Suggested Chemical Treatment for Non-Native Invasive Species

General Calendar of Control for Indiana, Updated January 2024

This is a guide: adjust treatment based on local conditions. Always read label for proper use, rates, application timing, etc.

	INVASIVE SPECIES	GENERAL TREATMENT	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Shrubs:	Autumn olive Asian bush honeysuckles Japanese barberry Multiflora rose Privet Winged burning bush Japanese spiraea Jetbead	These eight shrub species have similar control methods, rate of herbicide and timing of application.		**Foliar Spray when leaves are *fully developed* for good chemical contact.**										
					Cut Surface Treatment									
								Basal bark treatment is effective, but is difficult to apply on multiple stemmed shrubs. This treatment method is only recommended on large bushes of Autumn olive, Asian bush honeysuckle, privet and Winged burning bush.					

Color Key and Herbicide Treatment Recommendations

Foliar spray with 2% Glyphosate and 1/2% non-ionic surfactant. Surfactant is optional.	**Foliar spray with 1% Glyphosate and 1/4% non-ionic surfactant**
Basal bark treatment with 20% Tricolpyr and 80% horticultural oil or basal oil.	**Foliar spray with 1% imazapyr, 1/2% Glyphosate and 1/2% non-ionic surfactant**
Cut surface treatment with 20% Glyphosate and 80% water or 20% Triclopyr and 80% water.	**Foliar Spray with 2% Glyphosate approved for aquatic areas and 1/2% surfactant.**
Foliar spray with 1/2% grass specific herbicide such as Sethoxydim or Clethodim with 1/4% surfactant.	**Foliar spray with 2% Glyphosate and 1/2% non-ionic surfactant.**
Foliar Spray with 2% Glyphosate and 1/2% non-ionic surfactant. Due to waxy leaf surfactant is highly recommended.	**Foliar spray with 1.5% Triclopyr and non-ionic surfactant per label.**
Basal Oil = Ax-it, crop oil, bean oil etc.	**Surfactant (non-ionic surfactant) = Invade 90, NuFilm IR , etc**
Glyphosate = (Non-selective herbicide, prevents plants from making certain proteins needed for plant growth) = Round-up, Rodeo, Pondmaster, Accord, Ranger, etc.	**Triclopyr (auxin mimic; selective post emergent) = Garlon, Turflon, Access, Redeem, Tahoe, Remedy Ultra etc.**
Sethoxydim (selective post-emergent, prevents lipid synthesis, highly mobile) = Post, Torpedo, Ultima, etc.	**Imazapyr (Non-selective herbicide, mobility is associated with soil pH, non-target damage common, pre-emergent and post-emergent) = Habitat (aquatic label), Arsenal, Polaris, ecomazapyr, etc.**
Clethodim (selective post-emergent) = Clethodim 2E, Arrest Max, Arrow, Select, etc. Takes 10-30 days to kill.	**Clopyralid (auxin-mimic, disorganized and uncontrolled growth) = Transline, Stinger, Reclaim and Curtail**

USE PESTICIDES WISELY: The percentages listed in this guide are percent solution of products, not active ingredients. Always read the entire pesticide label carefully, follow all mixing and application instructions and wear all recommended personal protective gear and clothing. Contact your state department of agriculture for any additional pesticide use requirements, restrictions or recommendations.

Hand pulling and other non-chemical control methods are applicable for some species. Hand pulling should be done when soil is moist. Remove all of the root system. Mowing is an option for some species but care needs to be taken to time mowing to limit seed spread. Follow-up mowing is typically necessary.

Suggested Chemical Treatment for Non-Native Invasive Species

General Calendar of Control for Indiana, Updated January 2024

This is a guide: adjust treatment based on local conditions. Always read label for proper use, rates, application timing, etc.

