

Bio-Pesticides

Biological Pesticides Gaining Ground

By Denise Keller, Field Editor

As consumer demand for sustainably farmed food increases, adoption of bio-pesticides is trending upward, as well. According to the Bio-pesticide Industry Alliance (BPIA), this is one of several factors contributing to the bio-pesticide industry's current growth rate of almost 16 percent. Looking ahead, BPIA leaders expect this upswing to continue, bringing promising opportunities for potato growers to improve and diversify their pest management programs.

Growth in the Market

The BPIA is a business association representing 72 bio-pesticide companies of varying sizes. The group works to promote the use of bio-pesticide technology through increased awareness about the products' effectiveness and benefits to a pest management program.

In less than five years, the utilization of bio-pesticides has doubled, reports BPIA Executive Director Bill Stoneman. He forecasts the bio-pesticide industry to be a \$3.2 billion sector in 2017, representing nearly six percent of the crop protection industry. Currently, the market is less than two-thirds that size.

Demand for food that is grown locally and sustainably and under integrated pest management (IPM) or organic practices is a driving force for the adoption of bio-pesticides, which Stoneman says are a natural fit for these production conditions. Many bio-pesticides are allowed in organic crop production; however, he points out, approximately 95 percent of the bio-pesticide market is in conventional agriculture.

As well, many agrochemical

companies are helping spur the industry's growth through acquisitions and investments in the biological pest control sector.

"This, of course, allows for stronger development programs, basic research into management techniques using bio-pesticides and the advantages of better formulation and marketing to the potato grower," Stoneman explains, noting that Bayer CropScience recently purchased a German company with a relatively new active ingredient effective against nematodes.

He continues, "Chemically intensive agriculture will wane, and sustainable agriculture will continue to grow. That is where I think everybody—even in the chemical industry—sees things going. That's

why they've made these investments."

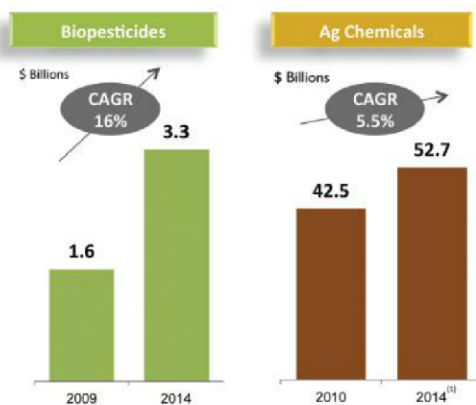
Advantages over Chemical Pesticides

Biological pesticides can offer growers several advantages, according to the BPIA. When applied properly, bio-pesticides are demonstrated to be as effective in pest and disease control as chemical pesticides, Stoneman says. In addition, they have "virtually no residue," and most are exempt from tolerance requirements, allowing for short re-entry intervals and good post-harvest opportunities.

Bio-pesticides also typically pass through the registration process more quickly than synthetic chemistries. The BPIA works to ensure there are limited regulatory impediments to bringing products to market.

Compelling Value Proposition of Biopesticides

- Yield/quality
- Performance (alone or mixed)
- No residues
- Pest resistance
- Worker safety and production flexibility
- Environmental footprint
- Can be used in organic



Source: BBC and AgroPages.

(1) Biopesticide Growth Outpaces Ag Chemical Growth (2009 – 2014E 15.6% vs. 2010 – 2014E 5.5% CAGR. 2014E figure extrapolated)

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bpia

Biopesticide Industry Alliance



As a result of the high cost of bringing a new product to market, few product launches are occurring in the chemical sector, Stoneman observes. And of the products recently introduced, he adds, many are reformulations of existing active ingredients. This leads to resistance management challenges. In contrast, many of the biological pesticides are sources of new modes of action.

“More and more of the skull and cross-bone chemistries are going to be restricted, or manufacturers may voluntarily pull them from the market. So by coming up with new bio-chemistries and biologicals, the bio-pesticide industry is answering that demand,” Stoneman comments.

Bio-pesticides can be used in tandem with chemical pesticides in a grower’s IPM program, helping avoid resistance development, agrees Lucie Grant, president of JET Harvest Solutions, a developer of certified organic biological products.

“[Bio-pesticides] are just another line of defense for potato growers,” Grant elaborates. “They’re products that work well with the conventional system. You can keep your heavy hitters and the hard chemistry and supplement them, and keep those products on the market longer and

make sure they’re around when you need them.”

Applications in Potatoes

As potato growers contend with the Food Safety Modernization Act, Good Agricultural Practices certifications and the like, biological pesticides are becoming increasingly important within the potato industry, according to Stoneman.

“I believe [bio-pesticides] are really going to help potato growers access a market they traditionally haven’t really focused on before—be it organically or sustainably grown potatoes,” Stoneman states. “We’re a growing industry. We believe we’re important to potato growers, and we want to continue to grow.”

Potato growers are using bio-pesticides to control diseases and pests. In particular, Bio-Save, a

post-harvest biological decay control agent from JET Harvest Solutions, is proving effective against Fusarium dry rot and silver scurf, Stoneman reports. When applied to the skin of potatoes, the active ingredient inhabits wounds, small cracks and fissures, preventing the fungal pathogens from growing.

Achieving superior performance through the use of biological pesticides, however, means not necessarily following the same methods of research and demonstration as the chemical standard. To ensure products are being properly tested and demonstrated, BPIA is launching an effort this year to meet with extension and research professionals to share information about how bio-pesticides function and how to properly test or demonstrate bio-pesticides. ●

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