Grace Breeding
green agro solutions

CORPORATE PRESENTATION

JANUARY/FEBRUARY 2023

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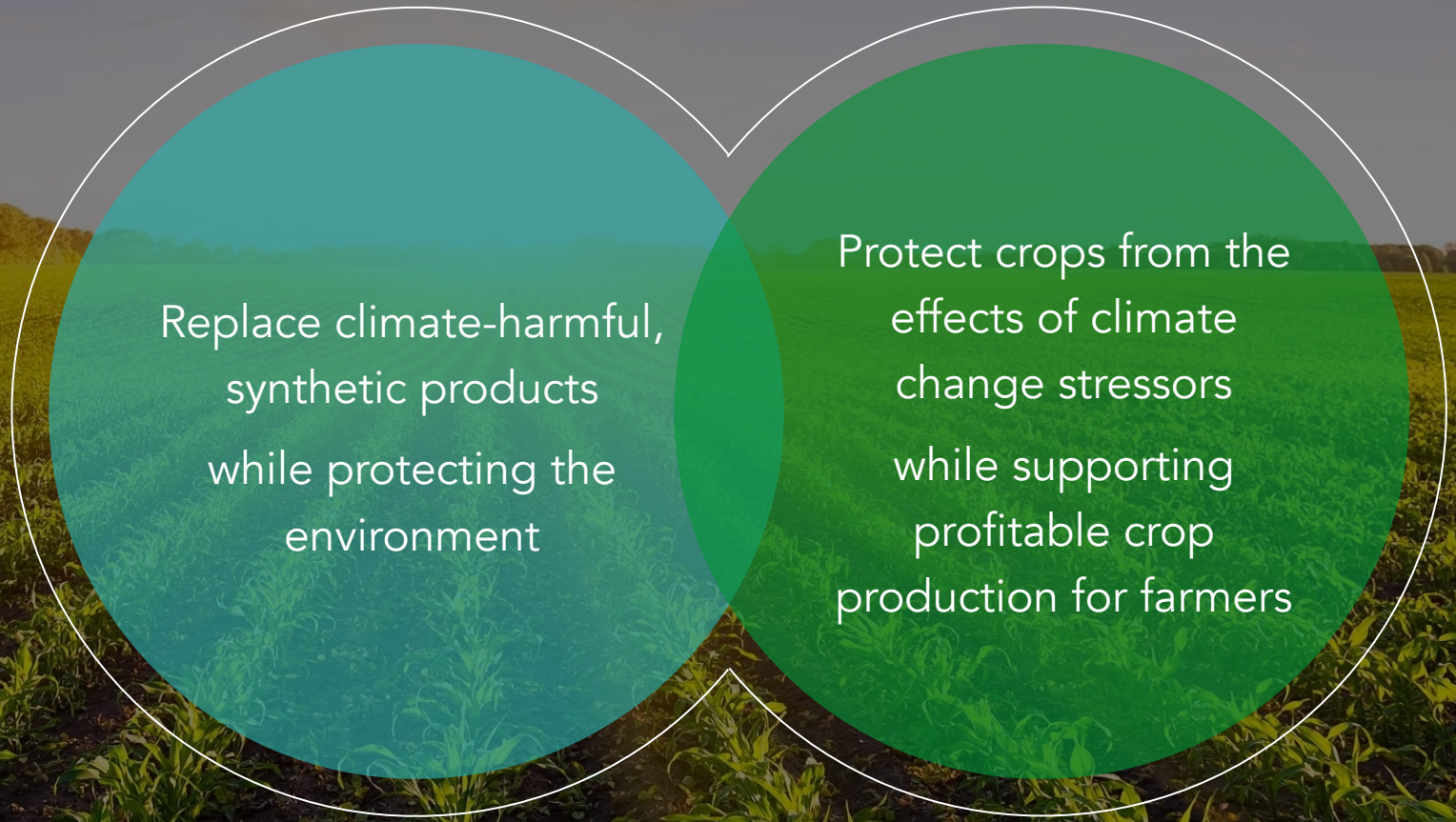
GRACE BREEDING

is an AgClimateTech company providing sustainable solutions for farmers in the $8TN agriculture industry

Our Mission

To create sustainable agricultural solutions for sustainable food supply



Company At-A-Glance

Established	2015
Headquarters	R&D center located in Israel's Rehovot's science park
Employees	12
Experience	Management with years of accumulated experience in the areas of Agtech, fertilizers, plant protection and food.
IPO	Feb 2022 (TASE: GRAC) with a market CAP ~ 100 Million ILS

Upstream and **Downstream** Solutions to Support a Crop's Sustainable Growth Lifecycle

1

Upstream: "NFT" (Bio-Fertilizer)
Replaces climate-harmful, synthetic urea

2

Downstream: "WDS" (Climate Stress Solution)
Improves the crop tolerance to withstand abiotic climate stress

Management

Morris Zelkha, Chairman of the Board of Directors
Founder and former CEO of LycoRed for 24 years
head of new product development Negev Phosphate ICL

Assaf Dotan, CEO
Senior Manager at ADAMA Agricultural Solutions Ltd.; entrepreneur in the ag-innovative world; former CEO of Casterra Ag. Former Ag Investment Advisor for Fortissimo Capital and RDC

Amit Avidov, CTO
Innovative agronomist and senior plant breeder with more than 30 years of experience and over 600 registered plant varieties attributed to his work

Moti Mordehai, CCO
Global Senior Manager at ADAMA Agricultural Solutions Ltd.; GTM expert with launch-to-commercial life cycle management experience & a deep understanding of the relationships between producers, distributors and product end-users

Orly Shuster, CFO
Graduate of the CPA firm EY Israel with 20 years of experience in accounting and economic services for a variety of private, public and governmental entities

Ricki Lahav, COO
Formerly head of budgeting and strategy at Evogene, with over 20 years of experience in sales, travel and administration at high-tech and agricultural companies

Professor Yoram Kapulnik,
Scientific Advisory Board – brings over 40 years experience in Life Science Innovations Industry and is a global expert in nitrogen fixation.

