Crop Science Annual R&D Pipeline Update

Advancing Tomorrow's Innovations Today

February 16, 2022

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President, Crop Science Division

Bob Reiter, PhD
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Jeremy Williams, PhD
Head of Climate LLC and Digital Farming Solutions

Agenda

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Welcome

Oliver Maier

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2

Prepared Remarks

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Digital Farming Solutions

3

Q&A

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.

Commercialization is dependent on multiple factors, including successful conclusion of the regulatory process. The information presented herein is provided for educational purposes only, and is not and shall not be construed as an offer to sell, or a recommendation to use, any unregistered pesticide for any purpose whatsoever. It is a violation of federal law to promote or offer to sell an unregistered pesticide.

Rodrigo Santos

- President of the Crop Science Division

Vision | ***Health for all, hunger for none***

Purpose Shaping agriculture for the benefit of farmers, consumers and the planet

Strategic Ambition

Perform
Grow above market and deliver strong returns

Transform
Achieve 100% digitally enabled sales by 2030

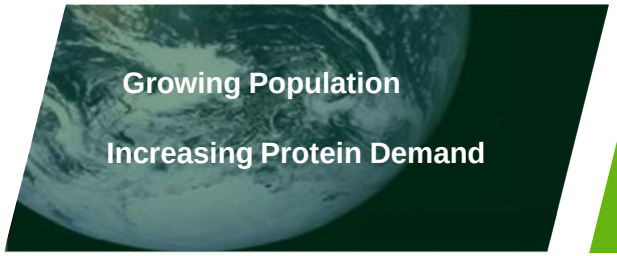
Pillars

- Operational Excellence
- World Class Innovation
- Digital Transformation
- New Standards in Sustainability

Win by being more grower centric

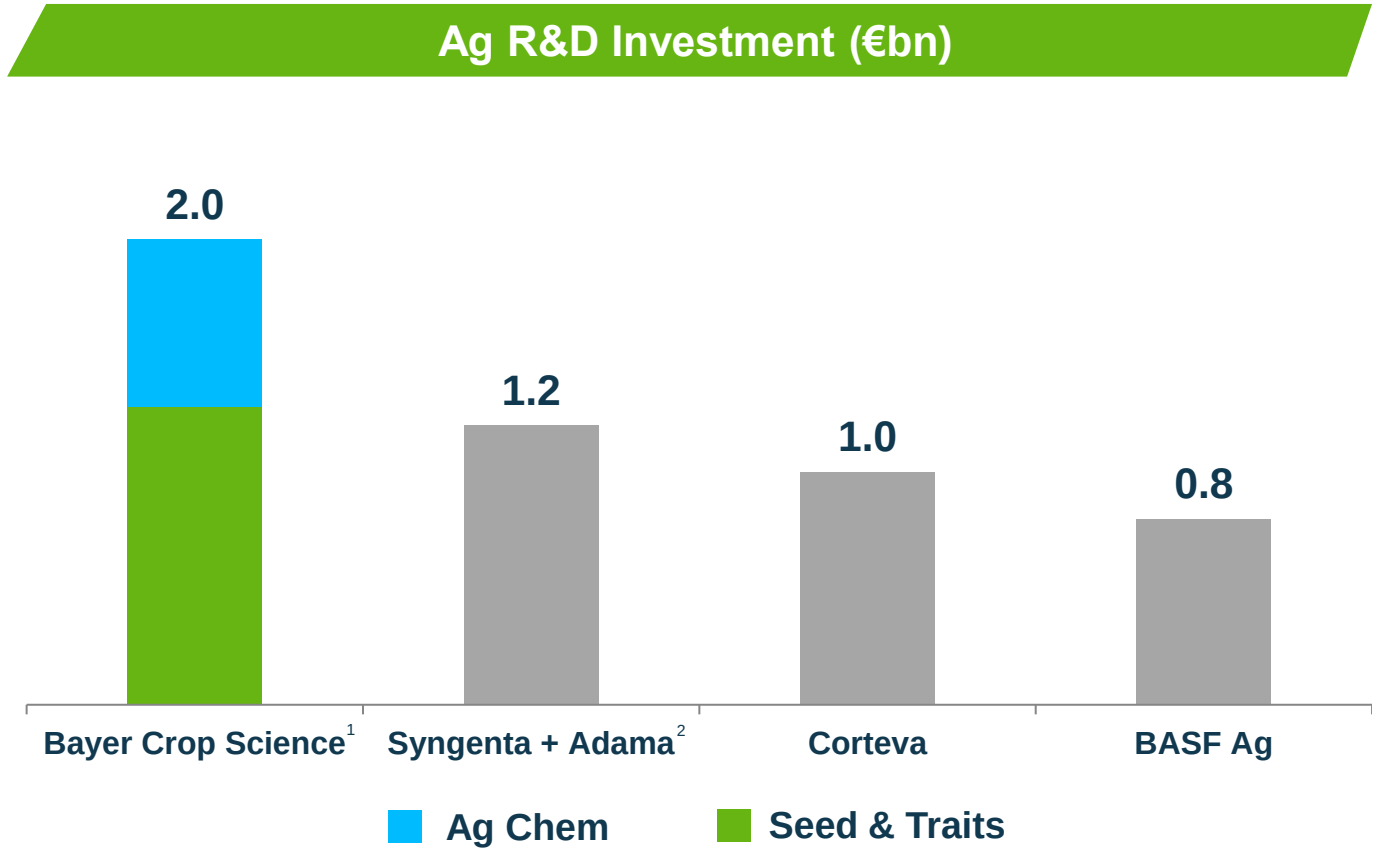
Vision ***Health for all, hunger for none***

Innovative, Sustainable Solutions to Address Global Challenges

Key Global Challenges	*Our Priorities*	*Pipeline of Sustainable Solutions*
	**Producing & Protecting Higher Yielding Seeds**	• **Higher-yielding**, disease-resistant **seeds** • Next-generation **biotech traits and crop protection** to protect and enhance yield
	**Using Fewer Natural Resources**	• **Small molecules** and complementary **biological solutions** focused on **reducing environmental impact** • **Short-stature corn** to enable optimal use of inputs, while **minimizing harvest losses**
	**Advancing a Carbon Smart Future for Ag**	• **Digital tools** for **carbon** sequestration **measurement**, **precise input** application • Next-generation **herbicide-tolerant traits** to support **no-till/ conservation tillage systems**

Solutions must serve growers large and small; Empowering 100m smallholders by 2030

