

Manufacturers Modify Existing Protectants; New Products Introduced

What will be available for 2007?

BY DAVID FAIRBOURN | EDITOR

When it comes to crop protection there are no silver bullets. This fact, however, does little to stop protectant manufacturing companies from developing effective, nearly pure alloyed shot for the industry.

Armed with the latest technologies, today's protectant manufacturers demonstrate acute and adept ability in producing increasingly refined and effective crop protection tools. Billions of dollars are invested annually in the study and discovery of biological processes for both crops and the pests that attack them.

Funding is also allocated toward developing new chemistries that leave a diminishing environmental footprint and producing protectants that offer viable alternatives for resistance management. Toxicology research is also a priority in preventing harm to beneficial and benign organisms.

Protectant manufacturers prove their value each season by linking new and existing products with the needs of growers. They have a keen awareness of the challenges taking place in the field and a knack for responding to the demands of the industry.

Potato Grower magazine presents this list of new products, label changes, re-registration news and other developments that are taking place.

SYNGENTA ADVANTAGE

With several new product introductions, an expanded product label, Syngenta continues to expand the value it provides to potato growers. With the recent introduction of CruiserMaxx seed treatment, Quadris Ridomil Gold fungicide, Ridomil Gold SL fungicide and Ridomil Gold Bravo SC fungicide, growers now have more options to choose from Syngenta's diverse product portfolio.

CruiserMaxx seed treatment is the first product for potatoes that puts the power of a liquid seed treatment insecticide (Cruiser seed treatment insecticide) and fungicide (Maxim 4FS seed-treatment fungicide), and

the power of an exclusive drying agent into one convenient product for broad-spectrum protection against sucking and chewing insect pests.

Quadris Ridomil Gold is a new, user-friendly twin pack of Quadris and Ridomil Gold for soil application in potatoes. With Quadris Ridomil Gold growers receive the benefits of two proven products to protect against all four major classes of fungi and control soil-borne disease and storage rots.

Ridomil Gold SL fungicide gives growers a more effective way to protect the quality and value of crops. Ridomil Gold SL is an enhanced formulation of Ridomil Gold EC that provides the same effective control of certain soil-borne and foliar diseases on a wide range of crops in a new, contemporary chemistry.

Ridomil Gold Bravo SC provides growers with a new, user friendly liquid premix formulation of Ridomil Gold Bravo, with an optimized ratio of the active ingredients chlorothalonil and mefenoxam to maximize disease control.

Contact your local Syngenta sales representative, call (800) 334-9431 or visit potatoes.farmassist.com.

BASF

Power Yield, the BASF program using Headline and Endura fungicides for disease management will increase profit potential by improving quality. Split pivot trials in 79 locations during 2004 and 2005 demonstrated an average increase of 23.9 cwt per acre and increased profits at 78 percent of the trial locations.

The increases were in large- to medium-size potatoes and the smaller sizes actually decreased nearly two cwt per acre.

Headline raises the standard for control of early blight and black dot and provides excellent late blight control. It is active on foliar and soil-borne diseases representing all four categories of fungi.

A strobilurin chemistry, Headline is an ideal rotation partner for Endura fungicide,

a boscalid. It has flexible, broad spectrum activity and strong disease protection in alternation programs.

Endura is effective in controlling white mold and early blight. It is the first fungicide with the active ingredient boscalid and incorporates a unique site of action for superior control of key diseases.

Endura has translaminar movement for strong disease control in less than optimal spray-coverage conditions. Plant uptake ensures rainfastness for durable, reliable protection with fewer re-sprays.

Forum fungicide is a high-performance fungicide delivering both preventative and curative control. It protects against Phytophthora diseases.

Forum's active ingredient is dimethomorph and is designed to be tank-mixed with other fungicides with different modes of action. It is both effective and economical when applied prior to the onset of disease as part of a regular fungicide program.

The exceptional disease-fighting power of Forum comes from its antispore activity and fungal growth inhibitors. It's one of the only systemic fungicides that helps stop spores from forming and also surpasses contact fungicides by protecting the plant from infections inside the leaf.

Alverde insecticide, to be registered during 2007, is a new high-performance insecticide. In research studies, it demonstrated effective control of Colorado potato beetle, caterpillars and worms.

Field study results indicate that Alverde effectively controls insecticide-resistant insects while maintaining beneficial insects



and pollinators. It will be an excellent choice for integrated pest management programs.

