

Phragmites Treatment Herbicide Quick Guide

Please Note: This document was developed for interpretive purposes. Treatment decisions should be based on site conditions and management goals. Rates listed below are not meant to override the instructions provided on each individual herbicide label. The label is the law; follow all label instructions. This sheet provides information about concentrations by volume of packaged product NOT by active ingredient (a.i.).

When working over or near water, it is important to use herbicide and surfactant **formulations approved for aquatic uses**. Terrestrial (overland) formulas, such as Roundup, contain ingredients that are dangerous to aquatic species. Use of terrestrial herbicides or surfactants on wet sites violates state and federal laws. **Many states require a permit** to use herbicide over or near water. Check with your local authorities to determine permitting requirements. **In Canadian provinces, no herbicides have been approved for over-water use.**

Herbicide		Imazapyr	Glyphosate	Imazapyr & Glyphosate Combination	Imazamox	Surfactant (nonionic)
Trade Names		Habitat (28.7% a.i.) Arsenal (27.8% a.i.)	Rodeo (53.8% a.i.) AquaNeat (53.8% a.i.) Aquamaster (53.8% a.i.) Accord (53.8% a.i.)		Clearcast (12.1% a.i.)	Cygnat Plus Cide-Kick
Treatment Timing (may vary by region)		Apply to actively growing green foliage <u>after full leaf elongation</u> and up to first killing frost (~ June-Oct)	Apply <u>after plants are in full bloom</u> in late summer up to the first killing frost (late-Aug – Oct)	Apply <u>after plants are in full bloom</u> in late summer up to the first killing frost (late-Aug – Oct)	Apply to actively growing green foliage <u>after full leaf elongation</u> and up to first killing frost (~ June-Oct)	
If the stand has a substantial amount of old stem tissue, mow or burn prior to spray; allow to re-grow to approx. 5' before treatment (>6 weeks)						
Herbicide Rate (% solutions are by volume of packaged product)	High Volume (aerial, boom spray)	4-6 pints/acre	4-6 pints/acre	3 pints imazapyr + 3 pints glyphosate/acre	4 pints/acre (use with 2 pints/acre methylated seed oil (MSO) instead of other surfactants)	1-4 pints/acre
	Low Volume Spray (backpack)	1-1.5% solution	0.75-2% solution	1.5% solution total (0.75% ea. for imazapyr and glyphosate)	1-2% (use with methylated seed oil (MSO) at 0.5-1% instead of other surfactants)	0.25-0.5% solution
	Hand Swiping, Wick, or Boom Wick	10% cover at least 50% of the foliage, best results from covering top half of plant	10% cover at least 50% of the foliage, best results from covering top half of plant	10% cover at least 50% of the foliage, best results from covering top half of plant		0.25-0.5% solution
	Stem injection or cut stem (squeeze bottle/ sponge applicator)		33% solution			0.25-0.5% solution
Pros:		Allows treatment earlier in the growing season	More appropriate if working in sensitive areas or areas near woody species	Reduced cost from imazapyr alone	More appropriate if working in areas near woody species	Use of surfactant is <u>necessary</u> to achieve the labeled results for the herbicides
Cons:		Greater danger of non-target damage and active residuals in the soil; expensive	Treatment window is smaller	Greater danger of non-target damage and active residuals in the soil; treatment window is smaller		
Mandatory setback distance to potable water-intakes		0.5 mile (0.8 kilometer)	0.5 mile (0.8 kilometer)	0.5 mile (0.8 kilometer)	0.25 mile (0.4 kilometer)	

Amount of Herbicide Needed for Common Percent Solutions

Total amount of spray solution being prepared	Desired percent solution (by volume of packaged product)					
	0.25%	0.75%	1%	1.5%	2%	10%
1 gallon	0.3oz	0.9oz	1.3oz	1.9oz	2.6	12.8
2	0.6	1.9	2.6	3.8	5.1	25.6
3	1	2.8	3.8	5.8	7.7	38.4
4	1.3	3.8	5.1	7.7	10.2	51.2
5	1.6	4.8	6.5	9.6	12.8	64
10	3.2	9.6	12.8	19.2	25.6	128
25	8 (1 cup)	24 (3 cups)	32 (4 cups)	48 (6 cups)	64 (8 cups OR 0.5 gallon)	320 (40 cups OR 2.5 gallons)
50	16 (2 cups)	48 (6 cups)	64 (8 cups OR 0.5 gallon)	96 (12 cups OR 0.75gallon)	128 (16 cups OR 1 gallon)	640 (80 cups OR 5 gallons)

To determine how many ounces of herbicide or surfactant you need to reach a desired concentration by volume, use the chart above for common measurements or follow the equation below to calculate it yourself.

oz product needed = total gallons of solution desired x 128 x (% solution by volume /100)

Example If you want 3 gallons of spray solution and want a 1.5% solution of herbicide and a .25% solution of surfactant, how much do you need of each?

$$\begin{aligned} \text{Herbicide: } \text{oz herbicide needed} &= 3 \times 128 \times (1.5/100) \\ \text{oz herbicide needed} &= 5.76 \text{ (round to 5.8oz)} \\ \text{Surfactant: } \text{oz surfactant needed} &= 3 \times 128 \times (0.25/100) \\ \text{oz surfactant needed} &= 0.96 \text{ (round to 1oz)} \end{aligned}$$

Add about 2 gallons of water to your tank. Add 5.8 oz of herbicide. Add 1 oz of surfactant. Add marking dye if desired. Add water until your tank is filled to 3 gallons total.

Sources and Additional Information:

- [Common Reed \(*Phragmites australis*\) Control Fact Sheet](#) (University of Rhode Island)
- [Aquatic Invasive Species: Phragmites](#) (Michigan DEQ)
- [Great Lakes Phragmites Collaborative](#) (Great Lakes Phragmites Collaborative)
- [A Guide to the Control and Management of Invasive Phragmites: Third Edition](#) (Michigan DEQ/DNR)
- [Herbicide Reference Guide for Landowners](#) (Larimer County Weed District) - *This PDF has information on calibrating spray equipment, including handguns and boom sprayers (p23-24)*
- [Phragmites Management Michigan State Parks](#) – Webinar (Ray Fahlsing and Bob Clancy, MI DNR)
- [Accord Label](#)
- [Cide-Kick Label](#)
- [Arsenal Label](#)
- [Cygnet Plus Label](#)
- [Aquamaster Label](#)
- [Habitat Label](#)
- [AquaNeat Label](#)
- [Methylated Seed Oil Label](#)
- [Clearcast Label](#)
- [Rodeo Label](#)

Use the QR code or visit
greatlakesphragmites.net/herbicide
 for links to state approved herbicides
 and permitting information

