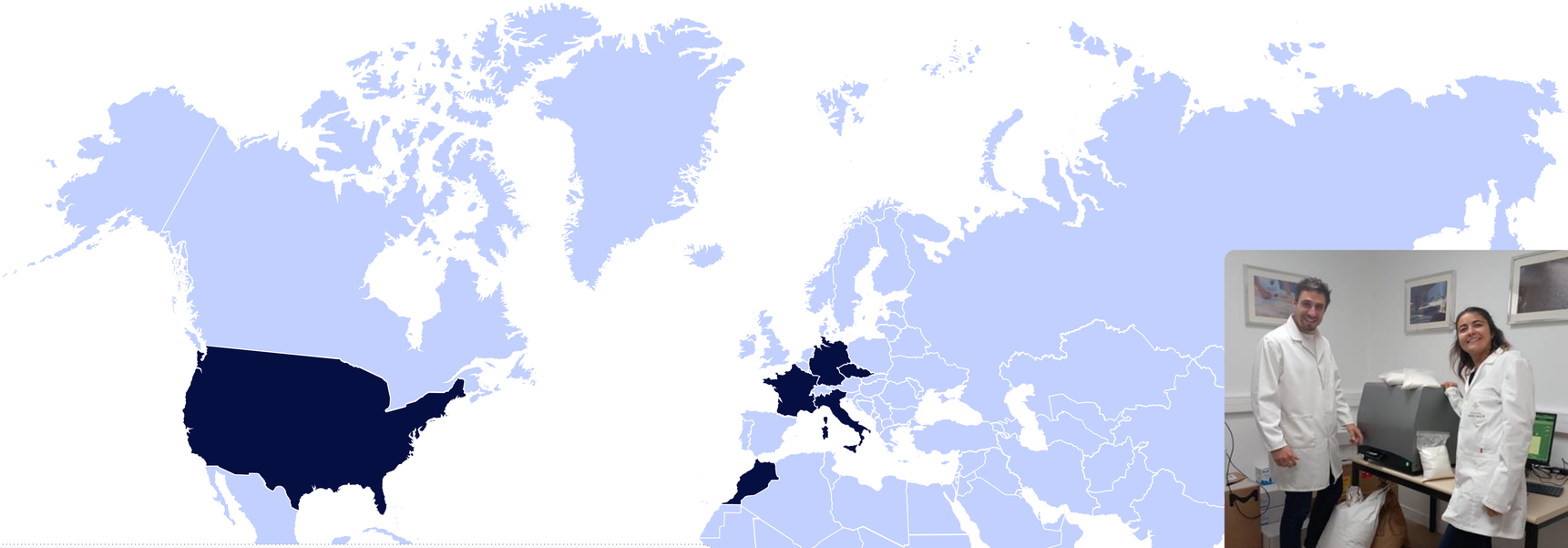
Dashboard

A test alone means nothing.

A real-time factory sampling visualisation for better transparency, traceability, and reactiveness

We’re already on the shop floor in multiple continents

More than 11 customers from top Fortune 500 companies in **F&B, Pharma,** and **Cosmetics** around the world







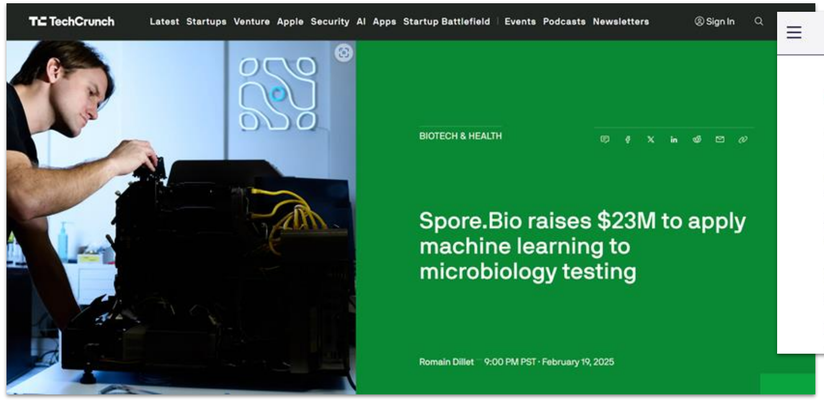
OUR FUNDRAISING

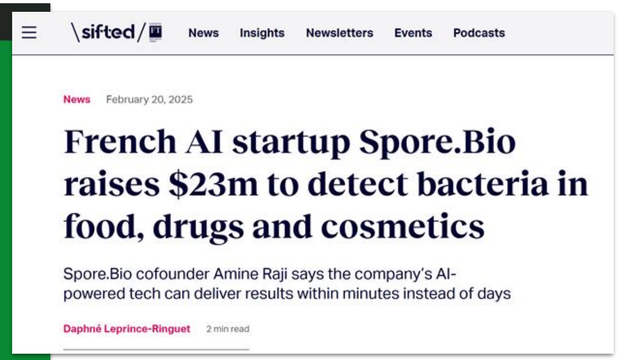
We’ve raised $40M+ in two years to fuel our ambition