Valdemar Fischer,
Advisory Board – brings decades of experience in agriculture and leadership as Non-Executive Chairman at Syngenta Latin America

Shaul Friedland,
Director, Business Consultant – brings over 40 years of commercial expertise in the agriculture industry. ADAMA Agricultural Solutions Ltd. and ADAMA Americas

Investment Thesis

Leading programs are two novel, patent-pending, biological environmental stress protection and growth enhancement technologies:

NFT (Bio-Fertilizer) = proprietary non-disruptive biofertilizer derived from natural bacteria and biological activators

WDS (Stress Tolerance Enhancer)= proprietary bio-stimulant that improves the crop tolerance to withstand abiotic climate stress

- **Large and growing** addressable end-markets for each product line
- Providing solutions to protect crops from the **ongoing effects of climate change**
- **Powerful unit economics and economies of scale**
- **Streamlined local production processes and distribution channel logistics**
- **Commercial path supported** through strategic collaborations and manufacturing and distribution advantages
- **Simplified regulatory path**
- **Environmentally friendly, sustainable, chemical-free**
- **Abundantly available** natural ingredients enable ease of raw material procurement
- **Strong IP protection**
- **Leading industry partnerships** and industry relationships
- **Strong management team** with many decades of relevant Agtech and food supply experience

The Advantages of Our Approach

GRACE BREEDING'S GREEN AGRO SOLUTIONS

- Climate stress resilience enhancement
- Biological source
- Nitrogenous technology
- Yield and quality
- Profitability
- Tolerance
- Provides ESG benefits to farmer

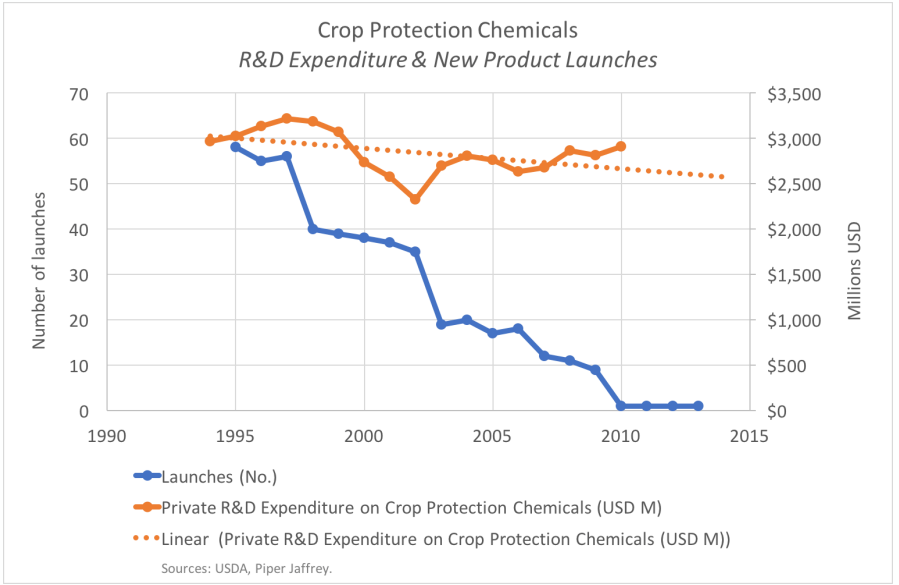
OTHER UNSUSTAINABLE COMPANIES

(examples of producers of legacy synthetic chemicals)

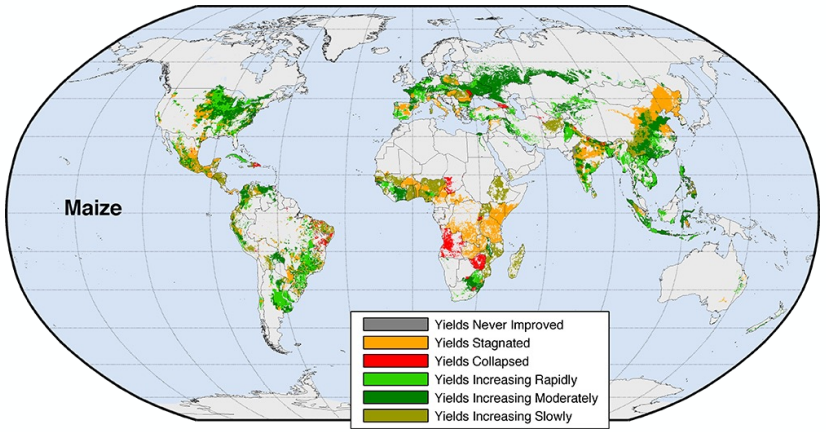
- Environmental pollution
- Environmental residue
- Resistance formed by crops
- Air pollution
- Water source contamination
- Higher priced

Market potential

- The global fertilizer market is estimated at $171 Billion
- Biofertilizers TAM (urea-nitrogen only) – US$ 45 Billion
- Over the last 20 years the investment of the conventional crop protection market in **R&D expenditure has shifted**
- **Conventional agrochemicals** projected at 2.9% CAGR
- Global biofertilizer market to witness a CAGR of 10.9%
- Bio-stimulants market is booming: 11.9% CAGR forecast for 2023-2028



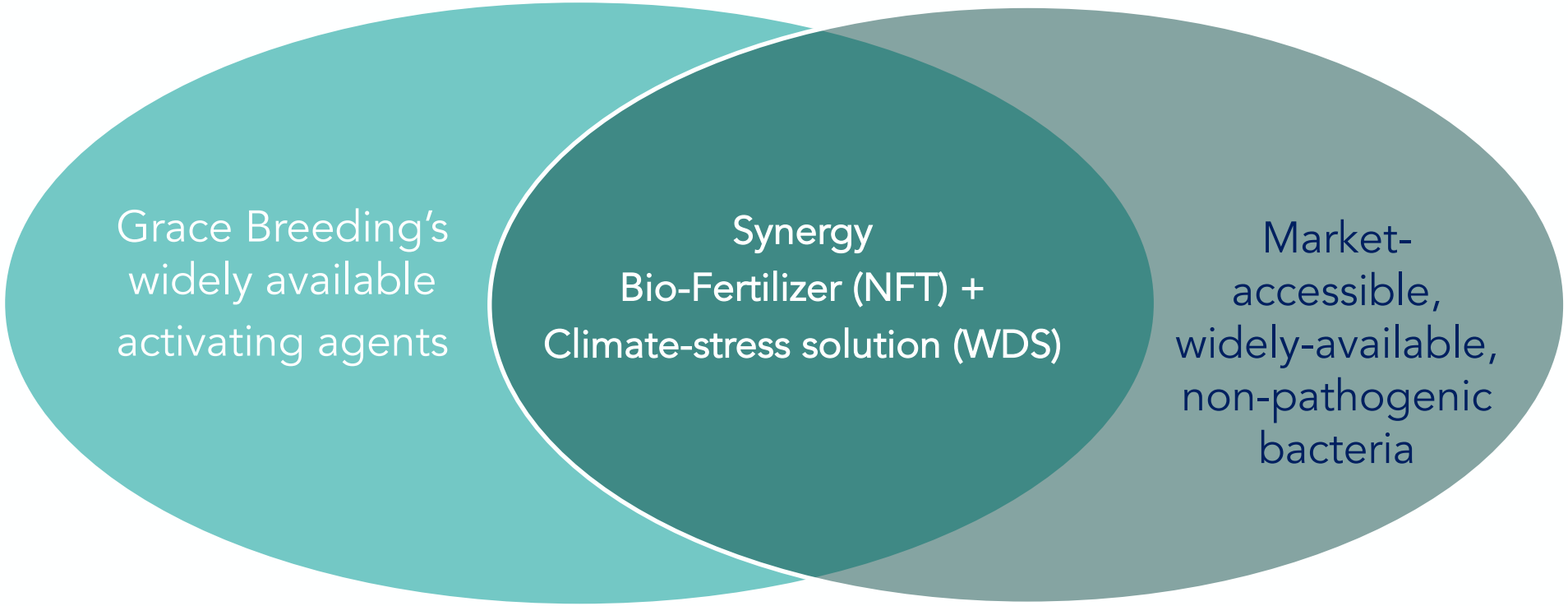
Target crop: Maize/Corn
Cultivated area size: 220,000,000 Ha.
Market value: US$ 37 Billion



