



Shaping the Future of Agriculture



Crop Science Investor Webinar

Advancing Our Leadership
October 19, 2021

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Head of R&D, Crop Science





Agenda

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Welcome

- Oliver Maier, Head of Investor Relations

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Prepared Remarks: Advancing our Leadership

- Liam Condon, President of the Crop Science Division

3

Video: Global Innovation Field Tour

4

Q&A

- Oliver Maier, Head of Investor Relations
- Liam Condon, President of the Crop Science Division
- Bob Reiter, Head of R&D, Bayer Crop Science

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Addendum: Investment Case



Cautionary Statements Regarding Forward-Looking Information

This presentation may contain forward-looking statements based on current assumptions and forecasts made by Bayer management.

Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Bayer's public reports which are available on the Bayer website at <http://www.bayer.com/>.

The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.



Four Core Pillars Anchor our Vision to Shape Agriculture

Plan to Out-Perform the Market and Expand Leadership in Innovation, Digital and Sustainability

1



Accelerate operational performance

2



Deliver world-class innovation

3



Pioneer the digital transformation

4



Set new standards in sustainability



2021: Advancing Leadership with Key Milestones Delivered YTD

1 Accelerate operational performance



2 Deliver world-class innovation



3 Pioneer the digital transformation



4 Set new standards in sustainability



Sales (cpa)		EBITDA margin before special items	
3-5% Annual Growth 2022-'24T ²	~7% 2021F	27-29% 2024T	23%¹ 2021F

430+ <i>New hybrids & varieties launched</i>	<ul style="list-style-type: none"> XtendFlex soybean launch on ~15m acres in U.S. Intacta 2 Xtend launching in Brazil
>200 <i>Total crop protection registrations in 2020</i>	<ul style="list-style-type: none"> Vitala short-stature corn beta launch in Mexico VT4PRO with CRW3 launched in Brazil

NEW >180m subscribed acres - 2021F	>70 partners on platform	#1 brand in digital ag	Operating in 23 countries
NEW Orbia digital marketplace largest in Brazil ; expanding to Mexico, Columbia and Argentina	NEW U.S. Bayer branded corn seed customers who also use FieldView Plus demonstrated >5% CAGR in Bayer corn seed volumes purchased '18-'20, vs. non-users		

- Successful Carbon Pilot in U.S. and Brazil with **>2,500 growers** in 2020/'21
- #1** rank in the **2021 Access to Seeds Index** for Eastern and Southern Africa and for Western and Central Africa
- Established baseline for 30% CP environmental impact reduction target: lowest environmental impact CP portfolio

¹ At June 30, 2021 exchange rates; 24% at constant currencies; consistent within initial guidance.
² Issued a 2% sales growth rate for 2021 and a 3-5% annual sales growth rate for 22-24 at March 2020 CMD.



Strong Demand for XtendFlex Soybeans and XtendiMax Herbicide Reinforces the Industry Leading Soybean System

~15m XtendFlex Soybean Acres in First Season in North America



#1 NA Soybean System¹

- Roundup Ready Xtend Crop System covered **>55%** of U.S. soybean acres in 2021, **retaining its #1 position**
- XtendiMax herbicide has **14-days residual activity**; controls significantly more weeds than the Enlist system³


June 29th 2021 / Storm Lake, Iowa



XtendFlex Soybeans



Enlist E3 Soybeans



- Adds glufosinate tolerance to the proven performance of Roundup Ready 2 Xtend Technology to provide additional flexibility to manage tough-to-control weeds
- Reached **~15m** acres in the U.S. in 2021 – its first year on the market

Top volume **XtendFlex** soybeans have a **4+bu/acre advantage** vs. Enlist E3 soybeans² in germplasm trials

¹ Data based on number of traited acres per Bayer internal estimates; assumes on a base of 87m acres planted in 2021 ² Data as of October 22, 2020. 2020 Bayer Commercial Germplasm Trials (94 locations in 2020 reporting data located in IL, IN, IA, KS, MD, MI, MN, MO, NE, OH, SD, TN, and WI) Bayer Commercial Germplasm Trials = 9 of the top 10 volume forecasted XtendFlex products. ³ Based on EPA labels for the chemistries.