Unmatched R&D Investment Powers Industry-Leading Portfolio



***#1** R&D Platform in Crop Science*

***>7,100** R&D employees[3]*

***>100** key collaborations; partner of choice*

[1] 2020 reported results, company information; exchange rate: FY 2020: ~1.14 USD/EUR. Bayer R&D excludes impairment charges
[2] Represents the legacy Syngenta results plus Adama, includes capitalized development costs
[3] Includes permanent and temporary employees

leaps Breakthrough Technology Investments Expand R&D Reach

Five Additions in 2021; 21 Distinct Investments in Sustainable Productivity and Improved Nutrition

Leap 03/ **Reduce** environmental impact of agriculture

Companies shown by primary Leap but may have potential in further Leaps. * New investment in 2021.
For additional information on these and other Leaps by Bayer investments, please visit: https://leaps.bayer.com/

Leap 07 / **Provide** next-generation healthy crops

Leap 08/ **Develop** sustainable protein supply

Leap 09/ **Prevent c**rop and food loss

Pipeline with Up to €30bn Peak Sales Potential Delivering for Farmers

Eight Projects Advance, Eight New Formulations Launch and Hundreds of Seed Deployments in 2021

>500
New hybrids and varieties deployed across corn, cotton soybeans and vegetables

>300 New crop protection registrations

8 New formulations launched

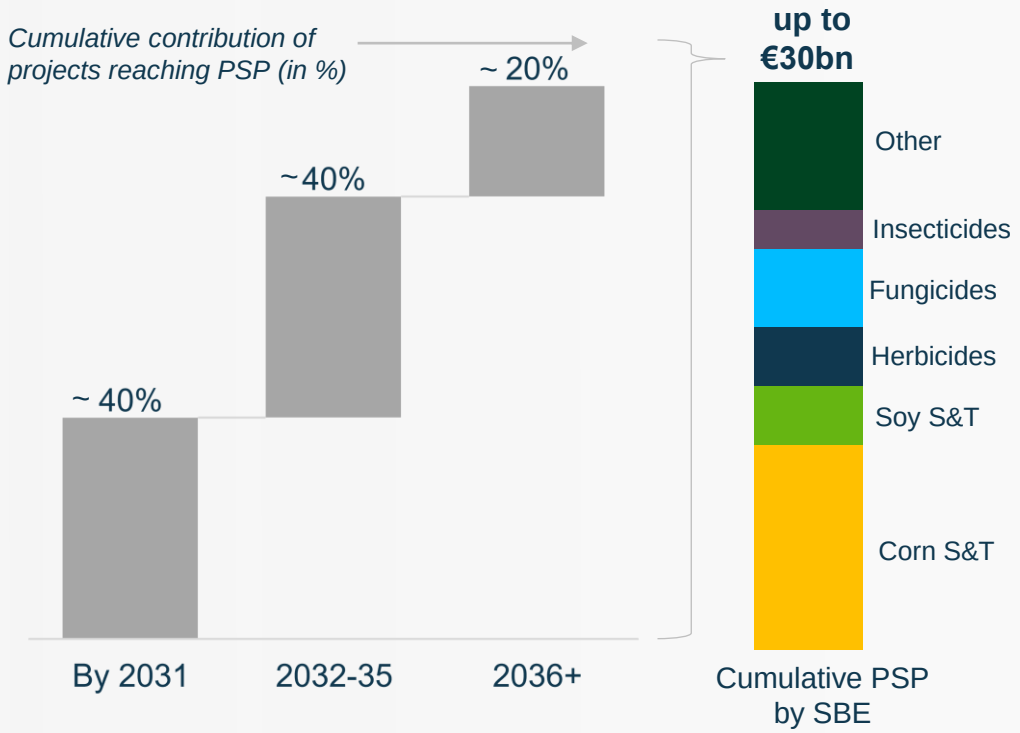
2 New actives advanced

5
New trait projects advanced across corn, soybeans and cotton

CLIMATE FIELD VIEW
Soybean Seed Placement digital tool advances to Phase 2

Value of Up to €30bn in Cumulative Peak Sales Potential[1]

~50% Incremental



[1] Represents non-risk adjusted estimated peak sales for the combined breeding, biotech, crop protection and environmental science pipelines, as well as new business models and new value areas. PSP = Peak sales potential SBE = Strategic Business Entity

advanced breeding technologies

New product design center in Petrolina, Brazil

Deploying >250 Corn Hybrids in 2021 to Expand Leading Position

Foundational to Expected Growth in Our > €5bn Global Annual Corn Seed & Trait Sales

Bayer Corn Seed Market and Share Positions in Key Countries

NEW

Superior-performing Bayer branded hybrids capture **#1** brand share position in the U.S. in 2021.

United States	#1 Market Pos.
Market Size:	~93m acres
Germplasm Share:	>55%

Argentina	#1 Market Pos.
Market Size:	~20m acres
Germplasm Share :	~60%[1]

Mexico	#1 Market Pos.
Market Size:	~20m acres
Germplasm Share :	>65%[1]

Europe	#2 Market Pos.
Market Size[2]:	~60m acres
Germplasm Share:	~20%

Brazil	#1 Market Pos.
Market Size:	~52m acres
Germplasm Share[1] :	~30%

South Africa	#1 Market Pos.
Market Size:	~6m acres
Germplasm Share :	~70%

〉 Deployed **>250** new hybrids globally in 2021; offer **>1,500** hybrids globally[1]

〉 **>7 bu/acre U.S. yield advantage** with leading hybrids in like-for-like trait package hybrid comparisons[2]

NEW 〉 **Best NCGA Yield Performer[3]** in 2021, **winning ~80% of the National Spots**, with 21 of the 27 spots from Bayer germplasm

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

[1] In hybrid corn market only; [2] Eu27 +UK, Russia and Ukraine

[1] Includes licensed and branded hybrids; [2] Annual yield advantage calculated each year by comparing 3 leading DEKALB products within each state having a minimum of 100 comparisons to national competitor products containing similar crop protection traits as of 2021. All comparisons are head-to-head using +- 2RMs and weighted average calculated using 15% moisture;
[3] NCGA = National Corn Growers Association – National Corn Yield Contest

Annual Germplasm Upgrade Drives Growth and Attracts Partners

High-Performing Seeds in Soybeans, Cotton and Vegetables Generating ~€3bn in Annual S&T Sales

Soybeans

- Deployed **>150** new varieties in 2021; offer **>850** varieties in North America
- **XtendFlex Soybeans,** as a part of the Roundup Ready Xtend Crop System have a **2.7+ bu/ac advantage** vs. Enlist ™ Weed Control system in farmer managed herbicide system trials[1]