Outlook herbicide has proven results in delivering powerful, consistent control of grasses and small-seeded broadleaf weeds while providing excellent crop safety. It is a root and shoot growth inhibitor, and controls key weeds like pigweed, nightshade and waterhemp.

The water-based formulation of Prowl H2O maximizes its availability for residual weed control with superior surface stability and reduced binding to field residue. It leaves more active ingredient available for weed control.

Prowl H2O recently received federal registration for alfalfa. "Alfalfa is particularly susceptible to problems with weed control," said Jon Sweat, Prowl H2O Market Manager for BASF. "Prowl H2O is an extremely effective pre-emergent residual herbicide that controls the weeds and grasses that shorten stand life, hinder yields and adversely affect hay quality which alfalfa growers depend on.

Visit www.agro.basf.com.

FMC

The exciting thing about Ranman is its control of pink rot. This fungicide provides a new, unique mode of action to control this devastating disease, which traditional means and products have struggled with because of increased resistance.

Resistance to mefexonam, the chief chemical used to treat pink rot in potatoes, was first detected in Maine and New York in 1994 and 1995, according to North Dakota State University researcher, Dr. Neil Gudmestad. Resistance was subsequently reported in Idaho and Minnesota in 2000, and continues to increase dramatically in growing areas.

"Pink rot can be devastating to a crop," says Yemel Ortega, Ranman product manager for FMC Agricultural Products Group in the United States.

"In key potato-growing areas, pink rot has significant negative impact on both yields and quality, so the need for a product like Ranman that combines effective control with a new mode of action is tremendous."

The active ingredient in Ranman is cyazofamid, the only fungicide in its class. As a preventative foliar treatment, it controls late

blight and has excellent activity on plant pathogens.

Ranman is a contact fungicide with anti-sporulation activity. It can be applied by ground, chemigation or aerial application and has some limited translaminar activity and excellent rainfastness.

Furadan 4F is an insecticide-nematicide that protects against crop-threatening pests like Colorado potato beetle, flea beetles and leafhoppers. It also has some effectiveness in suppressing wireworms.

Compared with other organophosphate insecticides, university trials and independent field studies have demonstrated that Furadan 4F improves crop quality and yield by 2.94 tons per acre on average. The liquid formulation provides greater application accuracy, ease and improved coverage.

Furadan 4F is absorbed through the roots and into the plant's vascular system. It provides protection from above-ground foliar feeding insects as well as soil organisms.

The advantages of Aim desiccant is that it can be used on all varieties of seed, fresh and storage potatoes. It is easier to handle, non-restricted use chemistry that provides excellent leaf and stem kill which leads to a clean break of the tubers from the stolons.

The tubers have excellent skin set and bulking without stem-end browning. Aim also controls susceptible weeds at harvest and is not corrosive to application equipment.

Beleaf insecticide provides superior control of aphids and plant bugs. It has a new mode of action with no known cross resistance to other chemical classes.

Beleaf provides long residual control of aphids and plant bugs, yet is soft on beneficial insects and predator mites.

"Beleaf causes rapid and irreversible feeding cessation in aphids resulting in starvation and ultimate control, while protecting the crop from damage," Ortega says. "Once insects are exposed to Beleaf, they begin to stop feeding in as little as 30 minutes. When you stop insects from feeding, you stop damage and disease transmission to the crop resulting in higher quality production."

Beleaf is a product that provides a new mode of action that is active on the A-Type Potassium Channel of the insect nervous system. The excellent aphid control is particularly important in seed production in preventing

the spread of PVY.

Beleaf has translaminar activity that provides the needed mobility to move through leaf tissues to reach aphids on the underside surfaces.

The chemistry behind Beleaf is soft on beneficial insects, making it a good fit with Integrated Pest Management systems. It is a good choice for rotation with neonicotinoid and is a valuable resistance management tool.

Contact FMC at (215) 299-6000 or visit www.fmc.com.

BAYER CROPSCIENCE

OBERON 2 SC is a powerful insecticide/miticide for foliar application in annual vegetable crops. It is effective against all important whitefly, mite and psyllid species.

It is active against all mite development stages including eggs, however, mite juvenile stages are often more susceptible than adults.

OBERON 2 SC has a significant effect on the otherwise difficult-to-control pupal stage.

This product belongs to a new chemical class named tetrionic acids and offers a unique mode of action classified as a lipid biosynthesis inhibitor (LBI).

The level of performance is equal to or better than the efficacy and residual control provided by current standards. OBERON 2SC is minimal risk to many beneficial insect species, making it an ideal addition to Integrated Pest Management (IPM) programs.

