MANAGE RESISTANCE Now

Welcome to the Manage Resistance Now newsletter!

This newsletter is designed to keep you updated on the latest information regarding resistance management. In this edition, we are highlighting how ManageResistanceNow.ca can support your network and providing some important off-season reminders.

We appreciate your support in sharing information to raise awareness of pest resistance and promoting the valuable resources available on ManageResistanceNow.ca. We also welcome your suggestions for additional resources that would be helpful for you, your stakeholders, and, of course, Canadian growers.

The Manage Resistance Now website: tools, insights and resources to support resistance management decisions

Are you dealing with resistance on your farm? Discover effective strategies for managing resistance. This is your one stop shop for expert insights, practical tools, and advice to help you navigate resistance challenges and cultivate resilience in your fields.

Explore topics such as herbicide, fungicide and insecticide resistance, Integrated Pest Management (IPM) and more. Whether you're facing setbacks or striving for development, we're here for you.

Built to support on-farm resistance management decisions

Managing pest resistance – diseases, insects and weeds – is getting more complex, and trusted, timely and practical information matters more than ever.
As a partner stakeholder you play a critical role in helping growers make informed, sustainable and timely decisions. ManageResistanceNow.ca was developed to support exactly that.

Why promote ManageResistanceNow.ca to your network?

- Canadian-focused, science-based information on resistance management
- Practical tools and insights you can use in grower conversations
- A one-stop resource covering multiple pests, crops, and management strategies

ManageResistanceNow.ca features grower-ready resources:

- Factsheets, case studies, grower testimonials, videos and images
- Advice from leading industry experts
- English and French languages

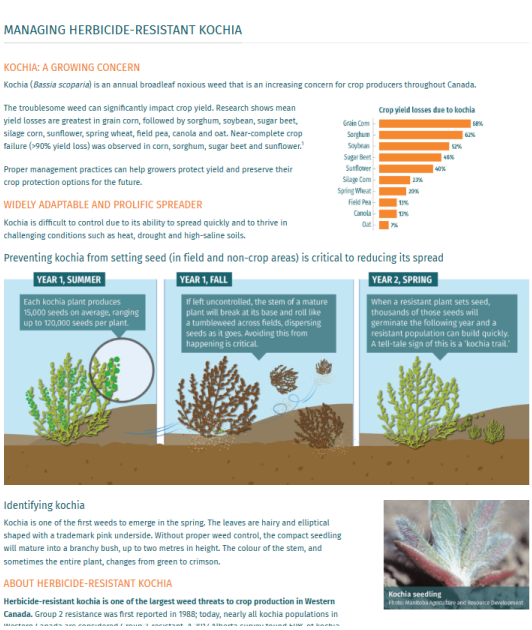
Top ManageResistanceNow.ca downloads:

Palmer Amaranth factsheet

Waterhemp factsheet

Kochia factsheet

Hear from a Grower tip sheet


MANAGING HERBICIDE-RESISTANT KOCHIA

KOCHIA: A GROWING CONCERN

Kochia (*Bassia scoparia*) is an annual broadleaf noxious weed that is an increasing concern for crop producers throughout Canada.

The troublesome weed can significantly impact crop yield. Research shows mean yield losses are greatest in grain corn, followed by sorghum, soybean, sugar beet, silage corn, sunflower, spring wheat, field pea, canola and oat. Near-complete crop failure (>90% yield loss) was observed in corn, sorghum, sugar beet and sunflower.[1]

Crop yield losses due to kochia

Grain Corn 68%
Sorghum 62%
Soybean 52%
Sugar Beet 48%
Sunflower 40%
Silage Corn 27%
Spring Wheat 20%
Field Pea 13%
Canola 13%
Oat 7%

Proper management practices can help growers protect yield and preserve their crop protection options for the future.

WIDELY ADAPTABLE AND PROLIFIC SPREADER

Kochia is difficult to control due to its ability to spread quickly and to thrive in challenging conditions such as heat, drought and high-saline soils.

Preventing kochia from setting seed (in field and non-crop areas) is critical to reducing its spread

YEAR 1, SUMMER
Each kochia plant produces 15,000 seeds on average, ranging up to 120,000 seeds per plant.

YEAR 1, FALL
If left uncontrolled, the stem of a mature plant will break at its base and roll like a tumbleweed across fields, dispersing seeds as it goes. Avoiding this from happening is critical.

YEAR 2, SPRING
When a resistant plant sets seed, thousands of those seeds will germinate the following year and a resistant population can build quickly. A tell-tale sign of this is a 'kochia trail.'

Identifying kochia

Kochia is one of the first weeds to emerge in the spring. The leaves are hairy and elliptical shaped with a trademark pink underside. Without proper weed control, the compact seedling will mature into a branchy bush, up to two metres in height. The colour of the stem, and sometimes the entire plant, changes from green to crimson.

