



PEI WILD BLUEBERRY GROWERS ASSOCIATION

Spring/Summer Newsletter

May 2015

Blueberries May Lower Blood Pressure

by Nicholas Baklar | Jan 14 2015 | New York Times

Can a cup of blueberries keep the doctor away? Maybe.

Researchers conducted a randomized, double-blind, placebo-controlled study of 40 postmenopausal women ages 45 to 65 with high blood pressure. Half ate 22 grams of freeze-dried blueberry powder (equivalent to a cup of blueberries) daily for eight weeks. The others consumed an identical-looking and tasting placebo.

The study, in The Journal of the Academy of Nutrition and Dietetics, found that those who ate the blueberry preparation saw an average 5.1 percent decrease in systolic blood pressure (the top number) and a 6.3 percent decrease in diastolic pressure.

Levels of nitric oxide, known to be involved in relaxing and widening blood vessels, increased significantly in the blueberry eaters. There were no significant changes in the placebo group.

The improvement, the scientists write, was moderate compared with that of blood pressure medicines. But, they say, eating blueberries in larger amounts or for longer periods could increase the effect.

The lead author, Sarah A. Johnson, a post-doctoral researcher at Florida State University, said she saw no reason for people to radically change their diet, but that if they are not eating blueberries, they might want to try them. "There is something very special about the composition of blueberries that is responsible for their effect on blood pressure," she said. "Other fruits and plant extracts have not produced the same result."

How to estimate bee abundance

Are you looking for an effective way to evaluate pollination in your field? In part 5 of the video series "Pollination in the Northeast", Dr. Frank Drummond (University of Maine) explains to low-bush blueberry growers how to estimate fruit set by both the actual yield of berries and by the number of bees visiting flowers. This video is aimed at helping the grower determine if there are enough bees in the field and how bee visitation will effect fruit set. To find the video, youtube search "How to Estimate Bee Abundance in Maine Blueberries" or follow the link: www.youtube.com/watch?v=rgVav2byl8o

Activities of the Association

- April 25th and 26th- Speaker Training sessions were attended by John Handrahan and JoAnn Pineau. The sessions were hosted by the PEI Federation of Agriculture with the purpose of assisting those involved in the agriculture industry in telling the story of modern agriculture.
- March 27th- a governance training program was attended by JoAnn Pineau. The program was hosted by the PEI Federation of Agriculture with the purpose of strengthening governance skills in agricultural Boards.
- April 29th- John Handrahan, Bill Harper and JoAnn Pineau met with NB and NS associations in Moncton NB to discuss ongoing and upcoming research.

Your Board of Directors

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John Handrahan

902.853.6555

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902.676.2434

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JoAnn Pineau

902.368.7289

We're Going Digital!!

In an effort to lower costs and remain environmentally friendly, we will be transitioning to email distribution for the PEIWBGA newsletter this fall. Paper copies will still be available, however anyone who would like to be added to our mailing list must let us know before September 1st. In addition to this, if you are not currently receiving the PEIWBGA newsletter by email and would like to, please let us know.

Contact the PEIWBGA at:

In Person: 420 University Avenue, Suite 110, Charlottetown

Phone: (902) 368-7289

Fax: (902)368-7204

Email: joann@peifa.ca

Upcoming Events

- WBPANS Field Day: July 18th
- Maine Wild Blueberry Field Day: July 15th

Brown Marmorated Stink Bug; A New Threat to Canadian Crops

The brown marmorated stink bug (BMSB), *Halyomorpha halys*, is an invasive alien insect which is considered a significant agricultural pest. The BMSB was first detected in North America in 1993, and since it has been found in most states and several Canadian provinces, and is established as close as southern Ontario. Although some natural spread does occur, BMSB is a proficient hitchhiker and can be moved over large distances through shipping. BMSB is particularly dangerous because it can survive on as many as 300 different hosts, ranging from vegetables to woody plants. To learn more about the brown marmorated stink bug, please see the PEIWBGA website: <http://peiwildblueberries.com/the-brown-marmorated-stink-bug/>



