

# MANAGE RESISTANCE*Now*

## Welcome to the Manage Resistance Now quarterly newsletter!



Hello from Manage Resistance Now,

This quarterly newsletter is aimed to keep you updated on the latest resistance management information. In each newsletter you can expect to find ready to use promotional materials that can be easily incorporated into your own presentations and social media, relevant events and news, and highlights of our latest resources and campaigns.

In this edition you'll find:

- Hear from a Grower: Special Feature
- The economic benefits of resistance management
- Shareable social media graphics
- An update on European Corn Borer
- Links to Manage Resistance Now resources
- Upcoming events
- New resistance management resources to watch for

A special welcome to new partners:

- Alberta Pulse Growers
- Certified Crop Adviser
- Grain Farmers of Ontario
- Ontario Fruit & Vegetable Growers Association
- Ontario Soil and Crop Improvement Association
- Canadian Weed Science Society

We appreciate your help sharing information to raise awareness of pest resistance and promote the valuable resources on the Manage Resistance Now website:

[manageresistancenow.ca](http://manageresistancenow.ca).

We welcome your suggestions for additional resources that would be helpful for you, your stakeholders, and of course, Canadian growers.



## Hear from a Grower: Special Feature

Here's a grower snapshot update with Brian Rideout, an Ontario tender fruit and apple grower who was featured in an earlier [Manage Resistance Now case study](#).

### Three things I've learned about managing resistance first-hand

It took Brian Rideout nearly two years to figure out how to manage his first experience with fungicide resistance. As an Ontario tender fruit and apple grower, Rideout initially discovered Group 3 fungicide resistance for powdery mildew in his orchard more than 10 years ago. Since then, he's implemented Best Management Practices (BMPs) like rotating modes of action to help preserve crop protection tools so they can be available to him when he needs them the most.

Rideout shares three things he's learned along his resistance-management journey to help fellow growers troubleshoot pest resistance and source tools and information for their own farms:

1. Test it before you try it
2. Rotation works
3. Share your experience

**“What we need to understand is that a grower’s experience with resistance is different for everyone,” says Rideout. “If you’re the first one in your area with a resistance issue, don’t keep it a secret. Share it with your neighbours and share your**

experience dealing with it. We can all learn from each other.”



To read more about how Brian manages his resistance and his three tips, you can read the rest of his strategy [here](#).

## The economics of herbicide resistance

It's never too early in the growing season to remind growers about the financial impact of herbicide resistance. Here's a short article about the economics of managing resistant weeds, along with a link to a [Manage Resistance Now factsheet](#) showing the economic returns of managing resistance.

### The economic impact of herbicide resistance adds up

Herbicide resistance costs Canadian growers an estimated \$1.1 to \$1.5 billion annually due to increased herbicide use and decreased yield and quality. That's why reducing the emergence of herbicide resistance pays off – literally. The challenge is, implementing weed management practices and programs to reduce the risk of herbicide resistance can cost money in the short-term. But the long-term payoffs make it worth the investment.

### Research shows long-term benefits of managing resistance

A study conducted by the United States Department of Agriculture and the University of Arizona actually identified the number of years it takes for resistance management efforts to show a return.

Using economic modelling, researchers estimated how managing glyphosate resistance to Canada fleabane affects short- and long-term profits in corn, soybean, and corn-soybean rotation systems.

The research results concluded that, while resistance management practices reduced profits in the first year of implementation, profits increased in year two and for the subsequent 18 years of the study. In fact, over a 20-year period, the estimated annual average profit advantage from managing resistance exceeded \$158 ha (\$64/acre) for corn, \$137 ha (\$55/acre) for corn-soybean, and \$55 ha (\$22/acre) for soybeans. That equates to grower profits of 14% - 17% over 20 years.

### Herbicide resistance in Canada

As herbicide-resistant weeds continue to spread throughout Canada, growers are increasingly faced with the challenge of making management decisions. In fact, three out of five Canadian growers are affected by herbicide-resistant weeds. And the costs associated with these problem weeds are adding up.

Already, wild oat herbicide resistance costs Prairie growers an average of \$12/acre in increased herbicide use and yield loss.

The best way to minimize or delay the development of herbicide-resistant weeds and maximize profit potential is by adopting integrated weed management. This includes using a combination of best management practices (BMPs) – cultural, mechanical, biological and chemical control measures – over the long term. Specific BMPs include crop rotation, rotation and mixture of herbicides, use of recommended label rates and timing, scouting, sanitation and more.

For more information on recommended BMPs to manage herbicide resistance, and herbicide Resistance in Canada visit [ManageResistanceNow.ca](https://www.ManageResistanceNow.ca).

