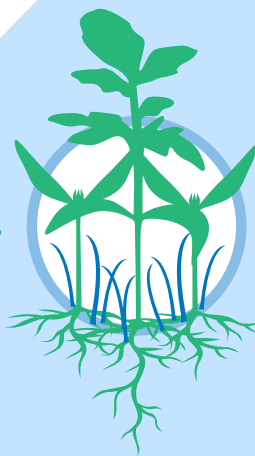


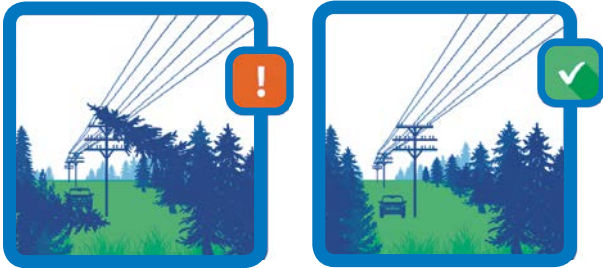
VEGETATION MANAGEMENT MATTERS

You may see workers performing maintenance in your community to control vegetation. Their purpose is to control overgrown vegetation where it creates a safety, health, occupational or environmental hazard. Controlling it helps ensure public safety. They may also be targeting invasive species. Their growth and spread can negatively affect biodiversity. Controlling these plant species allows natural species to flourish and contributes to a safe and diverse environment for wildlife, pollinators, beneficial species and the public.



WHERE IS VEGETATION MANAGED?

Power lines



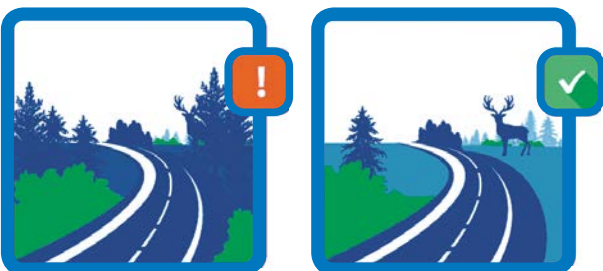
- Overgrown vegetation is the most frequent cause of power outages.
- A clear right-of-way helps maintenance and repair crews restore power quickly.

Rail lines



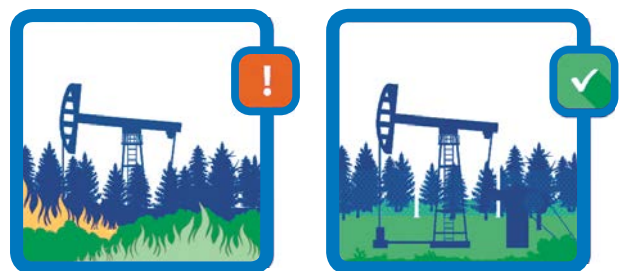
- Vegetation along rail lines reduces visibility for drivers, pedestrians and wildlife, leading to an increase in collisions.
- Damaged rail lines may be hidden by dense vegetation, making it difficult for workers to make necessary repairs.

Roadsides



- Overgrown vegetation reduces visibility for drivers, pedestrians and wildlife.
- Plant debris creates hazards that may increase injury-causing collisions.

Oil and gas sites



- Maintaining bareground is essential to safe operations, because the risk of fire is increased due to the presence of combustibles.

HOW IS VEGETATION MANAGED?

MECHANICAL

MOWING, TRIMMING, CUTTING

Advantages

- Cost effective for the current year.
- Can be used in areas close to water.

Challenges

- Reduces pollinator habitat because all plants are cut down.
- Causes some plants to re-sprout rapidly from their roots, increasing density of stand.
- Can distribute weed seeds.
- Flying debris and cutting equipment can be dangerous to animals, work crews and surrounding property. Cut stems of brush may leave sharp stumps dangerous for humans and wildlife.
- Needs to be repeated every year and sometimes multiple times per year.

HERBICIDE

APPLICATION

Advantages

- Selective control options leave desirable plants and support biodiversity.
- Less disruptive to the topography of the terrain, preserving nesting for birds and protected areas for wildlife habitat.
- Controls the entire plant so an application is required only once every 2-4 years, and the need for mechanical control is eliminated.