Graph Source: Pest Manag Sci. 2020 Oct; 76(10): 3348–3356.
https://agfundernews.com/crop-protection-biologicals-vs-chemicals, Crop Protection: Biologicals vs Chemicals?, July 20, 2017, Spencer Maughan and Kieran Furlong

Our Technology: How We Are Differentiated Within the AgTech Industry

Disrupting a multi-billion-dollar industry* with solutions to fertilize sustainably and enable crop health and vigor



Patent-pending for resulting products:

Proprietary solutions that result from years of research evaluating a thousand biological molecules and their combinations with non-pathogenic bacteria

*World Fertilizer Market Nitrogen, No. 42 (418) 21 October 2021

Our Pipeline

Our transformative product lines

Product Candidate	Discovery	Field Trial 1	Field Trial 2	GTM	Commercial*
Proprietary Bio-Fertilizer ("NFT")					
Stress Tolerance Enhancer ("WDS")					
R&D					

NFT = Proprietary bio-fertilizer that is a natural replacement to synthetic fertilizer and serves as a urea replacement; environmentally friendly to air, soil and the aquifer; naturally provides nitrogen to cereals

WDS = Proprietary bio-stimulant that is a plant nutrient enhancement and serves to increase yield and Improve the crop tolerance to withstand abiotic climate stress

*Development consists of field testing 2-3 season cycles per crop

Grace Breeding in the News

THE SCIENCE TIMES

HOME > TECH & INNOVATION

Grace Breeding's Nitrogen Fixation Tech Boosts Grain Yield By 18% During Wheat Cultivation, Field Test Shows

Jess Thomas Sep 21, 2022 09:34 AM EDT

Grace Breeding, a forward-thinking agrotech company developing biological-based products, results of a field test performed during wheat cultivation in Israel showing its unique Nitrogen Technology (NFT) improves grain yield by 18 percent and biomass by 16 percent. The use of farmers to significantly diminish their dependence on synthetic fertilizer, greatly reducing envi damage while still boosting yields.

StartupHub.ai

Posted on November 7, 2022 / 0 / parallax

MEET ASSAF DOTAN, CEO OF THE AGTECH STARTUP GRACE BREEDING

Meet Assaf Dotan, -interview at "StartupHub.ai"

Nasdaq

SUSTAINABILITY

The NFT You've Never Heard About, And How It Can Prevent Climate Change

PUBLISHER Guest Contributors

PUBLISHED DEC 6, 2022 10:00AM EST

CREDIT: NATALLIA / STOCK.ADOBE.COM

By Assaf Dotan, CEO of Grace Breeding

THE SCIENCE TIMES

Grace Breeding's Wide Defense System Formula Improves Industrial Tomato yield 17%, Field Trial Shows

Jessel Renolayan Nov 05, 2022 04:57 PM EDT

Grace Breeding (TASE: GRAC), a forward-thinking agrotech company developing biological-based products, announces the results of a field test that found its proprietary Wide Defense System (WDS) biostimulant formula improves industrial tomato yield by an additional 17 percent. The field trial showed its WDS formula boosts the growth of the tomato root system and improves nutrient absorption from the soil, improving yield and extending the shelf life of agricultural produce.

Published in Authority Magazine

Martita Mestey

Dec 8 · 6 min read · Listen

Life In The World's Breadbasket: Assaf Dotan of Grace Breeding On 5 Things You Need To Create A Successful Career In The Farming and Agriculture Industries

An Interview With Martita Mestey

THE JERUSALEM POST

BUSINESS B INNOVATION

Grace Breeding boosts grain yield by18% while cutting CO2 emissions

Tech Talk: Agrotech company Grace Breeding just announced the results of a field test it conducted for its nitrogen fixation technology (NFT), an organic alternative to harmful synthetic fertilizers.

By ARIEL SHAPIRA **Published:** SEPTEMBER 19, 2022 00:52

green queen

Israel's Grace Breeding Reveals a Breakthrough In Tackling Global Fertilizer Emissions

By Jill Ettinger — Last updated Oct 16, 2022

CLIMATE CHANGE | FOOD & NUTRITION | FUTURE FOODS

Sponsored by the Asper Foundation and Reichman University

nocamels ISRAELI INNOVATION NEWS

TECHNOLOGY SCIENCE ENVIRONMENT CULTURE NEWS BRIEFS

Israeli Formula Increases Tomato Yields, Even During Droughts

By Ariel Grossman, NoCamels October 27, 2022 < 1 minute

li agtech startup helps tomatoes grow, even during times of drought. Photo by Thomas Martinsen on Unsplash

News Briefs

NFT (Proprietary Bio-Fertilizer)

The Problem of Urea

- **Urea is the world's most common nitrogen fertilizer** and is estimated at a market size of **~$45 billion.**
- Making urea is a multi-step endeavor that consumes copious amounts of **energy and emits large amounts of greenhouse gases.**
- Urea **leaches** easily into what serves as the aquifer (water-bearing porous rock or sediment) and **contaminates water reservoirs**. Several EU countries already ban the use of urea.
- Combined reactions from the production and field application of urea **emits more CO2 than any other industrial chemical reaction**.
- Urea is a **costly, high-volume commodity** to ship and requires a **high dose per hectare**

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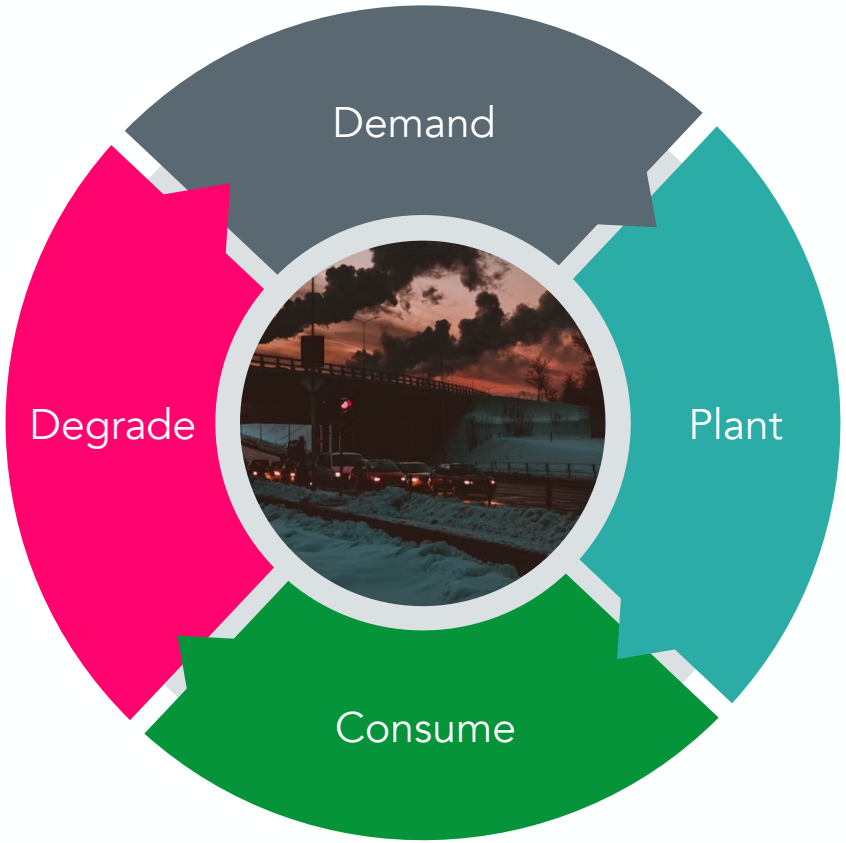
United Nations Climate Change Global Climate Action Summit 2021 . Nitrogenous Fertilizer Market Size | Global Industry Report, 2026. **World Fertilizer Market Nitrogen, No. 42 (418) 21 October 2021

