Next Generation Seed Treatments

Growers have been treating seeds in order to protect their crops since ancient times. Some of the first recorded seed treatments are the use of sap from onion, extract of cypress, ashes, olive residues and leek juice.

Salt water treatments have been used since the mid-1600s and the first copper products were introduced in the mid-1700s. Other key milestones were the introduction of arsenic, used from 1740 until 1808 and the introduction of mercury, used from 1915 until 1982.

Until the 1960s, seed treatments had been only surface disinfectants and protectants. The first systemic fungicide product was launched in 1968. This systemic fungicide had not only seed surface activity but also moved into the plants protecting the young seedlings from airborne pathogens.

Since the 1990s, the crop protection and seed industries have developed and adopted new classes of fungicide, insecticide and nematicide chemistry, expanding pest control for growers while reducing user and environmental impacts.

Today, many companies are discovering the next generation of seed treatments by turning to innovative places for new chemistries. As a result, several new proprietary products will hit the market in the next few years that could offer growers the best protection, extra vitality as well as leading-edge technology.

For example, companies are transferring proprietary research results and technologies from areas as diverse as automotive coatings, textile chemicals and vitamin capsules to seed treatments.

New pigments originally developed by BASF for the textile industry, for example, have been tailored to meet seed industry specifications. With the support of polymer research, companies are also designing seed treatment formulations that can release their active ingredients slowly over time. Delayed or slow release of an active ingredient will be useful to growers because it's more user-friendly, prolongs the ingredient's effectiveness and protects it from outside stresses allowing for fewer, more cost-effective applications.

Another example—increased knowledge of and expertise in adjuvants has allowed researchers to improve flowability of seed treatments and reduce dusting off. This will make the application process for growers more user-friendly and effective.

And it doesn't end with new chemistries. The biological sector is also looking at innovative treatment agents beyond the norm. For example, one company has been using other plants as a seed treatment for crops. A ground-breaking biological seed treatment, currently in the U.S. market, is based on patented technologies relating to the quinoa plant—a leafy plant related to spinach that produces little seeds packed with powerful nutrients.

Many companies are discovering the next generation of seed treatments by turning to innovative places.

Companies are transferring proprietary research results from automotive coatings, textile chemicals and vitamin capsules.

The seed treatment aspect of the quinoa plant was discovered when analyzing it for its health properties and potential in the pharmaceutical market. The mode of action of the product is called Systemic Acquired Resistance. The natural defense mechanisms of the plant are activated to fight off different fungal and bacterial diseases for the full growing season.

It is innovative work such as this that will create the next generation of seed treatments and add another level of protection and assurance for growers.

CORN STATES

BASF
The Chemical Company

GREENLEAF GENETICS®

BECKER UNDERWOOD®

ABM™

syngenta

PROTINUS™

Bayer CropScience