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## News Release

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### **Bayer's unmatched R&D investment powers industry-leading Crop Science portfolio**

- Commercialized ten new formulations and more than 430 new hybrids and varieties across corn, soybeans, cotton and vegetables. Three biotech trait projects advance to launch phase
- Advanced eight new small molecule crop protection actives
- Leading soybean pipeline to offer the greatest weed control flexibility, premium genetics

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**Monheim, Germany, March 12, 2021** – Bayer today announced pipeline project advancements and newly unveiled research in a dedicated research and development (R&D) pipeline update for the Crop Science division. In 2020, Bayer's pipeline commercialized ten crop protection formulations and advanced three key biotech products to launch while providing farmers around the world with more than 430 newly commercialized hybrids and varieties of corn, soybeans, cotton and vegetables.

Bayer's annual investment of 2 billion euros in Crop Science R&D is nearly double the spend of the company's next closest competitors. With an estimated peak sales value of up to 30 billion euros, Bayer has the most productive pipeline in the industry, continually converting its industry leading value-driven investment into new, innovative products that benefit growers, consumers and the planet.

"Each project in our pipeline is designed to help farmers develop more efficient ways to farm and meet their needs," said Bob Reiter, Head of Research and Development at the Crop Science division of Bayer. "We have a long history of converting R&D into viable solutions for farmers that enhance productivity, add value and more efficiently use natural resources to produce a crop."

## **Delivering an industry-leading R&D pipeline in scale, productivity, and value**

Bayer's commitment to customers and the planet was demonstrated in 2020 by the breadth of pipeline product launches including ten new crop protection formulations, and three biotechnology traits advancing to the launch phase. These include [Intacta 2 Xtend](#) soy, which has gained all regulatory approvals and is expected to launch in Brazil by the end of the year. This enhancement of the Intacta franchise will support farmers across South America with multiple modes of action for insect control.

In 2022 [SmartStax PRO](#) corn is expected to launch in the United States. SmartStax PRO offers three modes of action for rootworm control, including a novel RNAi-based mode of action, which is expected to have an area of opportunity of more than 75 million acres.

Advancements in insect-protection traits reduce the need for foliar insecticide applications and improve productivity per acre. Bayer's [ThryvOn Technology](#), a trait for lygus and thrips control in cotton is set for a stewarded Ground Breakers Program in the United States in 2021. In a biotech first, ThryvOn Technology will meet an important need in the cotton market and is predicted to help better control and reduce insecticide use. This is the first biotechnology trait ever introduced for piercing and sucking insects and will provide immense value to farmers by supporting healthy plant growth and helping protect yield potential against pests that, until now, couldn't be managed through a biotech trait.

## **Leading the development of next-generation biotech traits**

A key focus area for the R&D pipeline is to provide farmers with flexibility in weed control, through next generation soybean traits. In the future, farmers can look forward to choosing the weed control options that best suit their operations, knowing that the varieties they've chosen offer premium genetics and the ability to manage weeds.

Bayer has developed the first five-way stack of herbicide tolerance for soybeans. Currently in Phase 3 of development, this trait offering adds to XtendFlex's three tolerances with another two modes of action; tolerance to HPPD and its own proprietary 2,4-D tolerance. In Phase 2 of the pipeline there is an additional mode-of-action coming to convey PPO herbicide tolerance. Additionally, the third generation of insect control in

soybeans will further enhance the Intacta franchise and help farmers continue to increase yields while reducing the use of insecticides.

Continued investment in biotech traits means that next generation insect control traits in corn will be launching in the near term, with many debuting in South America. Brazil and Argentina are gearing up for the launch of VTPro4 in time for the 2021/22 season having received all necessary regulatory approvals. This new stacked offering includes an additional mode of above-ground insect control to combat evolving resistance in tropical Brazil.

Bayer's fourth generation of lepidoptera protection continues to show outstanding efficacy for above ground control and has received full cultivation approval in Brazil – a critical milestone for the planned commercial launch by middle of the decade.

### **Short Stature Corn will transform corn production**

Bayer's [short stature corn](#) is expected to transform corn production by enabling a new production system that allows more precise use of crop protection as well as the potential to optimize the use of key resources such as nitrogen, land and water. Short stature corn improves standability, including better green snap and stalk lodging tolerance, to help reduce significant crop loss from challenging environmental conditions and extreme weather including high winds. Short stature corn is a win for farmers, sustainability and food security at the same time.