CO_2 Emissions From Urea Production for Nitrogen-Release Fertilizer are Significantly Adding to the Global Warming Crisis Creating a Vicious Cycle

Urea Vicious Cycle



Demand:

The **global fertilizer market** is estimated at **$171 billion**

Plant:

Cereal grains (e.g., wheat, corn, rice, rye, millet, etc.) represent **55% of the world** nitrogen fertilizer market

Consume:

Consumption of cereal grains and pulse derivatives was estimated at **2.6 million tons in 2022**, with **a CAGR 6.2% through 2032**

Degrade:

1MT of urea production in the U.S. = 1.84 MT of gas emissions (CO2); **total CO2 produced through the annual global production of urea = 120 million cars CO2 emissions annually**! *(*yearly greenhouse gas emissions from a typical passenger vehicle in the US equal to 4.6MT of CO2)*

https://www.statista.com/statistics/1063689/global-urea-production-capacity

Persistence Market Research: July12, 2022

https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle

https://www.nature.com/articles/s41598-022-18773-w

NFT: The Solution Benefits

Naturally provides nitrogen to crops in synergy with available bacteria; reduction of 50% in use of urea

Environmentally-friendly to air, soil and the aquifer

In field trials, NFT demonstrated it was as efficient as and competitive with urea, suggesting it may be an ideal potential replacement

Farmer cost savings expected per:

- Reduced volume and dose per Ha. (1:25)
- Reduced application frequency

Low-carbon-footprint-product with ESG benefits

Distributor higher profit. Lower volume equals to less storage footprint and land transportation costs and margins higher than the standard 2-3%

NFT Field Trial Results

2020 and 2021

Wheat trial results 2020 and 2021 (Israel)

- Commercial field applied with urea
  - NFT provided a yield similar to urea
  - **7.5% additional protein content** was observed in grains with NFT


2021 and 2022

Wheat trials results Sept 2022 (Israel)

- NFT boosted grain yield and quality
  - 18% yield increase
  - 16% biomass increase

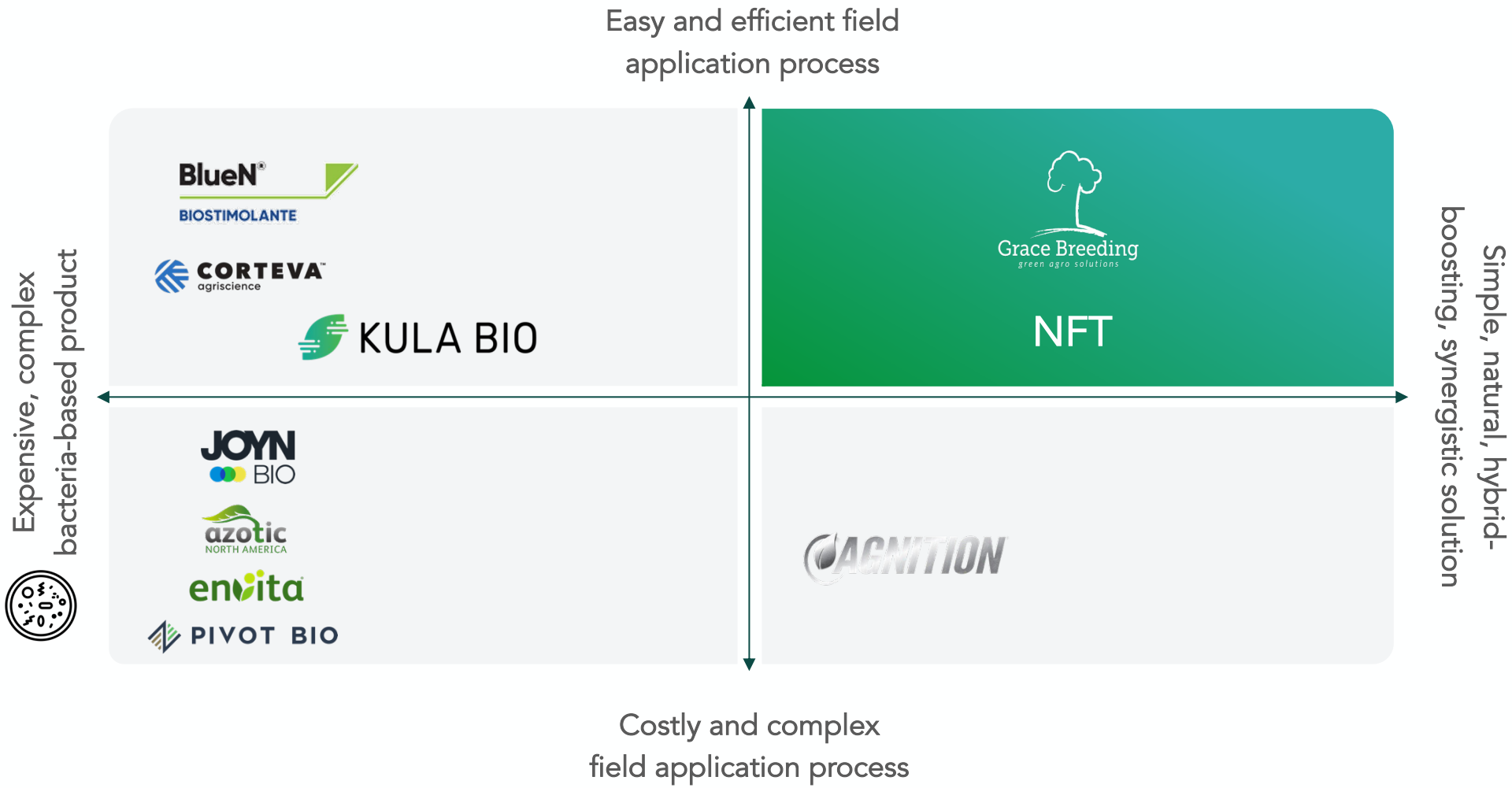
NFT Comparison to Urea in Maize (Corn)

