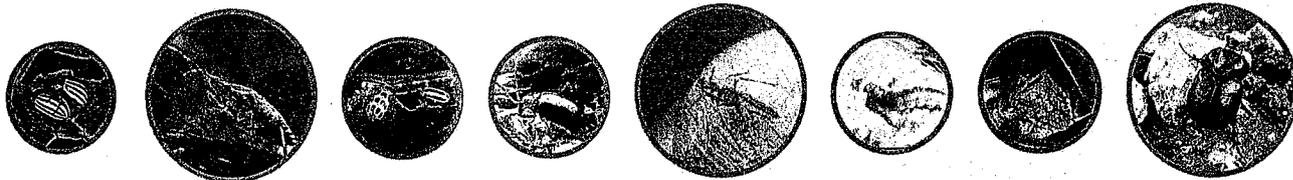


## Insect Control



# 5 That Can *Bug* You

It seems like there's a new insect problem every year — and the old ones keep returning.

It seems strange to think now, but it wasn't that long ago that growers had never even heard of such insects as brown marmorated stink bug or spotted wing drosophila. Today, you'd be hard-pressed to find a single fruit or vegetable grower who isn't familiar with these pests. With the crop season getting under way, *American Vegetable Grower* caught up with a couple of experts whose companies are on the leading edge in developing state-of-the-art solutions to growers' insect headaches. We asked Lars Swanson, portfolio manager — Rynaxypyr, DuPont Crop Protection, and Brian Timmerman, portfolio marketing leader for insecticides for Dow AgroSciences, a series of five questions.

**Q1** Invasive pests such as brown marmorated stink bug and spotted wing drosophila seem to be grabbing all the attention, but what are some other insect pests flying under the radar? In other words, while not drawing headlines, which ones can create real problems?

**Swanson:** Headlines generally can be driven by uncertain threats to the success of crop production, either uncertainties in scope of impact or uncertainty on what might control the threat. Insects that appear regularly each year don't grab a lot of headlines as growers and crop consultants do their job with diligence. Planning for and scouting for these insects prevent tremendous potential losses that could result if not controlled. Insects that are known but more periodic can be a local surprise,



Lars Swanson



Brian Timmerman

so regular scouting and staying current with crop production guides can assure timely response and a protected crop.

**Timmerman:** Many species of aphids are a cause of great concern for vegetable producers from around the country. Aphid feeding can result in substantial crop damage and leads to the transmission of numerous viruses that will further deplete crop value. Dow AgroSciences anticipates the registration of Closer SC insecticide — in every state except California and New York — in time for the 2012 crop season. Closer is a new insecticide that provides the best combination of speed and residual efficacy on aphids, such as cabbage aphid, potato aphid, melon aphid, and green peach aphid.

**Q2** As growers turn to softer or more selective chemistries for pest control, what are some secondary pests you've seen emerging that are not always considered big problems, but have the potential to cause serious headaches?

**Swanson:** As growers have turned to these new products, such as Coragen, they are seeing the benefit of the selec-

tivity as beneficial insect populations can remain established, which benefits overall IPM. In other cases, secondary pests do emerge as they were previously controlled knowingly or unknowingly with broad spectrum products. So as a selective worm control product is used, growers and crop consultants need to be aware of potential insect classes such as beetles and stink bugs. Proper scouting and timing of control of these pests, if needed, can prevent unexpected damage.

**Timmerman:** Thrips can cause considerable damage if left uncontrolled. Thrips significantly impact many high-value vegetables, such as tomatoes and peppers, by acting as a vector for tomato spotted wilt virus. High populations of thrips can quickly spread tomato spotted wilt virus, which can result in yield loss across the field. Using a spray program that includes Radiant SC insecticide can help keep thrips populations down.

**Q3** Growers in various parts of the country are reporting resistance issues with certain pests, such as diamondback moth (DBM) in the southeastern U.S. Have you heard of any specific problems?

