

# INVASIVE PLANT CONTROL IN FORESTS

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(Excerpt from 2010 Georgia Pest Management Handbook - University of Georgia College of Agricultural & Environmental Sciences)

There are a number of nonnative plants, referred to as exotic, noxious, alien, or invasive weeds that thrive in our southern forests in the absence of natural regulatory predators. Many of these plant species may be found under cultivation in yards, gardens and landscapes, but may become problems when they “escape” cultivation and invade forests, roadsides, and natural areas. These weeds displace native vegetation, increase management costs, reduce productivity, diminish diversity and impact wildlife habitat.

This section provides control options for plants that are of concern to the health and productivity of forest ecosystems. Be aware that in many cases these plants “escape” and spread into native habitats along roadsides, right/of/ways, streams, field edges, and fence rows. Controlling small infestations can minimize habitat impact and reduce future control costs. These herbicide recommendations are specifically tailored for treatment of small areas using 3/ gallon backpack sprayers.

Recommendations are adapted from.

Miller, J.H. 2003. Nonnative Invasive Plants of Southern Forests. A Field Guide for Identification and Control. Gen. Tech. Rep. SRS/62. Asheville, NC. U.S. Department of Agriculture, Forest Service, Southern Research Station. 93 p.

Miller, James H. and Steve T. Manning. 2008. An Expanded Nonnative Invasive Plants of Southern Forests. A Field Guide for Identification and Control. Asheville, NC. U.S. Department of Agriculture, Forest Service, Southern Research Station. DRAFT / August 2008

To view this publication on/line, and for images and information on invasive plants, insects, diseases, and animals go to.

**[www.invasive.org](http://www.invasive.org)**

PLANT SPECIES Common & Scientific Name(s)	PRESCRIPTIONS
<b>TREES</b>	
Tree/of/Heaven ( <i>Ailanthus altissima</i> )	<p><b>Large trees.</b> Make stem injections and then apply GARLON 3A, PATHWAY, PATHFINDER II, or ARSENAL AC, POLARIS AC, IMAZAPYR 4SL in dilutions and cut spacings specified on the herbicide label (midsummer best, late winter somewhat less effective). For felled trees, apply these herbicides to stem and stump tops immediately after cutting.</p> <p><b>Saplings.</b> Apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3/gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray.</p> <p><b>Seedlings and saplings.</b> Thoroughly wet all leaves with one of the following herbicides in water with a surfactant (July to October). ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL* as a 1 percent solution (4 ounces per 3 gallon mix), KERNITE S as a 30 percent solution (3 quarts per 3/gallon mix), GARLON 4 as a 2 percent solution (8 ounces per 3 gallon mix), or ESCORT XP at 1 oz. per acre. * Nontarget plants may be killed or injured by root uptake</p>
Mimosa, Silk Tree ( <i>Albizia julibrissin</i> )	<p><b>Large trees.</b> Make stem injections using ARSENAL AC, POLARIS AC, IMAZAPYR 4SL or GARLON 3A in dilutions as specified on the herbicide label (anytime except March and April). For felled trees, apply these herbicides to stem and stump tops immediately after cutting.</p> <p><b>Saplings.</b> Apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray.</p> <p><b>Resprouts and seedlings.</b> Thoroughly wet all leaves with one of the following herbicides in water with a surfactant. July to October / GARLON 3A, GARLON 4, or glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix)</p> <p>July to September / TRANSLINE as a 0.2 to 0.4 percent solution (1 to 2 ounces per 3 gallon mix)</p>

