

News Release

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Innovations for sustainable agriculture

- **BASF's expanded pipeline for agriculture with projected peak sales potential of more than €6 billion**
- **More than 30 pipeline products to be launched globally by 2028 to enable higher yields and quality as well as even more sustainable production**
- **Sustainability criteria as an essential part of BASF's research and development steering**

BASF has expanded its pipeline of solutions for agriculture significantly and by 2028, will launch innovations with projected peak sales of more than €6 billion. The pipeline contains a wealth of chemical and biological crop protection products, seeds and traits, as well as digital solutions. This will further strengthen the company's leading position in innovative and sustainable agriculture. BASF's innovation pipeline demonstrates tangible progress based on continuous investment in research and development, the integration of acquired businesses and strong partnerships. In 2019, BASF will spend around €900 million on R&D for agricultural solutions.

"We provide farmers with a full toolbox of innovative technologies, solutions and know-how, helping them develop their businesses successfully while addressing the demands of the food value chain," said Markus Heldt, President of BASF's Agricultural Solutions division. "We are actively steering our current and future portfolio towards more sustainable solutions. Sustainability is firmly embedded in our entire R&D decision process, from early research to product development. This

enables us to develop highly-effective, innovative compounds that benefit farmers, society and the planet.”

Innovative research connected to a deep understanding of the real-world challenges

Feeding the world’s growing population, while facing challenges such as unpredictable weather, efficient control of diseases and pests, scarcity of natural resources and available farmland, makes the need for innovation even more essential. These global trends are influencing food security and the overall sustainability of food and agricultural systems. BASF’s state-of-the-art innovation pipeline offers farmers new technologies and solutions in all key crops and regions to rise to these challenges.

An example of BASF’s innovation strength is its research and development for soybean production. One of the most important and in-demand crops in agriculture and trade, soybeans make a vital contribution to global food and feed supply. BASF has developed innovative solutions for soybean farmers to gain high yield and quality including:

- BASF’s new soybean seed with the [LibertyLink®GT27™](#) trait platform allows farmers to apply [Liberty®](#) herbicide, glyphosate, and pending regulatory approval, a new mode of action herbicide for post-emergence weed control. This innovative soybean technology will be available to farmers under BASF’s [Credenz®](#) brand and licensee brands. The launch is planned for 2020.
- As a corresponding disease and pest management tool, the company offers [ILeVO®](#) nematicide/fungicide seed treatment. It is the only product on the U.S. market that provides effective protection against Sudden Death Syndrome (SDS) and nematodes in the seed zone, resulting in healthier plants and higher yield potential. A further registration is anticipated in Brazil by 2020.
- To ensure that farmers worldwide continue to have access to effective weed management, BASF has developed [Tirexor®](#) herbicide. This new active ingredient has been specifically designed to control resistant weeds including key grass and broadleaf weeds. The company submitted a regulatory dossier for this new herbicide in Australia and North America in 2018. Pending regulatory approvals, BASF expects first market introductions of Tirexor-based products in Australia in 2020.

- To further expand its insecticide portfolio and offer additional solutions to farmers, BASF has co-developed **Broflanilide** with Mitsui Chemicals Agro, Inc. This active ingredient is a powerful and versatile new mode of action insecticide to control chewing pests. Initial market launches are expected in 2020.

BASF offers a similarly diverse and promising innovation pipeline across the entire crop cycle for further important crops such as canola, wheat, rice, as well as fruit and vegetables. The recently acquired businesses have significantly enlarged the scope of the company's innovation platform, enabling BASF to offer even more comprehensive crop solutions and provide farmers with a real choice in a consolidated industry.

Innovative projects to achieve higher yields sustainably for a broad range of crops

Resistance management is one of the big challenges that all farmers are facing. With its latest fungicide **Revysol**[®], BASF will provide farmers in all regions with an essential tool for resistance management in many important crops, including cereals, soy, corn, fruits and vegetables. The new active ingredient offers growers outstanding biological performance in a multitude of crops and application flexibility to improve their farm operations. Revysol will help growers worldwide to achieve high and reliable crop vitality, more yield and better quality. With first registrations received in Colombia and Korea, BASF is preparing for further market launches. Pending regulatory approval and national authorizations, first market introductions of Revysol-derived products for cereals are expected in 2019/2020. BASF is also planning to introduce a new seed treatment product based on Revysol, marketed under the **Relenya**[™] brand. This product will protect the seed and root zone of cereal crops from pathogenic fungi during the early development of the plant. Market entries in the U.S. are anticipated in 2021 pending regulatory approvals, with other regions to follow.

New digital farming products to enable better informed decision making

BASF customers are entrepreneurs in a challenging business environment. As a result, modern farmers have to analyze more and more data, dealing with increasing complexity to make the right cultivation decisions. BASF's **xarvio**[™] **Digital Farming Solutions** support them – with digital products like **xarvio Field Manager** or **xarvio Scouting** – to use this data to their advantage as a basis for better informed decision making, ensuring more efficient and sustainable resource inputs and allocation.

One current example from xarvio's digital innovation pipeline is **xarvio Healthy Fields**. Currently in the concept phase, this service package for efficient crop protection will not only provide field zone specific crop protection strategies and their implementation by a certified contractor or the farmer himself via the xarvio Field Manager, but also guarantees the success of the crop protection application.

Commitment to cutting-edge research in agriculture

"Innovation is a must in our industry. We combine our passion and expertise for innovative thinking with a deep understanding of the real-world challenges that farmers and the agricultural industry are facing. Our focus is on innovation-driven growth, targeted portfolio expansions and the realization of synergies from the acquired businesses. As a new and even stronger team, we are now in an exceptional position to break new ground with leading products, tools and solutions that meet the needs of our customers. Based on these capabilities, we will grow sustainably and build on our commitment to the future of agriculture," Heldt emphasized.

These products and solutions are representative of 30 projects that will be launched globally by 2028. They stem from a unique innovation pipeline based on continuous research activities. BASF aims to keep its expanded and integrated research and development expenditures in agriculture at the very high level of previous years. In 2018 alone, BASF spent €679 million on research and development in the Agricultural Solutions division; representing around 11% of sales for the segment.

To find out more about BASF's innovation pipeline in agriculture, please visit our [Innovation website](#).

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About BASF's Agricultural Solutions division

With a rapidly growing population, the world is increasingly dependent on our ability to develop and maintain sustainable agriculture and healthy environments. Working with farmers, agricultural professionals, pest management experts and others, it is our role to help make this possible. That's why we invest in a strong R&D pipeline and broad portfolio, including seeds and traits, chemical and biological crop protection, soil management, plant health, pest control and digital farming. With expert teams in the lab, field, office and in production, we connect innovative thinking and down-to-earth action to create real world ideas that work – for farmers, society and the planet. In 2018, our division

generated sales of €6.2 billion. For more information, please visit www.agriculture.basf.com or any of our social media channels.

About BASF

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. The approximately 122,000 employees in the BASF Group work on contributing to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of around €63 billion in 2018. BASF shares are traded on the stock exchanges in Frankfurt (BAS), London (BFA) and Zurich (BAS). Further information at www.basf.com.