	INVASIVE SPECIES		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Vines:	English ivy	These two species have waxy leaves. Use surfactant to improve herbicide contact across surface of leaves.							**Foliar Spray treatment after first frost through the dormant season when temperature is above 45 degrees F.**					
Evergreen	Japanese honeysuckle	Leaves often remain green through winter.							**Foliar Spray** / **Foliar Spray treatment after first frost through the dormant season is effective when temperature is above 45 degrees F.**					
Semi-evergreen	Nonnative Japanese / Chinese Wisteria	Wisteria typically flowers early in the spring and has hairy seedpods that look and feel like velvet. Native wisteria has a hairless, smooth brownish pod.			**Foliar Spray** / **Foliar Spray**		**Cut Surface Treatment on large vines**							
Deciduous	Autumn clematis	Due to the weak vines, this species may be difficult to treat.			**Foliar Spray**									
	Roundleaf bittersweet	Correctly identify prior to treating to ensure you are not treating native bittersweet.			**Foliar Spray**		**Cut surface treatment on large vines**							
	Kudzu	Contact DNR if you have Kudzu. It is best to treat this species when it's flowering.					**Cut surface treatment on large vines with a triclopyr product.** / **Foliar Spray**							
	Chinese yam	Correctly identify prior to treating to ensure you are not treating native yam.				**Foliar spray**								

Color Key and Herbicide Treatment Recommendations

Foliar spray with 2% Glyphosate and 1/2% non-ionic surfactant. Surfactant is optional but can increase efficacy. Leaves must be fully emerged.	**Foliar spray with 1% Glyphosate and 1/4% non-ionic surfactant**
Basal bark treatment with 20% Tricolpyr and 80% horticultural oil or basal oil.	**Foliar spray with 1% imazapyr, 1/2% Glyphosate and 1/2% non-ionic surfactant**
Cut surface treatment with 20% Glyphosate and 80% water or 20% Triclopyr and 80% water.	**Foliar Spray with 2% Glyphosate approved for aquatic areas and 1/2% surfactant.**
Foliar spray with 1/2% grass specific herbicide such as Sethoxydim or Clethodim with 1/4% surfactant.	**Foliar spray with 2% Glyphosate and 1/2% non-ionic surfactant.**
Foliar Spray with 2% Glyphosate and 1/2% non-ionic surfactant. Due to waxy leaf surfactant is highly recommended.	**Foliar spray with 1.5% Triclopyr and non-ionic surfactant per label.**
Basal Oil = Ax-it, crop oil, bean oil etc.	**Surfactant (non-ionic surfactant) = Invade 90, NuFilm IR , etc**
Glyphosate= (Non-selective herbicide, prevents plants from making certain proteins needed for plant growth) = Round-up, Rodeo, Pondmaster, Accord, Ranger, etc.	**Triclopyr (auxin mimic; selective post emergent) = Garlon, Turflon, Access, Redeem, Tahoe, Remedy Ultra etc.**
Sethoxydim (selective post-emergent, prevents lipid synthesis, highly mobile) = Post, Torpedo, Ultima, etc.	**Imazapyr (Non-selective herbicide, mobility is associated with soil pH, non-target damage common, pre-emergent and post-emergent) = Habitat (aquatic label), Arsenal, Polaris, ecomazapyr, etc.**
Clethodim (selective post-emergent) = Clethodim 2E, Arrest Max, Arrow, Select, etc. Takes 10-30 days to kill.	**Clopyralid (auxin-mimic, disorganized and uncontrolled growth) = Transline, Stinger, Reclaim and Curtail**

USE PESTICIDES WISELY: The percentages listed in this guide are percent solution of products, not active ingredients. Always read the entire pesticide label carefully, follow all mixing and application instructions and wear all recommended personal protective gear and clothing. Contact your state department of agriculture for any additional pesticide use requirements, restrictions or recommendations.

Hand pulling and other non-chemical control methods are applicable for some species. Hand pulling should be done when soil is moist. Remove all of the root system. Mowing is an option for some species but care needs to be taken to time mowing to limit seed spread. Follow-up mowing is typically necessary.

Suggested Chemical Treatment for Non-Native Invasive Species

General Calendar of Control for Indiana, Updated January 2024

This is a guide: adjust treatment based on local conditions. Always read label for proper use, rates, application timing, etc.