Jacobs PSU
Adult brown marmorated stink bug, courtesy of Penn State University

Blueberry yields heightened in response to *Clonostachys* spray treatments

John Sutton, Bradford Rooney and Todd Mason

The microscopic fungus *Clonostachys rosea* is currently being developed for farm use as a tool to promote the health and productivity of many kinds of crops. In nature, the fungus occurs within the leaves, stems, flowers, fruits and roots of a wide diversity of plants in temperate and tropical climates around the world. Over several years, particular strains of the fungus have been selected and tested in crop plants for activity against diseases and for promoting growth, vigour and yields. Recent work in small field plots and the laboratory has shown that our strains of *Clonostachys* are able to strongly suppress most economically important diseases of lowbush blueberries encountered in Canada including Monilinia (mummyberry), Phomopsis canker, Sclerotinia berry drop, and Botrytis. In 2014 we conducted trials to determine the effectiveness of *Clonostachys* as a practical tool for promoting the health and productivity of blueberries when applied under actual farm conditions. In particular it was important to determine when *Clonostachys* treatments should be applied during the crop season so as to achieve the best effects against disease outbreaks and in terms of better berry yield and quality. To find the full study, please go to: www.peiwildblueberries.com/blueberry-yields-heightened-in-response-to-clonostachys-spray-treatment/

FARM EQUIPMENT FOR SALE

- Kubota L5740 (57 hp) 4WD Tractor, 2009 Model less than 500 hours. Factory cab, AC, block heater: \$28,888.
- Tardif Flail Mower Model F1360L, 60 inch, 3 pt hitch, original blades used on only 35 acres : \$4,488.
- Salvarani Foam Marker Model TJ EV-24 still in the shipping cartons. Asking \$448. Also Foam Agent available.

Please contact: Richard Veinot, 902-566-3686 or at rveinot@islandtelecom.com

A message from the President

John Handrahan

Hello, it is my honour to have been selected by your Association's Board of Directors to be the Chair for the coming year. I would like to thank David MacNearney for his leadership over the past years, and retiring director Kevin McKenna for his contributions to the board. Both have served your interests well in providing leadership to your Association. Looking forward, I believe the members have chosen a strong Board to guide the Association this year.

As we look forward to the next cropping year, now is a good time to plan your pest control program. I believe this is important as there is increasing concern over pesticide resistance. You may have heard that some weeds are suspected of becoming resistant to Velpar, and we have heard how weeds, insects and disease in other sectors have developed resistance.

We all can help prevent the loss of effectiveness by applying products only when needed, and by scouting.

We can rotate the products we use from different groups (categorized by number) so that the pest is exposed to different products. Even if you do not apply crop protectants yourself, you can, and should, discuss with your custom applicator the products that will be selected this year, and how application will be decided. Compare the selected products with those used last season to determine if products are being used too frequently. To this end, Peter Burgess of Perennia has developed charts of pesticides that can be used to select different products to control pests. Peter deserves many thanks for his efforts. See the charts on the website at www.perennia.ca. See also production guides on the Perennia site and the updated NB guide at www2.gnb.ca/content/dam/gnb/Departments/10/pdf/Agriculture/WildBlueberries-BleuetsSauvages/C420-E.pdf

Also, I have heard of a cultural practice that can help delay resistance development. By leaving marginal areas consistently untreated, habitat for beneficial insects can establish and weeds that are not sprayed will not develop resistance. As these plants cross pollinate with plants in the field, the traits of susceptibility will be passed back to the weeds, delaying resistance.

Your Association, and those of Nova Scotia and New Brunswick, have supported research in pest management in the past and continue to do so, including projects for organic control products. Your Board continues to work to serve your interests, so feel free to contact any of us, or JoAnn at the Association's office, for any comments, concerns or suggestions. Have a good season.

WBANA UPDATE!

In March and April, WBANA participated in producer meetings in Nova Scotia, Quebec, PEI and New Brunswick. In PEI and New Brunswick, Jing Zhao Cesarone of Chinawise Business Consulting gave a presentation on the Chinese market and both her and Neri were available to answer questions.

TARIFFS: WBANA is active in lobbying the Federal Minister of International Trade and the Minister of Agriculture to negotiate better Trade deals with crucial markets for Canadian Wild Blueberries. Chilean Cultivated Blueberries are a major competitor in important markets and Canada has to address the Tariff discrepancies immediately for our industry to continue to grow.

UPCOMING:

Participate in Minister Ritz mission to China in June 2015

Field days: WBANA plans to attend all grower field days in July and will be available to answer any grower questions. Questions can also be sent to neri.vautour@nb.aibn.com.

WBANA will be looking for grower support during August visit of Japanese and German group of buyers and media.

Are you looking for employees?