$8.5M *pre-seed in December 2023:*



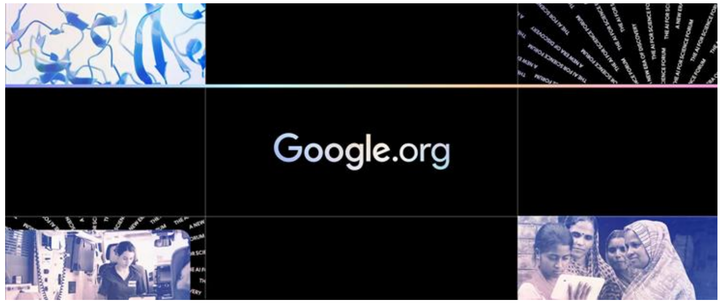
$23M *Series A in December 2024:*



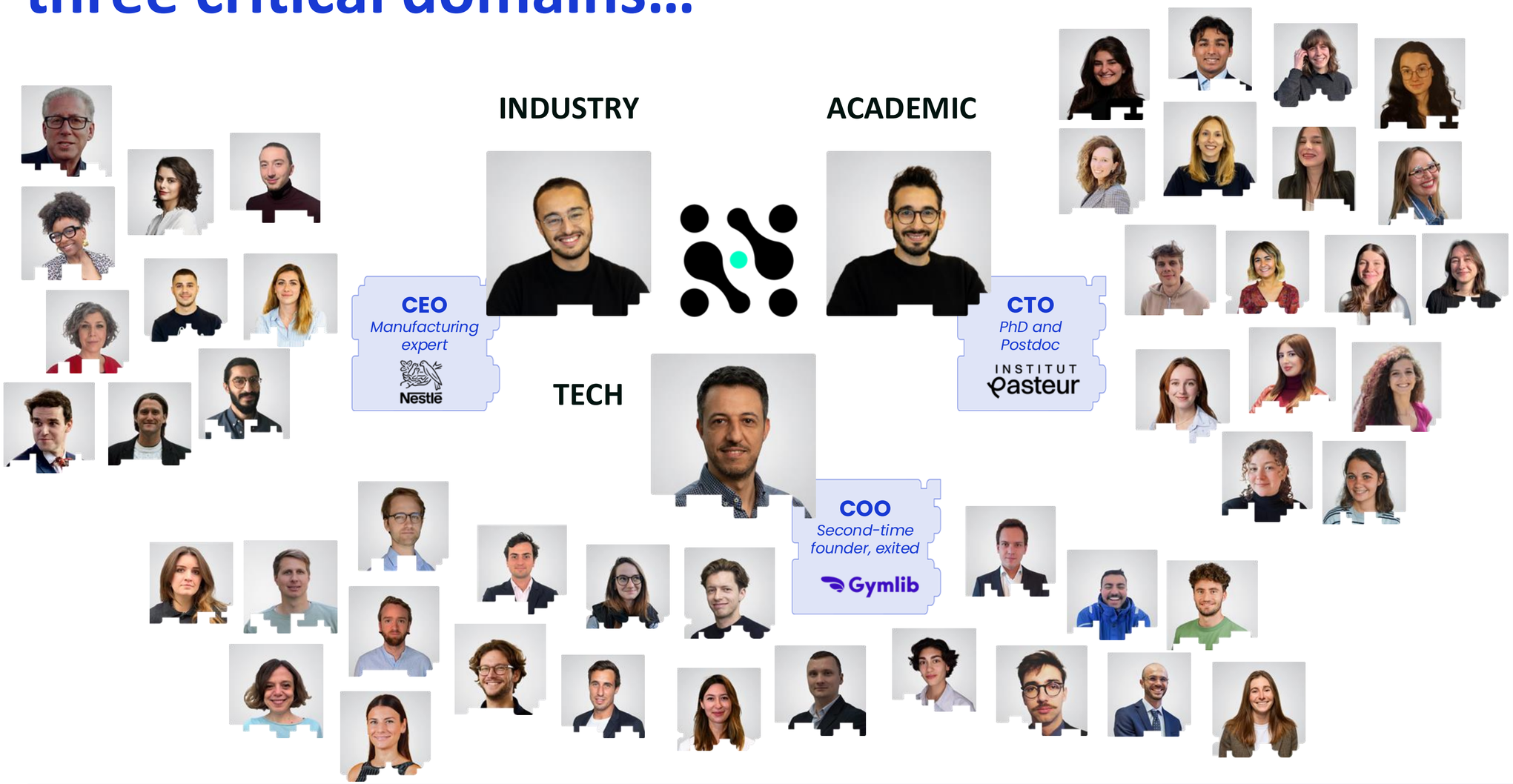




Google AI for Science fund*: January 2026:*



We've assembled a team that bridges the gap across three critical domains…



SCIENCES SORBONNE UNIVERSITÉ · OWKIN · BIO-RAD · Coca-Cola · ETH zürich · norma · GOURMEY · IMPERIAL · BOSTON UNIVERSITY · Capgemini · MONK · GoPro · Rakuten · ORACLE · data iku · WITHINGS · HOLOGIC · Laïta