Bayer's development of three approaches to short stature corn will help enable global market access. In Phase 3 development are two approaches – advanced breeding and biotechnology. Advanced breeding is working to introgress naturally occurring short stature characteristics into elite germplasm. Bayer is collaborating with BASF on a biotech approach to shorten internodes which enables applicability across a wide array of germplasm. With gene editing, Bayer is developing multiple approaches to generate short stature corn, creating potential for opportunities in multiple markets. Leveraging all three approaches to short stature corn, Bayer anticipates the product concept could have a fit on more than 220 million global acres in the coming years.

## **Optimizing large and diverse germplasm library with advanced breeding technologies**

Through advanced breeding tools and Bayer's large germplasm library, 430 new hybrids and varieties across corn, soy, cotton and vegetables have been deployed. The technology and traits deployed in developing these varieties protect the inherent yield potential of the seed and help Bayer continually improve the quality of its seed portfolio.

Bayer's breeding efforts are moving from selecting the best seeds with breeding to designing the best seeds for farmers. Through data science and a vast germplasm library, Bayer continuously enhances product development to meet changing needs of farmers.

## **Advancing new approaches in small molecule development**

Bayer is building on its exceptional track record of successful innovation and delivery of new active ingredients through investment in small molecule development. The strides it has made in small molecule discovery translate into a doubling of the number of candidates in the discovery phase with a higher probability of regulatory success. For 2020, Bayer advanced 8 new crop protection actives, with about ten active ingredients in the current pipeline, which builds upon the company's track record of delivering new active ingredients to the market.

Bayer's new herbicide mode of action for post-emergence weed control has advanced to Phase 3. This molecule has the potential to unlock greater weed control flexibility, as it allows use in various market segments, opens new opportunities for herbicide tolerance trait systems in major crops and enables the continued use of conservation- and no-till systems, which improve carbon sequestration and soil health.

With core competencies in fermentation, formulation, field testing and grower support, Bayer is also actively developing exciting new biologic options for farmers, as well as sustaining its leading lineup of biologic products. One example is the newest addition to the Serenade product family, Serenade Soil Activ. The new product improves ease of use for farmers, with lower use rates. Bayer expects this new product to deliver biologic growth in expanding markets, including launching in the U.S. and Australia this year, with broader global uses to follow in the years ahead.

## **Unlocking opportunities for new business models, powered by data science**

Every farmer faces different challenges and needs a tailored solution. The industry-leading [Climate FieldView](#) digital agriculture platform is now being used on more than 150 million subscribed acres across the world. The connectivity from those acres, including logging information from planters, sprayers and combines, helps farmers make data-driven decisions and evolve Climate FieldView's models to optimize yields. Bayer is better integrating the data into its R&D process, enabling aligned testing to reflect how its customers farm, helping inform advancement of key projects it is developing.

FieldView's [Seed Advisor](#) has continued to help farmers improve productivity by optimizing seed placement recommendations. Growth of the platform means that the models are now powered by more than 6.9 million data points from more than 8,600 hybrids on more than 70,000 fields.

"What we've announced today is just a snapshot of what we are working on as we continue to shape agriculture to meet growing needs of farmers, consumers and the planet," added Reiter.

### Notes to editors:

*To hear Bob Reiter discuss R&D Pipeline highlights, watch a dedicated online media Q&A session for journalists from March 12 at 9:30 a.m. EST / 3:30 PM CET / You can watch the recording [here](#).*

### **About Bayer**

Bayer is a global enterprise with core competencies in the life science fields of health care and nutrition. Its products and services are designed to help people and planet thrive by supporting efforts to master the major challenges presented by a growing and aging global population. Bayer is committed to drive sustainable development and generate a positive impact with its businesses. At the same time, the Group aims to increase its earning power and create value through innovation and growth. The Bayer brand stands for trust, reliability and quality throughout the world. In fiscal 2020, the Group employed around 100,000 people and had sales of 41.4 billion euros. R&D expenses before special items amounted to 4.9 billion euros. For more information, go to [www.bayer.com](http://www.bayer.com).

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**Forward-Looking Statements**

This release 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 [www.bayer.com](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.