**INVASIVE PLANT CONTROL IN FORESTS (continued)**

PLANT SPECIES Common & Scientific Name(s)	PRESCRIPTIONS
Paper mulberry ( <i>Broussonetia papyrifera</i> )	<p><b>Large trees.</b> Make stem injections using GARLON 3A as a 10 percent solution (1 quart per 3 gallon mix) in water or a 15 percent solution (3 pints per 3 gallon mix) for larger trees. Or cut large stems and immediately treat the stumps with GARLON 3A as a 30 percent solution (38 ounces per 1 gallon mix) in water with a surfactant.</p> <p><b>Saplings.</b> Apply GARLON 4 as a 20 percent solution in basal oil, vegetable oil, crop oil concentrate, diesel fuel or kerosene (2.5 quarts per 3 gallon mix) or apply STALKER* as a 3 percent solution (12 ounces per 3 gallon mix) plus GARLON 4 as a 15 percent solution (3 pints per 3 gallon mix) mixed in basal oil applied as a basal spray.</p> <p><b>Seedlings and saplings.</b> Thoroughly wet all leaves with one of the following herbicides in water with a surfactant on young trees less than 10 feet tall. GARLON 3A at 2 percent (8 ounces per 3 gallon mix) or GARLON 4 at 0.5 to 2 percent (2 to 8 ounces per 3 gallon mix); a glyphosate herbicide at a 3 /percent solution (12 ounces per 3 gallon mix); ARSENAL AC* as a 0.25 percent solution (1ounce per 3 gallon mix); or ARSENAL POWERLINE* at a 0.5 percent solution (2 ounces per 3 gallon mix).</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
Camphortree ( <i>Cinnamomum camphora</i> )	<p><b>Large trees.</b> Make stem injections using undiluted GARLON 3A during June through September or VANQUISH* as a 75 percent solution (96 ounces per 1 gallon mix) with water June through November in cut spacings specified on the herbicide label. For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with GARLON 3A at a 30 percent solution (38 ounces per 1 gallon mix) or GARLON 4 at a 50 percent solution (64 ounces per 1 gallon mix).</p> <p><b>Saplings.</b> Apply GARLON 4 as a 30 percent solution in basal oil, vegetable oil, crop oil concentrate, diesel fuel or kerosene (38 ounces per 1 gallon mix) as a basal spray for trees up to 4 inches in diameter.</p> <p><b>Seedlings and saplings.</b> Thoroughly wet all leaves with one of the following herbicides in water with a surfactant. a glyphosate product or GARLON 3A as a 2 percent solution (8 ounces per 3 gallon mix); GARLON 4 as a 0.5 to 2 percent solution (2 to 8 ounces per 3 gallon mix); or CLEARCAST as a 2 percent solution (8 ounces per 3 gallon mix).</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
Russian Olive ( <i>Elaeagnus angustifolia</i> )	<p><b>Trees.</b> Make stem injections using ARSENAL AC, POLARIS AC, IMAZAPYR 4SL, or GARLON 3A in dilutions and cut spacings specified on the herbicide label (anytime except March and April). For felled trees, apply the herbicides to stem and stump tops immediately after cutting.</p> <p><b>Saplings.</b> Apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray.</p> <p><b>Seedlings and saplings.</b> Thoroughly wet all leaves with one of the following herbicides in water with a surfactant (July to October). ARSNAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 1 percent solution in water (4 ounces per 3 gallon mix); a glyphosate herbicide, GARLON 3A, or GARLON 4 as a 2 percent solution in water (8 ounces per 3 gallon mix) for directed spray treatments that have limited or no soil activity.</p>
Glossy Buckthorn ( <i>Frangula alnus</i> )	<p>Thoroughly wet all leaves with a glyphosate product or GARLON 3A as a 2 to 3 percent solution (8 to 12 ounces per 3 gallon mix) in water with a surfactant. Or, apply ARSENAL AC* as a 0.25 percent solution (1 ounce per 3 gallon mix) or ARSENAL POWERLINE* as a 0.5 percent solution (2 ounces per 3 gallon mix).</p> <p>For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with one of the following herbicides. a glyphosate herbicide or GARLON 3A at a 25 percent solution (32 ounces per 1 gallon mix); In the winter, when the ground is not frozen, apply GARLON 3A at a 50 percent solution (64 ounces per 1 gallon mix) in water with a surfactant. A subsequent foliar application of may be required to control new seedlings and resprouts.</p> <p>Apply GARLON 4 as a 20 percent solution (2.5 quarts per 3 gallon mix) in basal oil, vegetable oil, crop oil concentrate, diesel fuel or kerosene as a basal spray.</p> <p>* Nontarget plants may be killed or injured by root uptake</p>

**INVASIVE PLANT CONTROL IN FORESTS (continued)**

PLANT SPECIES Common & Scientific Name(s)	PRESCRIPTIONS
Chinaberrytree ( <i>Melia azedarach</i> )	<p><b>Trees.</b> Make stem injections using ARSENAL AC, POLARIS AC, IMAZAPYR 4SL, PATHWAY, PATHFINDER II, or GARLON 3A in dilutions and cut spacings specified on the herbicide label (anytime except March and April). For felled trees, apply these herbicides to stem and stump tops immediately after cutting.</p> <p><b>Saplings.</b> Apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray.</p> <p><b>Sprouts and seedlings.</b> Thoroughly wet all leaves with one of the following herbicides in water with a surfactant (July to October). GARLON 3A or GARLON 4 as a 2 percent solution (8 ounces per 3 gallon mix); ARSNAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 1 percent solution (4 ounces per 3 gallon mix). * Nontarget plants may be</p>
Paulownia, Princess tree ( <i>Paulownia tomentosa</i> )	<p><b>Large trees.</b> Make stem injections using ARSENAL AC, POLARIS AC, IMAZAPYR 4SL or a glyphosate herbicide in dilutions and cut spacings specified on the herbicide label (anytime except March and April). For felled trees, apply these herbicides to stem and stump tops immediately after cutting.</p> <p><b>Saplings.</b> Apply GARLON 4 as a 2 /percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray.</p> <p><b>Resprouts and seedlings.</b> Thoroughly wet all leaves with one of the following herbicides in water with a surfactant (July to October). ARSNAL AC*, POLARIS AC*, IMAZAPYR 4S*L, as a 1 percent solution (4 ounces per 3 gallon mix); a glyphosate herbicide, GARLON 3A, or GARLON 4 as a 2 percent solution (8 ounces per 3 gallon mix). *</p>
Hardy orange, Trifoliate orange ( <i>Poncirus trifoliata</i> )	<p><b>Large trees.</b> For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with one of the following herbicides. a glyphosate herbicide or GARLON 3A as a 25 percent solution (32 ounces per 1 gallon mix). A subsequent foliar application of may be required to control new seedlings and resprouts.</p> <p><b>Seedlings and saplings.</b> Thoroughly wet all leaves with a glyphosate herbicide or GARLON 3A as a 4 percent solution (1 pint per 3 gallon mix) in water with a surfactant. Or apply ARSENAL AC* as a 0.13 percent solution (0.5 ounces per 3 gallon mix).</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
Callery pear or Bradford Pear ( <i>Pyrus calleryana</i> )	<p><b>Large trees.</b> For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with GARLON 3A or a glyphosate herbicide at a 25 to 5 /percent solution (32 to 64 ounces per 1 gallon mix). A subsequent foliar application of may be required to control new seedlings and resprouts. Make stem injections using undiluted GARLON 3A June through September in cut spacings as specified on the herbicide label.</p> <p><b>Seedlings and Saplings.</b> Thoroughly wet all leaves with one of the following herbicides in water with a surfactant. A glyphosate product or GARLON 3A as a 2 percent solution (8 ounces per 3 gallon mix); apply ARSENAL AC* as a 0.13 percent solution (0.5 ounces per 3 gallon mix); or ARSENAL POWERLINE* as a 0.5 percent solution (2 ounces per 3 gallon mix).</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
Brazilian peppertree ( <i>Schinus terebinthifolius</i> )	<p><b>Trees.</b> For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with GARLON 3A or a glyphosate herbicide as a 25 to 50 percent solution (1 to 2 quarts per 1/gallon mix); GARLON 4 as a 10 percent solution (12 ounces per 1 gallon mix); STALKER as a 50/percent solution (2 quarts per 1 gallon mix) when they are not fruiting. A subsequent foliar application of may be required to control new seedlings and resprouts. For treatment of extensive infestations in forest situations, apply VELPAR L* or Hyvar* to the soil surface within 3 feet of the stem (one squirt of spot gun or utility spray bottle per 1/4 inch stem diameter) or in a grid pattern at spacings and dilutions specified on the herbicide labels.</p> <p><b>Saplings.</b> Apply GARLON 4 as a 15 percent solution in basal oil, vegetable oil, crop oil concentrate, diesel fuel or kerosene (3 pints per 3 gallon mix) as a basal spray in the fall when flowering.</p> <p><b>Seedlings and saplings.</b> Thoroughly wet all leaves with one of the following herbicides in water with a surfactant. a glyphosate product or GARLON 3A as a 2 to 3 percent solution (8 to 12 ounces per 3 gallon mix); HABITAT* as a 0.5 percent solution (2 ounces per 3 gallon mix); or CLEARCAST as a 2 percent solution (8 ounces per 3 gallon mix).</p>