…and partnered with prestigious institutions

Academics

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INSTITUT PASTEUR
ONERA THE FRENCH AEROSPACE LAB
ESPCI PARIS EDUCATION SCIENCE INNOVATION
SORBONNE UNIVERSITÉ
INSTITUT PIERRE-GILLES DE GENNES Pour la microfluidique | PSL

Ecosystem Partners

PARIS SANTÉ COCHIN
STATION F
Agoranov
PC'UP L'INCUBATEUR DEEPTECH DE L'ESPCI PARIS
bpifrance
Paris Biotech Santé

Investors

LocalGlobe
F
FAMILLE PARTICIPATIONS
NOLABEL VENTURES
Singular.
PLUGANDPLAY
ÉTABLISSEMENTS Peugeot Frères
DeepMind
WITHINGS
SEQUOIA
WORLDCOIN
NHS
SEQUOIA
coop

LET'S BUILD THE FUTURE OF MICROBIOLOGY



Camille Gollety
camille.gollety@spore.bio



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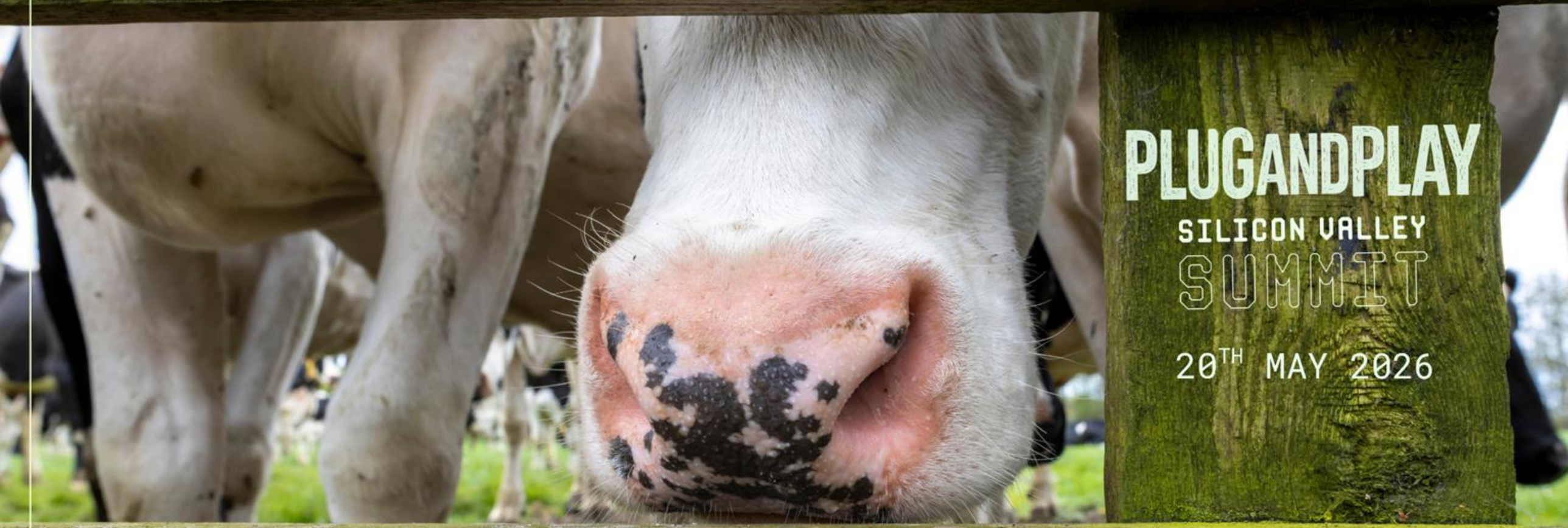
Next generation ruminant nutrition solutions for boosting profitability and sustainability



PLUGANDPLAY

SILICON VALLEY

SUMMIT

20TH MAY 2026

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/company/triplebio

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01

opportunity

Cattle farmers could more than double their profit margins if their herds could better utilise dietery energy currently used to make methane