Intacta 2 Xtend to Broaden Insect and Weed Control Spectrum

Intacta RR2 PRO on >85m acres in South America in 2020/21; Intacta 2 Xtend Launching in Brazil



INTACTA RR2 PRO®

#1 South America soybean system¹

- Excellent control of soybean loopers, velvetbean caterpillar and axil borer
- Glyphosate tolerance provides proven weed control and enables conservation tillage
- Licensed to soybean seed producers with >90% share of market in Brazil

PLATAFORMA
INTACTA 2
XTEND

- Built on the proven performance of Intacta RR2 PRO with two additional proteins for insect control and tolerance to dicamba to provide flexibility in managing tough-to-control weeds
- Industry-first with three proteins for insect control; key for resistance management
- Launching on **~600k** acres in Brazil in 2021/22 season with **>30 varieties** and across eight brands
- Broadly out-licensed to seed brands in Brazil
- Trials with **>250 growers** in 2020/21 season
- Performance advantage of **2.89 bu/acre**



¹ Data based on number of treated acres per Bayer internal estimates



Upgrading our Fox Franchise in Brazil with Fox Supra Fungicide

Fox Xpro Fungicide in Brazil is Key Contributor to the 22% H1 2021 Global Fungicide Sales Growth

Soybean Fungicides in LATAM

>€1bn

Peak Sales Potential

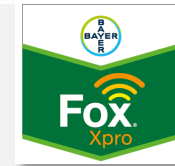
Fox Franchise builds on #1 position in soybean fungicides¹ in LATAM



Successful Transition from Fox to Fox Xpro

~25%

Market share²



- Long-lasting solution to offer full control of all relevant soybean diseases including Asian Soybean Rust, the most difficult to control and commercially most relevant disease for soybean growers in Brazil
- Combines **three different actives** from different classes to provide excellent disease control and unmatched resistance management properties
- Enables **use in major crop rotation systems** with cotton, corn, cereals and sunflower

Upgrade to Fox Supra in 2022

>€500m

Peak Sales Potential of Fox Supra

- **Indiflin^{®3}**, a new SDHI technology which is exceptionally strong in Asian Rust control, **is an innovative AI that will be the new technological backbone of the Fox family**
- Fox Supra **combines the next-generation technology Indiflin[®], with Prothioconazole**, another leading soy fungicide with a different mode of action, both **helping to reduce the development of resistance and to broaden the spectrum of efficacy to other relevant diseases**
- The outstanding and long-lasting disease control provided by Fox Supra will **enable growers to increase yield**

¹ Internal estimates ² Relative soybean market share (turnover) of Fox Family in Brazil in 2020/2021 ³ In collaboration with Sumitomo
Always read and follow label instructions. Products not registered in all jurisdictions



Deploying New Corn Hybrids and Traits to Grow Sales

Expect 3-4%¹ Sales CAGR 2020-'24 in Corn Seed & Traits

Mid-Term Key Growth Drivers in Corn

Deploying >150 new hybrids annually around the globe to grow leading germplasm share in corn key growing regions.



United States #1 Market Pos.

Market Size: ~93m acres

Germplasm Share: >55%

Argentina #1 Market Pos.

Market Size: ~20m acres

Germplasm Share: ~60%²

Mexico #1 Market Pos.

Market Size: ~20m acres

Germplasm Share: >65%²

Europe #2 Market Pos.

Market Size³: ~60m acres

Germplasm Share: ~20%

Brazil #1 Market Pos.

Market Size: ~52m acres

Germplasm Share¹: ~30%

South Africa #1 Market Pos.

