

# Kochia

## Solutions



### The Problem

Kochia is one of the most difficult-to-control weeds in the west, with its deep root system, prolific seed production and potential herbicide resistance. By the time a kochia plant is only 5cm tall, the root system can be over 15cm long and below the reach of typical herbicides in drier areas with little rainfall after applications. A full-grown plant can send roots up to 5m deep and 7m wide in search of moisture. A wind-blown kochia plant, can cover two miles a day, scattering 15,000-25,000 seeds along the way. These characteristics can allow kochia to quickly overtake rights-of-ways and reach heights of 1-1.5 m, blocking sightlines and creating a public safety hazard.

Kochia's quick-growing and extensive root system help explain its ability to withstand drought and why it is hard to control with pre or post emergence herbicides. Fortunately, Truvist® or Navius® VM herbicide or other aminocyclopyrachlor containing blends correctly applied, are a tool that can deliver long-lasting kochia control.

### Resistance Issues

Kochia has developed resistance to multiple herbicide modes of action in the Canada. Resistance to atrazine was documented by Kansas railroads in the 1970s. Resistance to sulfonyleurea (SU) herbicides was documented throughout the west in the '80s. In the '90s, kochia resistant to auxin herbicides was also documented in Montana, North Dakota, Idaho and Colorado. In the last 10 years, resistance to glyphosate has also been found. There are now populations that are documented to have resistance to multiple herbicides – either SUs and atrazine or SUs and glyphosate. The presence of herbicide-resistant kochia populations is why it is important to follow best management practices, including using full label rates, applying pre emergence or when plants are small, and using different classes of herbicides.



Photo Credit: Dr. David Spak, Bayer

*Kochia growing alongside railway.*



Photo Credit: Derek Sabastian, Colorado State University

*Kochia seedling with deep roots.*

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### Pre-emergent solutions

Applying Esplanade™ and Truvist before kochia emerges delivers the most effective control, especially in areas of the western Canada, which experience heavy kochia pressure. Applications can be made at any time, except when the ground is frozen or covered in snow.

### Post-emergent solutions

Because of kochia's fast-growing, deep and branched root system, post-emergent control can vary.

Applying Navius VM or Truvist to small kochia plants

– preferably when they are 5 - 10cm tall, can improve control. If kochia plants are taller than 10cm, or for heavy infestations, include a tank-mix partner such as glyphosate, dicamba or fluroxypyr as appropriate for the use site.

Effective control requires complete spray coverage of the foliage. Use application equipment that gives the best coverage of all kochia plants while minimizing spray drift. Remember, taller plants, railroad ties, guardrails and other obstacles can shield or shadow smaller plants and limit contact with shorter kochia.

APPLICATION TYPE	SOLUTION	RATE	APPLICATION TIMING
Pre-Emergent*	Esplanade + Truvist	375 ml/ha + 168 g/ha	Mid-April
Pre & Post-Emergent* Bareground	Esplanade + Truvist	375 ml/ha + 168 g/ ha	Spring emergence period - preferable before kochia grows to 10cm in height
Post-Emergent Selective weeding	Navius VM or Truvist	167 g/ha 168 g/ha	

\*Glyphosate must be added once weeds have emerged

**For more information about effective vegetation management, contact your Bayer representative or visit [BayerES.ca/VM](http://BayerES.ca/VM)**

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