Cotton

- Deployed **>10** varieties in 2021; offer **>25** varieties in the U.S.
- U.S. lint/acre yield advantage with leading varieties; 2021 was **80 lbs./ac** advantage for Deltapine vs. top-planted competitor varieties

Vegetables

- Deployed **>90** varieties in 2021; sell over **2,100** vegetable hybrids and varieties in **22** crops
- Focus on disease resistance, yield and climate resistance for growers; consumer benefits in flavor, color and shelf life

[1]2021 Farmer Managed Soybean System Trials (59 locations in 2021 reporting data located with 10-IA, 11-IL, 8-IN, 2-MI, 9-MN, 6-NE, 4-OH, 2-PA, 1-WI, 1-ND, 2-SD, 3-KS). Significant at P ≤ 0.05 LSD at 1.2 Bu/A as of 11/29/2021. Roundup Ready® Xtend Crop System data = XtendFlex® soybeans with a farmer-selected weed control program that may include dicamba, glyphosate, glufosinate and various residual herbicides. Enlist™ Weed Control System data = Enlist E3® soybeans with a farmer-selected weed control program that may include glyphosate, Enlist One® herbicide, Liberty® 280 SL herbicide and various residual herbicides.

Designing the Best Seeds Through Precision Breeding

Utilizing Advancements in Genomics, Data Science and Gene Editing to Accelerate Product Development

Customer Data & Insights @ Scale	***Seed Chipping, Genotyping, & Selection***	***Accelerated Germplasm Design***	***Prescriptive Field Evaluation***	***Globally connected data ecosystem***	***Customer Designed Solutions***
					
Data-driven ideas based on **customer needs and insights**	**Vast germplasm library**, cutting-edge **genomic selection and AI models** used to design germplasm	New methods and automation **double the rate** of **product improvement** and **accelerate** trait integration	Prescriptive field evaluation improving **customer recommendations and match of products to specific environments**	**Millions of simulated field environments** enrich product and system knowledge prior to launch	Customer designed solutions that enable **new business models**, improve **customer experience** and are **tunable** to global environmental changes

next-generation

biotech traits

Three Generations of Soybean Herbicide Tolerance Traits

Technologies Provide Solutions to Address Farmer's Needs, Herbicide Resistance Challenges

3 herbicide tolerances

XTENDFLEX SOYBEANS

LAUNCHED
in 2021 on ~16m commercial acres

- Glyphosate
- Dicamba
- Glufosinate

June 29th, 2021 / Storm Lake, Iowa

5 herbicide tolerances

HT4
Fourth-Gen
Phase 3

Expected 2027 launch

- Glyphosate
- Dicamba
- Glufosinate
- HPPD
- 2,4-D

July 14th, 2021 / Jerseyville, Illinois

6 herbicide tolerances

HT5
Fifth-Gen
Phase 2

- Glyphosate
- Dicamba
- Glufosinate
- HPPD
- 2,4-D
- PPO

July 14th, 2021 / Jerseyville, Illinois

Always read and follow label instructions. Products not registered in all jurisdictions.

Next-Gen Intacta Traits to Sustain Leading Franchise in Brazil

Intacta 2 Xtend Launched; IP3 Currently in Phase 3, IP4 Advanced to Phase 1

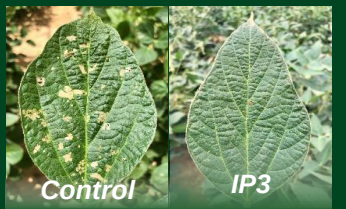
INTACTA RR2 PRO®

#1 ***South America soybean system[1]***

- Excellent control of soybean loopers, velvetbean caterpillar and axil borer
- Glyphosate tolerance provides proven weed control and enables conservation tillage
- Licensed to seed producers with >90% share of market in Brazil
- On >85m acres in South America in 2020/21

- Industry-first with three proteins for insect control and resistance management, plus adds dicamba tolerance for tough-to-control weeds
- ***LAUNCHED*** on ***>800k*** acres in Brazil in 2021/22 season. Targeting more than **6m** acres for the 2022/23 season.
- Performance advantage of **2.89 bu/acre**

Velvetbean Caterpillar Infested



Soybean Looper Infested

- **IP3 in Phase 3**; delivering multiple modes-of-action for insect control

Boone, Iowa, June 2021

- **IP4 *ADVANCED* to Phase 1;** focused on Brazil

IP3 = 3rd generation insect protection trait in soybeans
IP4 = 4th generation insect protection trait in soybeans

[1] Data based on number of traited acres per Bayer internal estimates

Multiple Traits in Late-Stage Development for Cotton Farmers

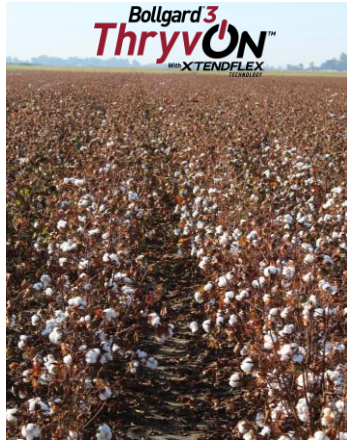
Leading Innovation for Cotton Growers Driving Growth in >€500m[1] Cotton S&T Business

1st generation

ThryvOn™ TECHNOLOGY

- First-ever biotech trait for piercing and sucking insect control

*Stewarded **Commercial Launch** in 2022 in the U.S.*



Scott, Mississippi, U.S.
Sep. 27, 2021

5 herbicide tolerances

HT4 Cotton

- Glyphosate
- Dicamba
- Glufosinate
- HPPD
- PPO

***ADVANCED** to Phase 3*

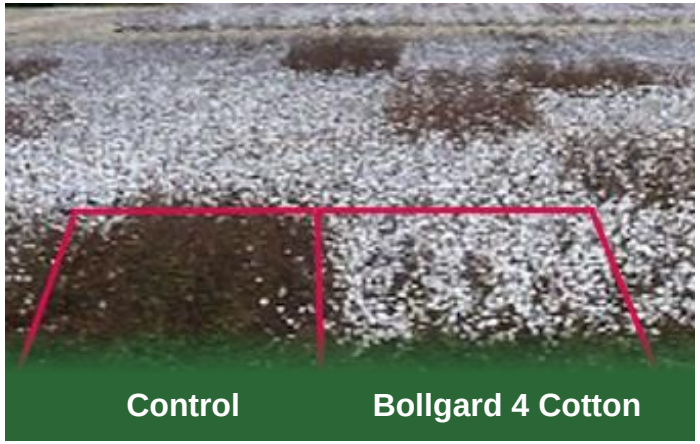
2x 5-way tank mix at V3 stage in US2020 field trial in Scott, MS

4th generation

Bollgard 4 Cotton

- Season-long protection with multiple modes of action for key lepidopteran pests

***ADVANCED** to Phase 3*



2019 Rocky Mount NCSU Results

[1] 2020 cotton seed & trait sales for Bayer Crop Science
ThryvOn™ Technology has received full approval for planting in the United States but, as of the date this material was published, is pending approval in certain export markets. Specific plans for commercialization depend upon regulatory approvals and other factors.