We have several resumes on file from potential employees who are interested in working in blueberry production! To learn more please contact JoAnn at 368-7289 or joann@peifa.ca

Submissions & contributions to the newsletter are welcome additions! Please forward ideas/articles/photos/events to JoAnn Pineau: joann@peifa.ca

Controlling Mummyberry (Monilinia Blight)

Submitted by Kelvin Lynch, IPM Solutions

This article first appeared in *Bleuets NB Blueberries' Newsletter* in December 2014

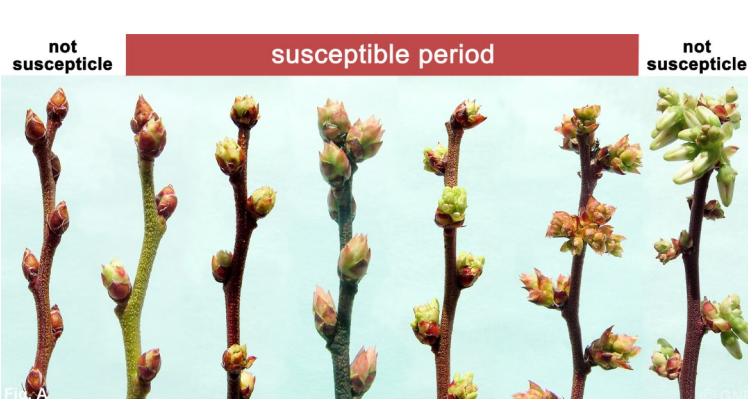
As blueberry growers increase yields by applying greater inputs their tolerance for risk declines. In addition, as yields increase the return improves on an input such as a pest control application. This is because the cost of spraying is the same for low yielding and high yielding fields but the return on a high yielding field is greater. Losses to mummy berry can be severe and the disease is present in all blueberry fields at some level. Since the disease over winters in the field pruning by burning significantly reduces the disease risk, but the percentage of our production base that is burned each year is declining and we are not likely to see a reversal in that trend. As we move away from burning, our dependence on fungicides for disease control increases. The period of crop susceptibility to mummy berry infection is about 2.5 weeks so getting good control with just one, or even two sprays is asking a lot from a fungicide. The timing of fungicide applications for mummy berry control is therefore critical and the most common error is applying too late. If you can already see blight or blossoms opening in the field then it is too late to start your spray program. Apply the first spray when the flower bud scales have opened on at least 50 percent of the fruit buds, apply the second spray 7 to 10 days later (Fig. A).

Fungicides are typically applied prior to wet periods to prevent infection, but for this disease it is possible to apply after a period of rain and get good control as long as it is done within 48 to 76 hours of when the rain started. If a hard frost occurs during the susceptible period the buds become more prone to infection and protection is therefore even more important.

The fungicides used for mummy berry control have been dominated by one particular chemical, propiconazole. Growers are familiar with this fungicide by the trade names; Jade, Tilt, Topas and Mission. All these products perform similarly and you should shop by price and service. There are however differences in formulation and therefore rates. Jade, Topas and Tilt have 250 grams active per litre whereas Mission has 418 grams of active. Tilt is actually an old formulation used on other crops but in 2014 blueberries were added to the list of registered crops. Since propiconazole fungicide has been used for so many years there are concerns about the possible development of resistance. To date however, this does not appear to have occurred to any significant degree.



Fig. 6 IPM Solutions



Propiconazole chemicals are not the only fungicides registered for mummy berry, Funginex is an older chemical and also a proven performer for mummy berry control. There are also newer fungicides such as Quash, Fontelis and Proline. Many growers are familiar with Proline since they have been using it for leaf rust control in the sprout year. In a limited number of trials conducted so far Proline and Fontelis have shown efficacy at least equal to that of propiconazole. The label instructions for the use of Proline on wild blueberry for control of mummy berry are not accurate and the product should be used as discussed in this article. Many of these fungicides are toxic to fish, and growers should be careful not to drift spray onto wetlands that may drain into brooks or rivers. Before using any pesticide in the crop year first check with your buyer to make sure it is acceptable with them.

There are several manage practices for forecasting mummy berry disease risk including using field specific weather monitoring, mummy berry cup maturation, recording blight incidence in previous crops and assessing the number of actual mummy berries produced in the previous crop. To date however, there hasn't been much uptake in these areas.