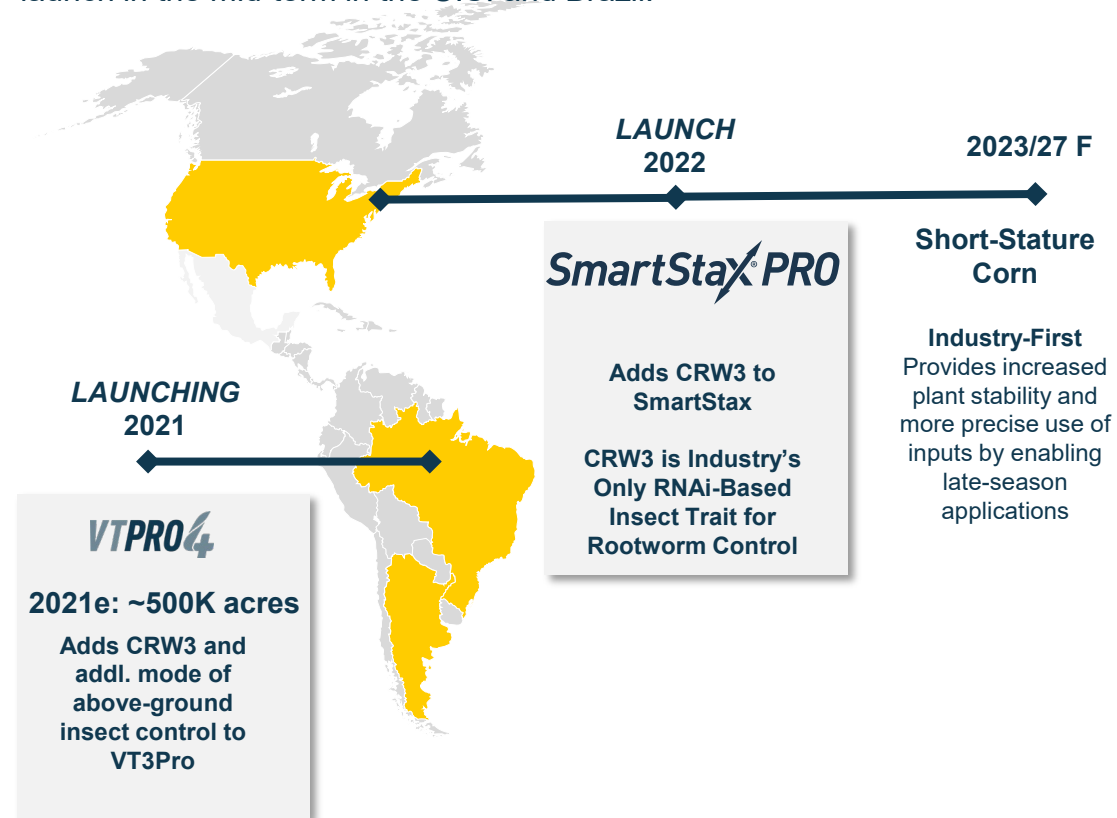
Market Size: ~6m acres

Germplasm Share: >70%

Note: Size of market, market position and germplasm share measured as of 2021.

¹ Currency and portfolio adjusted ² In hybrid corn market only ³Eu27 +UK, Russia and Ukraine

Launching CRW3 as a part of VTPro4 and SmartStax Pro stacked offerings in the near-term; game-changing short-stature corn expected launch in the mid-term in the U.S. and Brazil.






Successful VTPRO4 Launch in Brazil; Expect 500K Acres in 2021


Industry's Most Advanced Trait Technology for Above and Below Ground Insect Control in Corn

VTPRO4

- 3 Modes of above-ground insect control
- 2 modes of below-ground insect control
- Glyphosate tolerance
- New RNAi-based Corn Rootworm 3 (CRW3) trait




- Most advanced technology that provides control of above- and below ground insects
- Includes the first RNAi-based corn rootworm trait in the industry
- Offers extended protection against main caterpillars, such as fall armyworm, Heliothis and sugarcane borer
- Provides efficiency and flexibility in weed control



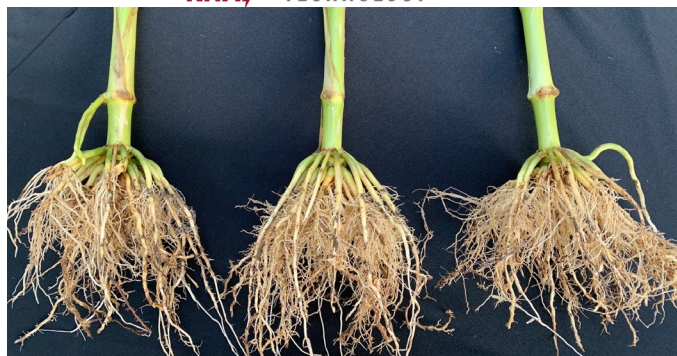
VTPRO4 adds CRW3 and additional mode of above-ground insect control to VT3PRO



Launching SmartStax PRO in U.S. for 2022 Season

SmartStax PRO Adds Industry-Only RNAi-Based CRW3 Trait to Upgrade SmartStax Corn Trait Stack

