Feature Story

The flu shot for plants

Biologicals and their potential for the ag industry

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RESEARCH TRIANGLE PARK, NC, December 7, 2017 — Biologicals have huge potential in agriculture, and the benefits they offer are constantly being researched. Specifically, biologicals are naturally occurring organisms, plant extracts or organic substances. They complement conventional chemical seed treatments to help enhance plant vigor and stand establishment.

Biologicals can be part of a holistic approach to help maximize yields. They help crops boost their genetic potential, which in turn can increase the grower's return on investment. While biologicals are a niche application, they are becoming increasingly valuable in integrated pest management (IPM) programs, giving growers broader protection, an extended application window and better management of resistance and residues.

"We know the potential biologicals can add to growers' outcomes," said Mark Howieson, BASF's Global Biological Research & Development Team Leader. "We are continuously searching for new and novel technologies that can complement traditional agricultural practices. Biologicals give growers an additional option."

Howieson advises biologicals are not meant to replace conventional seed treatments, as they are more effective when they complement each other. They provide plant health benefits in several ways, including increased nutrient availability and production of plant-growth promoting substances, in addition to other benefits such as disease and pest control.

For example, rhizobia and bacillus are bacteria-based biological products that are used by growers today.

Rhizobia is in inoculants like BASF's Vault®. Vault is more than just an inoculant, as it works with rhizobia to form nodules in partnership with legumes, such as soybeans, where the bacteria convert nitrogen from the air into a form that can be used by the plant as a nitrogen fertilizer. In exchange, the plant trades sugars that the bacteria use as an energy source.

Additionally, bacillus is in BASF's new biological product Velondis™ Flex, which is not yet registered or available for use, but it is expected to be available in 2018. The bacteria in Velondis Flex starts a mechanism known as Induced Systemic Resistance (ISR).

"Think of ISR like a flu shot in individuals, which helps prevent us from getting ill," said Howieson. "In plants, the activation of ISR allows the plant to protect itself, making it less likely for disease organisms to invade it."

BASF has a broad portfolio of high-performing, biological-based products. The BASF portfolio includes: biocontrols and pheromones for IPM insect control systems; biostimulants and inoculants for foliar, in-furrow and seed applications, as well as for agricultural, specialty and non-crop applications (e.g., turf and ornamental markets).

"We see biologicals growing to be an important factor in coming years," said Howieson. "It is less about one or the other, but how the different modes of action from chemistry and

biologicals work within integrated programs for growers to address their challenging and ever-evolving needs."

Growers can learn more about biologicals by visiting www.agproducts.basf.com or by contacting their local BASF representative.

Always read and follow label directions.
Vault is a registered trademark of BASF.
Velondis is a trademark of BASF.

About BASF's Crop Protection division
With a rapidly growing population, the world is increasingly dependent on our ability to develop and maintain sustainable agriculture and healthy environments. BASF's Crop Protection division works with farmers, agricultural professionals, pest management experts and others to help make this possible. With their cooperation, BASF is able to sustain an active R&D pipeline, an innovative portfolio of products and services, and teams of experts in the lab and in the field to support customers in making their businesses succeed. In 2016, BASF's Crop Protection division generated sales of €5.6 billion. For more information, please visit us at www.agriculture.basf.com or on any of our social media channels.

About BASF
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