



BASF Fights Invasives with multiple products and multiple modes of action

BC IVMA Fall Meeting, Prince George, BC
November, 2025
Brad Hayhoe



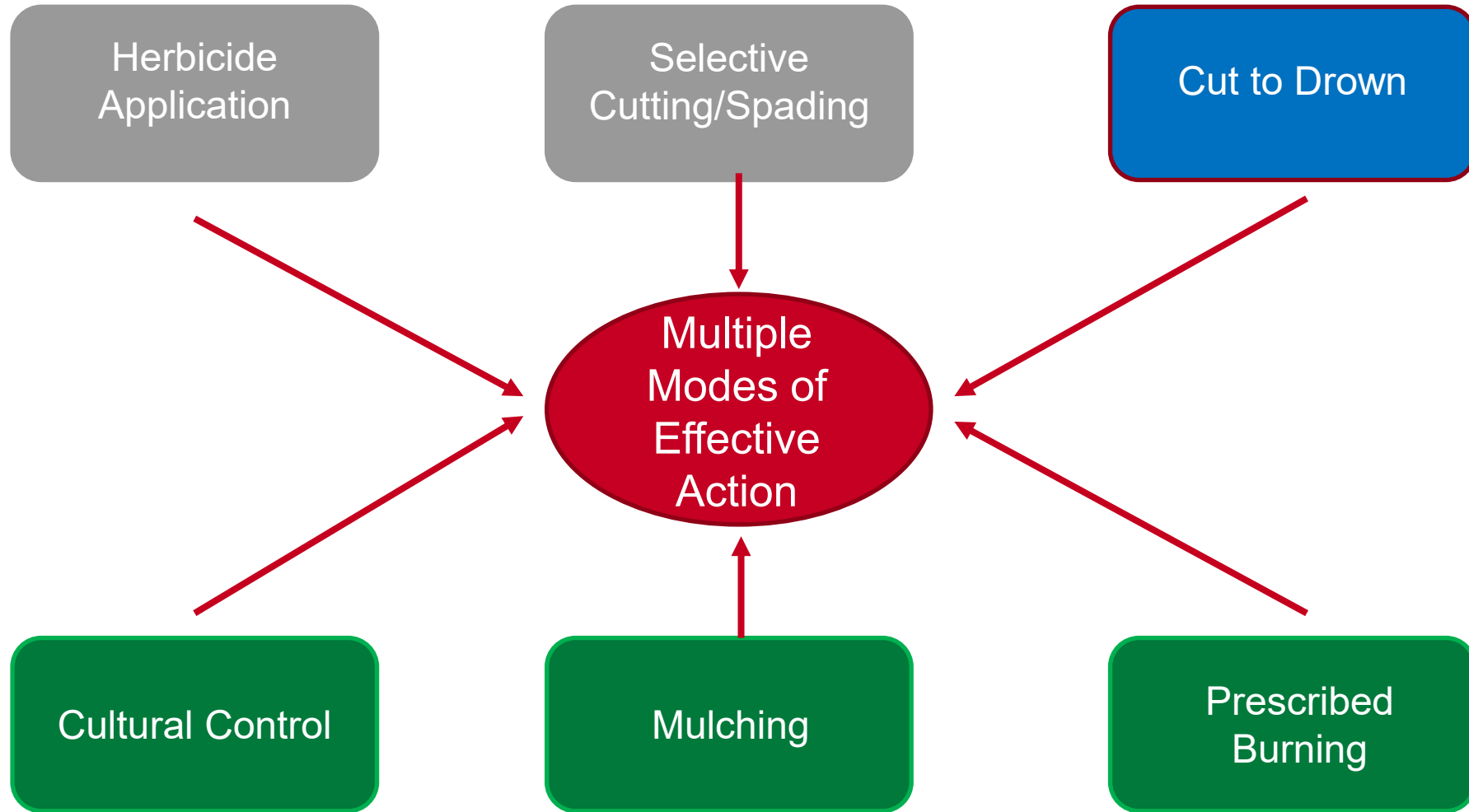
BASF Agenda

1. The What, Why and How of Habitat[®] Aqua and Arsenal[®] Powerline
2. Arsenal Powerline a powerful forestry tool
3. Banvel[®] & Overdrive[®] – the Forgotten tools
4. Detail[®] – it makes everything better



Photo Credit: Great Lakes Phragmites Collaborative

Phragmites Management Techniques



Two Great Products – Two Different Use Sites

Habitat® Aqua

Pack Size

- 2 x 9.5L
 - ▶ 4.1 - 6.3 Ha for Phrag and Knotweeds;
 - ▶ 6.3 Ha for Flowering Rush;
 - ▶ 4.68 – 7.0L/ha Spartina

Surfactant Required

- Aquasurf® – 0.25% v/v

Aerial Application? – Helicopter and Drone

Where to Purchase?