To time your first fungicide application you should be checking bud development in cropping fields in late April and early May. When doing this watch for other early season pests such as strawberry root worm and blueberry leaf tier. The leaf tier is a small, dusty-gold moth that can be seen in blueberry fields during early July. It lays its eggs in the leaf litter and they hatch the following spring in early May. Larvae climb the stems and feed on the developing buds (Fig B). This is not a new pest in NB but it is increasing in at least one production region.

The PEIWBGA would like to thank Kelvin Lynch very much for his newsletter contribution.

Quash® Fungicide receives Japanese maximum residue limits approval for blueberries

Calgary, AB [April 15, 2015] – Canadian blueberry growers can now control key diseases with Quash Fungicide and access the Japanese export market, with the recent approval of Maximum Residue Limits (MRL) for Quash. Japan is the second largest export market for Canadian-grown blueberries, after the United States.

Quash (metconazole) is a Group 3 fungicide that delivers preventative and curative control of mummy berry and anthracnose, and suppression of phomopsis in blueberries.

"Quash controls the most devastating diseases affecting Canadian blueberries," says Sabrina Bladon, Eastern Marketing Manager for Nufarm Agriculture Inc. "Before this Japanese MRL approval, growers using Quash to protect blueberry yields from mummy berry, anthracnose and phomopsis were limited to North American markets. They now have the opportunity to work with their processor to access the significant Japanese export market."

An important part of an Integrated Pest Management (IPM) program, Quash delivers broad-spectrum disease control of economically important diseases in one low use rate. Quash provides good residual activity, protecting blueberries during the entire infection period. Quash is also registered for use on a range of crops including potatoes and canola. For more information, consult the complete product label at www.nufarm.ca/product/quash/

DISEASE MANAGEMENT IN THE FRUIT YEAR:

Jim Anderson, Agronomic Service Representative, Syngenta Canada and Leigh Jenkins, Blueberry Farmer

This article has been prepared by a Syngenta representative to give growers general information on leaf diseases, and first appeared in Bleuets NB Blueberries' Newsletter in December 2014.

You've worked hard to get your blueberry crop strong and healthy throughout its sprout year. So now what? How do you help enable your blueberry plants to retain more flowers and produce an abundant crop of fruit so you can reap the benefits of your previous year's successes? By protecting your investment.

Protection, protection, protection!

When it comes to safeguarding your blueberry plants from disease, proper protection can't be stressed enough.

The first and most important management practice is to get ahead of disease before it takes hold of your crop. A proactively applied fungicide applied early in the spring is necessary to protect the plants before yield-robbing diseases take hold.

There are three main diseases of concern at this time of the growing season – *Monilinia* blight (or "mummy berry"), *Botrytis* blight and *Septoria* leaf spot. While *Septoria* is a leaf and stem disease that occurs later in season, *Monilinia* and *Botrytis* are mainly bud and flower diseases that can impact yield in the fruit year.

Monilinia blight is one of the most significant and costly diseases to any blueberry grower in the fruit year. This disease can infect the leaves, blossoms and fruit of the blueberry plant. *Monilinia* blight likes cool, wet conditions. An important thing to point out is that it can be difficult to distinguish between a *Monilinia* infection and frost damage until later in the season, so it's important to scout often if you detect symptoms. Once the fungus infects flowers, the fruit it produces is mummified and will eventually fall to the ground and produce spores the following season to continue the disease cycle. While the infection cannot be reversed with a fungicide application after the disease is visible, an application at this time can still be beneficial.

Botrytis blight (also known as grey mould) is another scourge. Plants can become infected with *Botrytis* during mid to late bloom, particularly after a wet period. The disease occurs during bloom and can cause the harvested fruit to rot, resulting in yield loss, but can also infect leaves and stems of the plant. Weak or injured tissue is particularly susceptible to *Botrytis*, and mature or frost-damaged blossoms can be most affected. Spores can also spread to healthy berries and cause rotting post-harvest. Your best defense against yield-robbing disease is the application of a fungicide before infection occurs. This will greatly reduce the onset of disease. A second fungicide application with a different mode of action is usually warranted 10 to 14 days after the first, particularly in fields where you anticipate higher yield or if bad weather occurs.

Applying a fungicide to protect against disease during this critical time of early growth can help enable plants to produce multiple fruit buds and develop fruit with a thicker skin, which reduces shatter loss and berry drop.

