Clearing Away the Clutter

The straight facts about **managing vegetation** with herbicides.

Professional Vegetation Management

BASF

The Chemical Company

The straight facts about manag

The Need for Vegetation Management

Unmanaged trees, brush and grass weeds can grow into a serious problem, especially in and around power and telephone lines, highway median strips and railroad tracks. Uncontrolled trees and brush in these areas can create safety and operational hazards, such as:

- Restricted vision that can lead to auto or train accidents
- Downed power lines caused by falling branches and brush or trees growing into lines
- Potential fire hazards that can cause property damage and power outages
- Overgrown vegetation in utility substations causing interruptions in utility service
- Putting maintenance crews at risk when they are unable to access vital equipment
- Reduction of property value due to unmanaged weeds and diminished aesthetics

Why Repeated Mowing Isn't The Answer

A direct and frequently used method for managing overgrown vegetation is to cut it down mechanically. However, with mechanical methods such as repeated mowing, "good" plants are cut along with undesirable vegetation. In addition, mowing removes the very plants that out-compete undesirable vegetation and help reduce maintenance. The end result is a wholesale reduction in desirable plant life, including plants that provide homes and feeding grounds for wildlife. And, because mowing doesn't prevent re-growth, it is only a short-term solution, requiring a frequent and ongoing program to keep vegetation under control. Fact is, brush will often re-sprout into many more stems than were originally cut, actually causing brush to become even more dense until it shades and crowds out desirable plants.

Relying solely on mowing has other drawbacks too. It's noisy, produces noxious exhaust and can lead to oil and gas spills.

The Role of Herbicides

These days, many vegetation control managers are discovering **Quality Vegetation Management**™, or **QVM**. **QVM** programs use herbicides in place of, or in addition to, mechanical mowing. Recent scientific advances have yielded a whole new generation of herbicides so sophisticated, they can specifically target unwanted weeds and plants without causing harm to desirable plants and animals.

Herbicides can be used in many ways to control unwanted brush and trees. They can be applied after mowing to prevent re-sprouting and achieve long-term control. They can be applied over brush to eliminate undesirable species while allowing useful plants the space and nutrients they need to thrive. Finally, herbicides can be selectively applied on previously treated sites to control particularly stubborn brush and keep it from returning, without reducing desirable vegetation.

Why We Use Herbicides

The goal of vegetation managers is to control unwanted brush with as little interference as possible to nearby residents and the environment. With this in mind, consider the advantages of a **QVM** program over a program of repeated mowing. A **QVM** program that includes herbicides:

- Provides long-term control of unwanted brush and trees
- Lengthens the time between treatments up to 3 years
- Removes only undesirable plant species
- Increases wildlife food sources by controlling brush
- Reduces stem densities of line threatening brush species
- Prevents environmental damage and reduces erosion caused by mowing equipment
- Improves access by ground crews

Thoroughly Tested Prior to Market Entry

Herbicides are among the most exhaustively tested products on the market today. Development and registration of a new herbicide may require 800 or more tests, $150 million or more in costs, and an average 10-12 years of development time. Once a registration application is submitted to the EPA, the EPA takes a minimum of 2 years to review the submitted test results and decide whether to approve the herbicide. Both the active ingredient – the part of the herbicide that actually has an effect on plants – and the final product are tested repeatedly to determine whether they have any potentially harmful side effects. Herbicides are also studied to determine what happens to them after they are applied, and whether the chemical left behind poses any threat to non-targeted plants or animals. In the end, only 1 out of approximately 100,000 chemicals tested meets the requirements to make it out of the laboratory and into the market.

BASF Smart Herbicides™

BASF offers a complete portfolio of highly advanced, high-performance **Smart Herbicides**, designed to effectively control unwanted weeds, brush and trees in a variety of applications.

Smart Herbicides provide intelligent, long-term vegetation control by affecting enzymes found only in plants – not birds, mammals, fish, insects or humans – hence the name, "smart" herbicides. **Smart Herbicides** move throughout undesirable and invasive species to eliminate them at the root.

