DuPont Science Solutions

DuPont™ Zorvec™ disease control

The Challenge: Protecting Crops to Increase Food Production

The harsh reality is that disease can cause devastating damage to crops. In fact, up to 40 percent of potential food production is lost each year to disease and other pests.

In a world where the population is expected to reach nearly 9.5 billion by 2050 and demand for food is increasing by as much as 70 percent, we don't have time or resources to lose crops to diseases. Now more than ever, we must increase farmer productivity in great measure to provide enough safe, nutritious food for people.

Responding to consumer demands for a better, safer, greener and more bountiful food supply, DuPont remains committed to including discovery targets for sustainability parameters such as minimal impact to non-target species, low environmental impact and lower application rates. DuPont scientists focused on our commitment to provide sustainable solutions and used innovative, blockbuster chemistry to develop a new class of fungicide products to help farmers protect their crops.

The Solution: Creating Value through Integrated Science

DuPont™ Zorvec™ (oxathiapiprolin) disease control provides an unmatched combination of consistency and control that growers can use every season to help achieve a better crop, even under the most challenging environmental conditions. Zorvec™ technology, intended for use on potatoes, grapes, vegetables and other specialty crops, will change everything about the way growers view disease control – helping them realize greater yield potential, better quality, and improved productivity for a more successful crop.

DuPont™ Zorvec™ is the first member of a new class of fungicides that represents a step-change in improvement in disease control for growers of potatoes, grapes, vegetables and other specialty crops. To date, there are 12 DuPont™ Zorvec Enicade™ country registrations: Argentina, Australia, Canada, China, Guatemala, Japan, Mexico, New Zealand, Singapore, South Korea, United States, and Vietnam, and several additional launches in 2016 and 2017, pending regulatory approvals.

Scientists and agronomists have described the technology as a game-changer, and a once-in-a-lifetime chemistry. Growers the world over have been amazed with the ability of Zorvec™ to deliver consistent control and increased yield opportunities.

Zorvec™ offers outstanding protection of new plant growth for better crop establishment, which contributes to healthier, higher yielding plants and better quality produce for a more profitable and bountiful harvest. It protects:

- Treated leaves as they grow and expand to eliminate the spread of disease for higher quality crops with reduced blemishes.
- New leaves as they emerge and grow to promote healthier, more even growth for better consistency, quality and yield.
DuPont™ Zorvec™

The Science behind Zorvec™

Zorvec™ was one of almost 175,000 compounds that arrived at DuPont for screening in 2002. Most of these compounds, which come from chemical libraries, pharmaceutical companies, universities and compound brokers, never see the light of day. But one compound with a low level of activity, HZQ10, caught the eye of our researchers in the High Throughput Screening process.

This is where the power of DuPont science comes in. The researchers needed to understand the basis for the activity they were seeing and they had to figure out how to make it work in the real world. The product needed to be optimized to increase effectiveness and, if possible, broaden the spectrum of disease control.

It wasn't easy. A year into the optimization program, scientists hit an extended plateau where no progress was made. But the team of DuPont scientists refused to give up. They tried one more analog (NBE16). With this analog, the power of this amazing technology was unleashed.

The new analog finally provided the activity that the team was looking for against late blight and downy mildew. But that's not all. It brought something new to the table. The technology showed the ability to stop an active infection in its tracks, even if there were visible lesions. This is something that no other chemistry on the market can do.

DuPont™ Zorvec™ controls diseases caused by oomycete pathogens, including: potato and tomato late blight (Phytophthora infestans), grape downy mildew (Plasmopara viticola), other downy mildews such as cucurbit downy mildew (Pseudoperonospora cubensis), and crown rot (Phytophthora capsici) in peppers and cucurbits.

DuPont is continuing to build upon the science of DuPont™ Zorvec™, while developing a full family of disease control products.

For more information about how DuPont™ Zorvec™ is changing the lives of people everywhere, please visit: www.zorvec.com