Hybrid approach opens acceptance of biologicals

DISEASE CONTROL: The hybrid fungicide Regev uses tea tree oil, a new mode of action for fungicides, combined with a triazole to control disease in a range of crops. While vegetable crops are a focus, soybeans and sugarbeet row crops are also on the label.

Regev from STK combines a biological active ingredient with a known synthetic product.

Willie Vogt | Oct 21, 2021

Yair Nativ had a problem. As vice president of sales for STK bio-ag technologies, he was facing a challenge in the crop fungicide market. “We had a solo biological product — Timorex Gold or Timorex Act — which contains only the active ingredient tea tree oil,” he recalls. “It’s organic, and it’s all natural.”

Sounds like a market advantage, but Native and his STK colleagues found farmers were reluctant to use the purely biological product. “While it’s starting to change, when you go to a farmer and say you have a product which is organic, the first thing that comes to their mind is low efficacy and high prices,” Nativ says. “We’re trying to change that.”

How to make the move? Bring out a hybrid fungicide by premixing the active ingredient in Timorex with difenoconazole, a recognized triazole fungicide that's been on the market for more than 30 years. The result is Regev, which became available to the U.S. market in 2021 and will expand in 2022.

"There are [conventional] fungicides on the market that use two active ingredients to avoid resistance or improve efficacy," Nativ says.

STK's move to a hybrid fungicide helps boost the product's credibility, he explains. Saying more farmers are opening to the idea of using a biological product, Nativ is frank that STK needed better results. "We chose the difenoconazole since our main market was the USA and Europe," he says.

Nativ notes Europe is going through an extensive process of changing its agriculture, reviewing every input. STK chose this specific triazole because it appears to be one that will continue under the changing ag regulations in Europe. As for the United States, California is a big target, and there STK is finding registration a challenge.

"I don't know how to describe it, but you're coming to countries that are talking about sustainability, green farming, organics, pesticide loading, and then you tell them that you have a new thing and you get this bureaucracy. You are waiting for registration," he says.

Unique mode of action

Difenoconazole has been around for some time and is a popular active ingredient in fungicides. The difference with Regev is the tea tree oil. Already in use in Latin America, this active ingredient, while biological, is a complex natural chemical. It takes on crop diseases in a new way.

The "ingredients have both preventive and curative properties," Nativ says. "Right now, tea tree oil is registered in FRAC [Fungicide Resistance Action Council], and it has its own category."

Tea tree oil is an F7 fungicide, which works through cell membrane disruption and induced plant defense mechanisms. Nativ says the company is gathering data on the in-plant resistance stimulation that tea tree oil may create. Difenoconazole is a G1 fungicide, working in a way that doesn't bring cross resistance.

Regev has a wide range of crop uses from vine crops to leafy vegetables to broad-acre crops like soybeans and sugarbeets. With its unique biological action, it may gain traction as a resistance management tool for a wide range of producers.

Regev works like a conventional product; storage and application is the same, which makes it more acceptable to farmers. "We're getting more farmers to take a look at Regev, and with this different mode of action, it offers a way to prevent disease resistance," Nativ says.

Regev is labeled for use in the United States and is distributed by Summit-Agro USA. Learn more at stk-ag.com.