Rollout of Most Advanced Corn Rootworm Control Trait Continues

CRW3: Industry's-Only RNAi-Based Corn Rootworm Trait

NEW: VT4PRO™ with RNAi TECHNOLOGY [4]

Expected Launch : **U.S. 2024**

LAUNCHED: Brazil 2021

~500k acres

VTPRO4

- **Most advanced technology for** control of insects in Brazil corn
- Two modes below-ground insect control, including **CRW3,** plus two modes above-ground insect control and glyphosate tolerance

LAUNCHED: U.S. 2022

~100k acres

SmartStax® PRO [3] With RNAi TECHNOLOGY

Corteva QROME Product (P1366Q)

2021 U.S. Field Results[1]

- **SmartStax PRO with RNAi Technology** had **lower root injury scores 97.4%** of the time
- **SmartStax PRO: 0.28 nodes** of root injury **Qrome Products: 0.97 nodes** of root injury
- For each root node damaged by CRW larvae, a yield loss of ~15% can be expected.[2] Root injury score of **0.97 nodes** in a 200 bu/acre yield environment could result in **29 bu/acre yield loss.**
  - ~30m acres infested with CRW in the U.S.

[1] Head-to-head comparisons across 40 locations with corn rootworm pressure in the U.S. in 2021
[2] 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
[3] SmartStax® PRO corn products will be commercially available for the 2022 growing season. [4] VT4PRO with RNAi Technology is not currently available for commercial sale or commercial planting. Commercialization is dependent on multiple factors, including successful conclusion of the regulatory process. The information presented herein is provided for educational purposes only and is not and shall not be construed as an offer to sell.

set the stage for short-stature corn

Three Development Approaches to Short-Stature Corn Enable Broader Market Reach:

Breeding: ***ADVANCED to Phase 4***

Planning for U.S. Commercial Trials in 2023

- Advanced breeding introgresses naturally occurring short stature characteristic into elite germplasm

Biotechnology: Phase 3

- In collaboration with BASF; uses transgene to shorten internodes; enables applicability across wide-array of germplasm

Genome Editing: Discovery

- Multiple, elegant approaches to generate short-stature corn

Short-Stature Corn Offers Transformational Shift in Production

Anticipated Fit on >220m Acres and Estimated Incremental Peak Sales Potential of ~€1bn for NA

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

Iowa 2020 Trials Following Derecho Windstorm

Spray Rig in Short-Stature Corn Plot
Jerseyville, IL August 2019

Poseyville, Indiana July 2021
Nitrogen Y-Drops for Precise In-Season Application

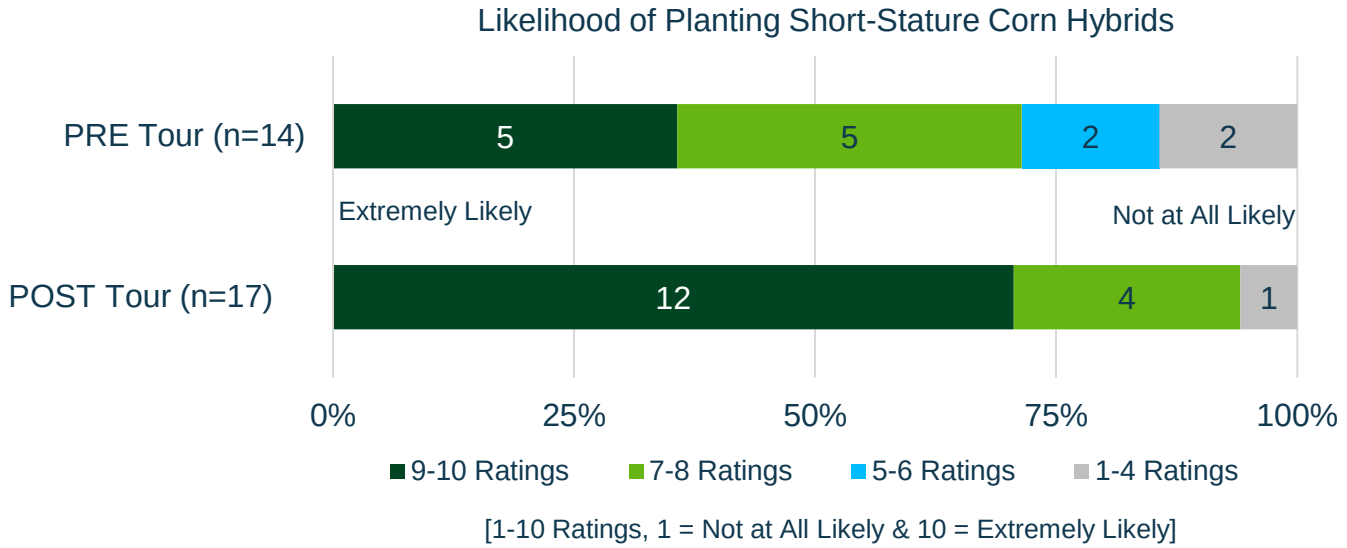
[1] Purdue University (http://www.extension.purdue.edu/ay/ay-262.html

Growers Cite High-Interest in Short-Stature Corn

2022 U.S. Pre-Launch Plans:

- *>200 market development trials*
- *pre-launch grower trials with >150 growers*

Top Producer Farmer Focus Group – Dyersville, IA August 2021



Online Farmer Survey, Feb/March 2020 (n = 900)

- *When full choice available, **75% of farmers** indicated they **would likely plant** some acres of short stature corn, and had it been available in 2020, could have planted **as much as one third of their acres** to it.*
- ***Highest likelihood to plant a new trait** vs. previous trait introductions, surpassing the previous high for SmartStax*

new approaches in crop protection

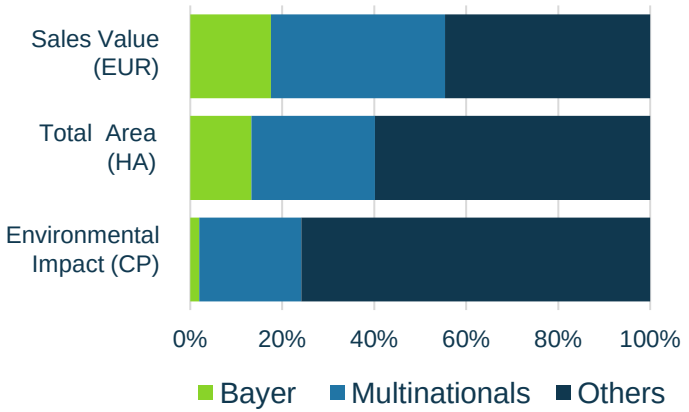
Progressing from Volume to Value with Our Crop Protection Vision

Today → ***Leading Portfolio*** | **Future** → ***Enhanced by Digital Farming Solutions***

Convergence of Advances in Small Molecules, Biology and Biotechnology Innovation with Digital Technology to Create New Value and Sustainable Productivity

Leadership in value, treated area AND exceptionally low crop protection environmental impact [1].