SmartStax[®] PRO
With RNAi TECHNOLOGY



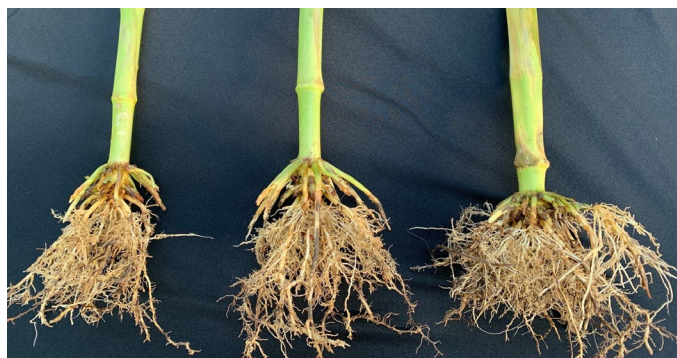
Location: Ireton, Iowa

Planting Date: 4/26/21
Date Photo Taken: 7/20/21

Product: 108 RM SmartStax PRO with RNAi Technology

Average Root Rating: 0.30

QROME Product



Location: Ireton, Iowa

Planting Date: 4/26/21
Date Photo Taken: 7/20/21

Product: P1366Q

Average Root Rating: 1.20

2021 U.S. Field Results – SmartStax PRO with RNAi Technology

- In head-to-head comparisons against **Qrome Products** across 40 locations with corn rootworm pressure, **SmartStax PRO with RNAi Technology** had **better root injury scores 97.4%** of the time and **SmartStax Technology** had better root injury scores 76% of the time.
- **Qrome Products averaged 0.97 nodes** of root damage across 40 locations with CRW pressure while **SmartStax PRO rated significantly better** with an average root injury score of **0.28 nodes**.
- For each node of roots damaged by CRW larvae, a yield loss of approximately 15% can be expected.¹ A root injury score of **0.97 nodes** in a 200 bu/acre yield environment could result in a **29 bu/acre yield loss**.

¹Source: Tinsley, N.A., Estes, R.E. and Gray, M.E.. 2012. Validation of a nested error component model to estimate damage caused by corn rootworm larvae. Journal of Applied Entomology. DOI:10.1111/j.1439-0418.2012.01776.x



set the stage for
short-stature
corn





Short-Stature Corn Offers Transformational Shift in Production

Anticipated Fit on >220m Acres Enabled by Three Development Approaches

Field Plots Around the Globe Demonstrate Key Features and Benefits of Short-Stature Corn



Game-Changing Innovation

- Unparalleled production stability with improved standability in high winds and challenging weather conditions
- Annual yield losses due to stalk lodging in the U.S. range from 5% to 25%¹



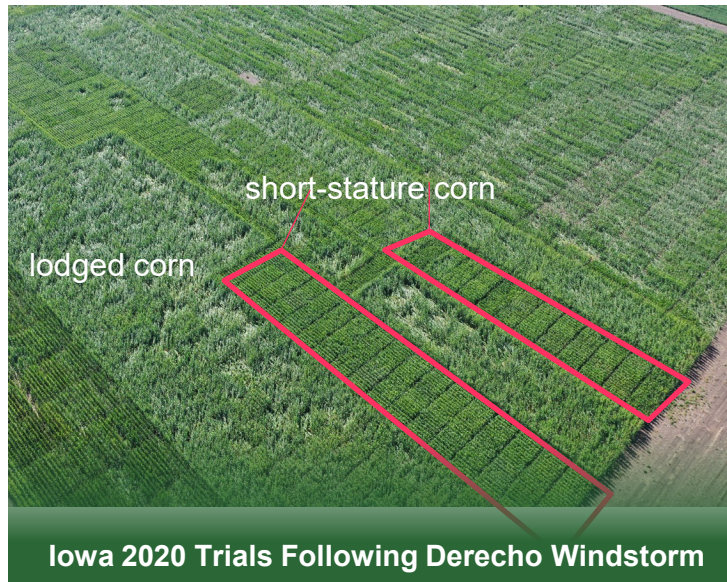
Digitally Optimized System

- Extended in-season crop access due to shorter height
- Supports tailored solutions with precise in-season crop protection