**INVASIVE PLANT CONTROL IN FORESTS (continued)**

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Tallowtree, Popcorn tree ( <i>Triadica sebifera</i> )	<p><b>Large trees.</b> Make stem injections using ARSENAL AC, POLARIS AC, IMAZAPYR 4SL, GARLON 3A, or PATHFINDER II in dilutions and cut spacings specified on the herbicide label (anytime except March and April). For felled trees, apply the herbicides to stem and stump tops immediately after cutting (at least a 10/percent solution for GARLON 3A). ORTHO BRUSH/B/GONE (triclopyr) and ENFORCER BRUSH KILLER (triclopyr) are effective for treating cut stumps and readily available to homeowners in retail garden stores. For treatment of extensive infestations in forest situations, apply VELPAR L to the soil surface within 3 feet of the stem (one squirt of spot gun per 1/inch stem diameter) or in a grid pattern at spacings specified on the herbicide label.</p> <p><b>Saplings.</b> Apply GARLON 4 as a 20percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3/gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray.</p> <p><b>Seedlings and saplings.</b> Thoroughly wet all leaves with one of the following herbicides in water with a surfactant (July to October). ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 1 percent solution (4 ounces per 3 gallon mix), KERNITE S as a 30 percent solution (3 quarts per 3 gallon mix), or GARLON 4 as a 2 percent solution (8 ounces per 3 gallon mix). CLEARCAST as a 2 percent solution (8 ounces per 3 gallon mix). * Nontarget plants may be killed or</p>
Tung oil tree ( <i>Vernicia fordii</i> )	<p><b>Large Trees.</b> Make stem injections using undiluted GARLON 3A during June through Sept. or VANQUISH* at a 75 percent solution (96 ounces per 1 gallon mix) with water during June through October in cut spacings specified on the herbicide label. For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with one of the following herbicides. GARLON 4 as a 25 to 50 percent solution (32 to 64 ounces per 1 gallon mix) or GARLON 3A as a 30 percent solution (38 ounces per 1 gallon mix).</p> <p><b>Saplings.</b> Apply GARLON 4 as a 15 percent solution in basal oil, vegetable oil, crop oil concentrate, diesel fuel or kerosene (3 pints per 3 gallon mix) as a basal spray in the fall when flowering.</p> <p><b>Seedlings and saplings.</b> Thoroughly wet all leaves with one of the following herbicides in water with a surfactant on young trees less than 10 feet (3 m) tall. GARLON 3A as a 2 percent solution (8 ounces per 3 gallon mix); a glyphosate herbicide as a 2 to 3 percent solution (8 to 12 ounces per 3 gallon mix); or CHOPPER GEN II* (or ARSENAL AC*) as a 0.5 percent solution (2 ounces per 3 gallon mix).</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
SHRUBS	
Hen's eye or coral ardisia ( <i>Ardisia crenata</i> )	<p>Apply GARLON 4 as a 10 percent solution in basal oil, vegetable oil, crop oil concentrate, diesel fuel or kerosene (2 pints per 3/gallon mix) as a basal spray in the fall when flowering.</p> <p>For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with GARLON 4 at a 15 to 25 percent solution (19 to 32 ounces per 1gallon mix).</p> <p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant. a glyphosate product or GARLON 4 as a 5 percent solution (20 ounces per 3 gallon mix).</p>
Japanese barberry ( <i>Berberis thunbergii</i> )	<p>Thoroughly wet all leaves with a glyphosate product or GARLON 3A as a 2 percent solution (8 ounces per 3 gallon mix) in water with a surfactant.</p> <p>For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with one of the following herbicides. a glyphosate herbicide or GARLON 3A at a 25 percent solution (32 ounces per 1 gallon mix). A subsequent foliar application of may be required to control new seedlings and resprouts.</p>
Silverthorn, Thorny Olive ( <i>Elaeagnus pungens</i> )	<p>Thoroughly wet all leaves with ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, or VANQUISH* as a 1/percent solution in water (4 ounces per 3 gallon mix) with a surfactant (April to October).</p> <p>For stems too tall for foliar sprays, apply GARLON 4 as a 20/percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray (January to February or May to October). Or, cut large stems and immediately treat the stumps with one of the following herbicides in water with a surfactant. ARSENAL AC, POLARIS AC, IMAZAPYR 4SL, as a 10 percent solution (1 quart per 3 gallon mix) or a glyphosate herbicide as a 20 percent solution (2.5 quarts per 3 gallon mix).</p> <p>* Nontarget plants may be killed or injured by root uptake</p>

