BAYER CROP SCIENCE
Scaling Regenerative Agriculture

Barclays Digital & Disruptive Technologies Conference
June 11, 2023

Dr. Jeremy Williams
Head of Climate LLC, Digital Farming and Commercial Ecosystems // Crop Science Division // Bayer

///// Health for all, Hunger for none

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Head of Climate LLC, Digital Farming and Commercial Ecosystems // Crop Science Division // Bayer
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.
The 2030 Challenge: Producing More with Less in a Changing Climate

Food Security

+ 2.2 billion people

Climate Change

- 17% harvest loss due to climate change

- 20% loss in arable land

+ 50% food and feed required
Our Vision Aspires to Address Global Challenges at Scale

**Sustainability Commitments**

- **Produce 50% More.**
  - Required increase by 2050 to feed the world (FAO data).

- **Restore Nature.**
  - To meet our 2030 sustainability commitments.

- **Scale Regenerative Ag.**
  - To expand our footprint to reach our 400M acre ambition by 2035.

**Sustainability Commitments**

- **30%**
  - Reduction in GHG emissions per kg of crops produced

- **30%**
  - Reduction in crop protection impact on the environment

- **25%**
  - Improvement of water use per kg of rice produced

- **100m**
  - Empower 100m smallholder farmers

FAO= Food and Agriculture Organization; GHG= Greenhouse Gas; 'For detailed commitments see our Sustainability Report.
Ag Input Market Growing Over Two Percent to Meet Demand
Potential to Double our Accessible Market Through Investments in Innovation in Adjacent Spaces

>100bn\(^1\) EUR
2023 Global Ag Input Market

>200bn\(^1\) EUR
2030 Global Ag Input Market & Related Adjacencies

Crop Protection
Seed and Traits

>2\%
expected annual growth rate in crop protection and seed & traits market

>2x opportunity

ADJACENT SPACES
- Biofuels
- Digital Platforms
- Carbon
- Crop Fertility
- Digital Marketplaces
- Precision Application

\(^1\) Company estimates
The Established Leader in Crop Science
Expect 2024 to be our 4th Consecutive Year of Growth in Core Business

Growth in Bayer Crop Science Core Business

Sales / currency & portfolio adj growth%

- **2024**
  - 1 to 4%
- **2023**
  - 7%
- **2022**
  - 6%
- **2021**
  - 10%

Growth in Bayer Crop Science Core Business

Sales / cEBITDA1 (€bn) / FY 2023

<table>
<thead>
<tr>
<th>#1 Corn Seed &amp; Traits</th>
<th>#1 Herbicides</th>
<th>#1 Soybean Seed &amp; Traits</th>
<th>#1 Cotton</th>
<th>#2 Fungicides</th>
<th>#2 Vegetable Seed</th>
<th>#3 Insecticides</th>
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</thead>
<tbody>
<tr>
<td>Bayer CS</td>
<td>Syngenta AG</td>
<td>Corteva</td>
<td>BASF Ag Solutions</td>
<td>FMC</td>
<td></td>
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</tr>
<tr>
<td>5.0</td>
<td>3.7</td>
<td>3.1</td>
<td>2.3</td>
<td>0.9</td>
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</tr>
<tr>
<td>23.3</td>
<td>19.0</td>
<td>15.9</td>
<td>10.1</td>
<td>4.2</td>
<td></td>
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</tr>
</tbody>
</table>

1 Company information: exchange rate: FY 2023: ~1.08 USD/EUR;
2 Syngenta AG as of FY'22, ~1.05 USD/EUR;
Core = Crop Science business excl. glyphosate-based herbicides
Extending Our Leadership Position Through Our Pipeline

>€32bn Peak Sales Potential; Ten Blockbusters Expected to Launch in Next Decade

**Bayer Crop Science R&D Pipeline**

- **Hybrid Wheat**
  - Digital Platforms, HortiView
  - 100’s of cotton varieties, 1000’s of vegetable varieties/hybrids, canola hybrids and rice hybrids

- **Plenexos Insecticide**
  - Various LCM projects (formulations and mixtures)

- **Next generation Fungicide Small Molecule**
  - Various LCM projects (formulations and mixtures)

- **New Herbicide Small Molecule**
  - Various LCM projects (formulations and mixtures)

**Insecticides**

- **Preceon Smart Corn System**
  - Next Gen Corn Insect Traits (LEP4, 5, CRW4)
  - 5th Generation Herbicide Tolerance in Corn

**Fungicides**

- 4th and 5th Gen Herbicide Tolerance Trait in Soybeans
- 3rd and 4th Gen Insect Protection Trait in Soybeans

**Herbicides**

- 1,000’s of new corn hybrids
- 1,000’s of new soybean varieties

**Soy S&T**

- Digital Farming Solutions Franchise Value

**Corn S&T**

- Digital Farming Solutions Franchise Value

Assuming success, pipeline peak sales values translates to above market sales CAGR

>50% PSP

Blockbuster Products with >€0.5bn expected PSP

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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. On average, ~50% of the PSP is incremental and 50% is replacement value. Note that products are excluded from the pipeline PSP typically the year following launch. Projects listed are only a subset of the pipeline. Direct-seeded rice, carbon farming, corn biotech traits in Asia and Africa and ~1.5bn EUR sales ambition in biologicals are upside potential to the €32bn PSP.