NFT amount applied per Ha. – 20 L

Urea amount applied per Ha. – 500 kg

- ✓ Easy application method in the field.
- ✓ Farmer keeps similar agrotechnical tools and methodologies

Bio-Fertilizer Approaches: Market Landscape



JOYN BIO

Joint Venture with Bayer Crop Science

BlueN BIOSTIMOLANTE

Joint Venture with Corteva

PIVOT BIO

$430M Series D @ $1.7B post-money valuation (July 2021)

azotic NORTH AMERICA envita

Private Investment by Koppert

KULA BIO

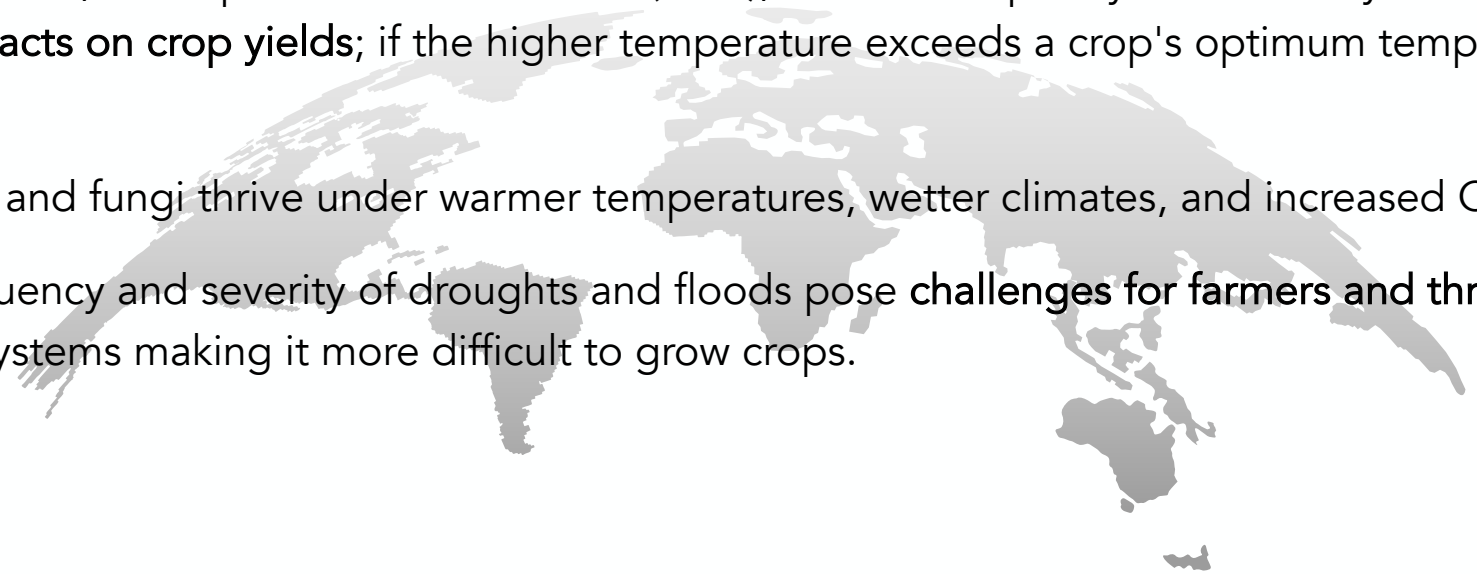
$50M Series A @ $210M post-money (Jan 2022)

- New startups have recently received multi-national investments
- https://blog.pivotbio.com/press-releases/series-d

WDS (Proprietary Stress Tolerance Enhancer)

How Climate Change is Affecting Global Crop Production

Rising levels of atmospheric carbon dioxide reduce the concentrations of protein and essential minerals in most plant species, including wheat, soybeans, and rice. **This direct effect of rising CO2 on the nutritional value of crops represents a potential threat to human health.**



- **Changes in temperature**, atmospheric carbon dioxide (CO2), and the frequency and intensity of extreme weather could have **significant impacts on crop yields**; if the higher temperature exceeds a crop's optimum temperature, **yields will decline**.
- Many weeds, pests, and fungi thrive under warmer temperatures, wetter climates, and increased CO2 levels.
- Changes in the frequency and severity of droughts and floods pose **challenges for farmers and threaten food safety** as well as disrupt ecosystems making it more difficult to grow crops.

*Source: EPA: *Climate Impacts on Agriculture and Food Supply*

WDS: The Solution Benefits

WDS is a **stress tolerance enhancer**; a combination of naturally sourced ingredients with market-available bacteria

Protects against abiotic climate stressors, addressing the supply problem for the farmer and the pricing threat to the consumer

Increases yield and improves plant nutrient uptake and therefore fruit and vegetable quality.

Provides a 20-30% increase in yield!

Widely applicable (legumes, industrial tomatoes, vegetables, grains); focus is on fruits (mangoes and avocado). In field trials, WDS helped farmers boost growth for industrial tomatoes in different plots amid various climate stress conditions

Simple and efficient once-per-season application via the irrigation system that adds an additional economic benefit

[1]Nature Food: https://www.nature.com/articles/s43016-022-00521-y

The Need for Environmental Stress Protection Solutions Has Increased With Episodes of Global Drought

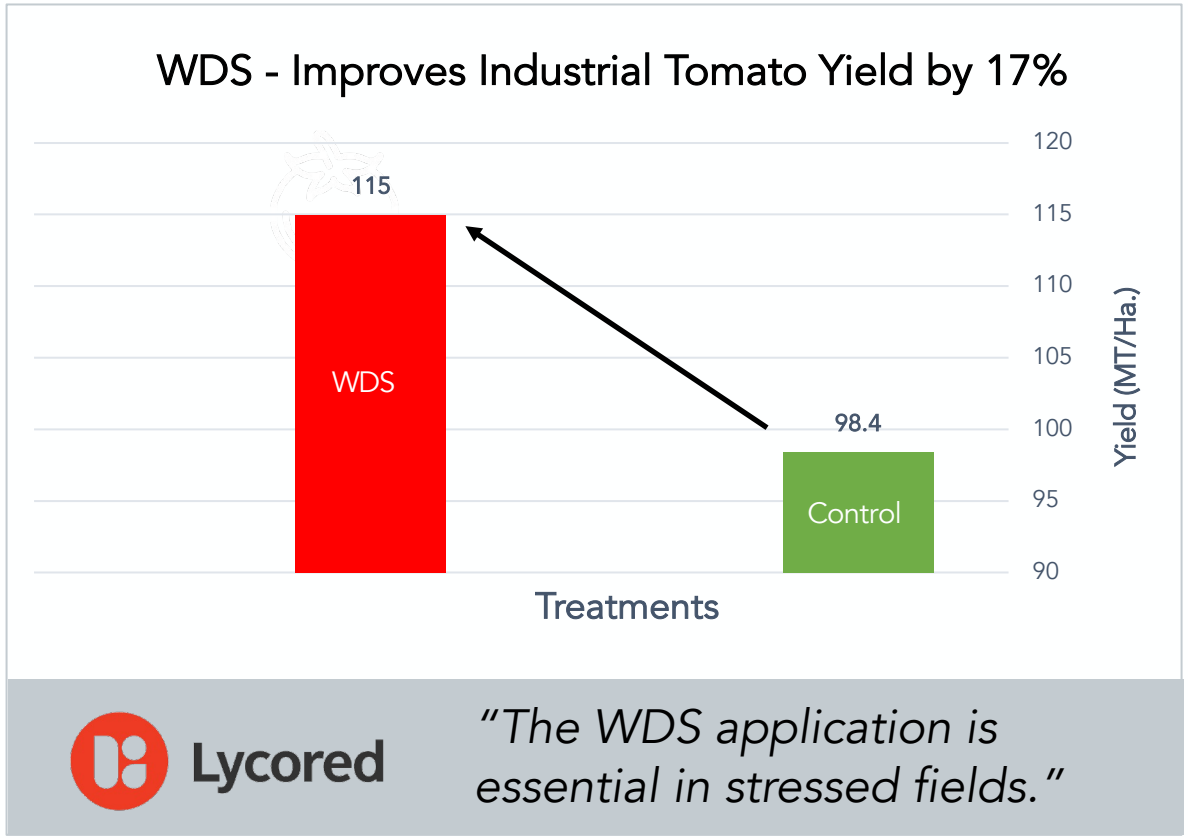
Solution: Provide farmers with a higher yields and mitigate distribution challenges resulting from drought conditions

