



# *Soybeans*

## North America

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Guidance at constant currencies, not including portfolio divestitures if not mentioned differently.

# Fields of Opportunity

## North America Soybeans



Drone Application Demo

HT5  
Non-Traited Check  
HT4  
Non-Traited Check  
XtendFlex  
Non-Traited Check

Next Generation Herbicide  
Efficacy Demo

Commercial  
XtendFlex  
Varieties

HT4 System Recommendation

Cover Crop - Rye Grass

Cover Crop - CoverCress

Season-Long Weed Control Flexibility with HT4 Demo

Commercial  
XtendFlex  
Varieties

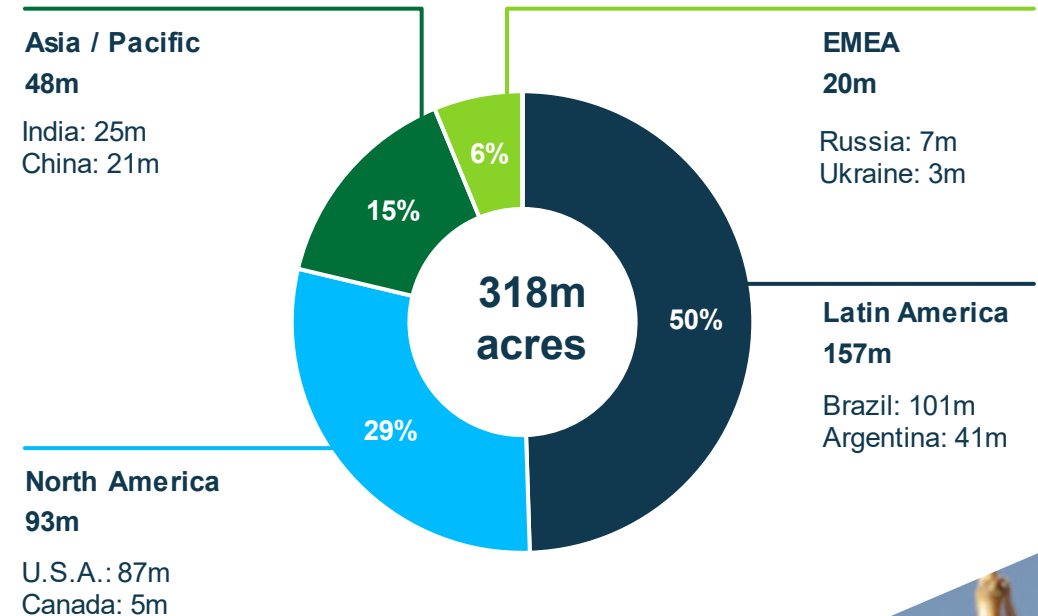


# The Americas Lead the World in Soybean Production

## About Soybeans

- // Total **CP market** globally: **€12.0bn**
- // Total **Seed & Traits market** globally: **€5.9bn**
- // Soybeans have a wide range of uses; **meal** is primarily used as a **high protein livestock feed**, and soybean **oil in food and industrial uses** like biodiesel
- // Continually evolving **weed resistance** drives need for innovation in **North America**, while management of **insect resistance** is key in tropical **Brazil**
- // Evolving **fungal diseases** can also be devastating to yields in **Brazil**; requiring state-of-the art fungicides to manage