More Sustainable Future

- Potential to optimize use of key nutrients like nitrogen, as well as reducing land and water requirements
- Opportunity to plant at higher densities, as evidenced in Vitala commercial beta in Mexico



¹ Purdue University (<http://www.extension.purdue.edu/ay/ay-262.html>)



Short Stature Corn Enables In-Season Access for Over-the-Top Nitrogen Application



Poseyville, Indiana July 21st, 2021



Nitrogen Y-Drops for Precise Application



Envision Full System Recommendation with Short-Stature Corn

Value Drivers Converging: Inherent benefits of new short corn technology *plus* tailored solutions and new business model concepts (seed advisor, weed management, disease management, fertility management, risk sharing, sustainable practices)

Pre-Plant

Field specific hybrid and density prescription
Latest weed and insect tolerant trait technology (HT4+5 and CRW4)
Weed mapping technology to develop precision field specific herbicide delivery and value

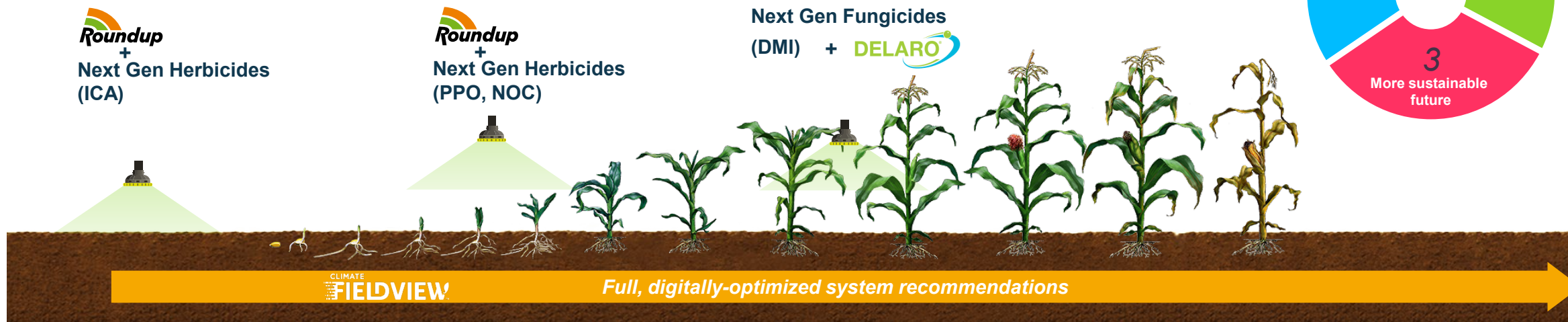
In-Season

More flexibility with in-season access driving more precision and efficiency
More judicious use of crop protection and fertility products
Improved water use potential and irrigation management

In season disease management based on weather data, disease modeling and severity analysis
Unparalleled production stability with improved standability

Post-Harvest

Farmer recognized for sustainable practices (e.g. carbon sequestration)
Outcome measured and risk shared with the farmer





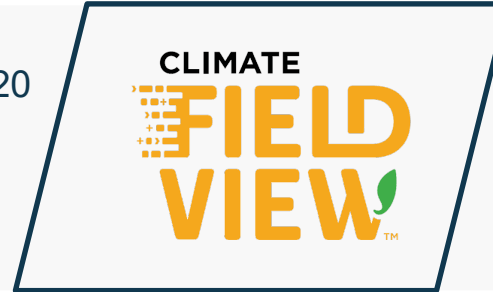
Digital Platform is Core To Driving Growth

Enabler of Tailored Solutions and New Business Models

1

Expand Industry-Leading Platform

- NEW** >**180m** subscribed acres in 2020
- #1** brand in digital ag
- Operates in **23** countries



- Largest database** of grower and field trial seed performance data in industry
- >**70** partners on platform

2

Unlock Growth from New Digital Business Models

Tailored Solutions

- NEW** Showcasing portfolio strength; increased corn seed volume purchases from U.S. FieldView Plus users, compared to non-users, '18 to '20
- Predicting seed & chemistry performance
- Partnering on outcomes

Carbon Farming

- Translating unique knowledge of on-farm practice into carbon credits

Smallholder Access

- Scalable, end-to-end smallholder support through value-chain partnerships & common data foundation



Envision 100% of 2030 Sales Enabled by Digital Enhancements and Increasingly Based on Partnered Outcomes