	INVASIVE SPECIES		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Herbaceous:	Crown vetch	Okay to treat during growing season.	Foliar Spray					Foliar Spray						
	Purple loosestrife	Noxious weed				Foliar Spray Aquatic								
	Periwinkle	Choose either glyphosate or triclopyr product. Do not mix.								Foliar Spray as long as temperatures are 45F and higher				
										Foliar Spray as long as temperatures are 45F and higher				
	Poison hemlock	Do not mow, instead focus on treatment during rosette stage											Foliar Spray basal rosettes prior to plant bolting	
	Japanese chaff-flower				Foliar Spray prior to flowering									
					Foliar Spray prior to flowering									
	Perilla mint	Both glyphosate and triclpoyr products work on Perilla.			Foliar Spray prior to flowering									
					Foliar Spray prior to flowering									
	Creeping Jenny	Hand pull is best for small infestations			Foliar Spray large infestations									
	Lesser celandine	Reproduces via bulbs/tubers and is challening to treat.	Foliar Spray approved for aquatic areas											Foliar Spray approved for aquatic areas

Color Key and Herbicide Treatment Recommendations

Foliar spray with 2% Glyphosate and 1/2% non-ionic surfactant. Surfactant is optional but can increase efficacy. Leaves must be fully emerged.	Foliar spray with 1% Glyphosate and 1/4% non-ionic surfactant
Basal bark treatment with 20% Tricolpyr and 80% horticultural oil or basal oil.	Foliar spray with 1% imazapyr, 1/2% Glyphosate and 1/4% non-ionic surfactant
Cut surface treatment with 20% Glyphosate and 80% water.	Foliar Spray with 2% Glyphosate approved for aquatic areas and 1/2% surfactant.
Foliar spray with 1/2% grass specific herbicide such as Sethoxydim or Clethodim with 1/4% surfactant. Or Foliar spray with 1/2% of glyophosate solution in water.	Foliar spray with 2% Glyphosate and 1/2% non-ionic surfactant.
Foliar Spray with 2% Glyphosate and 1/2% non-ionic surfactant. Due to waxy leaf surfactant is highly recommended.	Foliar spray with 1.5% Triclopyr and non-ionic surfactant per label.

Basal Oil = Ax-it, crop oil, bean oil etc.	Surfactant (non-ionic surfactant) = Invade 90, NuFilm IR , etc
Glyphosate= (Non-selective herbicide, prevents plants from making certain proteins needed for plant growth) = Round-up, Rodeo, Pondmaster, Accord, Ranger, etc.	Triclopyr (auxin mimic; selective post emergent) = Garlon, Turflon, Access, Redeem, Tahoe, Remedy Ultra etc.
Sethoxydim (selective post-emergent, prevents lipid synthesis, highly mobile) = Post, Torpedo, Ultima, etc.	Imazapyr (Non-selective herbicide, mobility is associated with soil pH, non-target damage common, pre-emergent and post-emergent) = Habitat (aquatic label), Arsenal, Polaris, ecomazapyr, etc.
Clethodim (selective post-emergent) = Clethodim 2E, Arrest Max, Arrow, Select, etc. Takes 10-30 days to kill.	Clopyralid (auxin-mimic, disorganized and uncontrolled growth) = Transline, Stinger, Reclaim and Curtail

USE PESTICIDES WISELY: The percentages listed in this guide are percent solution of products, not active ingredients. Always read the entire pesticide label carefully, follow all mixing and application instructions and wear all recommended personal protective gear and clothing. Contact your state department of agriculture for any additional pesticide use requirements, restrictions or recommendations.

Hand pulling and other non-chemical control methods are applicable for some species. Hand pulling should be done when the soil is moist and care should be taken to remove all of the root system. Mowing is an option for some species but care needs to be taken to time mowing to limit seed production, no avoid spreading seed via mowing, and note that follow-up mowing will typically be necessary.

Suggested Chemical Treatment for Non-Native Invasive Species

General Calendar of Control for Indiana, Updated January 2024

This is a guide: adjust treatment based on local conditions. Always read label for proper use, rates, application timing, etc.