REASON fungicide provides excellent, reliable disease control that maximizes crop yield and quality. It has quick knockdown activity on various key stages of many important diseases.

REASON provides more consistent, reliable control of early and late blight in potatoes because it acts rapidly at several stages within the pathogen life cycle. It features a direct spore-killing effect that quickly stops spores before they infect the leaf.

REASON penetrates leaf tissue with translaminar movement and protects both sides of the leaf surface. It is a reduced-risk product with very low use rates.

SCALA SC fungicide controls early blight. It is rainfast after application and effective even at low temperatures when triazoles and other fungicides are less active.

SCALA SC also penetrates the crop through inter-cellular and translaminar activity and blocks the secretion of fungal enzymes necessary for the infection process. This stops the disease before it develops in the leaf tissue.

With its active ingredient propoxycarbazone-sodium, mesosulfuron-methyl

OSPREY offers broad-spectrum control of major grasses and weeds, including annual (Italian) ryegrass and wild oat, including ACC-ase resistant wild oat, in winter wheat. It provides full rotational crop flexibility and can be tank-mixed with many broadleaf herbicides for one-pass weed control.

Contact (866) 99-BAYER or visit www.bayercropscience.com.

DUPONT

Growers can count on DuPont to focus its scientific resources for the development of new chemistry, unique formulations and reliable products. The result is a family of crop protection tools for managing threats from insects, weeds and diseases.

DuPont offers Asana XL, Lannate, Vydate C-LV, Vydate L and Avaunt insecticides. Avaunt now provides potato tuber-worm control through a 2(ee) recommendation for the states of California, Idaho, Oregon and Washington.

The company's herbicide offering includes DuPont Cinch and Matrix herbicides. For disease control, the portfolio includes DuPont SuperTin 80 WP, Curzate 60 DF, new Kocide 3000, Manzate Pro-Stick and Tanos fungicides.

Contact DuPont for more information about its full family of products at crop-protection.dupont.com.

MAKTASHIM AGAN

Adjourn is the premier generic formulation of esfenvalerate the advanced pyrethroid active that provides longer-lasting control of a broad range of pests in potatoes. Adjourn is the generic alternative for

Asana XL and is formulated with cottonseed oil which helps maintain the stability of the active ingredient in all weather conditions including intense sunlight or periods of rain.

Adjourn is registered for use in potatoes in all states, and is effective on tough pests including Colorado potato beetle, leafhopper, potato phyllid and tuber-worm, aphids, corn borer, leafhopper, tarnished plant bug and other tough pests. Adjourn is a Restricted Use Pesticide.

See your retailer or call your local MANA Generic Crop Protection representative.

VALENT

A growing line of quality products is available from Valent U.S.A. Corporation. These include plant growth regulators, herbicides, fungicides, a nematicide and miticides.

Chateau herbicide was introduced by Valent last year and is a powerful long-lasting flumioxazin-based product. In USDA field trials, it demonstrated better control of the toughest annual weeds like hairy nightshade than other currently used potato herbicides.

Chateau helps prevent weed resistance because it is a PPO inhibitor and has a different mode of action than other commonly used herbicides. It also does not leach or volatilize, requires minimal PPE, is clean, easy to handle and can be applied in a variety of ways to many crops.

Late last year, Select Max Herbicide was also introduced by Valent.

This herbicide is the most advanced grass herbicide, providing greater uptake and translocation through its innovative "inside technology."

This unique patent-pending formulation is used for control of problematic postemer-

gence grasses and volunteer cereals. It also provides growers unsurpassed tank-mix flexibility and virtually no antagonism from other crop protection products. This flexibility is especially valuable to growers looking to reduce the number of trips across the field.

Valent has also introduced Venom Insecticide, a third generation neonicotinoid that is super-systemic when applied to soil and has translaminar activity when applied to plant foliage. With this activity, potatoes are provided with the power to protect themselves from yield-damaging pests like Colorado potato beetle, flea beetle and potato leafhopper.