2018 Crop Protection Environmental Impact of Crop Protection



Industry Leading CP Development

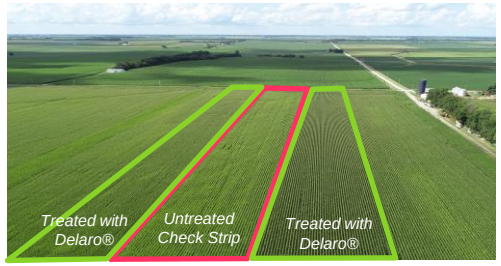
- >15 new AIs launched in the past 15 years; 8 AI in development and 2 launching in 2022

Advances in Formulation Technology

- Leadership in formulation technology enables lower volumes with equivalent or better efficacy; drone-specific formulations for safety and precision

New Insights and Precision Application with Digital Tools

- Crop specific digital application timing to optimize disease control and yields



- Showing and sharing value of fungicide applications with growers' data

[1] Note: Environmental impact study conducted by University of Denmark; other multinationals consists of combination of four multinationals.

Fungicides: New Innovations Drive our Growth Potential

Fungicide sales in 2020: **€2.6bn,** Pipeline Peak Sales Potential of **~€4bn**

Fox Supra

- Includes next-gen technology **Indiflin®**[1], with Prothioconazole

- Offers **unrivaled control** of Asian Soybean Rust
- Builds on **#1 position** in soybean fungicides[2] in LATAM

PSP of >€400m
Expected to launch in 2022 in Brazil

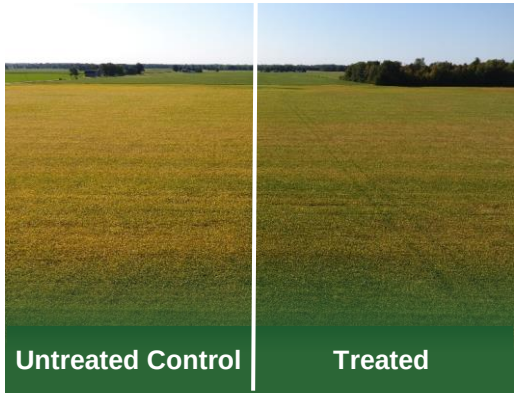
DELARO Complete

3 MoA

- Prothioconazole
- Trifloxystrobin
- Fluopyram

- Better **resistance management** and broader spectrum
- Consistent **yield advantage** over standard solutions

PSP of >€100m
Launched in the U.S. in 2021



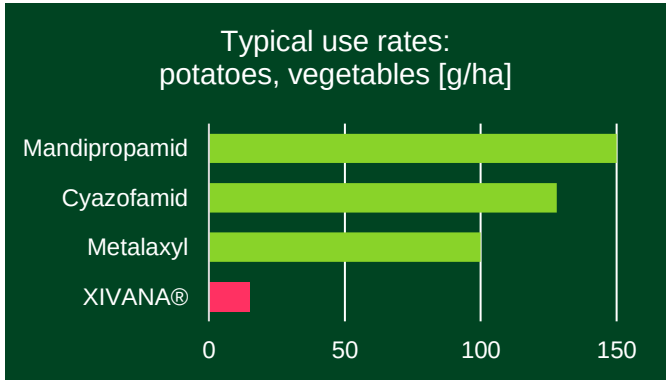
Use in soybeans in Frankenmuth, Michigan, 2019

Xivana

- Powered by **Fluoxapiprolin**

- New global horticulture fungicide with **best-in-class MoA**; delivers outstanding protection of grapes, potatoes and vegetables
- Higher, **longer-lasting efficacy** above established standards

PSP of >€150m
Expected to launch in 2022 in Australia (grapes)



[1] In collaboration with Sumitomo; [2] Internal estimates, [3] BASF Orkestra Ultra

Herbicides: Focused on Unlocking Greater Flexibility

Herbicide sales in 2020: **€4.7bn**, Pipeline Peak Sales Potential of **~€3bn**

Mateno® Complete

3 MoA

- Pyroxasulfone
- Diflufenican
- Aclonifen ***NEW***

- Mateno Complete includes Aclonifen, a new herbicide mode of action for Australia
- Suitable for use in wheat and barley for hard-to-control grass and broadleaf weeds

PSP of >€50m
Registration and launch expected in time for 2022 season

Untreated Control

Mateno Complete

New Herbicide Molecule

- First new mode of action in post emergence weed control in 30 years

- Potential to build on **#1 position** in global herbicides[1]
- Allows use in various market segments, beyond traditional nonselective use

Project is currently in Phase 3

Glyphosate Standard 1

Mix Partner + New Herbicide
Product concept with new active

[1] Internal estimates

Transformation of Small Molecule Discovery to Enrich Pipeline with Novel and Sustainable MoA‘s

Advanced Discovery Engine

Computational Target Discovery
// **Discover selective and safe MoA**
by proprietary algorithms & omics

New Paradigm in Screening
// **Gain deep knowledge on biological systems**
by machine learning approaches & virtual screening and docking

Digital Chemistry
// **Explore unlimited virtual chemical spaces**
by AI supported selection, design & synthesis

Predictive Early Safety
// **Focus on registrability & sustainability**
supported by early in vitro tests & in silico predictive models

Novel MoA in Research Pipeline

100% *in* ***Target Discovery***

>70% *in* ***Early Research***

>60% *in* ***Advanced Research***

>50 new molecular targets under investigation

Successful track record: Launched >15 active ingredients over the last 15 years

Biologicals Create New Value; Enable Crop Management Benefits

Leveraging the Power and Sustainability Derived from Microbes

Bayer is the **#1 Trusted Brand** in Biologicals by Growers[4]