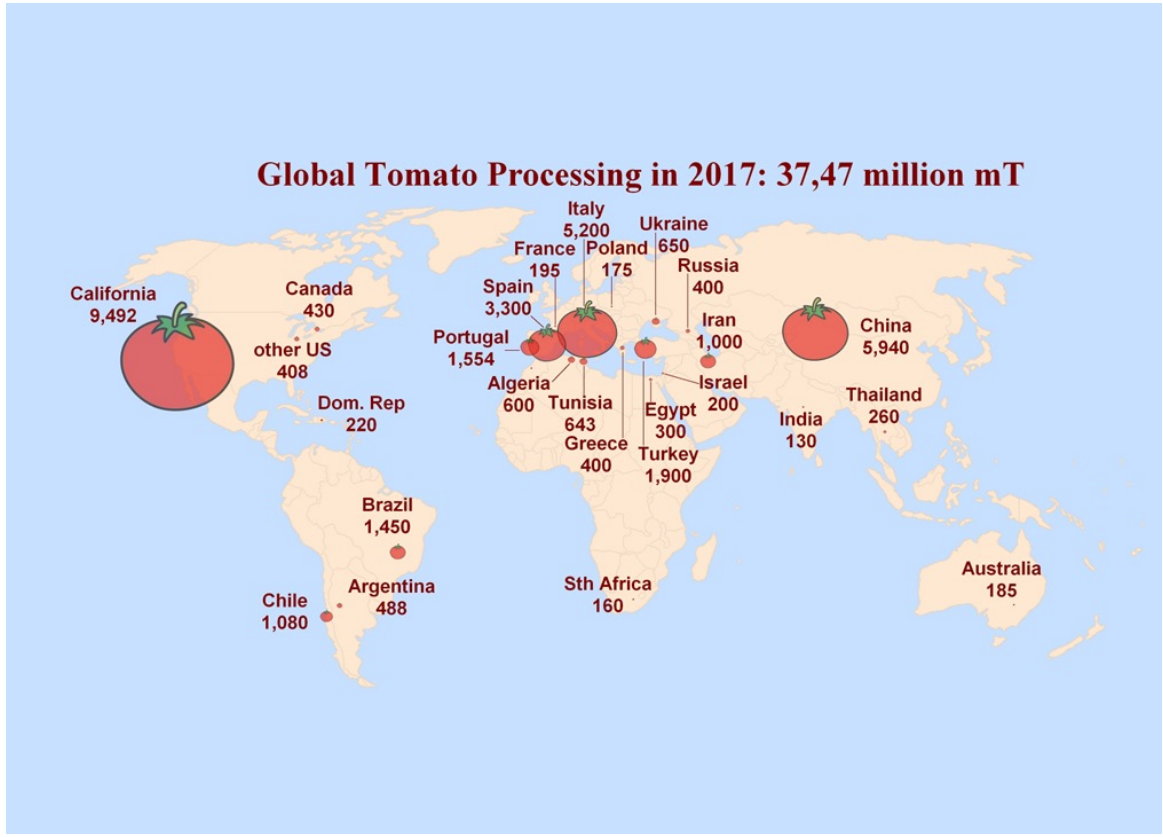
Example: Tomato Supply Crisis

- The global tomato processing market size reached **45.2M tons in 2022**, and, from 2023-2028 is expected to reach 56.5M, exhibiting a growth rate (CAGR) of 3.75%[1]
- In the U.S., **California is home to 90 percent** of domestic tomatoes
- California, Italy, Spain and Portugal **(4 markets only), represents 52% of the global market share**
- In the consumer sector, there is an expected mass **shortage of tomato-based consumer products**, including ketchup and spaghetti sauce as a result of the water shortage from recent and ongoing droughts.
- The shortage presents a **threat of price increases** for the tomato processing sector, with supply expected to decline by 6% by 2050 in key regions[2]

[1]tps://www.imarcgroup.com/tomato-processing-plant https://www.researchandmarkets.com/reports/5530618/tomato-processing-market-global-industry-trends
[2]Nature Food

WDS – Industrial Tomatoes Field Trials 10/26/2022





The field trial (Israel (2022) showed that the formula both boosted the growth of the tomato root system and improved the yield in amid harsh, arid weather conditions.