## Major Soybean Growing Geographies (planted acres, 21/22)<sup>1</sup>



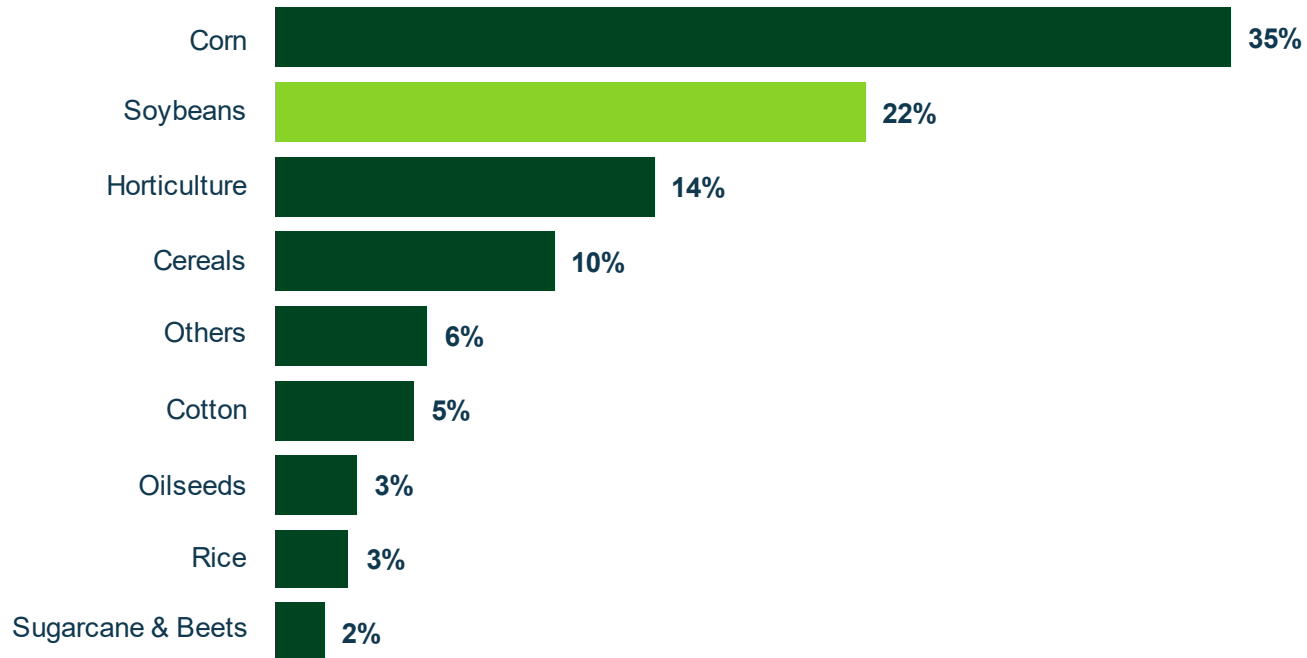
<sup>1</sup> Source: internal estimates, planted acres as of 2021



# #1 Global Soybean Trait Platform Complemented by the Leading Soybean Fungicide Franchise in LATAM

## Bayer Crop Science 2021 Sales<sup>1</sup>

### Sales by Crop Served



**> Sales in Soybeans: ~€4bn**

<sup>1</sup> Source: Company estimates. Based on 2021 data, excluding Environmental Science sales. Crop protection sales allocated to crops where they are applied. "Others" includes digital farming solutions, non-commercial crops, and non-identified crops.

