

# Non-Aquatic Phragmites.

A new management solution.

**Arsenal<sup>®</sup> Powerline**

Herbicide

 **BASF**

We create chemistry



# What is Phragmites?

Non-native phragmites (*Phragmites australis*) is a tall, perennial grass that can be found in both aquatic and non-aquatic environments in every Canadian province as well as the Northwest Territories.

In non-aquatic environments, such as roadsides and dry ditches, phragmites can reduce driving sightlines – increasing the risk of vehicle or animal collisions and altering snow drifting. It can also become a fire hazard and interfere with recreational activities. Environmentally, phragmites destroys wildlife habitat and food supplies and reduces biodiversity.



Source: BASF Canada

This aggressive plant grows and spreads easily, quickly out-competing native species for water and nutrients. It thrives in disturbed habitats and is often among the first species to colonize a new area. Invasive phragmites releases toxins from its roots into the surrounding soil which impedes the growth of and even kills neighbouring plants. Once established, phragmites cells can expand at a rate of 20% per year. Additionally, roadside corridors are a primary vector in introducing phragmites to waterways and shorelines.

## Current cultural phragmites treatment strategies:

### Burning:

- Potentially dangerous
- Provides only one season of control

### Rolling and mowing:

- Difficult, slow and costly
- Not possible in all areas
- Provides only one season of control