Challenges

- Choosing the herbicide with the appropriate selectivity to control invasive plants, while preserving desirable native plants. Not always a "one tool fits all" approach.
- It is important to adhere to buffer zones (proximity to water/beneficial plants/property lines).
- Requires trained pesticide applicators.
- Timing is important.

BIOLOGICAL INTRODUCING A PEST THAT CONTROLS THE INVASIVE PLANT

Advantages

- Considered natural.
- Perceived as safer by the public.

Challenges

- Can be difficult to establish.
- Can take many years to see control.
- Could involve introducing non-native species of plants, animals, insects or pathogens to the area, which may cause new problems over time.
- Implementation is costly.

WHY USE HERBICIDES?

Increased safety

Applicators are required to be trained in safe and proper pesticide application to minimize any risk to themselves, the environment, wildlife and the public. Since mechanical control results in flying debris that can be dangerous to animals, work crews and surrounding property, applying herbicides could eliminate this hazard.

More effective

Ongoing research has helped us determine how to use selective herbicides to control invasive or poisonous plants while promoting the native plant ecosystem so that it has space to grow and flourish. Effective herbicides can control the plant, including its root system, reducing the population of those plants the following year, and helping to provide a longer term solution.

Increased biodiversity

Compared to alternative control methods, herbicides promote biodiversity of animals and native plant communities by helping reduce competition from non-native and invasive plant species. Incorporating herbicides in a long term integrated vegetation management plan has been shown to increase biodiversity of plants, birds and wildlife versus manual cutting only.

(Source: Bramble and Byrnes, University of Pennsylvania)



Herbicides as invasive plant control

Herbicides control noxious weeds and fast-growing invasive plants to prevent them from overtaking native plant species or spreading to adjacent areas, including your property.

Are herbicides safe?

All herbicides used in Canada must be registered with the Pest Management Regulatory Agency (PMRA), which is a division of Health Canada. All herbicides are tested for safety to the environment, to wildlife and to humans (both the applicators using the product and the general public in that area). They control the brush and weeds they are designed to control, and then they break down after application.

HOW DO HERBICIDES WORK?

Herbicides interrupt or modify a biological process within the plant that leads to the plant being controlled. There are many different biological pathways within a plant and they can vary between species. Because of this, a herbicide can be considered “selective” – it will affect plants with certain biological pathways, but if a plant does not have that pathway, it will not be impacted.

Applicators can choose a herbicide that selectively targets the plant species that are a problem in their area, allowing desirable species to continue growing. Spot application targets specific plants to further increase the ability of applicators to selectively control plants that are a hazard.

HERBICIDES AND POLLINATORS

Bees are one of several types of pollinators that feed from flowers, transferring pollen in the process. Other examples include butterflies and hummingbirds.

Herbicides target a specific pathway in plants. These target sites do not exist in pollinators, including bees. For this reason, Corteva Agriscience™ herbicides, when used according to the label, do not have an adverse effect on pollinators.