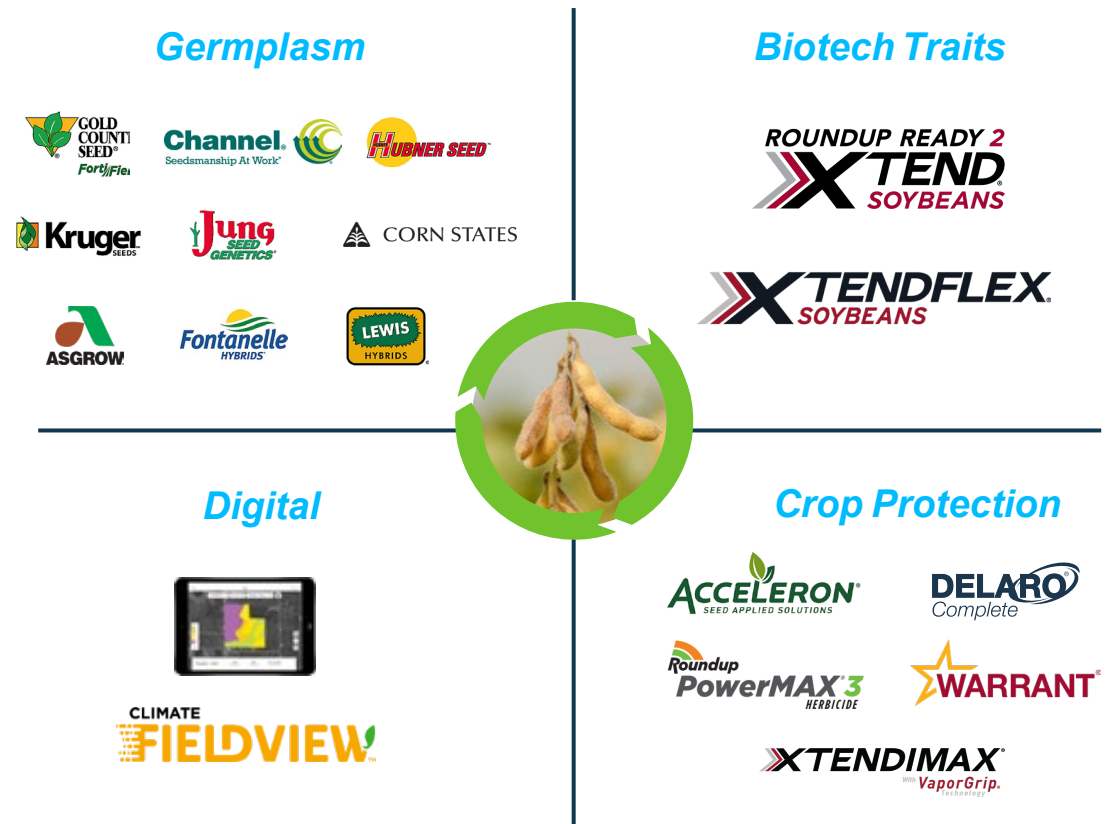


# North America's Leader in Soy Seed & Traits and Crop Protection

## Bayer NA Soybean Footprint

- // #1 Soybean Seed and Traits Platform in North America
  - // #1 U.S. Germplasm share of 35-40%
  - // #1 U.S. Trait share of >55%
- // Deployed >150 new varieties in 2021; offer >850 varieties in North America
- // When using XtendFlex soybeans as part of the Roundup Ready Xtend Crop System, farmers see a **2.5 bu/acre advantage**<sup>2</sup> vs. Enlist™ Weed Control System<sup>2</sup> in farmer managed herbicide systems trials in farmer managed trials
- // The Roundup Ready Xtend Crop System controls >335 weeds<sup>3</sup>

## Bayer NA Soybean Portfolio<sup>1</sup>



<sup>1</sup> Examples of key products in the Bayer portfolio; not a comprehensive representation <sup>2</sup> 2021 Farmer Managed Soybean System Trials (67 locations in 2021 reporting data located with 12-IA, 11-IL, 9-IN, 3-MI, 9-MN, 8-NE, 5-OH, 2-PA, 2-WI, 1-ND, 1-SD, 4-KS). Significant at P ≤ 0.05 LSD at 1.2 Bu/Aas of 01/05/2022. 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. <sup>3</sup> Based on the EPA herbicide labels for the herbicide recommended use in each system as of January 2021. XtendFlex soybeans include Xtendimax herbicide with VaporGrip Technology, Roundup PowerMAX and Liberty herbicide.



# XtendFlex and XtendiMax Defend #1 Soybean System in NA

~16m XtendFlex Acres in First Season in North America; expect >20m in 2022



**#1** NA soybean system<sup>1</sup>

Only system with **14-days residual activity**; controls significantly more weeds than the Enlist system<sup>3</sup>

~**50m** acres in soybean system in 2021; expect to retain **leading position** in 2022



- Provides tolerance to dicamba and glyphosate
- Recommended Herbicide Pairings:



- Proven performance, high-yield potential, strong agronomics
- Broadly licensed across the industry



- Adds glufosinate tolerance to the proven performance of Roundup Ready 2 Xtend Technology to provide additional flexibility to manage tough-to-control weeds

- Recommended Herbicide Pairings:



- Expect **>20m** acres in the U.S. in 2022

Top volume **XtendFlex** soybeans have a **2.5+bu/acre advantage** vs. Enlist E3 soybeans<sup>2</sup>

<sup>1</sup> Bayer internal estimates; <sup>2</sup> 2021 Farmer Managed Soybean System Trials (67 locations in 2021 reporting data located with 12-IA, 11-IL, 9-IN, 3-MI, 9-MN, 8-NE, 5-OH, 2-PA, 2-WI, 1-ND, 1-SD, 4-KS). Significant at P ≤ 0.05 LSD at 1.2 Bu/A as of 01/05/2022. 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; <sup>3</sup> Based on EPA labels for the chemistries.