© Triple Bio 2026

Image source: Eddie Jim / Fairfax Syndication

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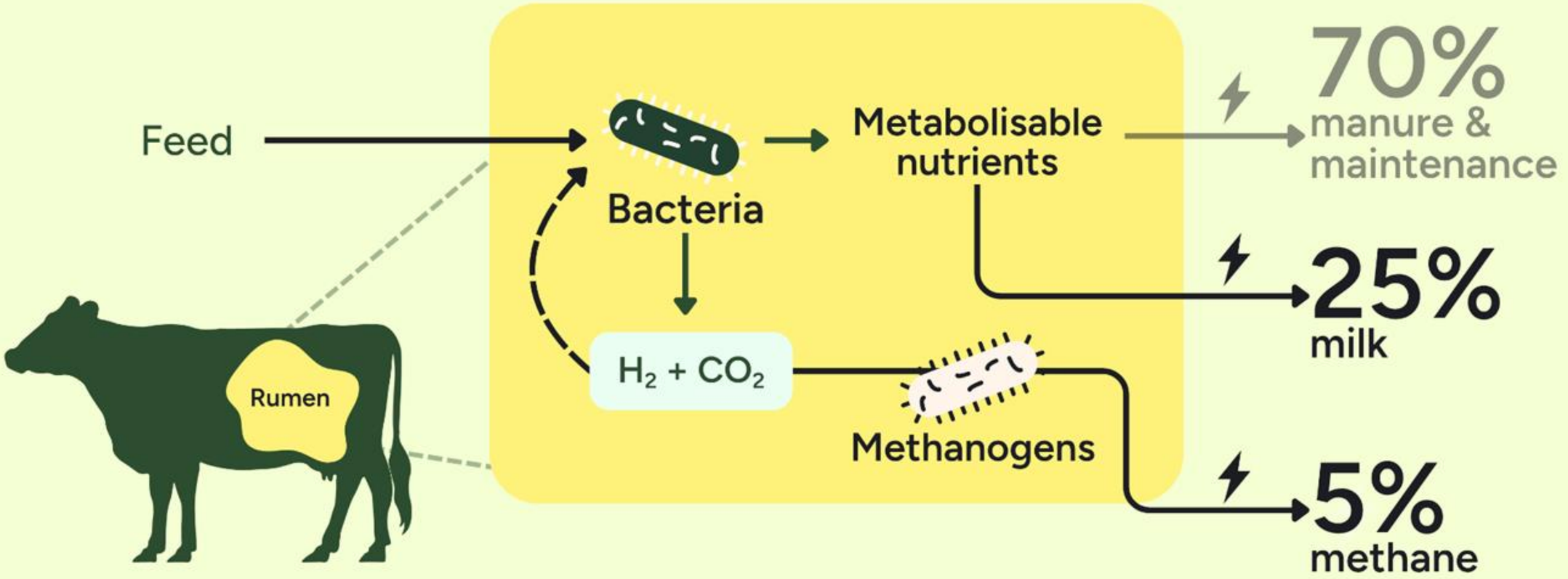

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01
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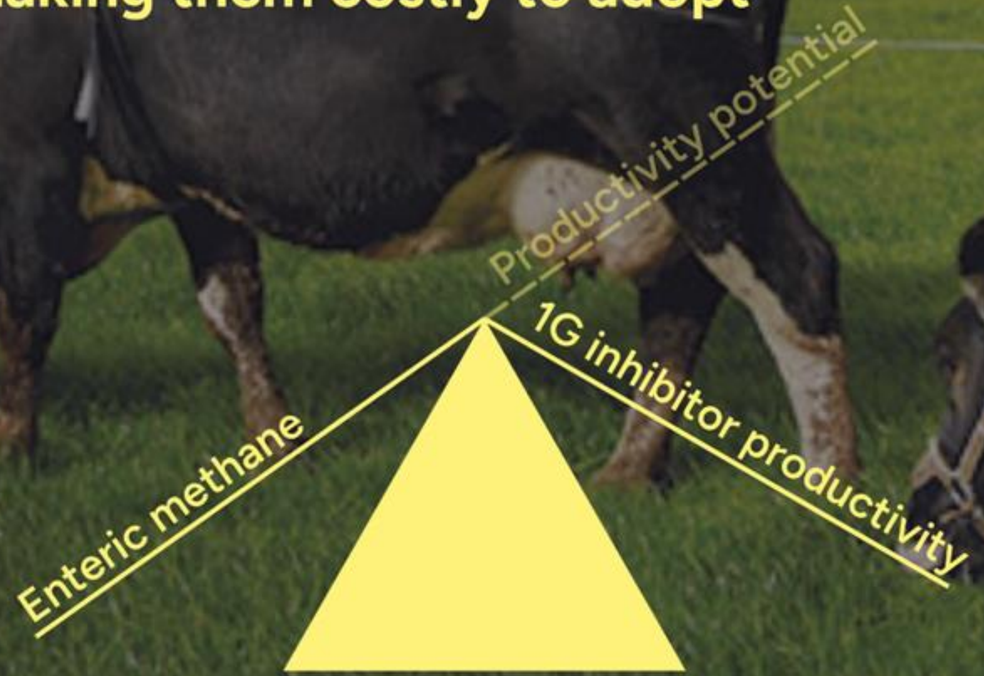
Cattle farmers could more than double their profit margins if we could better utilise dietery energy currently used to make methane