**INVASIVE PLANT CONTROL IN FORESTS (continued)**

PLANT SPECIES Common & Scientific Name(s)	PRESCRIPTIONS
<p>Autumn Olive <i>(Elaeagnus umbellata)</i></p>	<p>Thoroughly wet all leaves with ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, or VANQUISH* as a 1 percent solution in water (4 ounces per 3 gallon mix) with a surfactant (April to October).</p> <p>For stems too tall for foliar sprays, apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray (January to February or May to October). Or, cut large stems and immediately treat the stumps with one of the following herbicides in water with a surfactant. ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 10 percent solution (1 quart per 3 gallon mix) or a glyphosate herbicide as a 20 percent solution (2.5 quarts per 3 gallon mix). * Nontarget plants may be killed or injured by root uptake</p>
<p>Winged Burning Bush <i>(Euonymus alata)</i></p>	<p>Thoroughly wet all leaves with ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, or VANQUISH* as a 1 percent solution in water (4 ounces per 3 gallon mix) with a surfactant (April to October).</p> <p>For stems too tall for foliar sprays, apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray (January to February or May to October). Or, cut large stems and immediately treat the stumps with one of the following herbicides in water with a surfactant. ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 10 percent solution (1 quart per 3 gallon mix) or a glyphosate herbicide as a 20 percent solution (2.5 quarts per 3 gallon mix). * Nontarget plants may be killed or injured by root uptake</p>
<p>Chinese Privet <i>(Ligustrum sinense)</i></p> <p>European Privet <i>(Ligustrum vulgare)</i></p>	<p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant (August to December). a glyphosate herbicide as a 3 percent solution (12 ounces per 3 gallon mix) or ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 1 percent solution (4 ounces per 3 gallon mix), or ESCORT XP at 1 oz. per acre + 0.25% non/ionic surfactant.</p> <p>During the dormant season (November - February) use a 3 to 5% glyphosate solution with water applied as a directed spray to completely wet the foliage of the privet. Use a glyphosate product that contains 41% or more active ingredient plus added surfactant. With no soil activity and low impact on dormant (leafless) plants, this treatment has low impact on desirable dormant non/target plants growing in close proximity to privet.</p> <p>For stems too tall for foliar sprays, apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray. Or, cut large stems and immediately treat the stumps with ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, or VELPAR L* as a 10 percent solution in water (1 quart per 3 gallon mix) with a surfactant. * Nontarget plants may be killed or injured by root uptake</p> <p>When safety to surrounding vegetation is desired, immediately treat stumps and cut stems with GARLON 3A or a glyphosate herbicide as a 20 percent solution in water (2.5 quarts per 3 gallon mix) with a surfactant.</p>
<p>Japanese Privet <i>(Ligustrum japonicum)</i></p>	<p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant. August through September - ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 1 percent solution (4 ounces per 3 gallon mix) or GARLON 4 as a 3 percent solution (12 ounces per 3 gallon mix); March to June - a glyphosate herbicide as a 3 percent solution (12 ounces per 3 gallon mix), or ESCORT XP at 1 oz. per acre + 0.25% non-ionic surfactant.</p> <p>During the dormant season (November - February) use a 3/5% glyphosate solution with water applied as a directed spray to completely wet the foliage of the privet. Use a glyphosate product that contains 41% or more active ingredient plus added surfactant. With no soil activity and low impact on dormant (leafless) plants, this treatment has low impact on desirable dormant non-target plants growing in close proximity to privet.</p> <p>For stems too tall for foliar sprays, apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray (January to February or May to October). Or, cut large stems and immediately treat the stumps with ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, or VELPAR L* as a 10 percent solution in water (1 quart per 3 gallon mix) with a surfactant. * Nontarget plants may be killed or injured by root uptake</p> <p>When safety to surrounding vegetation is desired, immediately treat stumps and cut stems with a glyphosate herbicide or GARLON 3A as a 20 percent solution in water (2.5 quarts per 3 gallon mix) with a surfactant.</p>