Growers are always evaluating the cost and benefits of applying fungicides to their crops. If you have already made the investment of time and effort into your blueberries, protecting this investment makes sense. Early-season fungicide applications can mean a difference of a crop producing 2,000 or 4,000 lbs. per acre. That's a lot of potential yield for your hard work.

The blueberry business is ripe for growth. A proactive approach to your disease management practices will help ensure a healthy and bountiful crop, now and for the future.

Field Management for Optimal

ROI:

The Importance of the Sprout Year

Jim Anderson, Agronomic Service Representative, Syngenta

Canada and Leigh Jenkins, Blueberry Farmer

This article has been prepared by a Syngenta representative to give growers general information on the sprout year.

Getting your crop going on the right foot aptly applies to blueberry production, particularly as you look to drive optimal yields in years to come. To set your crop up for success and increase yield potential, an important step is to maintain the health of your plants in the sprout year.

Keeping your blueberry plants healthy by minimizing disease in the sprout year will help your stands produce a higher bud count. And as we all know, more buds leads to more blossoms – and more blueberries – in the fruit year.

When disease pressure is not actively managed in the sprout year, you run the risk of an infestation that could directly impact yield. Assessing your fields' disease history is the first step to determining if your crop requires a more intensive disease control program. If you have experienced disease pressure in the past, there is a high likelihood that spores have overwintered in debris, and if left untreated, could infect new sprouts and leaves in the spring.

We recommend scouting your fields early in the season, especially after rainy weather, as a proactive way to identify problem areas. *Septoria* leaf spot will manifest as tiny lesions on the underside of leaves, while *Valdensinia* leaf spot lesions are typically brown and circular, with darker colouring around the outside of the lesion. If left untreated, infected leaves will begin to drop prematurely, which will directly impact crop yield the following year.

If higher yields are a driver for you, we recommend a proactive approach to disease management with planned fungicide applications. Because leaf and stem diseases are quite prevalent in blueberry growing regions of New Brunswick, they can spread well before a problem is detected. A good rule of thumb is to schedule your first fungicide spray when the canopy is almost filled (mid-June) to protect new plant material from key diseases such as *Septoria* leaf spot, *Valdensinia* leaf spot, *Phomopsis* canker and twig blight, then follow up in early August with a second foliar fungicide application for optimal protection. It is easier to prevent disease from taking hold rather than trying to rectify the situation post-infection!

In the sprout year, stems can grow approximately 10–12 inches, and keeping that new plant material green and healthy for as long as possible is one of the best ways to increase yield potential in the fruiting year. Why? Because during the sprout year, plants are working hard to store up the energy necessary to produce high-quality fruit in the crop year.

At Syngenta, we're committed to helping you grow your best crop. We feel that maintaining the health of your plants in the sprout year can help to increase your yield potential in the fruit year.

Check us out online: www.peiwildblueberries.com

Facebook: www.facebook.com/peiblueberries.com

Twitter: <https://twitter.com/PEIWBGA1>

TAKE STEPS TO AVOID INSECTICIDE RESISTANCE

Compiled by Wayne Buhler

The more frequently insecticides with the same MOA are used, the more likely resistance will occur. Once resistant insects have been detected, curbing the spread of resistance is exceedingly difficult. The best practice is to reduce the chance of resistance developing in the first place.

The following integrated pest management (IPM) and pesticide management tactics will help delay the onset of insecticide resistance:

- 1. Monitor pests--** Use research-based sampling procedures to determine if pesticides are necessary (based on action/economic thresholds) and the best application timing (when pests are most susceptible). Consult your county Extension Educator or crop advisor about economic thresholds for the insect in question. After treatment, continue monitoring to assess pest populations and their control
- 2. Employ appropriate control measures--** Effective IPM-based programs will include insecticides, cultural practices, biological control (predators and parasites), mechanical control and sanitation. A healthy plant or crop is often less susceptible to insect attack.
- 3. Select and use insecticides wisely--**
 - If repeated applications of pesticides are necessary, alternate insecticides with different modes of action against the pest so that no more than two consecutive applications are made with the same MOA. The insecticides used in a rotation or tank mix (see below) must be active against the target pest. For help in identifying classes and insecticide mode of action, see *Spraying by the Numbers*.
 - For some cropping systems, insecticide applications are often arranged into mode of action spray windows or blocks that are defined by the stage of crop development and the biology of the target pest (s). Several sprays of a compound may be possible within each spray window but it is generally essential to ensure that successive generations of the pest are not treated with insecticides from the same MOA group. Consult local expertise with regard to spray windows and timings.
 - Follow label directions for the proper application method and rate. Using reduced application rates favors survival of the stronger individuals in the pest population. The use of lower rates where possible is a good practice, but it is not a scientifically-proven resistance management technique.
 - Minimize the use of long-residual insecticides. When persistent pesticides must be used, consider where they can be used in a rotation scheme to provide the control needed and with a minimum length of exposure. Select insecticides that are least damaging to populations of natural enemies.
 - When feasible, spot treat (e.g., field edges or other hot spots) or leave unsprayed areas within treated fields or adjacent "refuge" fields. The pesticide-susceptible individuals in the untreated area will interbreed with resistant ones and dilute the resistance genes in the population.
 - Keep good records of insecticide use to aid in planning for future years. Note the insect species that were present in the field, which insecticides were applied and where, and the level of control that was achieved. Record the rate, timing and number of insecticide applications made.