02
problem

Current approaches to reduce methane don't realise the potential to drive productivity, making them costly to adopt



01 Products must be stable enough to withstand rumen conditions for broad applicability

ADDRESS ALL FARMING SYSTEMS

02 Additional revenue must offset methane inhibition costs

STRENGTHEN INCOME OVER FEED COSTS

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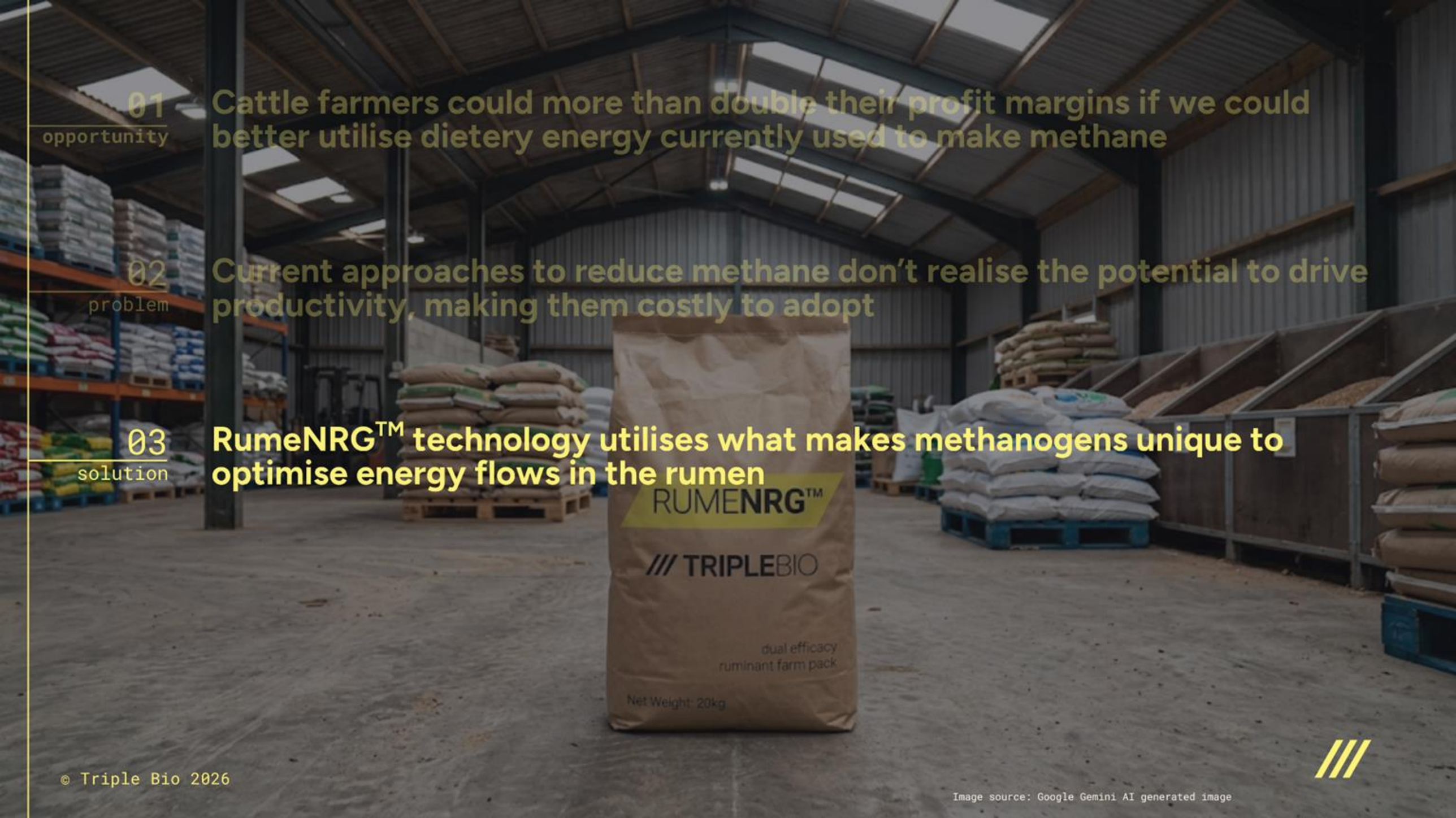
Image source: Eddie Jim / Fairfax Syndication