	INVASIVE SPECIES		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Grasses:	Japanese stiltgrass, wavybasket, carpet grass	Aggressive. Treat as soon as discovered.			Grass specific herbicide									
					Foliar Spray 1% Glyphosate plus 1/4% non-ionic Surfactant									
	Miscanthus, Fountain Grass	Ornamental grasses seed into natural areas.	Cut clumps back to 6 inches and let regrow a foot then spray.				Cut clumps back to 6 inches then let it regrow a foot and spray.							
	Reed canary grass	Similar to Fescue. Will green up early in spring and stay green later in fall. Mow in the growing season to keep from flowering and then treat in the fall with an herbicide is most effective.		Treat in the spring before flowering with water safe glyphosate product only.				Treat until consistent frosts.						
Trees:	Mimosa	All of these species root sprout and sucker. Mimosa creates dense colonies via an extensive underground root system.			Cut surfact treatment: triclopyr seems to be the most effective									
	Princess tree				Basal Bark treatment helps reduce sprouting. Do not treat when snow is on the ground. If you are unable to basal bark due to proximity to structures, cut stump can be used; however, these often resprout even with the use of an herbicide. Therefore, multiple treatments for resprouts are necessary.									
	Callery pear													
	Tree-of-heaven				Cut surface treatment with 20% Glyphosate and 80% water or 20% Triclopyr and 80% water as long as temperatures are at least 45 F.									
	White mulberry			Foliar spray with 1.5% Triclopyr										

Color Key and Herbicide Treatment Recommendations

Foliar spray with 2% Glyphosate and 1/2% non-ionic surfactant. Surfactant is optional but can increase efficacy. Leaves must be fully emerged.	Foliar spray with 1% Glyphosate and 1/4% non-ionic surfactant
Basal bark treatment with 20% Tricolpyr and 80% horticultural oil or basal oil.	Foliar spray with 1% imazapyr, 1/2% Glyphosate and 1/4% non-ionic surfactant
Cut surface treatment with 20% Glyphosate and 80% water.	Foliar Spray with 2% Glyphosate approved for aquatic areas and 1/2% surfactant.
Foliar spray with 1/2% grass specific herbicide such as Sethoxydim or Clethodim with 1/4% surfactant. Or Foliar spray with 1/2% of glyophosate solution in water.	Foliar spray with 2% Glyphosate and 1/2% non-ionic surfactant.
Foliar Spray with 2% Glyphosate and 1/2% non-ionic surfactant, due to waxy leaf.	Foliar spray with 1.5% Triclopyr

Basal Oil = Ax-it, crop oil, bean oil etc.	Surfactant (non-ionic surfactant) = Invade 90, NuFilm IR , etc
Glyphosate = (Non-selective herbicide, prevents plants from making certain proteins needed for plant growth) = Round-up, Rodeo, Pondmaster, Accord, Ranger, etc.	Triclopyr (auxin mimic; selective post emergent) = Garlon, Turflon, Access, Redeem, Tahoe, Remedy Ultra etc.
Sethoxydim (selective post-emergent, prevents lipid synthesis, highly mobile) = Post, Torpedo, Ultima, etc.	Imazapyr (Non-selective herbicide, mobility is associated with soil pH, non-target damage common, pre-emergent and post-emergent) = Habitat (aquatic label), Arsena, Polaris, ecomazapyr, etc.
Clethodim (selective post-emergent) = Clethodim 2E, Arrest Max, Arrow, Select, etc. Takes 10-30 days to kill.	Clopyralid (auxin-mimic, disorganized and uncontrolled growth) = Transline, Stinger, Reclaim and Curtail

The percentages listed in this guide are percent solution of products, not active ingredients. Always read the entire pesticide label carefully, follow all mixing and application instructions and wear all recommended personal protective gear and clothing. Contact your state department of agriculture for any additional pesticide use requirements, restrictions or recommendations.

Hand pulling and other non-chemical control methods are applicable for some species. Hand pulling should be done when the soil is moist and care should be taken to remove all of the root system. Mowing is an option for some species but care needs to be taken to time mowing to limit seed production, no avoid spreading seed via mowing, and note that follow-up mowing will typically be necessary.