WDS Trials in Avocados: 2020 – 2022

WDS

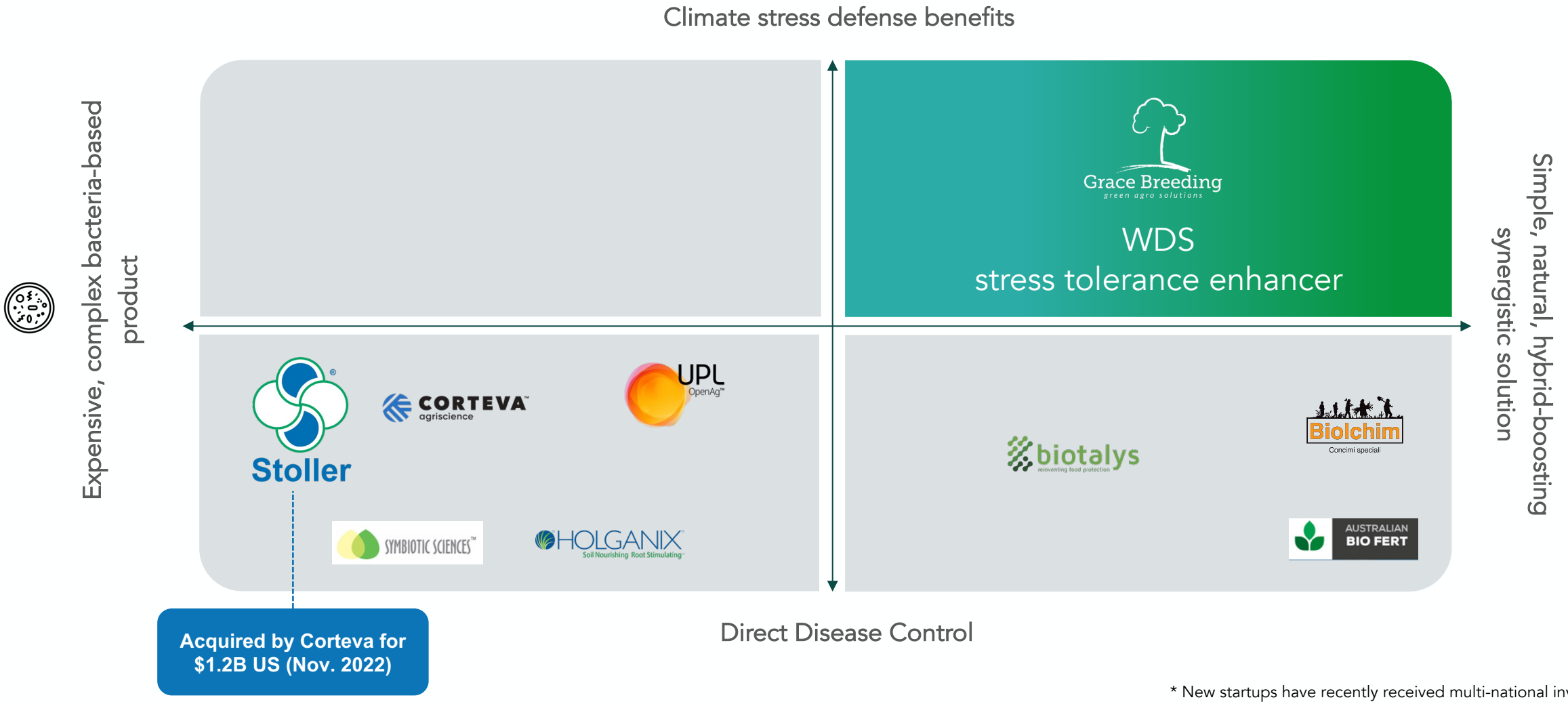
Control

" The WDS application saves me <u>two years</u> of growing and the additional cost of replanting; manpower and new plants."

- quote from farmer

Bio-stimulant Approaches: Market Landscape

WDS provides dual benefit related to plant tolerance and yield



* New startups have recently received multi-national investments

Target Market & Strategic Collaborators

Our Major Partners in Brazil: An Agricultural Market Leader

Universidade Estadual de Londrina

GAIA Agrosolutions

With 42 million Ha. of soybean and 22 million Ha. of maize (corn), **Brazil is one of the largest agricultural markets in the world.**

- Brazil is **the largest agricultural chemical market in the world**, with a turnover of 13 billion USD.
- **Brazil is a major importer of fertilizers**: **95%** of the urea used in corn and 75% of the phosphorus used in corn and soybeans is imported.
- **23%** of Brazil's annual **imported fertilizers** are from Russia.
- Russia is planning to impose an **export tax of 23.5%** on all fertilizers.
- The market of **biological products grew 40%** this last year in Brazil.

Strategic collaboration with the University of Londrina, Brazil (November 2022)

GAIA Agrosolutions

Universidade Estadual de Londrina

We announced a strategic research and development collaboration with the University of Londrina (UEL), based in Paraná State, Brazil. The University is evaluating Grace Breeding's NFT being developed to improve absorption of nutrients from the soil as well as increase the efficiency of nitrogenous feeding. This will allow farmers to significantly reduce their dependence on synthetic fertilizer.

Brazilian Study Results (January 2023)

Universidade Estadual de Londrina

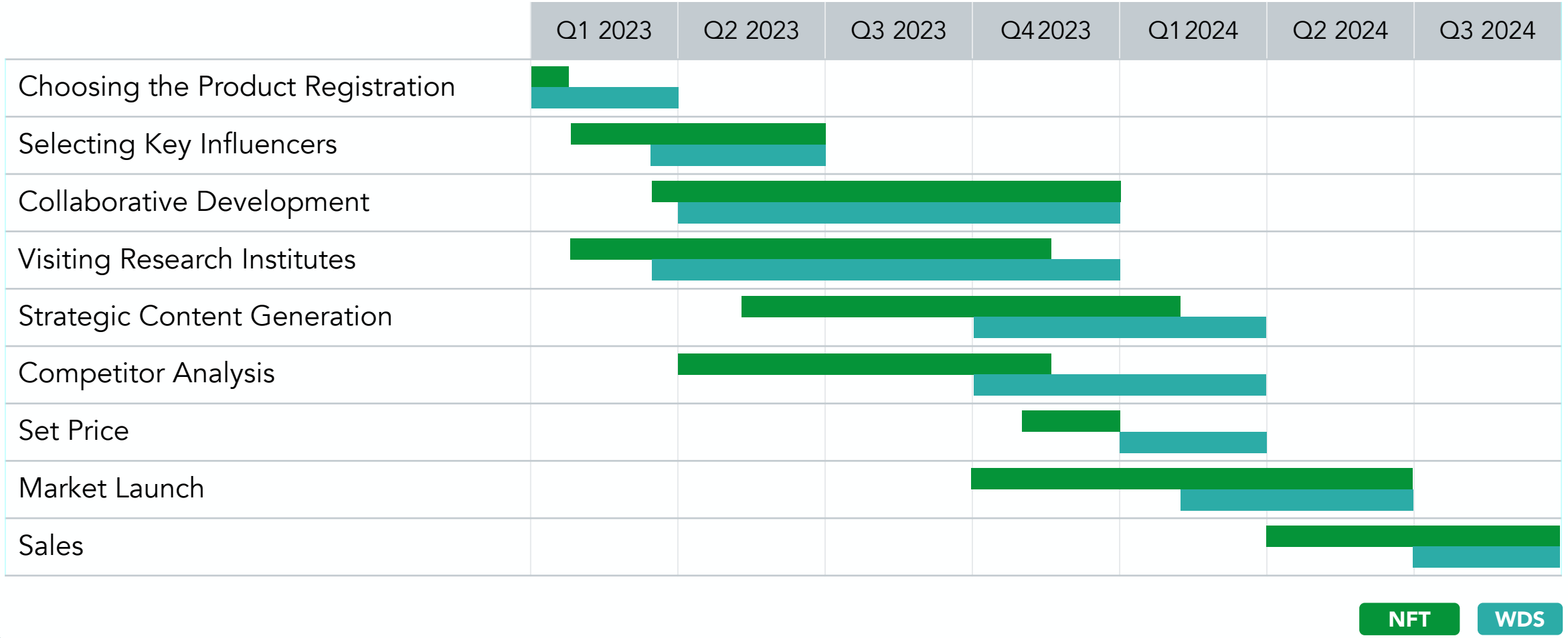
Results from the UEL study showed that the corn seeds treated with NFT had:

- Showed greater **efficiency in the use of nitrogen** as shown through the greater intensity of green in the leaves (indicating an increase in chlorophyll content), **leading to a potential reduction of more than 50% of nitrogen in corn cultivation.**
- **Reduced carbon emissions** (released less carbon into the atmosphere), while enabling a sustainable production system
- Outperforms standard nitrogen fertilizers in almost all parameters

"Grace Breeding's NFT presents properties that stimulate the metabolic process of the plant – physiological, respiratory and secondary-metabolic pathways – promoting greater growth and better development of corn. Based on our early results, we believe that this technology may effect a significant advancement in sustainable agriculture, enabling low carbon emissions, as well as support the economy in the more efficient use of water and nitrogen."