**Swanson:** Resistance can develop in parallel to high market adoption and/or in situations of overuse locally. In vegetables, some insect species like DBM and beet armyworm, also can have greater inherent likelihood of developing tolerance. Resistance to one class of chemistry also can accelerate resistance in the few remaining tools, so it's important for growers and consultants

## Insect Control

to follow IRM (Insecticide Resistance Management) guidelines to maintain all their available tools. Practices that include tank mixes of an inexpensive class of chemistry for additional control 'just in case' should be avoided. You can look at pyrethroid tolerance on insects such as corn earworm as an example of the impact of heavy, repeated exposure to a single class of chemistry.

**Timmerman:** There are areas where reduced sensitivity to insecticides has happened. To help manage this, Dow AgroSciences promotes a resistance management program. Growers should rotate classes of chemistry in order to keep the tools we have today viable for long-term management. If we don't rotate today, we could have significant problems in the future.

**Q4** If you were to give growers one specific piece of advice regarding insect management, what would it be?

**Swanson:** The introduction of new classes of chemistry, such as Coragen, gives the grower and consultant an opportunity for more effective control. To maintain this and other new classes of insect control products, growers should make sure that they rotate modes of action (MOA) across the season. Use a different MOA for multiple insect generations, and if generations overlap rotate to a new MOA at least each 30 to 45 days.

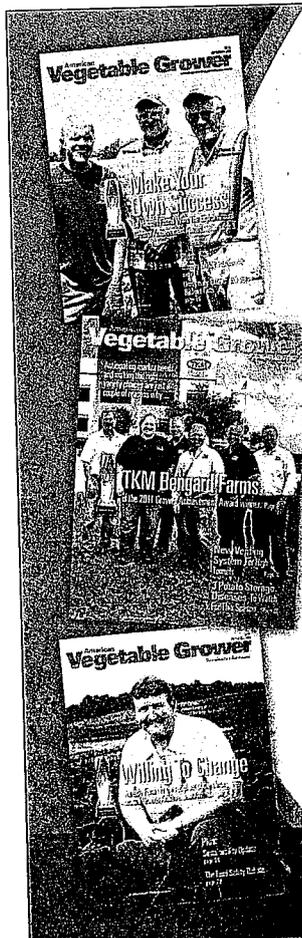
**Timmerman:** It can be extremely tempting to repeatedly use an insecticide if it shows excellent control of targeted insects. Growers need to resist that temptation in order to keep the few effective options currently offered viable for the long term. Insects can quickly develop resistance to insecticides, so it's important to devise a spray program that rotates between different classes of chemistry. By doing so, growers can receive optimal control while keeping their arsenal of choices effective for years to come.

**Q5** How do you think the field of insect management might be

different for the next generation of growers, i.e. 30 years from now?

**Swanson:** Insect management is always transforming from broad spectrum calendar schedule sprays of the past to today's IPM, supported by tools such as decision trees based on field data and environmental conditions. I expect there will be more integration of multiple insect control strategies from crop traits, chemical applications, cross benefit products (insects and diseases), natural beneficial insect management, new to be discovered methods, and other advanced agronomic practices that will require a more intensive knowledge management process.

**Timmerman:** Selective chemistries have already started to become an important part of the insecticide landscape. That trend will only continue to progress over the next 30 years. As years and decades pass, insecticides will become increasingly selective. This will allow growers to target the specific pest they're battling, while maintaining the natural enemies they need. **AVG**



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It seems like there's a new insect problem every year — and the old ones keep returning.

# That Can Bug You

**I**T SEEMS strange to think now, but it wasn't that long ago that growers had never even heard of such insects as spotted wing drosophila or brown marmorated stink bug. Today, you'd be hard-pressed to find a single fruit grower who isn't familiar with these pests. With the crop season getting under way, *American/Western Fruit Grower* caught up with a couple of experts whose companies are on the leading edge in developing state-of-the-art solutions to growers' insect headaches. We asked Lars Swanson, Portfolio Manager — Rynaxypyr, DuPont Crop Protection, and Brian Timmerman, Portfolio Marketing Leader for Insecticides for Dow AgroSciences, a series of five questions.