**INVASIVE PLANT CONTROL IN FORESTS (continued)**

PLANT SPECIES Common & Scientific Name(s)	PRESCRIPTIONS
Bush Honeysuckles  Amur Honeysuckle <i>(Lonicera maackii)</i>  Morrow's Honeysuckle <i>(Lonicera morrowii)</i>  Tatarian Honeysuckle <i>(Lonicera tatarica)</i>  Sweet/breath/of/spring <i>(Lonicera fragrantissima)</i>	<p>Thoroughly wet all leaves with glyphosate herbicide as a 2 percent solution in water (8 ounces per 3 gallon mix) with a surfactant (August to October). Or, apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray.</p> <p>For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with one of the following herbicides in water with a surfactant. ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 10 percent solution (1 quart per 3 gallon mix) or a glyphosate herbicide as a 20 percent solution (2.5 quarts per 3 gallon mix).</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
Beale's barberry or mahonia <i>(Mahonia bealei)</i>	<p>For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with one of the following herbicides. GARLON 4, GARLON 3A or a glyphosate herbicide as a 25 percent solution (32 ounces per 1 gallon mix).</p> <p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant. A glyphosate herbicide or GARLON 3A as a 5 percent solution (20 ounces per 3/gallon mix) applied during the growing season above 70 degrees; apply ARSENAL AC* as a 0.13 percent solution (0.5 ounces per 3 gallon mix) or ARSENAL POWERLINE* as a 0.25 percent solution (1 ounce per 3 gallon mix) plus Accord as a 2/percent solution (8 ounces per 3 gallon mix) plus Escort* at 0.8 dry ounces per 3 gallon mix in water. Spray as a low volume application to lightly wet leaves.</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
Nandina, Scared Bamboo <i>(Nandina domestica)</i>	<p>Thoroughly wet all leaves with glyphosate herbicide as a 1 percent solution in water (4 ounces per 3 gallon mix) with a surfactant (August to October). Or, apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray.</p> <p>For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with one of the following herbicides in water with a surfactant. ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 10 percent solution (1 quart per 3 gallon mix) or a glyphosate herbicide as a 20 percent solution (2.5 quarts per 3 gallon mix).</p> <p>* Nontarget plants may be killed or injured by root uptake. Collect and destroy fruit.</p>
Japanese knotweed <i>(Polygonum cuspidatum)</i>	<p>Thoroughly wet all leaves with glyphosate herbicide as a 1 percent solution in water (4 ounces per 3 gallon mix) with a surfactant (August to October). Or, apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray.</p> <p>For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with one of the following herbicides in water with a surfactant. ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 10 percent solution (1 quart per 3 gallon mix) or a glyphosate herbicide as a 20 percent solution (2.5 quarts per 3 gallon mix).</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
Nonnative Roses  Multiflora Rose <i>(Rosa multiflora)</i>  Macartney Rose <i>(Rosa bracteata)</i>	<p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant. April to June (at or near the time of flowering) - ESCORT XP* at 1 ounce per acre in water (0.2 dry ounces per 3 gallon mix); August to October - ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 1/percent solution (4 ounces per 3 gallon mix) or ESCORT XP* at 1 ounce per acre in water (0.2 dry ounces per 3 gallon mix); May to October - repeated applications of a glyphosate herbicide as a 2 percent solution in water (8 ounces per 3 gallon mix), a less effective treatment that has no soil activity to damage surrounding plants.</p> <p>For stems too tall for foliar sprays, apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to young bark as a basal spray (January to February or May to October). Or, cut large stems and immediately treat the stumps with one of the following herbicides in water with a surfactant. ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 10 percent solution (1 quart per 3 gallon mix) or a glyphosate herbicide as a 20 percent solution (2.5 quarts per 3 gallon mix). * Nontarget plants may be killed or injured by root uptake</p>

**INVASIVE PLANT CONTROL IN FORESTS (continued)**

PLANT SPECIES Common & Scientific Name(s)	PRESCRIPTIONS
Japanese spiraea <i>(Spiraea japonica)</i>	<p>Thoroughly wet all leaves with GARLON 3A or a glyphosate herbicide as a 3 percent solution (12 ounces per 3 gallon mix) in water with a surfactant. Applications may be made almost any time of year, as long as the air temperature is above 65°F, to ensure absorption by the plant, while September is best.</p> <p>For stems too tall for foliar sprays, cut large stems and immediately treat the stumps with one of the following herbicides. a glyphosate herbicide or GARLON 3A at a 25% solution (32 ounces per 1 gallon mix).</p>
VINES	
Five/leaf akebia or chocolate vine <i>(Akebia quinata)</i>	<p>Thoroughly wet all leaves with GARLON 3A as a 2 to 3 percent solution (8 to 12 ounces per 3 gallon mix) in water with a surfactant applied in the early to mid fall.</p> <p>To control climbing vines in trees, cut large stems and immediately treat the stumps with GARLON 3A or a glyphosate herbicide as a 25 percent solution (32 ounces per 1 gallon mix). A subsequent foliar application of may be required to control new seedlings and resprouts.</p>
Amur peppervine or porcelainberry <i>(Ampelopsis brevipedunculata)</i>	<p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant. a glyphosate herbicide or GARLON 3A as a 2 to 3 percent solution (8 to 12 ounces per 3 gallon mix). Or, apply ARSENAL AC* as a 0.25 percent solution (0.5 ounces per 3 gallon mix) or Chopper Gen II applied as a 0.5 percent solution (2 ounces per 3 gallon mix) in water. * Nontarget plants may be killed or injured by root uptake</p> <p>To control climbing in trees, cut large stems and immediately treat the stumps with GARLON 3A or a glyphosate herbicide at a 25 percent solution (32 ounces per 1 gallon mix).</p>
Oriental Bittersweet <i>(Celastrus orbiculatus)</i>	<p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant (July to October). GARLON 4, GARLON 3A, or a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix).</p> <p>For stems too tall for foliar sprays, apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to the lower 16 inches of stems. Or, cut large stems and immediately treat the cut surfaces with one of the following herbicides in water with a surfactant. GARLON 4 or a glyphosate herbicide as a 25 percent solution (32 ounces per 1 gallon mix).</p>
Climbing Yams Air Yam <i>(Dioscorea bulbifera)</i> Chinese Yam <i>(Dioscorea oppositifolia)</i> Water Yam <i>(Dioscorea alata)</i>	<p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant (July to October). GARLON 3A or GARLON 4 as a 2 percent solution (8 ounces per 3/gallon mix). Sometimes the air yams take up the herbicide; otherwise, they must be collected and destroyed (not composted).</p> <p>Cut climbing plants just above the soil surface and immediately treat the freshly cut stem with undiluted GARLON 3A (safe to surrounding plants).</p>
Winter Creeper <i>(Euonymus fortunei)</i>	<p>Thoroughly wet all leaves (until runoff) with one of the following herbicides in water with a surfactant (July to October for successive years). TORDON 101* as a 3 percent solution (12 ounces per 3/gallon mix) or TORDON K* as a 2 percent solution (8 ounces per 3 gallon mix). * Nontarget plants may be killed or injured by root uptake</p> <p>Or, repeatedly apply GARLON 4 or a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix) in water with a surfactant, a less effective treatment that has no soil activity to damage surrounding plants.</p> <p>Cut all vertical climbing stems to prevent fruiting and spread by birds.</p>
English Ivy <i>(Hedera helix)</i>	<p>Thoroughly wet all leaves (until runoff) with one of the following herbicides in water with a surfactant (July to October for successive years). GARLON 3A or GARLON 4 as a 3 to 5 percent solution (12 to 20 ounces per 3 gallon mix) or a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix). Use a string trimmer to reduce growth layers and injure leaves for improved herbicide uptake. Cut large vines and apply these herbicides to cut surfaces.</p> <p>Or, apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to large vines being careful to avoid the bark of the host tree.</p>