- Vesperis (www.pestweb.ca) – 800-888-4897

Arsenal® Powerline

Pack Size

- 2 x 9.5L
 - ▶ 4.1 - 6.3 Ha for Phrag

Surfactant Required

- Non-ionic surfactant

Where to Purchase?

- Vesperis (www.pestweb.ca) – 800-888-4897
- AdvantageVM (www.advantagevm.ca) - Chad

**PLEASE VISIT SITE FOR MORE DETAILS:
WWW.BETTERVM.CA**

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AQUASURF is a trademark of Norac Concepts Inc.

Always Read and Follow the label

Habitat Aqua – Benefits

■ Plant specific target site

- Group 2 ALS Inhibitor – (AHAS/ALS enzyme is only present in plants)
 - Enzyme responsible for certain amino acid production for protein synthesis and cell growth
 - Rapid absorption & systemic translocation to growing points = rapid end of plant growth
 - Complete plant death slow (several weeks), plant using up stores of amino acids

■ Very safe toxicological profile

- Low toxicity to:
 - Mammals, Birds, Fish & Invertebrates
 - Does not bioaccumulate in organisms
- Oral LD50 >5,000 mg/kg (safer than table salt - LD50 3,000 mg/kg)

■ Degradation Mechanisms

- In soil: Microbial metabolism
- In water: Photodegradation – very Rapid: 0.5 – 5 day half life

Habitat Aqua – Watchouts

- **Non-selective herbicide**

- Activity on: Grass & Broadleaf weeds (incl aquatic), deciduous brush species, specimen trees
- Foliar & Root uptake

- Do not use treated water to irrigate crops (or apply to runoff areas for irrigation water – ditches or agricultural land)
- Do not apply directly to water, avoid fast moving water (transport outside of target area)
- Do not apply to water within 1km upstream of active potable water intake (unless intake shut off from application + 48 hours)

Biology of *Phragmites australis* – Key for Management

- **Perennial** reed grass
- **Long** growing season
 - Germ/Emergence – April/May
 - Elongation – June/July
 - Flowering – Aug/Sept
 - Dormant – Oct on
- Reproduction via:
 - Seed, **Stolons, Rhizomes** (majority of plant's biomass)
 - Individual plants → Small patches → Large infestations
- Tall plants (up to 5m), Thick densities
 - **Out competes** for sunlight, water & nutrients



Photo Credit: Great Lakes Phragmites Collaborative

Performance of Habitat - Before



Durham Ontario, September 2021

Performance of Habitat - After



100% control on 5 acre lake. Dead phrag cut on ice during winter.

Durham Ontario, September 2022

“The results were far better than I could have possibly expected. This product works fantastic and is well worth the expense”