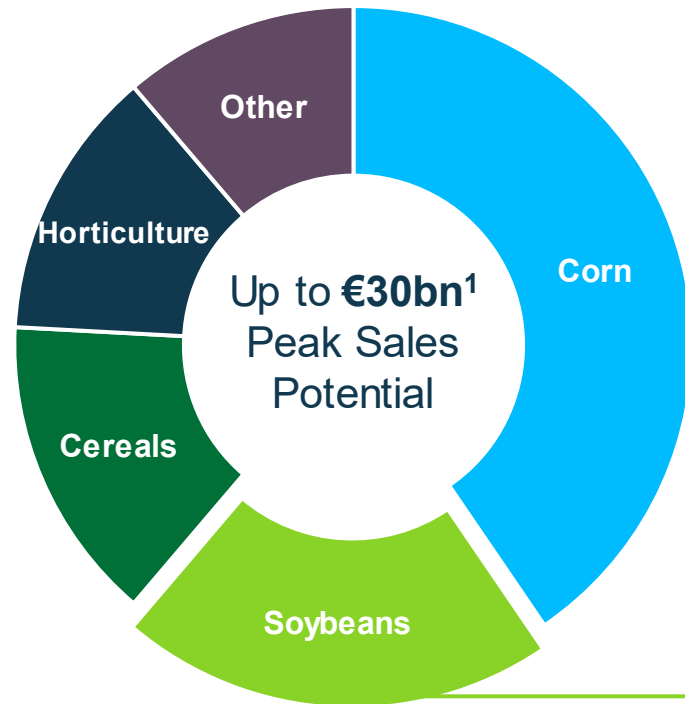


# Next Gen. Weed Control Central to Pipeline of Solutions for NA Soy

## Pipeline Potential Balanced Across Key Global Crops

### Crop Science Pipeline Peak Sales Potential

*Seed, Trait, Crop Protection and Digital Solutions by Crop Served*



Up to €30bn<sup>1</sup>  
Peak Sales  
Potential



**Global Soybeans<sup>2</sup>: ~€6bn Peak Sales Potential**  
*Products Specific to the NA Market*

- Annual Germplasm Upgrades
- 4<sup>th</sup> and 5<sup>th</sup> Generation Herbicide Tolerance Traits (HT4 & HT5)
- New Crop Protection Formulations
- New Mode of Action Herbicide (post-emergence broad acre)
- Digital Tools (e.g. Disease Management, Seed Placement, Weed Management)

<sup>1</sup> 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. ~50% incremental sales value. Estimated to reach ~40% of peak sales potential by 2031, ~40% by 2032-2035 and ~20% by 2036+

<sup>2</sup> Projects listed per crop are subset of the pipeline; selected top contributors to peak sale potential





# Three Generations of Soybean Herbicide Tolerance Traits

Technologies Provide Solutions to Address Farmers' Needs, Herbicide Resistance Challenges

## 3 herbicide tolerances



- Glyphosate
- Dicamba
- Glufosinate

**LAUNCHED**  
in 2021 on ~16m  
commercial acres



Enlist E3 Soybeans

XtendFlex Soybeans

June 29<sup>th</sup>, 2021 | Storm Lake, Iowa

## 5 herbicide tolerances

### HT4 Fourth-Gen Phase 3

Expected 2027  
launch

- Glyphosate
- Dicamba
- Glufosinate
- HPPD (Mesotrione)
- 2,4-D



Control

HT4 Soybeans

July 14<sup>th</sup>, 2021 | Jerseyville, Illinois

## 6 herbicide tolerances

### HT5 Fifth-Gen Phase 2

- Glyphosate
- Dicamba
- Glufosinate
- HPPD (Mesotrione)
- 2,4-D
- PPO



Control

HT5 Soybeans

July 14<sup>th</sup>, 2021 | Jerseyville, Illinois

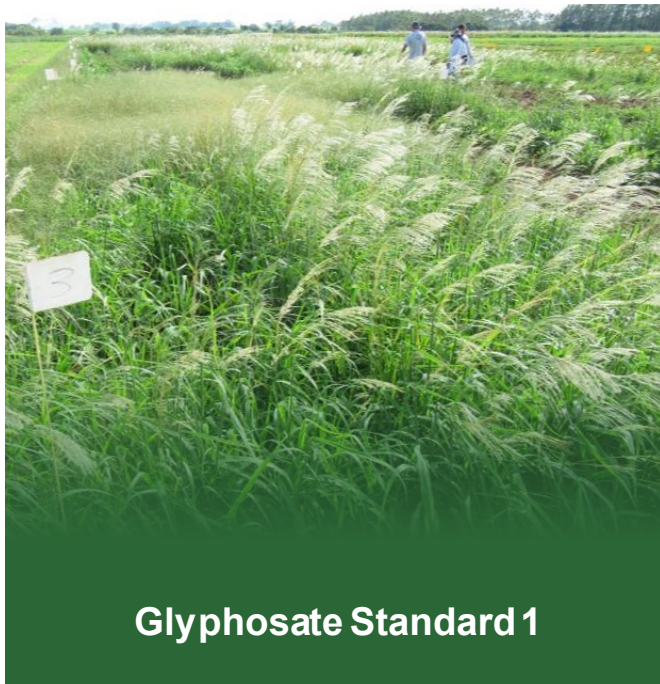
Always read and follow label instructions. Products not registered in all jurisdictions.