**INVASIVE PLANT CONTROL IN FORESTS (continued)**

PLANT SPECIES Common & Scientific Name(s)	PRESCRIPTIONS
Japanese honeysuckle ( <i>Lonicera japonica</i> )	<p>Apply ESCORT XP* with a surfactant to foliage June to August - either by broadcast spraying 2 ounces per acre in water (0.6 dry ounces per 3 gallon mix) or by spot spraying 2 to 4 ounces per acre in water (0.6 to 1.2 dry ounces per 3 gallon mix). * Nontarget plants may be killed or injured by root uptake</p> <p>Or, treat foliage with one of the following herbicides in water with a surfactant (July to October or during warm days in early winter) keeping spray away from desirable plants. a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix) or GARLON 3A or GARLON 4 as a 3 to 5 percent solution (12 to 20 ounces per 3 gallon mix).</p> <p>Or, cut large vines just above the soil surface and immediately treat the freshly cut stem with a glyphosate herbicide or GARLON 3A as a 20 percent solution (2.5 quarts per 3 gallon sprayer) in water with a surfactant July to October (safe to surrounding plants).</p> <p>Prescribed burning in spring will reduce dense ground mats and sever climbing vines for more effective herbicide treatments to resprouting vines.</p>
Kudzu ( <i>Pueraria montana</i> )	<p>Thoroughly wet all leaves (until runoff) with one of the following herbicides in water with a surfactant. July to October for successive years when regrowth appears - TORDON 101* as a 3 percent solution (12 ounces per 3 gallon mix) or TORDON K* as a 2 percent solution (8 ounces per 3 gallon mix), either by broadcast or spot spray, spraying climbing vines as high as possible. July to September for successive years - ESCORT XP* at 3 to 4 ounces per acre in water (0.8 to 1.2 dry ounces per 3 gallon mix) - or when safety to surrounding vegetation is desired, TRANSLINE as a 0.5 percent solution in water (2 ounces per 3 gallon mix); spray climbing vines as high as possible or cut vines that are not controlled after herbicide treatment. * Nontarget plants may be killed or injured by root uptake</p> <p>For partial control, repeatedly apply GARLON 4 or a glyphosate herbicide as a 2/percent solution in water (8 ounces per 3 gallon mix) with a surfactant during the growing season. Cut large vines and immediately apply these herbicides to the cut surfaces. Or, apply GARLON 4 as a 20 percent solution in commercially available basal oil, diesel fuel, or kerosene (2.5 quarts per 3 gallon mix) with a penetrant (check with herbicide distributor) to large vines as a basal spray (January to April), which controls vines less than 2 inches in diameter.</p>
Vincas, Periwinkles  Common Periwinkle ( <i>Vinca minor</i> )  Bigleaf Periwinkle ( <i>Vinca major</i> )	<p>Thoroughly wet all leaves (until runoff) with one of the following herbicides in water with a surfactant (July to October for successive years). TORDON 101* as a 3 percent solution (12 ounces per 3 gallon mix), TORDON K* as a 2 percent solution (8 ounces per 3 gallon mix), or GARLON 4 as a 4 percent solution (15 ounces per 3 gallon mix). Or during the growing season, repeatedly apply GARLON 4 or a glyphosate herbicide as a 2 percent solution in water (8 ounces per 3 gallon mix) with a surfactant. In winter, herbicide treatments should be limited to warm days. * Nontarget plants may be killed or injured by root uptake</p>
Nonnative Wisterias  Chinese Wisteria ( <i>Wisteria sinensis</i> )  Japanese Wisteria ( <i>Wisteria floribunda</i> )	<p>July to October for successive years when regrowth appears - TORDON 101* as a 3/percent solution (12 ounces per 3 gallon mix), TORDON K** as a 2 percent solution (8 ounces per 3 gallon mix), or GARLON 4 as a 4 percent solution (15 ounces per 3 gallon mix) * Nontarget plants may be killed or injured by root uptake</p> <p>July to September for successive years when regrowth appears - TRANSLINE as a 0.5 percent solution in water (2 ounces per 3 gallon mix) when safety to surrounding vegetation is desired</p> <p>September to October with repeated applications - a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix)</p>
<b>GRASSES</b>	
Giant Reed ( <i>Arundo donax</i> )	<p>Foliar applications in September – October with – a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix), ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 1 percent solution (4 ounces per 3 gallon mix) A combination of the two herbicides. * Nontarget plants may be killed or injured by root uptake</p>
Weeping lovegrass ( <i>Eragrostis curvula</i> )	<p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant. a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix) or ARSENAL AC* as a 0.5 percent solution (2 ounces per 3 gallon mix) or apply ARSENAL POWERLINE* as a 0.75 percent solution (3 ounces per 3 gallon mix). All applications should be made in early summer when foliage is developed while seeds have not been produced.</p> <p>* Nontarget plants may be killed or injured by root uptake</p>