Tank-Mix:

Applying two or more pesticides with different modes of action in a tank-mix or prepack may delay the onset of, or mitigate, existing pest resistance. Tank-mixing allows for adjusting of the ratio of pesticides to fit local pest and environmental conditions, while premixes are formulated by the manufacturer. The different pesticides in the mixture must be active against the target pest so that insects with resistance to one mode of action are controlled by a pesticide partner with a different mode of action. Theoretically, repeated use of any tank-mix or pre-pack combination may give rise to herbicide resistance, if resistance mechanisms to each herbicide in the mix arise together but the probability is very low.

You can find this article online at <http://pesticidestewardship.org/resistance/Insecticide/Pages/Take-Steps-to-Avoid-PIInsecticide-Resistance.aspx>

Pesticide Resistance Management: What to do??

Hugh Philip, PAg May 2011

As all growers know, many pests (plants, insects and diseases) can develop resistance to most pesticides applied to protect tree fruits from losses due to their presence. To avoid development of resistance, growers are constantly reminded to follow a pesticide resistance management (PRM) plan that is based on rotation of chemical groups within each pesticide category (insecticides, fungicides, herbicides). But how does one go about designing a proper PRM plan? This article describes four steps to implementing a successful PRM plan.

Step 1: Learn about the pesticide Group Number classification system by reading Section 15 of the Integrated Fruit Production Guide which contains a table of recommended pesticides sorted according to their Group Numbers. The Pesticide Management Regulatory Agency (PMRA) adopted this classification system to make it easier for growers to identify control products that belong to the same chemical group within each pesticide category. Products with the same Group generally kill their target pests the same way. The Group Number is printed on the front of every pesticide label: This system is much simpler to use than trying to remember what chemical group each product belongs to which are not printed on labels (e.g. organophosphates, diacylhydrazines, acylalanines, bipirydylums). Resistance to one product in a group generally causes resistance to all other products with the same Group Number. Repeated use of a single product or of products with the same Group Number will select for insects/mites, weeds, or disease pathogens that are already somewhat resistant. The pest population gradually becomes more and more resistant until field failure occurs – no control even when the product(s) is applied according to label instructions.

Step 2: Create a list of the pesticides along with their Group Numbers that you plan to use against each of the pests that may appear in your orchard. Follow the production guide Spray Schedules which list the Group Number for each pesticide recommended as the growing season progresses. Make sure that no products with the same Group Number are applied consecutively (preferably not more often than every third application per pest). For example, Admire, Alias, Assail, Calypso, Actara, and Clutch along belong to Group 4. Therefore do not list any of these products one after the other against a specific pest. Also, limit the use of products that have a high risk of resistance development such as fungicides with Group Numbers 3 or 11.

Step 3: Apply the correct rate of product/ha at the correct timing using a calibrated, well maintained and properly operated sprayer. Pesticide resistance is often identified as the reason for poor pest control when poor mixture preparation, application or timing are the real culprits. The target pests do not take in enough pesticide to be killed because they can break it down before it does any harm. This will also contribute to development of pesticide resistance. **Step 4:** The most important step – follow the planned sequence of pesticide applications and keep accurate records of every application using the reporting forms in the production guide. These records will help determine if poor control was due to increased pest tolerance, poor mixing and/or application, or some other factor.

This article can be found online at <http://www.oksir.org/docs/PesticideResistanceManagement.pdf>. Also see Center for Integrated Pest Management (www.cipm.info/) for more information.