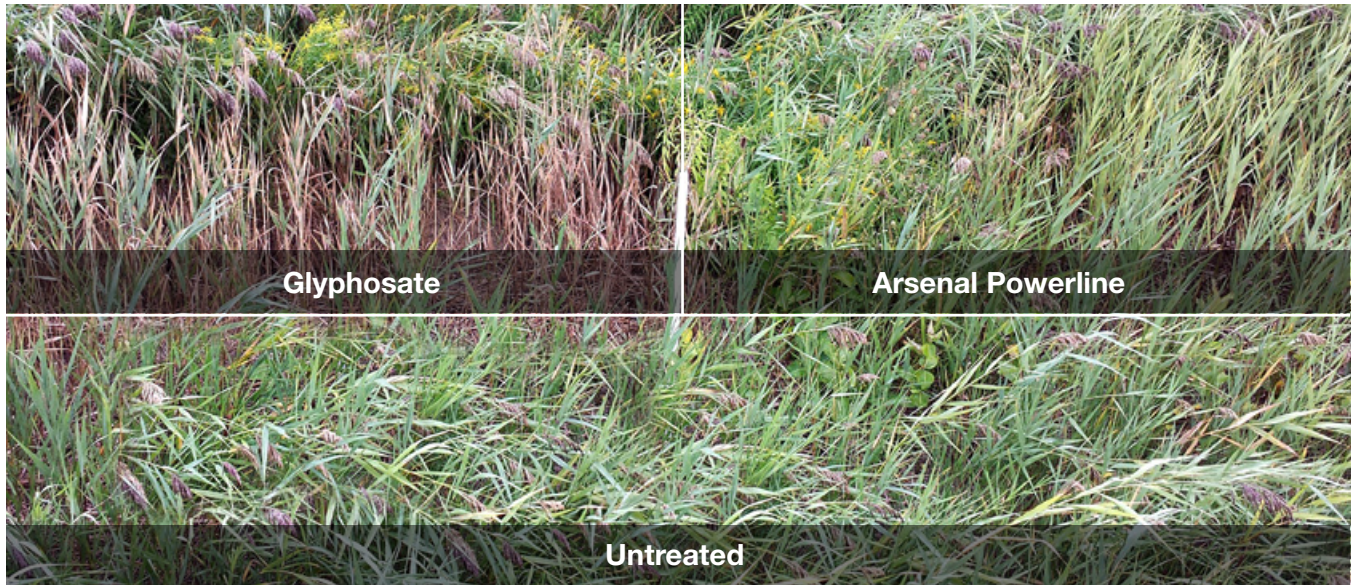
## **Arsenal® Powerline herbicide.**

**A new tool to help manage non-native phragmites.**

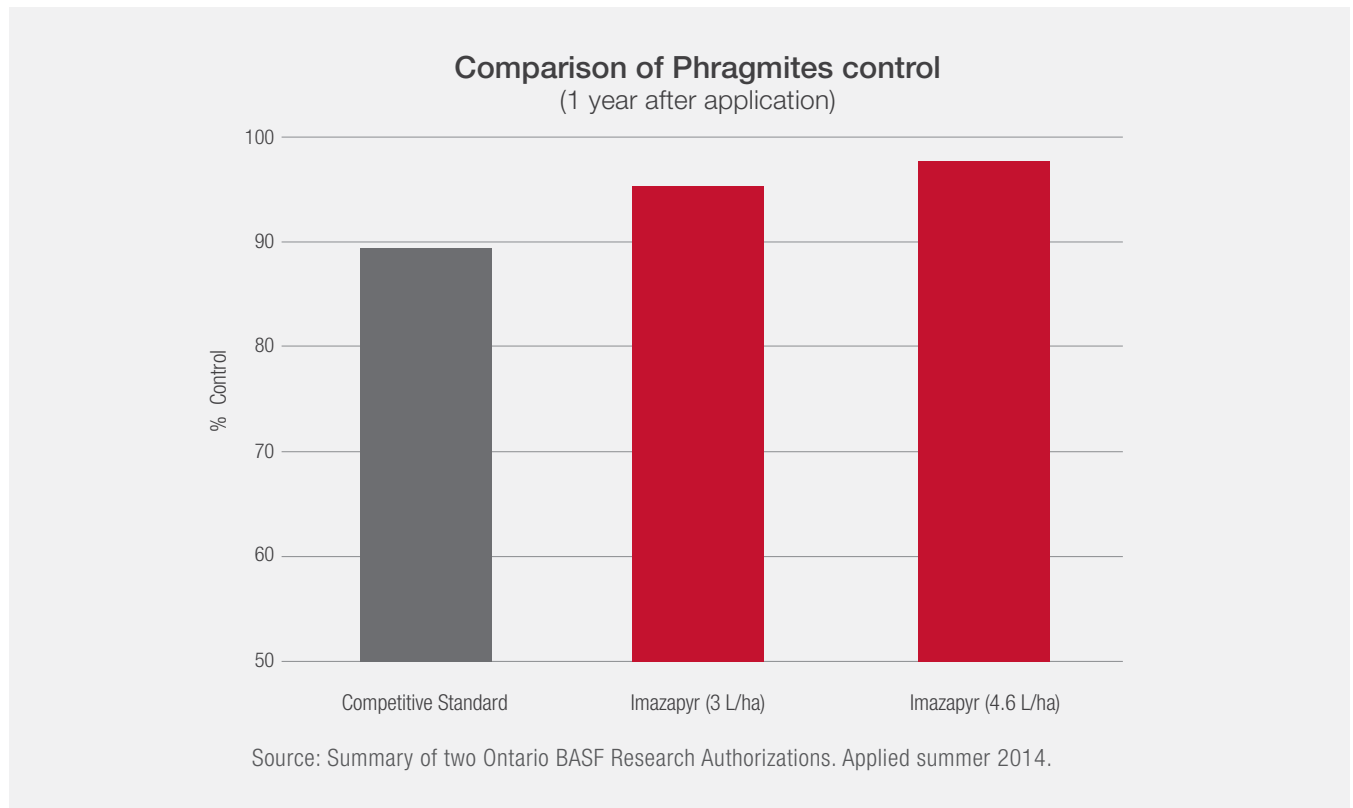
Arsenal Powerline is a water-based herbicide with the active ingredient imazapyr. It acts on an enzyme found only in plants. As a result, it is safe to mammals, birds, fish and bees. Arsenal Powerline is non-carcinogenic, non-mutagenic and does not bio-accumulate. It has also been approved for use by the Forest Stewardship Council (FSC) to help in the establishment of new forests and protection of wildlife habitat. Arsenal Powerline has been used extensively in the United States for control of phragmites for more than 10 years where it has been shown to help in restoring natural habitat for wildlife, recreational uses, and maintenance of infrastructure on right-of-ways.

## How does Arsenal Powerline work?

Arsenal Powerline controls plants by stopping the development of new growth in the root zone when applied in mid-summer to early autumn. As a result, phragmites plants display few, if any, visual symptoms in the year of application. Instead, treated plants stay green through the application year, avoiding the displacement of wildlife that may have been established in the treated areas. In the year following application, treated plants do not regrow and the infestation is managed with minimal impact on other vegetation or wildlife.



Arsenal Powerline (right) displays no visual symptoms in the year of application, preserving habitat for established wildlife.  
Source: BASF Canada. August 2014





## Arsenal Powerline for control of non-aquatic phragmites.

- More consistent, longer-term control than other cultural and herbicide solutions
- Systemic activity targets shoots and roots
- No symptomology in year of application, so it does not displace established wildlife



One year after application, Arsenal Powerline provides more consistent and complete control than either mowing or other herbicide applications.

Source: BASF Canada. August 2014

## Arsenal Powerline in Soil

Arsenal Powerline binds tightly to soil particles to resist leaching or lateral movement. While it does offer residual activity, commercial experience has demonstrated that native species will begin to re-establish in the spring following an Arsenal Powerline application and continue to develop in subsequent years. These native species restore the natural biodiversity of the site and provide improved habitat for wildlife.



Applied August 2013; 1<sup>st</sup> summer photo August 2014; 2<sup>nd</sup> summer photo August 2015

Source: BASF Canada.

For more information on Arsenal Powerline herbicide, please visit [www.BetterVM.ca](http://www.BetterVM.ca).

### Always read and follow label directions.

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