**INVASIVE PLANT CONTROL IN FORESTS (continued)**

PLANT SPECIES Common & Scientific Name(s)	PRESCRIPTIONS
<p>Cogongrass <i>(Imperata cylindrica)</i></p>	<p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant. ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL* as a 1 percent solution (4 ounces per 3 gallon mix), a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix), or combination of the two herbicides. * Nontarget plants may be killed or injured by root uptake</p> <p>Repeat before flowering in spring to suppress seed production and again in successive years for eradication.</p> <p>This is a Federally listed invasive species. Report suspected infestations to your County Georgia Forestry Commission office or Country Extension office.</p>
<p>Tall Fescue <i>(Lolium arundinaceum)</i></p>	<p>On forest lands, apply a glyphosate herbicide as a 0.5 percent solution in water (2 quarts per 10 gallons mix per acre), or ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 1 percent solution (25 ounces per 20 gallons mix per acre) in spring. * Nontarget plants may be killed or injured by root uptake</p> <p>On noncroplands, apply 10 to 12 dry ounces of PLATEAU per 20 gallons mix per acre (consult the label for additives) in spring. Mixing PLATEAU with a glyphosate herbicide or ARSENAL AC, POLARIS AC, IMAZAPYR 4SL, will improve control but may damage associated native plants. VANTAGE (sethoxydim), POAST (sethoxydim), ASSURE (quizalofop), and SELECT (clethodim) may be useful on pastures, but they are usually more costly than a glyphosate mix with PLATEAU or ARSENAL AC, POLARIS AC, IMAZAPYR 4SL, .</p> <p>Early spring burning, if repeated, inhibits fescue and encourages native warm/season grasses.</p>
<p>Nepalese Browntop <i>(Microstegium vimineum)</i></p>	<p>Apply a glyphosate herbicide as a 2 percent solution in water (8 ounces per 3 gallon mix) with a surfactant in late summer. Or, apply VANTAGE (see label) for situations that require more selective control and less impact on associated plants.</p> <p>Repeat treatments for several years to control abundant germinating seeds. Mowing or pulling just before seed set in September will prevent seed buildup.</p>
<p>Chinese Silvergrass <i>(Miscanthus sinensis)</i></p>	<p>Foliar applications of ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 1 percent solution (4 ounces per 3 gallon mix). * Nontarget plants may be killed or injured by root uptake</p> <p>A glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix)</p> <p>A combination of the two herbicides.</p>
<p>Bamboos <i>(Phyllostachys spp.)</i> <i>(Bambusa spp.)</i></p>	<p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant (September or October with multiple applications to regrowth). ARSENAL AC*, POLARIS AC*, IMAZAPYR 4SL,* as a 1/percent solution (4 ounces per 3 gallon mix), a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix), or combination of the two herbicides.</p> <p>Apply VELPAR L* as a soil treatment (rate dependent on soil texture) following cutting or burning of stand.</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
<p>Johnsongrass <i>(Sorghum halepense)</i></p>	<p>Recommendation for mature grass control Apply OUTFRIDER as a broadcast spray at 0.75 to 2 ounces per acre plus a non/ionic surfactant to actively growing johnsongrass. For handheld and high volume equipment, apply 1 ounce of OUTFRIDER per 100 gallons of water plus a non/ionic surfactant at 0.25 percent Or apply PLATEAU as a 0.25 percent solution (1 ounce per 3 gallon mix) post emergence when plants are 18 to 24 inches (45 to 60 cm) tall or larger.</p> <p>Recommendation for seedling control Apply JOURNEY as a 0.3/percent solution (1.2 ounces per 3 gallon mix) applied pre/emergence when desirable species are dormant.</p> <p>Apply a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix)</p>
<p><b>FERNS</b></p>	
<p>Japanese Climbing Fern <i>(Lygodium japonicum)</i></p>	<p>Thoroughly wet all leaves from July to October with one of the following herbicides in water + surfactant. ESCORT XP at 1 to 2 ounces per acre in water (0.3 to 0.6 dry ounces per 3 gallon mix), ARSNAL AC*, POLARIS AC*, IMAZAPYR 4SL*, as a 1 percent solution (4 ounces per 3 gallon mix), GARLON 3A, GARLON 4, or a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix). * Nontarget plants may be killed or injured by root uptake</p>