	SeedGrowth					Foliar & Soil applied			
	Corn Yield	Soy Yield	Nematicide	Fungicide	Other	Insecticide	Fungicide	Soilborn Disease/Pest	Crop Performance Enhancers
In-licensed / Commercial Products	BioRise[1]	TagTeam®[3] Optimize®[3]	Poncho® Votivo®[2]	Integral® Pro[2]	TagTeam®[3] JumpStart®[3]	FLiPPER, VYNYTY, XenTari WG, REQUIEM, ABP 111	SERENADE ASO, SERENADE SOIL ACTIV, SONATA, DonJon, BALLAD, MINUET	BioAct	yAmbition AKTIVATOR, yAmbition COBRE

[1] Also sold under Acceleron® and Torque®[3] brand names; [2] 3rd party product from BASF, [3] In-licensed from Novozymes

Business Opportunities

- **Reduction of environmental impact** of Crop Protection
- **Maximizing yield potential** of high value germplasm
- Increasing **nitrogen use efficiency**
- Use in **Tailored solutions** to leverage our full portfolio, combining biologicals, chemistry, germplasm and digital to deliver new grower value

Vibrant Innovation Ecosystem

>20 *In-licensed/ Commercial products*

>5 *Ongoing collaborations and licensing partners*

>10 *Pipeline Candidates[5]*

>30 *Assets under evaluation for new collaborations or in-licensing opportunities*

[4] 75-100 growers polled in each of seven countries (Europe, Brazil, US) for potato, tomato and grapes, Bayer Market Research 2020, [5] Includes early research and collaborations

Reaching >60m acres in row crops and high value horticulture and vegetables acres

Biologicals Complementary to our Seeds, Digital and Small Molecules Portfolio

Serenade
Biological Fungicide

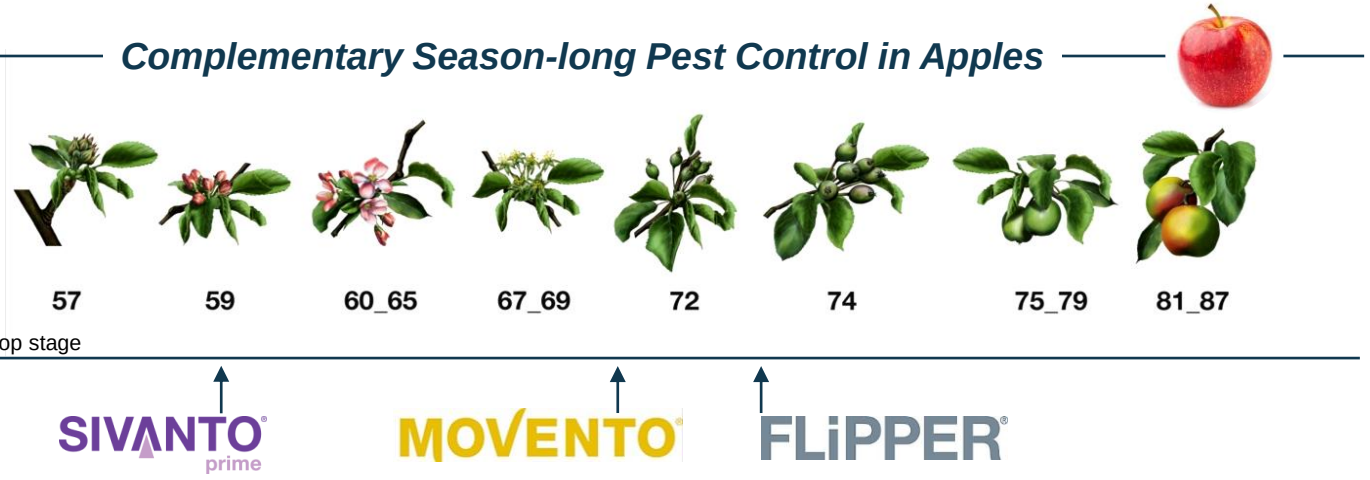
- Delivers **sustainable solutions** in emerging soil and expanding bacterial disease markets
- Serenade Soil Activ propels growth of Serenade brands to **>€150m peak net sales**
- Soil Activ Launched in the U.S. and Australia in 2021, Chile in 2022 and broader global uses to follow

FLiPPER
Biological Insecticide

- Natural product containing **fatty acids** derived from a by-product of extra virgin olive oil
- Consistent **broad-spectrum activity** across multiple fruit and vegetable crops and pests
- **Compatible** with conventional crop chemistry

All Organic Production with Serenade in Beans

Complementary Season-long Pest Control in Apples



powered by

data science

Digital Farming Solutions Underpin and Enhance Our Ability to Bring Transformational Solutions to Agriculture

Our Positive Impact on Agriculture

- Increase **yield** and improve **profitability**
- Leverage information to **manage risk** and address **variability**
- Manage fields down to the square meter, to farm more **efficiently** and **sustainably**
- Seamlessly collect, visualize and analyze data to enable **more informed decisions**

Three Core Value Drivers

- **Franchise Value**
- **Downstream Value**
- **Platform Value**

Climate FieldView Provides Unmatched Visualization, Analysis and Insights to Enable Growers to Enhance Productivity

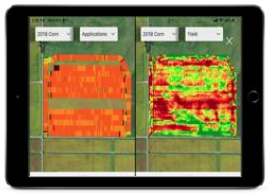
Climate FieldView

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

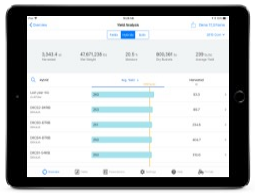
- **Largest database** of grower and field trial seed performance data in industry
- **>70** partners on platform

In-cab visualization

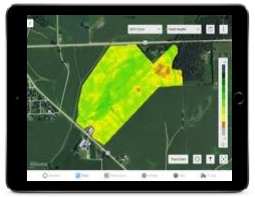
Performance Visualization



Performance Evaluation



Field health images



Prescription Delivery

[1] according to Kynetec December 2021 FieldView Brand Tracker

FieldView Creates Franchise Value via Insights

Increases Product Performance Transparency and Enables Seed and CP Digital Recommendations

Turning field data into insights

CLIMATE FIELD VIEW™

- Data Connectivity
- Data Visualization
- Crop Performance Analysis
- Field Health Imagery
- Variable Rate Planting Scripts
- Fertility Management
- Crop Protection