Customer – September 25, 2022



Chatham Ditches – May 2024 - After



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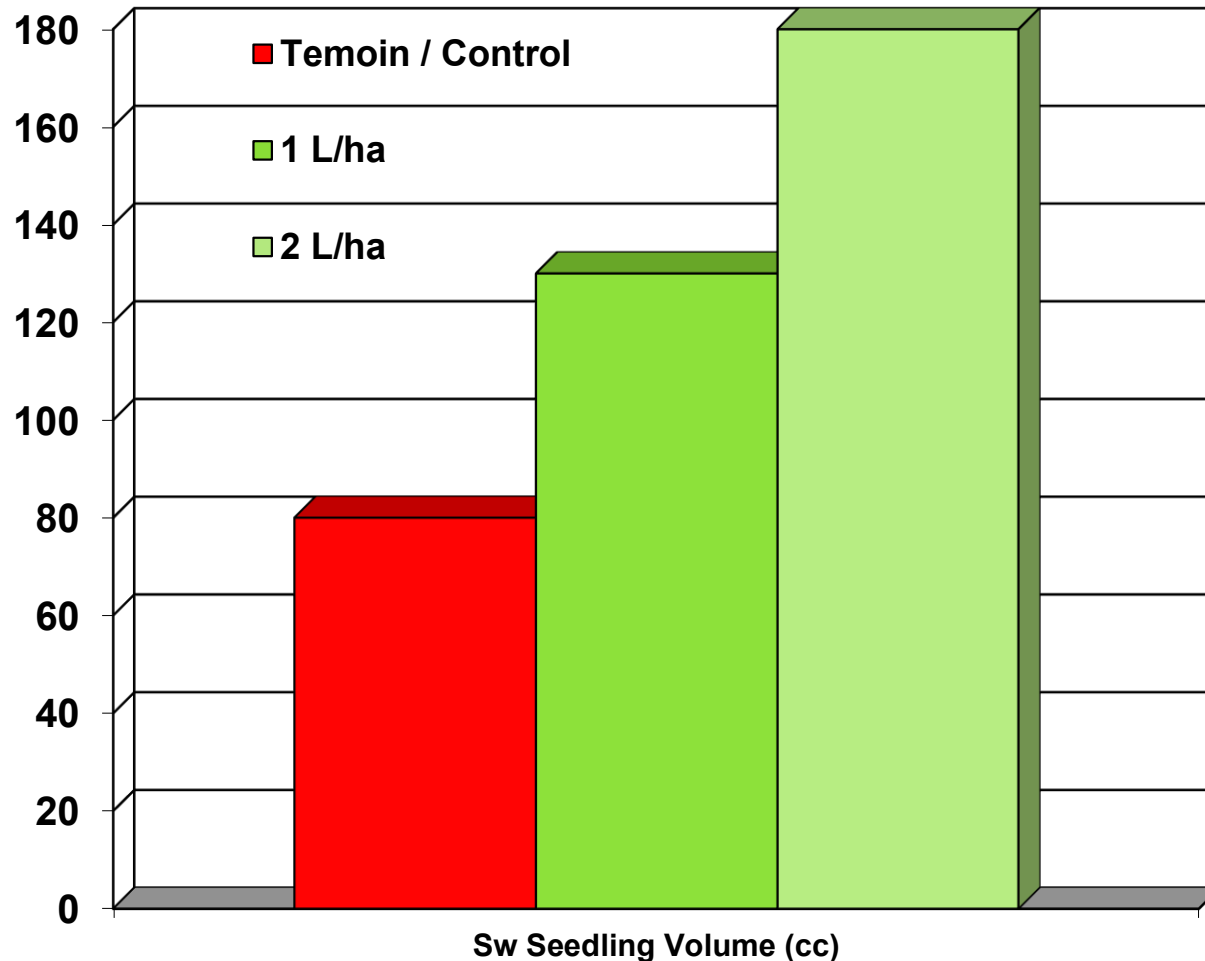
1. The What, Why and How of Habitat[®] Aqua and Arsenal[®] Powerline
2. Arsenal Powerline a powerful forestry and Hydro tool
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Photo Credit: Great Lakes Phragmites Collaborative

Arsenal Powerline in Forestry (2)

4 years after Treatment, Judy Creek AB



**Results Presented in 2004
from work performed by:**

Milo Mihalovich Incremental
Forest Technologies,
Dr. Doug Pitt CFS/ON,
Dr. Len Lentaigne CFS/NB,
Dr. Michael Irvine MNR/ON,
Scott Macdonald BASF

LVF Brush Control

Location: Kingston, ON (Asplundh)

Arsenal® Powerline™
Herbicide



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Banvel[®] VM

Herbicide

Overdrive[®]

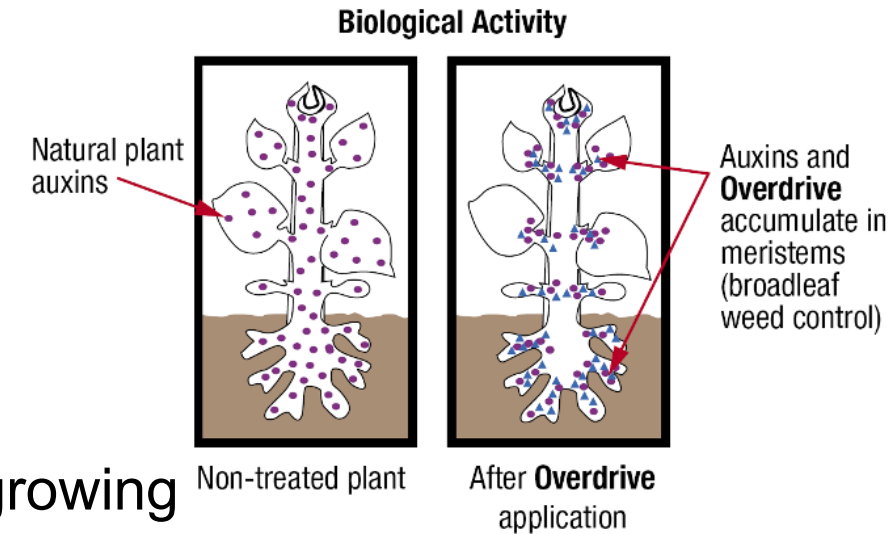
Herbicide

**Selective Herbicides which
Feature Dicamba**

- Selective
- Systemic

Mode of action:

- Accumulates & concentrates auxins in the weeds' key growing points in the root and shoot meristems
- Causes RAPID uncontrolled cell division and growth
- Kills sensitive broadleaf weeds quickly, sometimes in a few hours
- Safe on grasses (Metabolized in monocots)



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Detail™ Herbicide

Technical Information

Active Ingredient

Saflufenacil (Kixor – 342 g/L)

Formulation

Suspension Concentrate (Liquid)

Rate

Burndown & Residual – 435 mL/ha
Burndown only – 145 - 290 mL/ha

Rain fast

1 Hour

Re-Entry Interval

Non-Military Sites – Spray is Dry; Military – 2 Days
No Pasture Restrictions

Best Practices

Foliar - Acts like a contact Herbicide but is systemic. Use >200 L/ha water volume for good coverage. Use a good non-ionic surfactant (0.5% - 1% v/v). Ensure PH of tank mix is 6 – 7.5.

Detail™ Herbicide

Weeds Controlled

- Bindweed, field ¹
- Buckwheat, wild*
- Canada fleabane*
- Chickweed, common*
- Cocklebur, common*
- Cowcockle
- Dandelion ¹
- Fleabane, hairy
- Flixweed
- Groundsel, common
- Henbit (suppression)
- Kochia* (including Group 2 and 9 resistant)
- Lady's-thumb*
- Lamb's-quarters*
- Lettuce, prickly ²
- Mallow, common
- Morning glory, entireleaf*
- Morning glory, ivyleaf*
- Morning glory, pitted*
- Mustard, tumble
- Mustard, wild*
- Nightshade, black*
- Nightshade, cutleaf
- Nightshade, Eastern black
- Nightshade, hairy
- Pigweed, prostrate*
- Pigweed, redroot*
- Pigweed, smooth*
- Purslane, common*
- Ragweed, common*
- Rapeseed (canola), volunteer
- Shepherd's-purse
- Smartweed, Pennsylvania*
- Sowthistle, annual and spiny
- Sowthistle, perennial ²
- Stinkweed*
- Sunflower, common*
- Thistle, Canada ¹
- Thistle, Russian*
- Velvetleaf*

* Apply 435 mL/ha of Detail for post-emergence and residual pre-emergence control

¹ Control of seedling stage and suppression of perennial growth stage

² Top growth burn down control

Detail™

POWERED BY KIXOR® HERBICIDE

Item	Common Name	Scientific Name	Detail	Arsenal	Banvel	Overdrive
1	Barberry, common	Berberis vulgaris L.				
2	Bedstraw, smooth	Galium mollugo L.	US		US	US
3	Buckthorn, European	Rhamnus cathartica L.				
4	Chervil, wild	Anthriscus sylvestris (L.) Hoffmann			Bur chervil US	
5	Coltsfoot	Tussilago farfara L.				
6	Crupina, common	Crupina vulgaris Cass.				
7	Cupgrass, woolly	Eriochloa villosa (Thunb.) Kunth		US		
8	Dodder spp.	Cuscuta spp.				
9	Dog-strangling vine	Vincetoxicum rossicum (Kleopow) Barbar.		•		
10	Dog-strangling vine, black	Vincetoxicum nigrum (L.) Moench		•		
11	Goatgrass, jointed - Goat's beard?	Aegilops cylindrica Host		•	US	
12	Hogweed, giant	Heracleum mantegazzianum Sommier & Levier				
13	Knapweed spp.	Centaurea spp.		US	•	US
14	Kudzu	Pueraria montana (Lour.) Merr.		US	US	
15	Parsnip, wild	Pastinaca sativa L.		US		US
16	Poison-hemlock	Conium maculatum L.	US		US	
17	Poison-ivy	Toxicodendron radicans (L.) Kuntze		•	•	
18	Ragweed spp.	Ambrosia spp.	•	•	•	•
19	Ragwort, tansy	Senecio jacobaea L.			•	
20	Sow-thistle spp.	Sonchus spp.	•	•	US	US
21	Spurge, cypress	Euphorbia cyparissias L.	US		•	
22	Spurge, leafy	Euphorbia esula L.	US	•	•	US
23	Thistle, bull	Cirsium vulgare (Savi) Tenore		•		US
24	Thistle, Canada	Cirsium arvense (L.) Scopoli	•	•	•	
25	Tussock, serrated	Nassella trichotoma Hackel ex Arech.				



We create chemistry