Sequestering Carbon at Scale; New Revenue Stream on Farm

Pioneering New Climate Smart Business Models; Enroll >2,500 Growers in Year One of Carbon Program

1 Carbon markets and consumer demand for sustainability is growing



Carbon Markets >\$200bn per year¹

- 1.5C pathway will require over 20 GT to be reduced until 2030 (future demand)²
- Over 200 food and retail companies committed to Science Based Targets to decarbonize value chains³
- Expect Sustainable Land Mgmt. Investment >\$180-235bn by 2030⁴

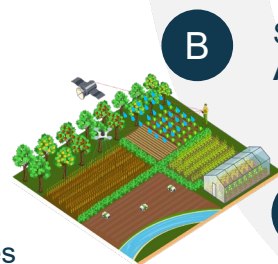
2 We are best positioned to support carbon farming with our Bayer Carbon Program

- Utilizes FieldView, the most connected Digital Ag platform⁵
- Has a global impact covering 10 countries, ~1.5m acres and ~2,500 participating farmers in Brazil and the U.S. alone
- Ranked #1 in the U.S., scoring very high in terms of grower trust⁶



4 Farmers to benefit from new sources of emerging value

- A** Premiums for products produced using low-carbon practices in the food/energy value chain
- E** Access subsidies / compliance with policies



- B** Sell Carbon Removal Assets
- C** Lower costs through e.g. insurance premiums

- D** Drive Improved productivity e.g. improved soil health

3 We expect to enable new value pools in carbon farming



Enables 3 revenue streams

- Service fees
- Product sales
- Carbon assets



JV to leveraging crop-colonizing microbes and synthetic biology



R&D

- New launches with lower environmental impact
- Formulations with lower volumes but same or higher efficacy

Standardize carbon measurement and reporting

Create a new generation of products that yield more and sequester more carbon

¹ Source: <https://www.reuters.com/article/us-carbontrading-turnover/global-carbon-trading-turnover-at-record-214-billion-last-year-research-idUSKBN1ZN1RN>

² Source: https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_Chapter2_Low_Res.pdf ³ <https://sciencebasedtargets.org/companies-taking-action?sector=Food%20and%20Beverage%20Processing#table>

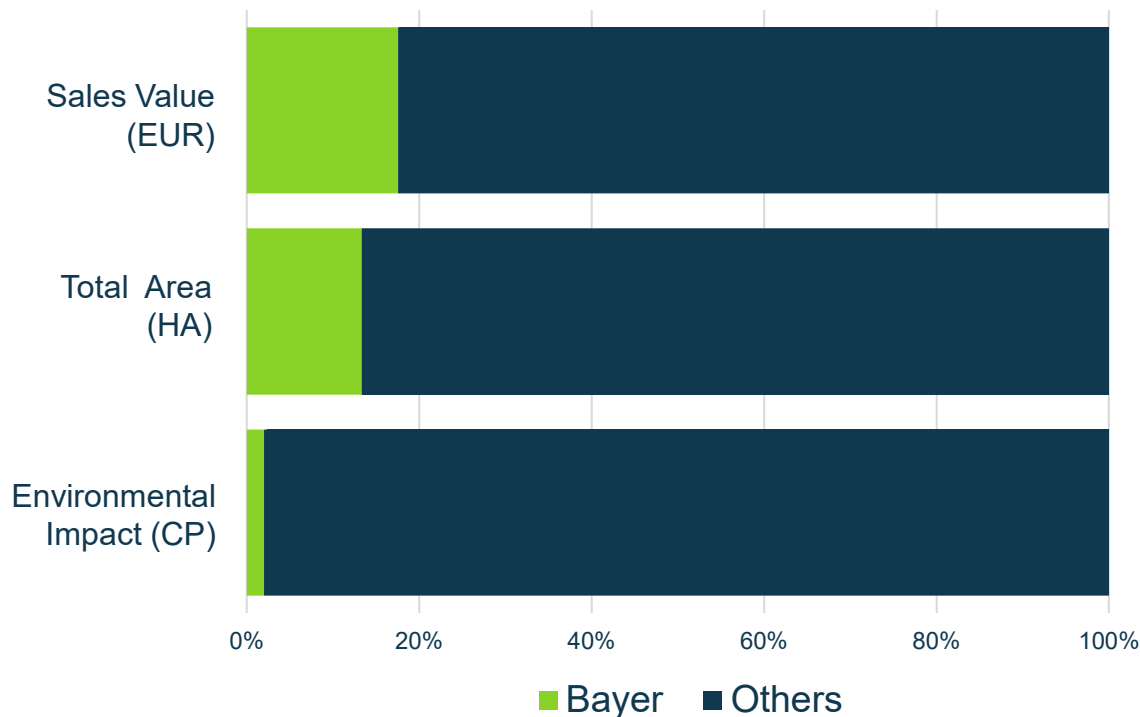
⁴ Source: [McKinsey study on Sustainably investing in Agriculture, 2020](#) ⁵ Based on subscribed acres. ⁶ Forward Group Research CARBON CREDIT PROGRAM PERCEPTIONS & EVALUATION, July 2021