01 opportunity

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Current approaches to reduce methane don't realise the potential to drive productivity, making them costly to adopt

03 solution

RumeNRG™ technology utilises what makes methanogens unique to optimise energy flows in the rumen

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Image source: Google Gemini AI generated image

01 opportunity

Cattle farmers could more than double their profit margins if we could better utilise dietery energy currently used to make methane

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03 solution

RumeNRG™ technology u kes methanogens unique to optimise energy flows in



Reliably reducing enteric methane

>50%[1]

SMALLER CARBON FOOTPRINT*

Boosting yields & profitability for farmers

>20%[1]

INCTREASE IN PROFIT MARGINS

Suitable for all farming systems

>75%

LARGER ADDRESSABLE MARKET

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[1] Based on extrapolation of *in vitro* rumen simulation data

Image source: Google Gemini AI generated image



01 the good

Cattle farmers could more than double their profit margins if we could better utilise dietery energy currently used to make methane

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Current approaches to reduce methane don't realise the potential to drive productivity, making them costly to adopt

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RumeNRG™ technology utilises what makes methanogens unique to optimise energy flows in the rumen

04 why now?

We accepted some ugly truths about the cattle digestive system, took inspiration from nature & leveraged recent technical advances

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Image source: FUTURE KIID / Pexels

Overlooked scientific realities

1 H Hydrogen 1.008

01 Methanogens play an essential role the rumen, they're not pathogens

MAINTAIN LOW RUMEN HYDROGEN LEVELS

Recent technical breakthroughs



02 mRNA vaccines are stabilised with advanced lipid technology based on cell membranes

ADDRESS COMPETITIVE ADVANTAGE

Inspired by nature



02 Methanogens use their unique cell membranes to compete with fast growing bacteria

ADDRESS COMPETITIVE ADVANTAGE

04 why now?

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05
team

Navigating the biological and commercial realities of rumenant nutrition requires multidisciplinary expertise, strong networks and determination



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TOM STEVENS
CCO

>15 years at world's biggest dairy trader, including as Managing Director for APAC

hoogwegt

PETER ROWE
CEO

Serial biotech entrepreneur

Innovators Under 35

Forbes 30 under 30

Deep Branch

The University of Nottingham

TRACY NEVITT
CSO

Drug discovery specialist that solves complex biology

Duke University

mariposa therapeutics

BART TAS
CTO

Animal scientist & ruminant nutritionist

for Farmers

Wageningen University & Research

Advisory board



VALERIE SCHUSTER
Animal nutrition new product innovation

ab agri

BCG



JULIAN EASTOE
Professor Emeritus Materials Science

University of Bristol



DAVID WILLIAMS
Seasoned dairy executive

herd

Arla

BEN BUCKLE
Regulatory specialist

Elanco

JOE McFADDEN
Assoc. Prof. Dairy Cattle Biology

Cornell University

6 FTE | 4 PhDs | UK R&D | NL HQ



05
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Navigating the biological and commercial realities of rumenant nutrition requires multidisciplinary expertise, strong networks and determination

06
gt(m)

We’re developing product applications and distribution partnerships to address a $100 bn market opportunity, starting with intensive dairy

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We're developing product applications and distribution partnerships to address a $100 bn market opportunity, starting with intensive dairy



Toll manufacture

Low CapEx &
strong margins

TRIPLEBIO





Sales & distribution partners

Feed (additives)
& animal health

e.g. nutreco · dsm-firmenich · Elanco · BASF We create chemistry · Alltech · Cargill



Dairy & beef farms

Performance-
driven markets

EMEA · North America · APAC · LatAm

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gt(m)

We're developing product applications and distribution partnerships to address a $100 bn market opportunity, starting with intensive dairy

07
data

Strong *in vitro* results show separate formulations can drive productivity, and reduce methane production, and we're working towards dual efficacy

The University of Nottingham

In vitro studies using rumen fluid collected from The University of Nottingham's Dairy Research Centre

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Mechanistic modelling suggests a 5-10% increase in milk yields if results are observed *in vivo*

RumeNRG-Mx1 boosts VFA production

+28%



07
data

Strong *in vitro* results show separate formulations can drive productivity, and reduce methane production, and we're working towards dual efficacy

Enables dramatically lower costs & more application flexibility

RumeNRG-PL enhances 1G methane inhibitor potency

500X



The University of Nottingham

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05 team

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08 roadmap

This year we plan to conduct our first studies in dairy cows, begin engineering for manufacturing scale-up and secure additional funding

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Image source: Igor Passchier / Pexels

01.



Formulation optimisation & scale-up

Q3 2026

02.



Animal studies & regulatory

Q3 2026

03.



Commercial partnerships

Q3 2026

Co-development,conditional offtake & consortium agreemeents

04.