2 Other category includes seeds and traits, such as cotton, canola, wheat, OSR, rice, vegetable seeds and sugarbeets, plus digital platforms and SeedGrowth.
Annual Portfolio Refresh Provides Foundation for Growth

Pricing and Sales Mix Opportunity Across Our Leading Global Footprint Enhanced by Digital Assets

ANNUAL SEED GERMPLASM REFRESH

~400-500 new seed hybrids & varieties deployed annually

>400 hybrids and varieties launched in 2023

6 row crops and
>20 fruit and vegetable crops in our breeding programs

CROP PROTECTION LIFE-CYCLE MANAGEMENT

~90-100 new formulations to launch in the next decade

>190 crop protection registrations in 2023

6 formulation launches in 2023
Accelerating Genetic Gain with Precision Breeding

ACCELERATING OUR ABILITY to bring innovative solutions to our customers around the world

Data & analytics driving decisions & AI connected pipeline - enabling a dynamic breeding pipeline

Fieldview Field Health Imagery Data Collection

Seed Chipping Technology for Accelerated Discovery

Marana, AZ Protected Culture Design Center

Cassette Planter delivers large scale field testing

Customer Insights

Customer Driven quantitative economic indices

Advanced Genomic Capabilities

Genomic Insights & AI driving new breeding starts

Accelerated Breeding Methods

Genomic Insights & AI driving new breeding starts

Digital Field-Testing Twin

Mix of simulated and actual field testing

Doubling Genetic Gain by 2030

Accelerating Breeding Cycle from 5-6 years to ~4 months
Preceon Smart Corn System to Transform Corn Production
High-Value Biotech Approach Advanced to Phase IV; Breeding Targeted U.S. Launch in 2024

Global PSP Opportunity >€1.5bn
Global Acre Potential >220m

Preceon Smart Corn <7ft
Traditional Corn 9-12ft

365 growers (>30k acres) in Europe & US in Groundbreaker trials in 2023
>80% growers in trials would plant Preceon Smart Corn again

Preceon Smart Corn to Transform Corn Production
High-Value Biotech Approach Advanced to Phase IV; Breeding Targeted U.S. Launch in 2024

Global opportunity represents combined breeding & biotech opportunity
Next Gen Soybean Traits Driving >€3bn Peak Sales Potential
Key Anchoring Technologies in Next Gen Soybean Solutions Advanced in 2023

**HT4:** Advanced to Phase 4

- **Soybean Herbicide Tolerance**
  - **4th Gen**
  - Provides *industry leading weed control* and flexibility with 2 additional herbicide tolerances: HPPD (Mesotrione) + 2,4-D
  - **Broatest class of high-performing** varieties across all maturities
  - **Potential to regain significant** U.S. market share

**IP3:** Advanced to Phase 3

- **Soybean Insect Protection**
  - **3rd Gen**
  - Includes *two new proteins* for enhanced and durable protection from broad spectrum of lepidopteran pests
  - Builds on *leading insect protection platform and >80% Brazil market share*

>€3bn PSP

Including Next Generation: HT5 and IP4 to be introduced early next decade
New Production Systems for the World’s Largest Crops

Potential to Shape Transformation of Wheat and Rice Production by End of the Decade

Resilient Hybrid Wheat System

- Hybrid wheat expected to provide **higher yield** and **yield stability**, with potential fit on a significant portion of the ~555m acres of wheat grown globally and ~€700m PSP
- Envision a **more sustainable and resilient system** with better nitrogen use efficiency, disease, drought and heat tolerance
- Advancements in genomic tools and the cytoplasmic male sterility system are enabling the development of hybrid wheat at competitive cost
- ‘Blue ocean’ market potential to drive value of market for Wheat seed and technologies, which has already happened in crops like corn

Our Vision:
A digitally enabled sustainable hybrid wheat system offering

Hybrid Wheat Nursery
Filer, Idaho - June 2022

Sustainable & Profitable Direct Seeded Rice Crop System

- **Elite Designed Hybrid Rice**
- **Integrated & Effective Weed Mgmt System**
- **Digital Insights & Agronomic Support**