Lowest Environmental Impact Driving Higher Value

Bayer's Crop Protection Environmental Impact Exceptionally Low; Further Reductions Planned by 2030

2018 Crop Protection Environmental Impact



- Bayer applied latest state of the art methodology to measure impact of portfolio, as developed by independent academic consortium
- Bayer's crop protection environmental impact is exceptionally low despite leadership in share and volume
 - Testimony to prior safety commitments:
 - 2012: Stop WHO acute toxicity class 1 products
 - 2016: Only sell products with actives registered in at least one OECD country
 - 2017: Open access of safety-related studies
- Further reduction is possible through digital precision application of crop protection, new breeding technologies, integrated crop management, risk mitigation and new chemical and biological crop protection with even lower impact

Preliminary impact assessment has been conducted by Technical University of Denmark (DTU) based on the PestLCI/USEtox® models. Impact assessment limited to current scientific consensus of USEtox®: aquatic organisms and the substances which can be characterized in USEtox®. Soil and pollinator impact assessment is currently not included in USEtox®. CP application data mostly from third parties such as Kynetec/Kleffmann. In some countries based on Bayer estimates. Only CP applications in 2018 covered. Others now includes multinationals (combination of four multinational Ag input providers) as well as the generic producers.



Improving Lives and Driving Business Growth

Smallholder Sales Expected to Grow from €1.7bn to > €3bn¹ by Empowering ~100m Smallholders by 2030



¹ At constant FX, estimates based on internal baseline database



Collaboration with Orbia Establishes First Digital Ag-Marketplace

Orbia is a JV between Bayer and Bravium²

Orbia

- Orbia is the first digital marketplace to connect various players in the agricultural sector in their daily operations, expanding market access for farmers
- Platform provides integrated benefits through a **loyalty** program as well as online purchase and sale of **agricultural inputs** and **commodities**



In combination with FIELDVIEW, Orbia provides an integrated digital grower experience¹



Orbia in Brazil

- Established in 2019
- Country's **main agricultural marketplace**
- **>300 distributors** and national coverage in inputs such as pesticides, seeds and fertilizers
- **Largest loyalty program** in Brazilian agribusiness
- **>185,000** registered growers
- Covers ~70% of planted area

Expansion to Argentina, Colombia and Mexico

¹ Orbia (Sell, Search, Buy), FieldView (Use, Harvest); Orbia is named „Nucle“ in Mexico
² Brazil-based marketing agency who managed Bayer's loyalty program in Brazil, prior to the formation of Orbia.



Convergence of Technologies on Farm Optimizes Performance

Brazil Customer Example



Cristian Dalben
Sorriso, Brazil

2015-16

FieldView Adopter

Participated on pre-launch and has 4 years of planting, spraying and harvest data



2019-20

Loyal Bayer Customer

5-star loyalty program client (IMPULSO), free access to FieldView license and can redeem FieldView Services in the Orbia Market Place



2019-20

Outcome-Based Pricing Pilot Participant

Invited to 2 outcome-based pricing pilots: Fox Xpro & seed density. Added nearly 500 bags of corn in the tested areas (Fox Xpro: +120 bags of corn in 20ha and seed density: +375 bags of corn in 50ha).