- Professor Juliano Tadeu Vilela de Resende Ph.D. of the Agronomy Department at Universidade Estadual de Londrina

GTM Roadmap (Brazil): NFT and WDS



Note: projected timing is based on the typical timelines for market and product development and registration approvals

B2B Strategy Supports Core Environmental and Sustainability Pillars

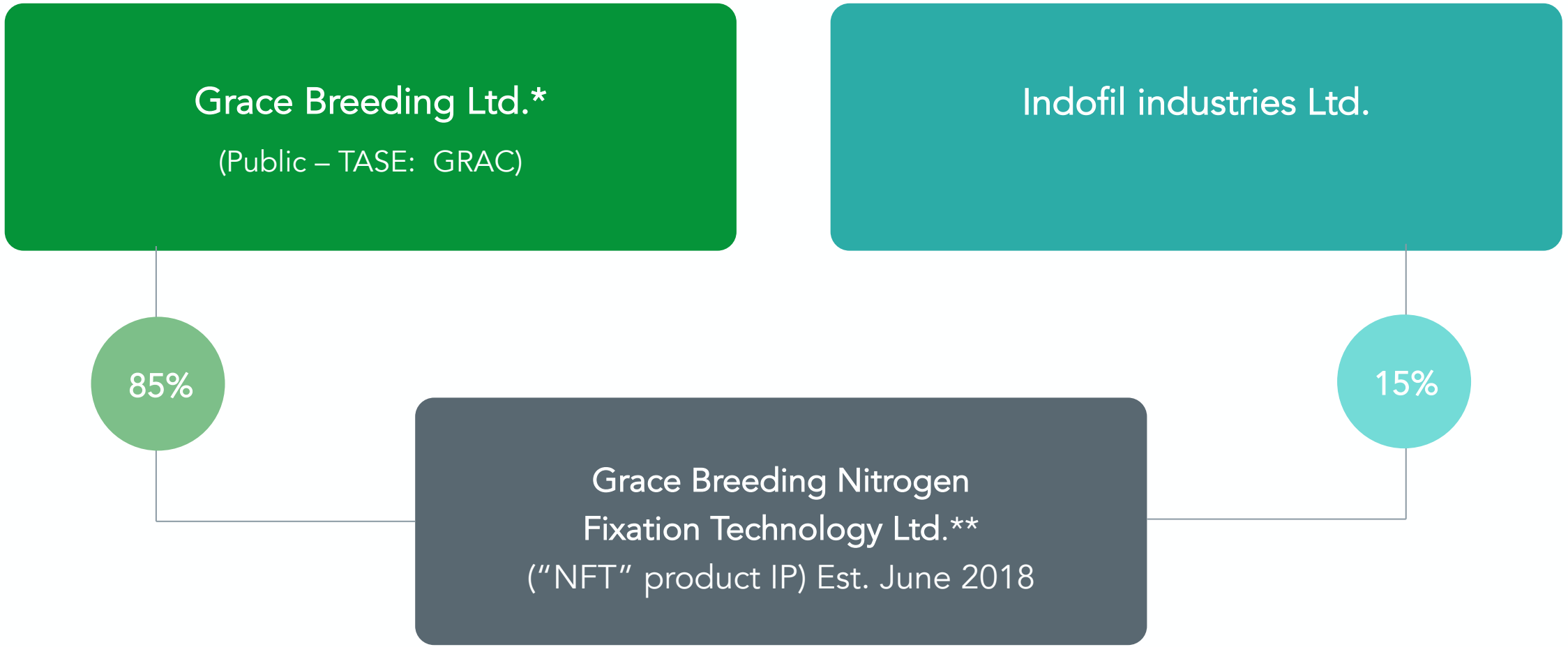
Our B2B business model produces more robust and resilient industrial crops and improves distributor and farmer economics, while importantly, supporting ESG initiatives - responsibly reducing environmental impact with a lower carbon-footprint and lower greenhouse gas (GHG) emissions.

Environmental Pillar of ESG Reporting

Climate Change	Carbon Emissions	Product Carbon Footprint	Packaging Material & Waste	Climate Change Vulnerability
Natural Resources	Water Stress	Biodiversity & Land Use	Raw Material Sourcing	
Pollution & Waste	Toxic Emissions & Waste	Financing Environmental Impact	Electronic Waste	
Environmental Opportunity	CleanTech Opportunity	Green Building Opportunity	Renewable Energy Opportunity	

Grace Breeding's business model directly addresses 8 of 13 core Environmental & Sustainability reporting elements

Corporate Structure



*Grace Breeding Ltd. - (Public – TASE: GRAC), established February 2022- Holds WDS and R&D technology IP (ex. NFT)
**Grace Breeding Nitrogen Fixation Technology Ltd. – Private company, established June 2018 –Holds NFT technology IP

Financials

	As of YE June 30, 2022
Ticker	TASE: GRAC
Shares outstanding	3,544,489
Net operating cash used*	3.5M ILS (1.1M USD)
Cash balance*	12.2M ILS (3.5M USD)

ILS = Israeli shekels

Investment Summary

- **Large and growing addressable end-markets for each product line**
  - Sustainably reversing the threats of global climate crisis with bio-fertilizer and climate stress tolerance enhancer technology solutions
  - Focus is on high-yield crops (soybean, corn, tomato)
- **Powerful unit economics and economies of scale;** High availability to procure raw materials
- **Biofertilizers TAM – US$ 45 billion urea-nitrogen; global market to witness a CAGR of 10.9%**
- **NFT (proprietary, non-disruptive bio-fertilizer)**
  - Proof-of-concept shown: enhances growth and improves nutrient absorption resulting in a 15% yield increase, 50% nitrogen reduction, and a 50% reduction in carbon-emissions and waste
- **WDS (proprietary bio-stimulant and nutrient enhancement technology boosts plants' tolerance to abiotic stress)**
  - Proof-of-concept shown: Provides a 20-30% increase in yield
- **Environmentally friendly, sustainable, chemical-free products** with expedited regulatory path for each program
- **Strong IP protection** with four separate utility patent applications
- **Strong industry partnerships and industry relationships** to support R&D and pre-commercial efforts
- **Strong management team** (former ADAMA Agricultural Solutions Ltd., Evogene, ICL and LycoRed) with decades of combined accumulated experience in the areas of fertilizers, plant protection and food supply

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THANK YOU!