Investment & grant funded projects

Q4 2026

Advance on 2027 Seed round under consideration (€1-2M CLN)

08
roadmap

This year we plan to conduct our first studies in dairy cows, begin engineering for manufacturing scale-up and secure additional funding

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Get in touch to learn more about our plans to deliver triple bottom line impact



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Sv summit

STARTUP PRESENTATION

PITTER PETTER

PITTER PETTER

Unlocking animal DNA to deliver science-backed value and insights

#PNPTCSiliconValley

Join us at pnptc.com

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Unlock DNA
Deliver Premium Value

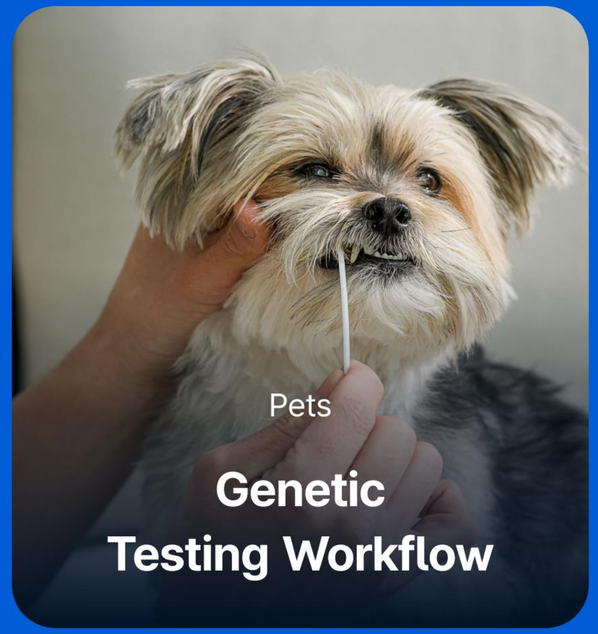
Pitter Petter Inc. - CSO Sam Park

PITTER
PETTER

PITTER PETTER

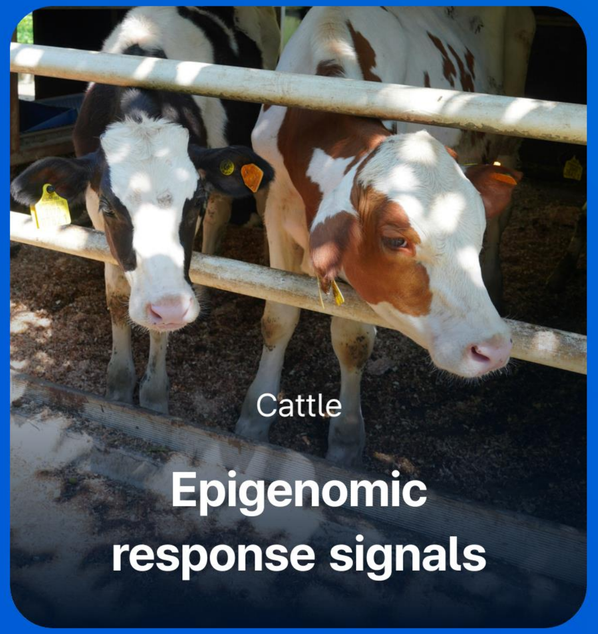
The next layer of livestock health

From pet genetics to cattle response testing.



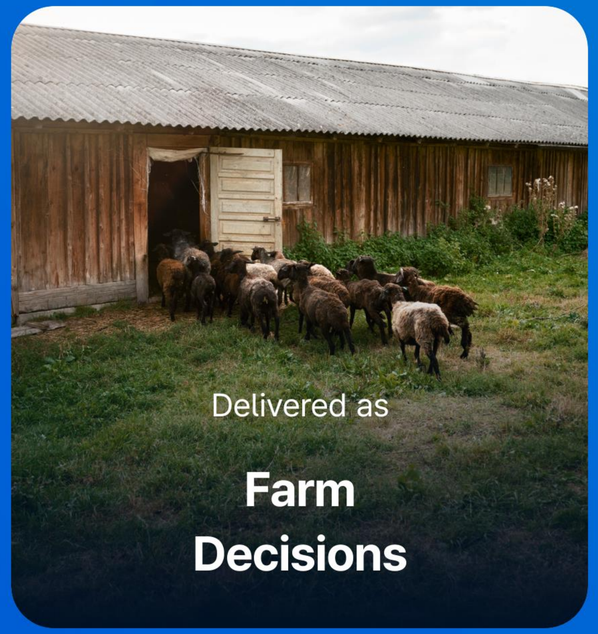
Pets

Genetic Testing Workflow



Cattle

Epigenomic response signals



Delivered as

Farm Decisions

Positioning

Platform expansion, not just species expansion.

PITTER PETTER

Loss starts before records

Feed, heat, udder health, fertility: signals arrive late.