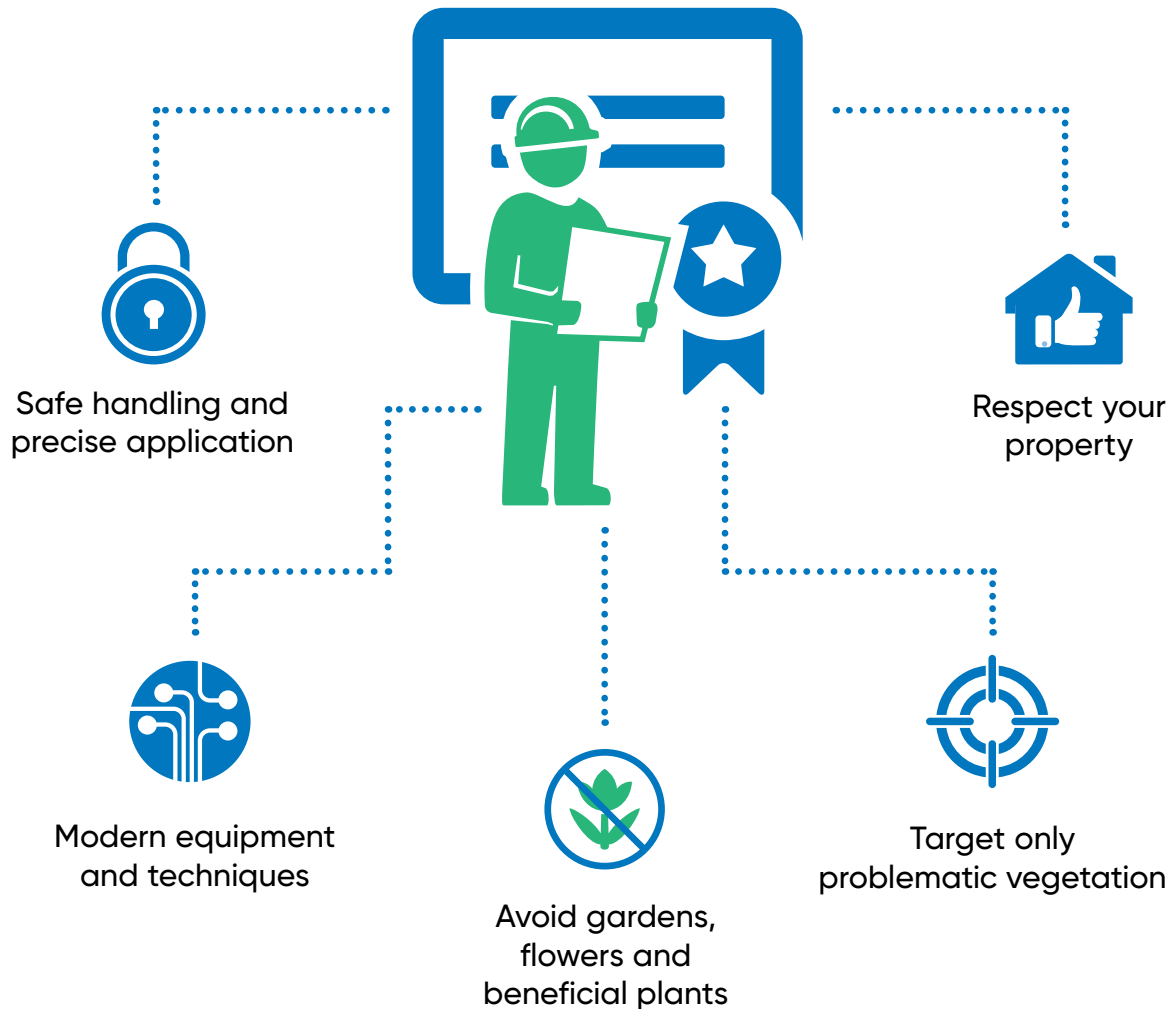
Controlling invasive species with herbicides can benefit the plants that provide food for pollinators. When invasive plants, such as spotted or diffused knapweed, overtake an area they can choke out a variety of native species. Invasive weeds can flower once annually, while native plants flower throughout the whole growing season providing a continual food source for pollinators. By eliminating the invasive plant types, the native species will re-establish themselves from seed, providing more sustainable foraging ground and habitat for bees and other pollinators.

Using herbicides versus mowing can preserve wildlife habitat. A 60-year field study looking at herbicide-managed rights of way found that the populations and numbers of species of birds, reptiles, amphibians and small mammals were greater in the managed area compared to the adjacent non-managed habitat.



All herbicides go through a risk assessment by the Pest Management Regulatory Agency (PMRA) to determine their potential effects (toxicity) on bees and other pollinators. None of Corteva Agriscience herbicides used in vegetation management have been found to be toxic to bees and other pollinators. In fact, they are categorized as “practically non-toxic”, which is the safest possible category assigned by the PMRA.

OUR APPLICATORS ARE TRAINED PROFESSIONALS



QUESTIONS?

Visit us at IVM.corteva.ca to find your Corteva Agriscience™ IVM Experts.