Turning field data into innovation

premium offerings in development

Corn Seed Advisor
- North America -

Corn Seed Showcase
- North America -

Corn density / Placement
- Brazil -

Wheat Digital Disease Management
- Europe -

Corn and Soybean Digital Disease Management
- North America -

Soybean Seed Placement
- North America -
ADVANCED to Phase 2

Bayer corn seed customers
who are FieldView Plus users have

>5%

higher 2-Year sales CAGR [1,2,3]

U.S. customers who are active
FieldView Plus users have a

+4 points

higher U.S. Net Promoter Score in 2020-2021[1,3]

U.S. customers who use FieldView had a

~2.5%

higher seeding rate
for Bayer owned corn brands
in 2021 vs. national average[3]

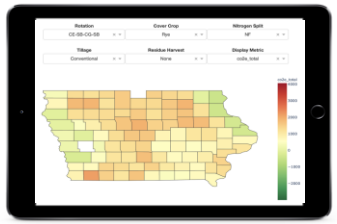
[1] vs. non FV Plus users; [2] based on U.S. GPOS data; [3] Internal estimates

Digital Unlocks Scalable Climate-Smart Business Models

Carbon Markets Valued at >$200bn/year[1] and Growing with Consumers' Demand for Sustainability

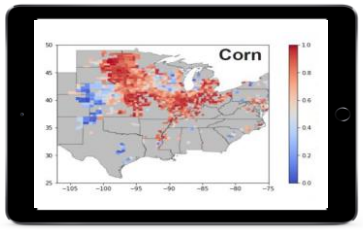
FIELDVIEW has the potential to **streamline the way carbon is measured, verified and reported**, to enable scalable, climate-smart business models

Quantification



CO_2e Total

Verification & Reporting



Crop Rotation by Field

Carbon Initiative

~2,500 *participating farmers in Brazil and the U.S. alone*

10 *countries covered*

1.5m *acres globally*

- Long-term program providing **annual incentives** to Climate FieldView enrolled growers for verified and validated **climate-smart practices** like no-till and cover cropping
- Ranked ***#1*** **in the U.S.**, scoring very high in terms of **grower trust**[2]

Enables 3 Expected Downstream Revenue Opportunities

Carbon Services | **Product sales** | **Carbon assets**

- **Project Carbonview**, collaboration with **Bushel, The Andersons,** and built on **Amazon Web Services** cloud infrastructure, expected **to track carbon emissions across ethanol chain**
- **CHS Inc.,** largest Ag Coop in the U.S., **agreed** to be our **carbon program provider,** providing advice to growers moving to sustainable practices.

[1] Source: https://www.reuters.com/article/us-carbontrading-turnover/global-carbon-trading-turnover-at-record-214-billion-last-year-research-idUSKBN1ZN1RN; [2] Forward Group Research Carbon Credit Program Perceptions & Evaluation, July 2021

Enabling New Digital Platforms in Ag

Opens Access to Participate in Broader B2B AgTech Value Pools; Expanding into Digital Marketplaces

Microsoft

Collaboration

- Combines **Bayer's ag expertise** and leading digital farming platform with **Microsoft's cloud technology** and unrivaled B2B solutions, to enhance digital infrastructure
- **Cloud-based set of digital tools** and data science solutions for agriculture and adjacent industries
- Seeking to create and commercialize **off-the-shelf opportunities** for other companies **to enter and innovate directly in ag** and other industries.
- **Solutions** to address farming operations, **sustainable sourcing, manufacturing and supply chain improvement**, and **ESG monitoring** and measurement

Orbia: First Digital Ag-Marketplace

Expansion to Argentina, Colombia and Mexico

- JV between Bayer and Bravium[1]
- Connects growers, input providers and grain traders to a network to expand their reach, secure financing, redeem rewards, purchase and sell inputs

- Established in 2019 in **Brazil**
- **Main agricultural marketplace** with largest loyalty program
- **>300 distributors** with inputs such as pesticides, seeds and fertilizers
- **>185,000** registered growers
- Covers **~70% of planted area**

[1] Brazil-based marketing agency.

Win with world class innovation

Key Take-Aways

Investing to Lead

- ***~€2bn*** *annual R&D spend to fuel* ***~€30bn*** *peak sales potential*
- ***Five*** *New Leaps Investments*

Advancing Innovation

- ***Eight*** *projects advance, including*
  - *Short-Stature Corn Hybrids*
  - *Bollgard 4 and HT4 Cotton*

Powering the Core

- ***~500*** *new hybrids and varieties launch*
- ***>300*** *new crop protection registrations*
- *2022 Launches: SmartStax Pro corn, Intacta 2 Xtend soybeans & Fox Supra fungicide*

Transforming with Digital

- *Robust Carbon Initiative*
- *Microsoft Collaboration*

Health for all,
hunger for none

Q&A

Field Innovation Showcase

August 2022

February 2022 Crop Science
Annual Pipeline Update

Crop Science R&D Pipeline

Appendix 1

Crop Science Division: R&D Pipeline (as of February 2022)

Key Corn Seed & Traits, Soybean Seed & Traits and Other Projects with ~€19-€21bn Peak Sales Potential; ~50% Incremental

Projects listed here and included in the peak sales potential by segment do not include projects funded by our LEAPS investments

PSP = Peak Sales Potential

[2] In collaboration with KWS [3] In collaboration with BASF [4] "Other" category includes seeds and traits, such as cotton, canola, wheat, OSR and sugarbeets, plus carbon and digital Models

■ advanced to next phase

Annual upgrades with new hybrids or varieties launching annually and multiple generations in development.

Crop Science Division: R&D Pipeline (as of February 2022)

Key Crop Protection Projects with ~€9bn Peak Sales Potential; ~50% Incremental

[1] Shown here is a subset of Bayer's total life cycle management activities; focused on new formulation developments which have the potential to bring significant innovation to customers compared to currently marketed product., Products shown may not yet be fully registered in all jurisdictions. [2] SeedGrowth is currently reported within other SBEs

PSP = Peak Sales Potential

Selection of projects listed here and included in the peak sales potential by segment do not include projects in early research or discovery

■ advanced to next phase

February 2022 Crop Science
Annual Pipeline Update

Platform Capabilities and Development Timelines

Appendix 2

Breadth and Depth of Five Core R&D Platforms Power Innovation

CONVERGENCE OF LEADING R&D PLATFORMS TO UNLOCK NEXT LAYER OF VALUE CREATION IN AGRICULTURE

SEEDS & TRAITS

Breeding

Leading germplasm libraries paired with advanced breeding and data science technology application