2020-21

Carbon Ambassador

A Groundbreaker participating in the Carbon Initiative in Brazil, generating additional revenue and positive environmental impact



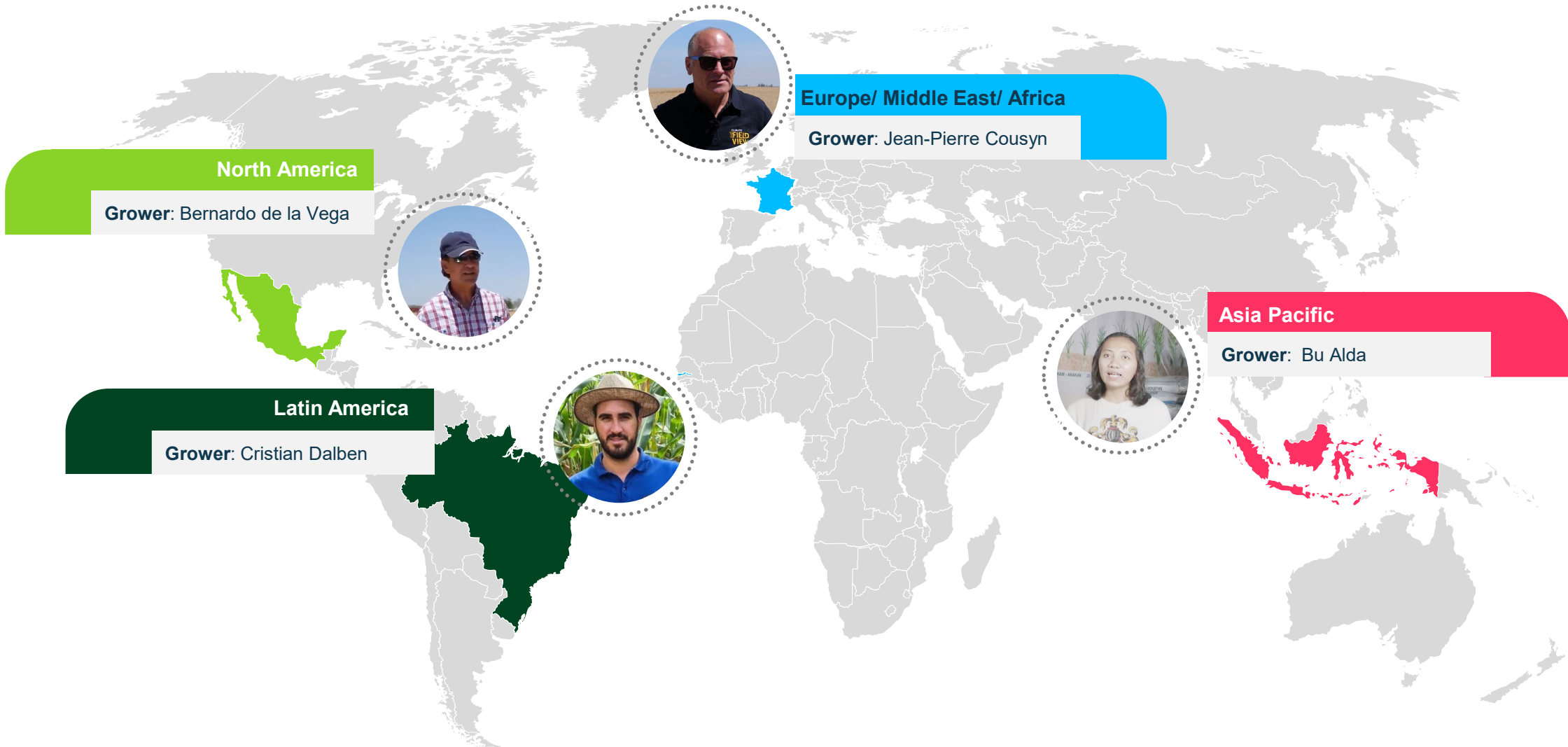
- // Total area (ha):
2,100 soy / 2,000 corn
- // MS Intacta RR2 Pro: 80%
- // MS Bayer Corn seeds: 100%
- // MS Bayer Crop Protection: 55%

After using FieldView and participating in Outcome based pricing trials, Cristian increased his share of Bayer products significantly (from 33% Bayer Corn seeds to 100% and from 16% Bayer Crop Protection to 55%)



Video: Bayer Crop Science 2021 Virtual Global Innovation Field Tour

Delivering Unrivaled Integrated Solutions to Growers Around the Globe





Q&A





Investment Case: Bayer AG



View our Bayer AG Investment Case here: [LINK](#)