Joint News Release

BASF and TECNALIA accelerate R&D of new crop protection products through digitalization

- ■ **Jointly developed technology enables a more precise evaluation of the efficiency of new crop protection products**
- ■ **Artificial intelligence and machine learning allow reliable analysis of diseases and pests in worldwide field trials**
- ■ **Farmers benefit from more efficient R&D processes leading to crop protection innovations adapted to their needs**

Limburgerhof, Germany, and Bilbao, Spain – November 5, 2020 – Protecting crops from diseases and pests is essential to sustainably improve yield on existing arable land to feed a growing population. BASF and TECNALIA, a European center for research and technological development, are collaborating in digitalization to accelerate the global research and development of new crop protection products. This contributes to a faster development of innovations that respond to farmers' needs worldwide to control weeds, fungal diseases and insect pests in their crops, protecting yield and biodiversity at the same time.

The two companies jointly developed a technology for automated image recognition to determine the species and quantity of plants, pests and diseases in greenhouse and field trials. "Our collaboration with TECNALIA, started in 2014, enables us to employ state-of-the-art algorithms based on artificial intelligence and machine learning," said Ramon Navarra-Mestre, Head of Global Agricultural Research Stations at BASF. "This new, efficient technology provides us with more reliable information from our global field trials network as the image recognition assessments can be done more frequently and deliver more objective data compared to traditional methods."

By analyzing and processing these large amounts of data from BASF's field trials, TECNALIA continuously develops its algorithms further. "The more information we incorporate into our database, the more reliable and meaningful are the results we can

provide to BASF," added Jone Echazarra, Head of Computer Vision at TECNALIA. These comprehensive data sets enable researchers and developers at BASF to optimally evaluate the efficiency of new crop protection products. Already at an early stage of the R&D process, this allows to even stronger focus on the most promising, innovative active ingredients.

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 2019, our division generated sales of €7.8 billion. For more information, please visit www.agriculture.basf.com or any of our social media channels.

About TECNALIA

TECNALIA is a European benchmark research and technological development center with 1,400 experts from 30 different nationalities, focusing on transforming technology into GDP to improve people's quality of life, by creating business opportunities for companies. Its main action areas are digital transformation, advanced manufacturing, energy transition, sustainable mobility, urban ecosystems and health. For further information please visit www.tecnalia.com.

BASF Media Contact:
Alexandra Goeke
Phone: +49 174 3198080
alexandra.goeke@basf.com

TECNALIA Media Contact:
Imanol García
Phone: +34 664 104 859
imanol.garcia@tecnalia.com