# First New Herbicide MoA in Post Emergence Weed Control in 30 years

*New Herbicide Molecule*

*Project is currently in Phase 3*



- Potential to build on **#1 position** in global herbicides<sup>1</sup>
- Allows use in various market segments, beyond traditional nonselective use
- Herbicide tolerance trait to be paired with this molecule currently in discovery

<sup>1</sup> Internal estimates



# Expect HT4 Soybean Weed Management Tailored Solution by 2027

Industry-First Five Mode-of-Action Trait System with Proprietary Herbicides and Digital Prescription



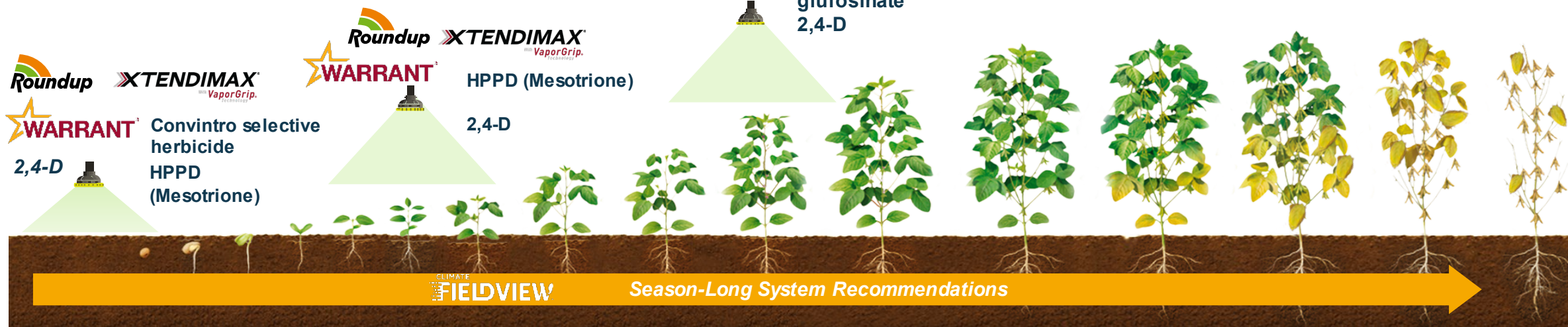
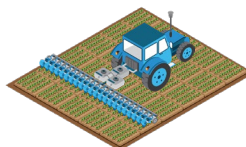
**Pre-Plant and Planting:**  
Seed Placement variety and digital weed management recommendation

**In-Season:**  
Field imagery and data to determine best prescriptive herbicide recommendation

**Harvest/Post-Harvest:**  
Weed-Control performance



**HT4**  
Five-Tolerance Trait Stack  
(glyphosate, dicamba, glufosinate, 2,4-D, HPPD [mesotrione])



Burndown/Pre-emergence application options

Early post-emergence application options

Prescriptive post-emergence application options



# The Next Frontier: Evolution to Digitally Enhanced System Solutions

Illustration: HT4 Soybean Weed Management System



**Win** by being more grower centric

## Discrete Solutions

SEEDS & TRAITS	CROP PROTECTION	DIGITAL
	   	 Performance Transparency Yield Analysis

## Tailored Solutions

SEEDS & TRAITS	+	CROP PROTECTION	+	DIGITAL
OR		OR		OR
HT4 Seeds				

Field and Zone Level  
Crop Protection Recommendations

Field Level  
Seed Placement Recommendations

## Crop System Solutions

SEEDS & TRAITS	+	CROP PROTECTION	+	DIGITAL
HT4 Seeds				
Cover crops				
		Biological Solutions		

Field and Zone Level  
Crop Protection Recommendations

Field Level  
Seed Placement Recommendations

Targeted Application Recommendations

Carbon Program

Increased Value from Digital Enhancements to Grow Share of Farm

Inputs to Outcomes

2022

2030