ARSENAL® herbicide

Arsenal® herbicide provides superior, long-term control of a broad-spectrum of troublesome weeds and woody vegetation, even when applied at low rates. The active ingredient in **Arsenal** is absorbed through the roots, stems and leaves of targeted plants and binds with an enzyme found only in plants – not animals, humans, birds or fish – to inhibit amino acids essential for growth. This action eliminates the plant down to the root and prevents re-sprouting. **Arsenal** is highly selective and promotes the growth of forbs favored by wildlife to help increase plant diversity and forage.

Habitat® herbicide For effective, environmentally sensitive control of emergent, shoreline and woody wetland invasive species such as phragmites, torpedograss, melaleuca and saltcedar, **Habitat® herbicide** is the answer. Specifically formulated for use in aquatic applications, **Habitat** is effective at very low rates and helps protect and reclaim riparian areas and other aquatic environments by improving habitat and increasing land value. **Habitat® herbicide** uses less active ingredient and doesn't require multiple applications, so it provides a cost-effective alternative to many other aquatic herbicides and vegetation management techniques.

Journey™ herbicide **Journey™ herbicide** gives professional applicators a ready-to-go pre-mix option for use in a diverse range of vegetation management situations including weed control, grass release and seedhead suppression on roadsides and non-cropland areas. Effective and long lasting, **Journey** provides excellent postemergent activity and residual control of annual and perennial grasses, broadleaf weeds and vine species. **Journey** is also effective in wildlife-habitat management when applied prior to the establishment of certain native prairie grasses and wildflowers.

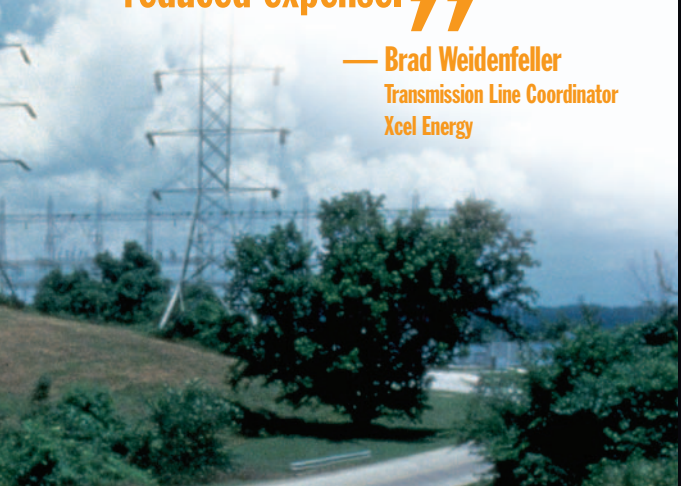
overdrive® herbicide **Overdrive® herbicide** is a highly effective, postemergent herbicide used to control a broad-spectrum of annual, perennial and biennial broadleaf weeds. Especially well-suited to roadside and utility applications where cost-effective control of tough nuisance

weeds such as Canada and musk thistle is critical, **Overdrive** delivers consistent, improved control of target weed species at lower rates and makes an ideal complement or alternative to mowing in roadside vegetation management programs. **Overdrive** is excellent for touch-up or burndown treatments and is also commonly employed in bareground applications.

An innovative formulation of **Pendulum® preemergent herbicide**, **Pendulum AquaCap™** combines the industry's leading preemergent active ingredient with patented BASF encapsulation technology in a water-based formula that reduces staining and virtually eliminates odor so handling, mixing and clean up are easier than ever. Plus, this technology allows **Pendulum AquaCap** to be stored at a greater temperature range without losing effectiveness. **Pendulum AquaCap** provides consistent, reliable control of a broad-spectrum of troublesome grass and broadleaf weeds, including crabgrass.

"Eliminating or reducing many of our mechanical methods in favor of herbicide control has allowed us to maintain the same amount of ROW miles with better results at greatly reduced expense."