COST DRIVER

Feed

Efficiency Pressure

Heat

Stress Response

Udder

Immune Stress

Fertility

Missed Cycles

Gap

The earlier biological signal is missing.

PITTER PETTER

Potential is not response

Genomics, records, and sensors do not show current biology.

Genomics	= Potential
Records	= History
Sensors	= Observation

Missing Layer

Response

The animal's biology now.

Positioning

Not replacing genomic testing. Adding a response layer.

PITTER PETTER

Epigenomics = Response

Methylation signals turn stress biology into farm priorities.

Genetic
Potential

Epigenomics
Response

Targeted Methylation Markers → **Response Scores** → **Farm Actions**

Trust Note

Pilot-ready signals, not diagnostic claims.

PITTER PETTER

30 Markers now 60 later

Essential for management. Premium for herd value.

Essential Plan

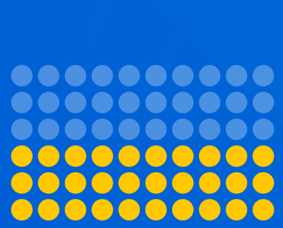
30 **Farm management markers**

- **Feed**
- **Heat**
- **Udder / Metabolic**

Premium Plan

60 **Expanded herd-value markers** = Essential + 30

- **Fertility**
- **Longevity**
- **Meat / Breeding**



Validation

Targeted MassARRAY panel, validated against farm records.

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Priorities, not raw data

The report tells teams where to act first.

Example Output

Cow 1287 Response Report

Heat stress response	**HIGH**
Udder health / immunity	**MEDIUM**
Breeding follow-up	**LOW**

Farm Loop

Score ⟶ **Prioritize** ⟶ **Track**

Decision support for farms and partners

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Evidence before claims

Published signals start the process

1

Literature candidates



2

Targeted validation



3

Farm outcomes



4

Commercial score



Discipline

Pilot first.
Claims later.

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Ask: pilot partners

Samples, matched records, and 6-12 month outcomes.

After partnership flow →

NEED 1

Cattle samples

NEED 2

Matched farm records

NEED 3

6-12 month outcomes

PARTNER CATEGORIES

Dairy Beef Veterinary Feed Animal health Breeding

Goal

Validate response signals into farm decisions.

PLUG AND PLAY

Thank you

Pitter Petter Inc. - CSO Sam Park

PITTER PETTER

PITTER PETTER

60 marker candidate atlas

A compact Q&A appendix:
candidate genes grouped by product tier and biological use case.

Panel Logic

30+30

Essential 30 for management pilots.
Premium 30 for herd-value expansion.

Evidence Discipline

L4 Phenotype-linked cattle validation

L3 Cattle epigenomic association

L2 Trait biology / multi-omics candidate

L1 Biological plausibility; pilot needed

Near-term Evidence

Mastitis / immunity

Milk somatic-cell methylation studies support field validation.

Pilot Learning

Feed & heat response

Candidate CpG/DMR regions need matched farm outcomes.

Premium Validation

Fertility / herd value

Use as advanced validation candidates, not claims.

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Essential 30: Management response markers

Designed for farm-facing pilots around feed cost, heat pressure, udder health, and metabolic stress.

Use

Essential markers should be validated against intake, milk yield, SCC, THI, health events, and sample type.

Feed & Metabolism — 15 genes

Energy Balance

Feed efficiency, glucose use, lipid metabolism, lactation stress.

GPD2	AUTS2	CPT1A
PPARGC1A	SLC2A4	LEP
IGF1	ACACA	PDK4
SCD	DGAT1	SREBF1
FASN	HMGCS2	SLC2A1

Heat, Immunity & Udder Health — 15 genes

Stress Response

Heat-load biology, immune signaling, mastitis monitoring candidates.

HSPA1A	HSPA8	HSP90AA1
HSF1	DDIT3	SOD2
NR3C1	TLR4	IL6R
CXCR1	CD4	TNF
IL1R2	NFKB1	PADI4

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Premium 30: herd-value expansion markers

Positioned for breeding partners and long-term value after stronger field and sample-specific validation.

Claim Discipline

Treat Premium 30 as advanced validation candidates until linked to longitudinal farm outcomes.

Fertility & Offspring — 15 genes

Reproductive Biology

Sperm function, imprinting, embryo competence, offspring potential.

DNMT3A	DNMT 1	TET1
TET2	IGF2	H19
PEG3	ZFP57	PRM1
TNP1	PLCZ1	CATSPER1
SPAG11	CRISP2	POU5F1

Longevity & Meat Quality — 15 genes

Herd value

Productive longevity, resilience, muscle biology, fat deposition.

TERT	ELOVL2	CLOCK
ARNTL	SIRT1	FOXO3
MYOD1	MYOG	MSTN
FABP4	ADIPOQ	LPL
PLIN1	CAPN1	CAST