Kochia seedling

ABOUT HERBICIDE-RESISTANT KOCHIA

Herbicide-resistant kochia is one of the largest weed threats to crop production in Western Canada. Group 2 resistance was first reported in 1988; today, nearly all kochia populations in

Whether you're preparing recommendations, answering tough resistance questions, or looking for reliable resources to share, ManageResistanceNow is designed to support your network.

What can you do to support Canadian growers?

- Follow and share Manage Resistance Now content on your channels
- Request printed copes of factsheets and postcards for your next event
- Looking for a speaker, or need an expert on pest resistance? Manage Resistance Now has a team that can support you and your growers. Just reach out.
- Share your feedback – are you looking for a new resource? Want to partner on a project? We'd love to hear from you.

Explore and share the resource: www.manageresistancenow.ca

Let's work together today to help Canadian growers protect our cropping tools and technologies for tomorrow.

Off-season reminders: leverage field and weed history for better results

Why weed history matters more than a single season – Reviewing field history is one of the most underused tools in resistance management. Weed pressure does not reset each spring. It accumulates, shifts, and responds to management decisions over time.

Patterns often emerge when viewing weed maps from multiple seasons together. Small patches that persist year after year, expand along equipment paths, or survive repeated treatments are early indicators of elevated resistance risk. In contrast, areas that respond consistently to control suggest current strategies remain effective.

Looking back across several seasons allows growers and agronomists to link weed pressure with crop rotation, herbicide programs, and application timing. It also

helps determine where focused treatments may be helpful to recover productive land from a bad weed patch, or where alternative tools such as different modes of action, cultural practices, or targeted approaches are warranted.

Recording and reviewing weed history turns resistance management from a single season decision into a long-term strategy.

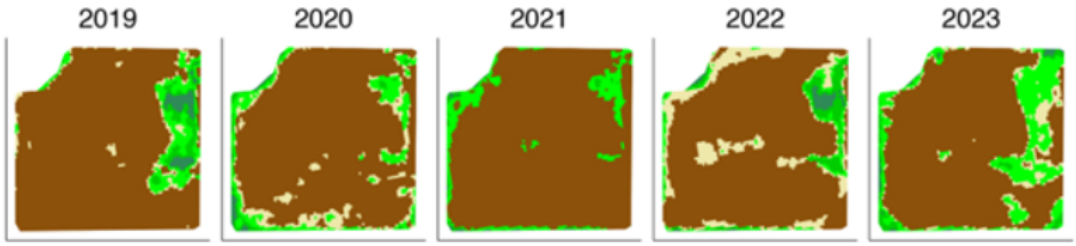


Figure 1: A set of weed maps (created by Geco Strategic Weed Management) showing how the shape and size of a kochia patch changes over a five-year period. In some years, such as 2021, favorable weather conditions result in a smaller visible infestation, even though the underlying weed seedbank remains present.

Recommended reading

- **Challenges facing the management of pesticide resistance in weeds, diseases and insect pests in European agriculture and the future of effective IPM implementation** – how EU regulations limiting available modes of action influence resistance management and agricultural sustainability.
- **Herbicide resistance sprouts in Manitoba's wild oats** – wild oat resistance is on the rise in Manitoba
- **The Agronomists, Ep 221: Corn rootworm challenges with Dr. Jocelyn Smith and Greg Stopps** – everything you need to know about the rising risk of corn rootworm
- **Crop Rotation Increases Yields and Revenue by 20%, Major Global Study Finds** – understanding the economic value of crop rotation
- **Tame Wild Oats with Early-Maturing Crop Rotations and Harvest Weed Seed Control in the Canadian Prairies** – why growers should consider early-maturing crops to manage wild oats
- **Glufosinate resistant waterhemp found in U.S. Midwest** – weed experts suspect glufosinate-resistant watehemp.

Events | Where we've been

Sponsorship: Canadian Weed Science Society AGM

Manage Resistance Now was proud to sponsor the 2025 CWSS Annual Meeting in Gatineau, Quebec. Our sponsorship supported custom tote bags designed by Sandra Flores-Mejia featuring several of “Canada’s Yield Robbers”. The bags included Manage Resistance Now promotional materials, and additional materials were available at registration. Manage Resistance Now was also recognized throughout the meeting via the conference room slideshow.

Check out the new **Manage Resistance Now postcard** – available for your next event.

Do you have a tradeshow, speaking engagement or event coming up? Manage Resistance Now can support you with resources for **weeds**, **insects**, and **diseases**, including factsheets, postcards and promotional materials.

You can also contact the **Manage Resistance Now Team** to learn how they can help you spread the word about pest resistance and best management strategies.

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

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