- Farmer economics show 16% lower costs with direct seeded rice
- Reduced water usage by up to 40%
- Manual labor reduced by up to 50% or 150 labor hs per 1 Ha DSR
- Up to 45% reduction in CO2 emissions
- Methane reduction up to 85%

HYBRID RICE TRIALS

1 Internal estimate via DirectAcre program in India
CropKey Approach to Open Uncharted MoA & Chemical Spaces

Pioneering Today to Unlock the Crop Protection Solutions of Tomorrow

**2023**

**Opening new doors**

- Novel modes of action in our pipeline:
  - 100% in Target Discovery
  - >80% in Early Research
  - >65% in Advanced Research
  - >30 new molecular targets under investigation
  - >10 newly validated targets identified for screening
  - >5 novel modalities/screening technologies

Backed by strong partnerships:

- Oerthbio
- Targenomix
- AgPlenus

**2030**

**New keys for farmers**

First new modes of action from CropKey approach

- New herbicide molecule
  - First new Mode of Action for broadacre post-emergent weed control in 30 years
  - Control of key leaf spot fungi like Anthracnose across key regions
  - >€750m PSP

- New fungicide molecule
  - >€200m PSP

**2040+**

A set of keys for advanced solutions in key markets

- Phase 2
- Phase 3
We aim to Outgrow the Market with a 17% CAGR

Global Biologicals Market

<table>
<thead>
<tr>
<th>Year</th>
<th>Biologicals Market</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2022</td>
<td>€12bn</td>
<td>7%</td>
</tr>
<tr>
<td>2035</td>
<td>€30bn</td>
<td></td>
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</table>

Bayer Biologicals Opportunity

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales (mn)</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2022</td>
<td>€200m</td>
<td></td>
</tr>
<tr>
<td>2035e</td>
<td>&gt; €1.5bn</td>
<td>17%</td>
</tr>
</tbody>
</table>

In-licensing or distribution; expanding current portfolio
Pipeline advancements
Strategic research partnerships

Increasingly stringent regulatory approvals processes, consumers’ demand for low- and no-residue food products and retailer food sourcing standards drive growers to look for new innovations in crop protection

Source: Global Agricultural Biologicals Market, Forecast to 2030, Frost & Sullivan, 2022 and internal estimates
Data and Digital are Anchors for the Pathway to Regenerative Ag

**Validation of Regen Ag outcomes**
- Preservation, restoration of biodiversity
- Yield increase and improved productivity
- Conservation of water
- Climate mitigation and adaptation
- Improved soil health
- Enhanced social & economic well-being of farmers and communities
- Yield increase and improved productivity

**Creation of New Value Streams**
- impacting +250M acres in 23 countries through our digital farming solutions and carbon programs
- Powered by an open ecosystem driving continuous innovation towards more sustainable food systems

**Data Collection**
- Understand what farmers are doing

**Data Analysis**
- Obtain deeper insights into each acre

**Data-based Recommendation**
- Support farmer decision-making

**Quantify outcomes & co-benefits**
- Create new value streams impacting +250M acres in 23 countries through our digital farming solutions and carbon programs
- Improve soil health
- Climate mitigation and adaptation
- Conservation of water
- Improved social and economic well-being of farmers and communities
- Yield increase and improved productivity

**ForGround by Bayer**

**PRO Carbono**

**Opensource**

**Powerful**

**Worldclass**

**Sustainable**

**Open ecosystem**

**Driving continuous innovation**

**Towards more sustainable food systems**
Today our seed & trait technologies reach ~340m acres globally, anchoring our vision for regenerative system solutions.

By the middle of the next decade, we envision broadening our reach to >400m acres.

Hybrid wheat, direct seeded rice, corn traits in Africa & Asia and carbon farming enable potential in new crops and markets.

Preceon Smart Corn System and next-gen herbicide tolerance in soybeans build out our base.
Crop Science: Seed & Traits and Digital R&D Pipeline  
(Annual Update March 2024)