— Brad Weidenfeller
Transmission Line Coordinator
Xcel Energy



Plateau® herbicide provides superior long-term control of a broad-spectrum of common roadside grasses like tall fescue, bahiagrass and smooth bromegrass; as well as invasive and noxious species such as cheatgrass, medusahead, leafy spurge and dalmation toadflax. **Plateau** prohibits growth of these undesirable species and provides excellent seedhead suppression at low rates. Used alone or combined with other herbicides for comprehensive cost-cutting roadside vegetation management, **Plateau** helps lower annual mowing costs, reduce liability, and improve aesthetics in roadside applications.

Sahara® DG herbicide provides total bareground control of a broad-spectrum of annual and perennial species with just one application. Ideal for guardrails, medians, shoulders, sidewalks, barriers, delineators and signposts, **Sahara** has a wide window of application — preemergence through late postemergence — and delivers outstanding residual control. **Sahara** is easy to mix and apply, and is particularly compatible with drift-control agents. It disperses easily in water and produces a stable, long-lasting suspension suitable for application with either conventional or injection sprayers.

Stalker® herbicide contains the same active ingredient as **Arsenal®**, but is formulated to work for cut stump and basal bark applications. **Stalker** controls a broad-spectrum of undesirable vegetation that other herbicides do not — including hickory, oak, maple, ailanthus and sweetgum.

Stalker, like **Arsenal**, utilizes low-use rates and can reduce the total active ingredient applied per acre by as much as 50%, compared to other herbicides. The low-use application of **Stalker** is helping meet the government's initiative of reducing the amount of active ingredient being applied to the environment.

By selectively eliminating undesirable vegetation and releasing plants that serve as food sources and forage for wildlife, **Smart Herbicides**™ can help promote the growth of wildlife habitats. That, in turn, can qualify companies as supporters of the **Project Habitat**® wildlife enhancement program. Wildlife organizations including the National Wild Turkey Federation, the Quality Deer Management Association and the Rocky Mountain Elk Foundation have all joined BASF as partners in **Project Habitat**.

Together, these sponsors recognize utilities using vegetation control products that help encourage the growth of wildlife forage and cover.

Effective Vegetation Management by Trained Professionals

As professionals in the industry, applicators are rigorously trained before using herbicides. Although certain laws vary from state to state, professional applicators must typically pay a licensing fee and pass closed-book exams. The following are core areas in which applicators are tested:

- Law and Safety – including general knowledge of herbicides, their use and disposal, first aid, labeling and laws pertaining to herbicide use
- Right-of-Way Herbicides – for railroads, highway departments and others controlling roadside weeds on public, non-crop lands

In addition, applicators are expected to stay up-to-date on changes in application methods and regulations, and are often required by regulatory agencies to earn a minimum number of Continuing Education Units on designated topics each year.

BASF encourages applicators using **Smart Herbicides**™ to follow a program that incorporates mowing and low-volume herbicide applications that provide for effective, environmentally responsible management of unwanted plants. Compared to repeated mowing, a vegetation management program that utilizes herbicides is far less intrusive and far more effective.

Responsible. Effective. The Right Choice.

Controlling the growth of unwanted weeds and plants is essential to ensure dependable, uninterrupted utility service and safe roadways, as well as more pleasant views and a more livable habitat for wildlife.

Utilities, highway maintenance departments and other professionals responsible for vegetation management have an obligation to their customers and the general public to use the least harmful and invasive — as well as the most cost efficient — methods possible, to control undesirable and potentially hazardous vegetation.

Used properly, **Smart Herbicides** provide a more effective, more fully integrated, and more environmentally responsible approach to managing vegetation than mowing and other mechanical means alone.

BASF is proud to be at the forefront of this evolution.

For more information about Smart Herbicides and QVM, call 1-800-545-9525 or visit www.vmanswers.com.

ARSENAL® herbicide

Habitat® herbicide

Journey® herbicide

overdrive® herbicide

PENDulum® Herbicide AquaCap™

PLATEAU® herbicide

Sahara® DG herbicide

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Always read and follow label directions.