**Q:** *Invasive pests such as brown marmorated stink bug and spotted wing drosophila seem to be grabbing all the attention, but what are some other insect pests flying under the radar? In other words, while not drawing headlines, which ones can create real problems?*

**Swanson:** Headlines generally can be driven by uncertain threats to the success of crop production, either uncertainties in scope of impact or uncertainty on what might control the threat. Insects that appear regularly each year don't grab a lot of headlines if growers and crop consultants do their job with diligence. Planning for and scouting for these insects prevents tremendous potential losses that could result if not controlled. Insects that are known but more periodic can be a local surprise. This reinforces regular scouting and staying current with crop production guides and pest alerts to assure timely response and a protected crop.

**Timmerman:** The Asian citrus psyllid and its ability to exacerbate citrus greening dominate the headlines in the citrus industry, from Florida to Texas to California. Citrus leafminer shouldn't be forgotten, though. Leafminer chew holes in leaves, which creates an entry point for citrus canker. Canker may not result in the devastation greening does, but it can make fruit unsuitable for sale and significantly reduce yield.

Applying an effective insecticide like Intrepid 2F insecticide early in the season when leafminer populations are low can help keep pressure down for months to follow. Also, the European grapevine moth in California has the ability to destroy a grape vineyard. Over the last few years, though, Intrepid 2F has been a staple in spray programs that have helped manage this invasive species. Fortunately, quarantines for

European grapevine moth recently have been lifted in four counties in California.

**Q:** *As growers turn to softer or more selective chemistries for pest control, what are some secondary pests you've seen emerging that are not always considered big problems, but have the potential to cause serious headaches?*



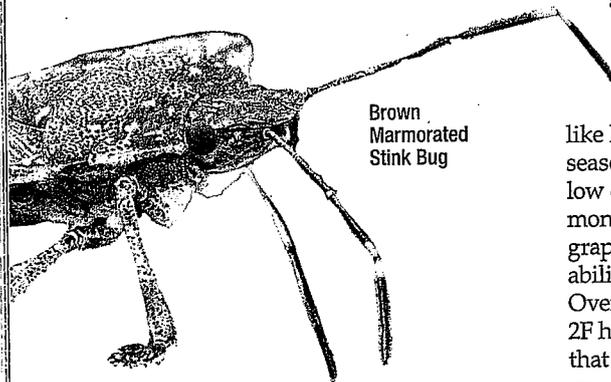
European grapevine moth



Brian Timmerman



Lars Swanson



Brown Marmorated Stink Bug

**Swanson:** As growers have turned to these new products, such as Altacor, they are seeing the benefit of the selectivity as beneficial insect populations can remain established, which benefits overall IPM. In other cases, secondary pests do emerge as they were previously controlled knowingly or unknowingly with broad-spectrum products. So as a selective worm control product is used, growers and crop consultants

need to be aware of potential insect classes such as beetles and stink bugs. Proper scouting and timing of control of these pests, if needed, can prevent unexpected damage.

**Timmerman:** Plum curculio can get lost in the shuffle when it comes to the broad spectrum of pests that invade pome and stone fruit orchards every year. Plum curculio can cause extensive damage by burrowing into fruit and rendering it inedible. Additionally, the holes created by plum curculio provide entry for brown rot, further harming the fruit. An application of a broad-spectrum insecticide, such as Delegate WG, at petal fall can help manage plum curculio, while also controlling first-generation codling moth.

**Q:** Growers in various parts of the country are reporting resistance issues with certain pests, such as diamondback moth in the southeastern U.S. Have you heard of any specific problems?

**Swanson:** Resistance can develop in parallel to high market adoption and/or in situations of overuse locally. In fruit crops, older organophosphates were standard control products for decades such that pests like codling moth developed an increased tolerance or regional resistance.

**Timmerman:** There are areas where reduced sensitivity to insecticides has happened. To help manage this, Dow AgroSciences promotes a resistance management program. Growers should rotate classes of chemistry in order to keep the tools we have today viable for long-term management. If we don't rotate today, we could have significant problems in the future.

**Q:** If you were to give growers one specific piece of advice regarding insect management, what would it be?

**Swanson:** The introduction of new classes of chemistry such as Altacor gives the grower and consultant an opportunity for more effective control. To maintain this and other new classes of insect control products, growers should assure that they rotate modes of action (MOA) across the season. Use a different MOA for multiple insect generations, and if generations overlap, rotate to a new MOA at least each 30 to 45 days.

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Spotted Wing Drosophila

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