<table>
<thead>
<tr>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
<th>Phase IV</th>
<th>PSP</th>
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</thead>
<tbody>
<tr>
<td>Corn Disease Shield - NA</td>
<td>Corn LEP5</td>
<td>Corn HT5</td>
<td>PRECEON Smart Corn - Breeding</td>
<td>~€21bn</td>
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<tr>
<td></td>
<td>2nd Generation Seed Density</td>
<td>2nd Gen Seed Density Digital Tool</td>
<td>PRECEON Smart Corn – Biotech Trait2</td>
<td>~€5bn</td>
</tr>
<tr>
<td></td>
<td>Digital Mgmt. – NA</td>
<td>Digital Mgmt. Tool – NA</td>
<td>CRW4</td>
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<tr>
<td></td>
<td>Seed Placement Digital Tool - NA</td>
<td>Annual Germplasm Upgrades</td>
<td>Soy IP3</td>
<td>~€5bn</td>
</tr>
<tr>
<td>Annual Germplasm Upgrades</td>
<td>Soy IP4</td>
<td>Soy HT5 (6 Tolerances – Adds PPO)</td>
<td>Soy HT4</td>
<td>~€5bn</td>
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<tr>
<td>Soybean Native Resistance</td>
<td>Digital Mgmt. – NA</td>
<td>Seed Placement Digital Tool – NA</td>
<td>Vistive Gold Xtend</td>
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<tr>
<td>Soybean Native Resistance</td>
<td>Seed Placement Digital Tool – LATAM</td>
<td>Annual Germplasm Upgrades</td>
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<tr>
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<td>Annual Germplasm Upgrades</td>
<td>Soybean Native Resistance</td>
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<td></td>
<td>Wheat Digital Disease Mgmt. - EMEA</td>
<td>Sugarbeets 2nd Generation Herbicide</td>
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<tr>
<td></td>
<td>Canola HT4</td>
<td>Tolerance1</td>
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<tr>
<td>Canola/OSR Digital Mgmt. - NA</td>
<td>Wheat Annual Germplasm Upgrades</td>
<td>Cotton HT4 (5 tolerances – Adds 2, HPPD and PPO)</td>
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<tr>
<td></td>
<td>Wheat Disease Package Upgrades</td>
<td>Cotton HT4</td>
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<td></td>
<td>Coton Annual Germplasm Upgrades</td>
<td>Wheat Annual Germplasm Upgrades</td>
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<td>Veg Annual Germplasm Upgrades</td>
<td>Coton Annual Germplasm Upgrades</td>
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<td></td>
<td>Rice Annual Germplasm Upgrades</td>
<td>Coton Annual Germplasm Upgrades</td>
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| Projects listed here and included in the peak sales potential by segment do not include projects funded by our Leaps by Bayer investments; includes all advancements made in FY'23, updated Mar'24

PSP = Peak Sales Potential, 50% incremental; Expected to reach 30% of PSP by 2032, 80% of PSP by 2038 and remainder in 2039+

1 In collaboration with KWS; 2 In collaboration with BASF; 3 “Other” category includes seeds and traits, such as cotton, canola, wheat, OSR, rice, vegetable seeds and sugarbeets, plus carbon and digital Models.

Note that products are excluded from the pipeline PSP typically the year following launch.
Crop Science: Crop Protection R&D Pipeline
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<th>Phase IV</th>
<th>Life Cycle Management</th>
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<tr>
<td><strong>HERBICIDES</strong></td>
<td></td>
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<td></td>
<td>Non-Selective</td>
</tr>
<tr>
<td>New Herbicide ✓ ✓ ✓</td>
<td>New Herbicide ✓ ✓ ✓</td>
<td>New Herbicide ✓ ✓ ✓</td>
<td>Glyphosate LCM ✓</td>
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<tr>
<td><strong>FUNGIC.</strong></td>
<td></td>
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<td>Selective</td>
</tr>
<tr>
<td>New Fungicide ✓ ✓ ✓</td>
<td>New Fungicide ✓ ✓ ✓</td>
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<td>Martin Flexx / Adengo LCM ✓</td>
<td>Council Family ✓</td>
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<td><strong>INSECT.</strong></td>
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<td>Balance Flexx LCM ✓</td>
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<td>New Insecticide ✓ ✓</td>
<td>New Insecticide ✓ ✓</td>
<td>Plenexos ✓ ✓ ✓</td>
<td>Convintro ✓</td>
<td>Mesosulfuron LCM ✓</td>
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<td><strong>SEED GROWTH</strong></td>
<td></td>
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<td></td>
<td>New over-the-top herbicide ✓</td>
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| | | | | Non-Selective |
| | | | | Selective |
| | | | | New over-the-top herbicide ✓ |
| | | | | |

**Com** ✓ **Soybeans** ✓ **Fruits and vegetables** ✓ **Cereals**, **oilseed rape**, **sugarbeets**, **cotton and rice** ✓ **Biological** ✓ **Small Molecule**

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; includes all advancements made in FY’23, updated Mar’24; 2 SeedGrowth is currently reported within other SBEs; 3 3rd party collaboration

PSP = Peak Sales Potential, 50% incremental; Expected to reach 30% of PSP by 2032, 80% of PSP by 2038 and remainder in 2039+; Note that products are excluded from the pipeline PSP typically the year following launch.

advanced to next phase **Selection of projects listed here and included in the peak sales potential by segment do not include projects in early research or discovery.**