1.7P^3 calculations in cloud-based algorithms

>3,500 unique field-testing locations

>500 deployments a in corn, soybeans, vegetables in 2021

Biotech

Leading protein optimization technology with extensive protein libraries

First to combine RNAi technology with biotech

>2.7bn datapoints generated by Precision Genomics team to deliver biotech traits and accelerate genetic gain

>15 new and next-gen. traits in development

CROP PROTECTION

Chemistry

Strong discovery platform for molecules with new modes-of-action and differentiated profiles

100% novel Mode of Action in early discovery

30-60 molecules selected for field trials per year

Expect ~100 new formulations to launch in the next decade

Biologicals

270,000 microbes in collection

>100,000 strains characterized every year with in silico, in vitro or in planta assays

>1,700 trials in 44 countries in 2021

~60m acres of commercial products in row crops annually

DIGITAL FARMING

Data Science

#1 **database** of grower and field trial seed performance data in the industry

>87.5bn data points of product performance under real-world farmer management practices

>180m subscribed acres across 23 countries

Scale and Expertise in Biotech Crop Development Lead the Industry

Designing Crops to Revolutionize Agriculture

Trait Development Process (12-15 years)

Phase 0	Phase 1	Phase 2	Phase 3	Phase 4
Gene/Trait Identification	**Proof of Concept**	**Early Development**	**Advanced Development**	**Pre-Launch**
Genomics and High-Throughput Protein Screening to Identify Desired Characteristics	Gene Optimization and State-of-the-Art Genome Editing Capabilities Drive Product Concept Demonstrations In-Crop	Large-Scale Transformation, Commercial Candidate Selection, Pre- Regulatory Data Generation	Trait Integration, Regulatory Data Generation	Regulatory Submissions & Approvals, Seed Bulk-Up, System Testing and Pre-Marketing
Competitive Advantage	***Competitive Advantage***	***Competitive Advantage***	***Competitive Advantage***	***Competitive Advantage***
Industry-leading genomics capabilities and germplasm libraries Best-in-class screening capabilities	Best-in-class genome editing and gene expression toolkits drive precision in gene to phenotype optimization High throughput protein optimization leveraging machine learning to design unique modes of action for pest control	Ability to rapidly test many gene combinations to evaluate stacks Knowledge of optimal genome locations Largest global field-testing footprint diversifies geographic data insights	New traits are introgressed into the most elite germplasm, and stacked with the industry's leading traits	Unrivaled global regulatory experience Identification of optimal agronomic systems (trait, germplasm, chemistry) for product deployment & customer recommendations

Industry-Leading Expertise in Chemical Crop Protection R&D

Designing Low Impact Chemicals to Safely & Sustainably Address Needs of Farmers and Society

Chemical Crop Protection R&D timeline (10-14 years)

Phase 0

Molecular Target & Hit Identification

AI-supported molecular target & hit identification toward selection of potent and safe molecules

Competitive Advantage

Powerful target-based discovery platform

Unique early safety assessment with *in vitro* tests and *in silico* prediction tools & models

Focus on novel Mode of Action & novel chemical spaces

Phase 1

Proof of Concept

Profiling of best candidates addressing market needs; Field trials; chemical & formulation optimization; mammalian & environmental toxicology assessment

Competitive Advantage

AI-supported design of molecules to create desired properties

World-class biology testing

Combined regulatory and chemical expertise allow early decisions to maximize probability of success

Phase 2

Early Development

Commercial candidate selection and product concepts; process development; pre-regulatory data generation

Competitive Advantage

Largest global field-testing footprint diversifies geographic data insights

Industry-leading formulation expertise with locations in Europe, NA, APAC

CoGs leadership ensured by cutting edge science and AI-supported synthesis and route design

Phase 3

Advanced Development

Commercial proof of concept, regulatory data generation

Competitive Advantage

Largest portfolio of assets and digital capabilities to define digitally enabled tailored solutions (CP, Breeding, Plant Biotech, Data Science)

Scientific and agronomic knowledge to design best resistance-breaking products

Phase 4

Pre-Launch

Regulatory Submissions & Approvals, Production, Application Optimization, Pre-Marketing

Competitive Advantage

Unrivaled global regulatory experience advising

Evaluation of agronomic systems for product deployment & customer recommendations

Scale and Leading Technology Drives New Seed Development

Enhancing the Breeding Process with Scalable Analytics, Automation and Improvements in Testing

Germplasm Product Development Process (8 - 10 years)

Discovery

Population Selection

Population simulation and selection for desired agronomic characteristics and attributes

Competitive Advantage

Industry-leading global germplasm libraries across crops and markets

Decades for field and genomic data combined with industries leading data science platform

Phase One

Early Development

Advanced genomic selection, first year of field testing, and early demonstration of Product Concept In-Crop

Competitive Advantage

Ability to rapidly sample and genetically evaluate millions of seeds

Advanced Product Design facilities that enable multiple cycles of planting per year

Phase Two

Intermediate Development

Large-Scale Field Testing, Trait Integration, disease screening advanced selection analytics, early COGS assessment

Competitive Advantage

Industry leading Trait Integration programs stack traits into elite germplasm

Largest global field-testing footprint diversifies geographic data insights

Phase Three

Advanced Development

Traited Testing, Early Tailored Solutions data generation, and preparation of digital data package for Climate models

Competitive Advantage

Fully automated seed distribution centers prescriptively sample diverse growing environment

Traited Testing evaluates products as they would be experience by the growers

Phase Four

Pre-Launch

Broad product testing by R&D and Marget Development, Seed Bulk-Up, System Testing and Pre-Marketing

Competitive Advantage

Most advanced and distributed network of field testing in the industry

Evaluation of agronomic systems for product deployment & customer recommendations

Exploring New Product Concepts Drives Future Growth for Biologics

Open Innovation approach broadens product offerings with exceptional product development and support

4-6 Year Product Development Timeline

Partner of choice for developing biological products including new concepts

Discovery

Vast library of diverse microbes for new generation of microbials and biochemicals

Competitive Advantage

In depth understanding of genomes and modes of action results in novel products

Research Optimization

Core competencies in fermentation and formulation optimization of microbial products for agriculture

Competitive Advantage

Market leading end use products with ease of handling for customer and good shelf life for distribution

Field Development

World wide network of field testing capabilities for early screening and development of spray programs

Competitive Advantage

Understanding of geographic product range with precise guidance on practical use

Grower Support

Dedicated resources to understand compatibility, rainfastness and stability of biologicals in jug and on seed

Competitive Advantage

Exceptional customer support with market leading biological products

Industry leading portfolio

Sustaining today's leading lineup and pioneering next generation of biologicals

Competitive Advantage

Ability to address untapped markets and work within challenging regulatory constraints worldwide