## Tips for unexpected European Corn Borer injury in *Bacillus thuringiensis* (Bt) Corn from the Canadian Corn Pest Coalition.

Since 2018, extension specialists have observed Bt resistant population of European Corn Borer (ECB) across Nova Scotia, and in some fields in Manitoba and Quebec. Additionally, in 2023 feeding injury by ECB was reported in corn containing different Bt proteins targeted to protect from ECB in a field New Brunswick and Connecticut. With these new reports, there are now 4 Bt proteins ECB have shown reduced susceptibility. These warning signs increase the need for scouting and reporting of any ECB injury found in Bt corn.

To detect ECB damage, we encourage corn growers to scout their Bt corn fields before harvest when the plants are still green. Any plants with injury should be tested for the presence of Bt proteins. Scout between 10 to 20 areas of your field looking for signs of ECB injury including leaf or whorl feeding, frass and stalk tunneling in the midrib or at the leaf axils, bent or broken stalks and the tell-tale sign - broken tassels. If you see any of these signs, let your seed provider and extension specialist know so they can investigate further. Don't assume the damage is on non-Bt plants, especially if you see it on multiple plants in one area.

To reduce the risk of resistance, the Canadian Corn Pest Coalition recommends rotating to a non-host crop for ECB and consider shredding stalks during or shortly after harvest to reduce overwintering ECB populations which can spread resistance. If corn-on-corn is planted, do not plant Bt corn hybrids that contain only one mode of action (MOA) to protect against ECB, and avoid planting the same Bt MOAs year after year.

For more information on ECB resistance and provincial contacts, visit the Canadian Corn Pest Coalition website at [www.cornpest.ca](https://www.cornpest.ca).



Early season ECB feeding includes whorl feeding, midrib mining (T. Baute, OMAFRA) and repeated pinholes across leaves (J. Smith, UGRC).



Later season ECB feeding injury includes frass and stalk tunneling at the leaf axils, broken tassels and bent or broken stalks (J. Smith, UGRC).

## Media kit

Download engaging content and shareable resources [here!](#)

If you would like to request hard copies or French resources, please [contact us](#).



## Social media

Please like and share our posts on [Twitter/X](#) and [Facebook](#). You can also download and post content directly on your channel. Remember to tag [@protectyourland](#) and use [#cdnag](#) [#agtwitter](#)



## News

- Learn about a new digital tool that can be used to predict where weeds will

## Events

**Plant Canada**  
July 7-10, 2024  
Winnipeg, MB

CropLife Canada is pleased to be a sponsor of Plant Canada 2024. Through our sponsorship we are looking to raise awareness of CropLife Canada stewardship initiatives, including Manage Resistance Now, and will include hosting a lunch time panel on resistance management. The panel discussion will include an introduction to Manage Resistance Now, accompanied by 10–15-minute presentations and a short Q&A. The panel will include speakers from Ontario Ministry of Agriculture and Rural Affairs, the University of Guelph and Canola Council of Canada discussing resistance research, in-field challenges and management strategies, and the importance of science-based regulations to maintain existing tools and facilitate the approval of new tools.

Event registration and

emerge and identify areas with herbicide resistance within fields in this [Grainews article](#).

- Understand the cost of insect resistance and helpful management tips to help prevent or delay resistance in this [Farm Progress article](#).
- Here is an [article](#) from one of our partners, the Canola Council of Canada, on what to do when dealing with herbicide resistant kochia.

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### How do you manage pest resistance?

We want to hear from growers. Share your experiences and tips to help raise awareness of this important issue. [Contact us](#) or find MRN on Twitter/X [@protectyourland](#).

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**Would you like to suggest content ideas, upcoming events or other resources? Please contact the [Manage Resistance Team](#) with feedback and questions.**

agenda can be found [here](#).

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### New resistance management resources to watch out for:

#### Palmer amaranth factsheet: *coming soon*

We're making regular updates to our website, [ManageResistanceNow.ca](#) to keep growers up to speed on the latest information about pest resistance. Manage Resistance Now has partnered with the Canadian Plant Health Council, a coalition of extension specialists, federal and provincial governments to develop a new Palmer amaranth resource for growers.

Commonly referred to as the most troublesome weed in the U.S, Palmer amaranth populations have been confirmed to be resistant to nine different modes of action in the U.S.

Stay tuned!

**Are you looking to promote Manage Resistance Now at your next event? Download resources and logos [here](#). Looking for hard copies of resources? Please [contact us](#).**

Please feel free to share this newsletter with colleagues in your organization. If you have colleagues who would benefit from these updates, please email the [Manage resistance Now](#) to have them added to the distribution list.



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