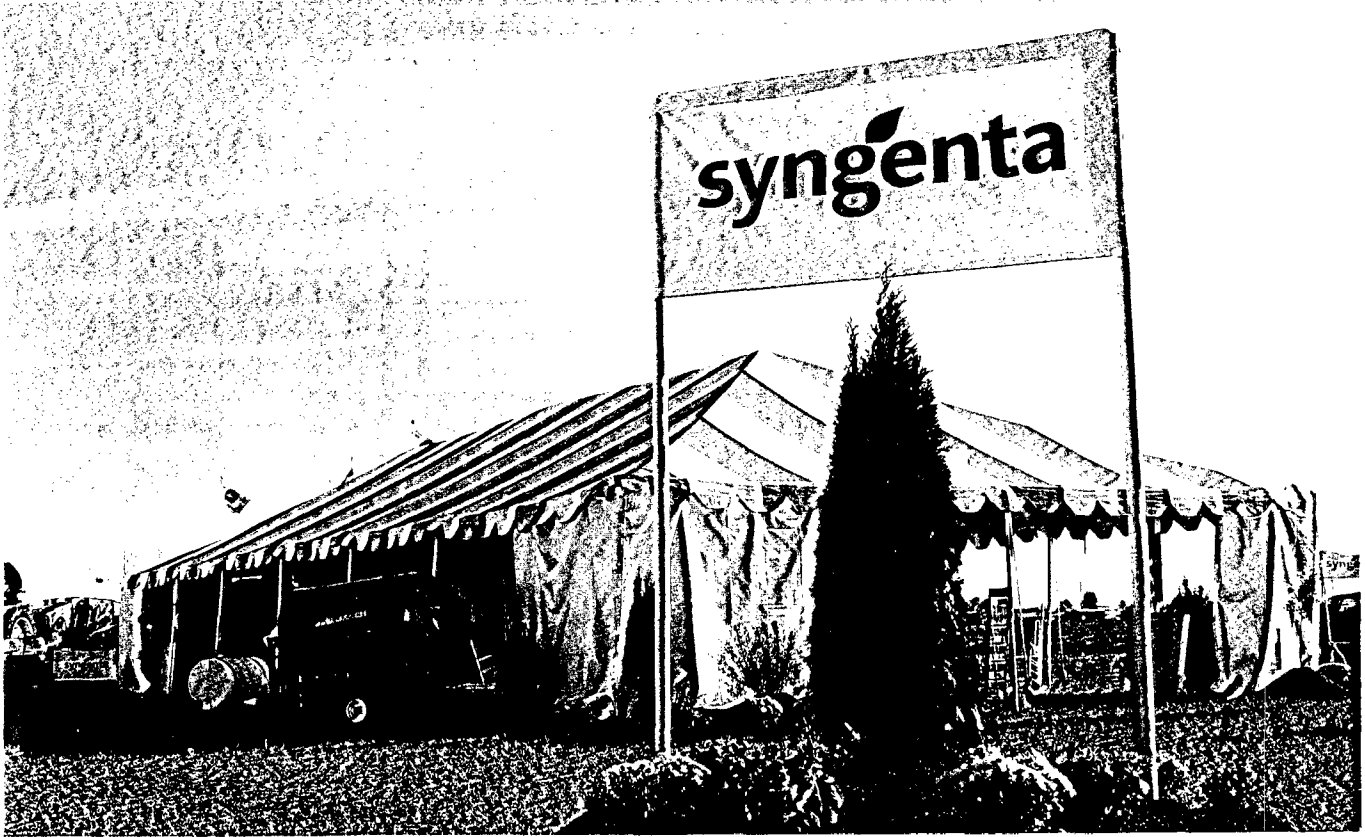
Venom is fast acting and can be used in foliar, drip, in-furrow, drench and side-dress treatments. It can be applied at preplant, pre-emergence or later in the season when the ground cracks.

A new fungicide with the chemical name Fluopicolide is set to be released later in 2007. According to a Valent technical information bulletin, Fluopicolide provides fast, preventative and curative control of a wide range of oomycete diseases including downy mildews, late blight and various Pythium species including those resistant to other fungicides.

Fluopicolide has a new, novel active ingredient from a new chemical class called "acylpicolides" which has no known cross resistance. It provides consistent control at low rates, has translaminar and systemic movement and unique quick action on zoospores. But can't be fully elucidated at this time. As observed under a microscope, within seconds of contact with fluopicolide, zoospores stop swimming and later swell and explode.

Contact Valent at (800) 682-5368 or visit www.valent.com.

(EDITOR'S NOTE: The staff of Potato Grower magazine does not claim this list to be 100 percent complete. An effort was made to contact all major and many minor manufacturers of crop protectants used on potatoes. If we have missed any, we invite a submission so that the product can be included in a future article.)



WPC Farm Show participants learned about the protection of BASF's Power Match Outlook and how to be released. Always instruct.