**INVASIVE PLANT CONTROL IN FORESTS (continued)**

PLANT SPECIES Common & Scientific Name(s)	PRESCRIPTIONS
<b>FORBS</b>	
Garlic Mustard <i>(Alliaria petiolata)</i>	<p>To control two generations, thoroughly wet all leaves with a glyphosate herbicide as a 2/percent solution in water (8 ounces per 3 gallon mix) during flowering (April through June). Include a surfactant unless plants are near surface waters.</p> <p>In locations where herbicides cannot be used, pull plants before seed formation. Repeated annual prescribed burns in fall or early spring will control this plant, while “flaming” individual plants with propane torches has also shown preliminary success.</p>
Alligatorweed <i>(Alternanthera philoxeroides)</i>	<p>Thoroughly wet all leaves with one of the following herbicides in water.</p> <p>HABITAT* applied as a 0.5 percent (2 ounces per 3 gallon mix) solution in a 100 gallon per acre mix.</p> <p>CLEARCAST as a 1 percent solution (4 ounces per 3 gallon mix) if foliage is emerged.</p> <p>A glyphosate product (RODEO for aquatic sites) or GARLON 4 (RENOVATE 3 for aquatic sites) as a 2 percent solution (8 ounces per 3 gallon mix) for good control above the water line.</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
Nodding plumeless thistle <i>(Carduus nutans)</i>	<p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant.</p> <p>TRANSLINE as a 0.5 percent solution (2 ounces per 3 gallon mix) applied during the rosette stage or prior to flowering;</p> <p>GARLON 3A, MILESTONE or a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix);</p> <p>OVERDRIVE as a 0.8 /percent solution (0.3 ounces per 3 gallon mix) applied at the rosette growth stage.</p>
Spotted knapweed <i>(Centaurea stoebe ssp.)</i>	<p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant.</p> <p>MILESTONE as a 0.1 percent solution (0.4 ounces per 3 gallon mix) applied at the spring bolting or fall rosette stages.</p> <p>Tordon K* at 0.25 to 0.5 pounds per acre will control spotted knapweed plants and seedlings for 2 to 3 years. TORDON K* should be applied either in fall when the plant is in the rosette growth stage, or in spring during the bud to bloom stage.</p> <p>VANQUISH* at 1/2 pounds (acid equivalent/see label) per acre. May require annual follow/up treatment for a minimum of two years.</p> <p>OVERDRIVE as a 0.2 percent solution (0.6 ounces per 3 gallon mix) plus TORDON 101* as a 4 percent solution (2 pints per 3 gallon mix).</p> <p>GARLON 3A at a 2 to 3 percent solution (8 to 12 ounces per 3 gallon mix) 3 to 4 times per year for two years.</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
Introduced Lespedezas  Shrubby (bicolor) Lespedeza <i>(Lespedeza bicolor)</i>  Chinese (sericea) Lespedeza <i>(Lespedeza cuneata)</i>	<p>Thoroughly wet all leaves with one of the following herbicides in water with a surfactant (July to September).</p> <p>GARLON 4 as a 2 percent solution (8 ounces per 3 gallon mix),</p> <p>ESCORT XP* at three3/4 of an ounce per acre (0.2 dry ounces per 3 gallon mix),</p> <p>TRANSLINE as a 0.2 percent solution (1 ounce per 3 gallon mix), a glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix), or</p> <p>VELPAR *L as a 2 percent solution (8 ounces per 3 gallon mix). * Nontarget plants may be killed or injured by root uptake</p> <p>Mowing 1 to 3 months before herbicide applications can assist control.</p>

**INVASIVE PLANT CONTROL IN FORESTS (continued)**

PLANT SPECIES Common & Scientific Name(s)	PRESCRIPTIONS
<p>Big blue lilyturf (<i>Liriope muscari</i>), (<i>L. spicata</i>) creeping liriop (<i>Liriope spicata</i>)</p>	<p>A glyphosate herbicide as a 2 percent solution (8 ounces per 3 gallon mix) applied June to October.</p> <p>ARSENAL AC* as a 0.5 percent solution (2 ounces per 3 gallon mix) or ARSENAL POWERLINE* as a 1 percent solution (4 ounces per 3 gallon mix) or Joumey as a 3 percent solution (12 ounces per 3 gallon mix) applied to actively growing shoots.</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
<p>Crownvetch (<i>Securigera varia</i>) or (<i>Coronilla varia</i>)</p>	<p>Thoroughly wet all leaves with a glyphosate product or GARLON 3A as a 1 to 2 percent solution (4 to 8 ounces per 3 gallon mix) in water with a surfactant during the vegetative stage prior to branching or during flowering.</p> <p>Apply TRANSLINE as a 0.5 percent solution (2 ounces per 3 gallon mix) or apply ARSENAL AC* as a 0.5 percent solution (2 ounces per 3 gallon mix) or apply ARSENAL POWERLINE* as a 1 percent solution (4 ounces per 3 gallon mix) in fall, before frost or leaf drop.</p> <p>* Nontarget plants may be killed or injured by root uptake</p>
<p>Tropical Soda Apple (<i>Solanum viarum</i>)</p>	<p>Thoroughly wet leaves and stems with one of the following herbicides in water with a surfactant at times of flowering before fruit appear.</p> <p>GARLON 4 (or REMEDY in pastures) or ARSENAL AC, POLARIS AC, IMAZAPYR 4SL, as a 2 percent solution (8 ounces per 3 gallon mix); a glyphosate herbicide as a 3 percent solution in water (12 ounces per 3 gallon mix).</p> <p>MILESTONE at 5 to 7 ounces per acre at any growth stage, but application before flowerings can reduce seed production</p> <p>Collect and destroy fruit to prevent reestablishment.</p> <p>If mowing is used to stop fruit production, delay herbicide applications until 50 to 60 days to ensure adequate regrowth.</p> <p>This is a Federally listed invasive species</p>

\* TORDON101 and TORDON K are Restricted Use Pesticides. Rainfall must occur within 6 days after TORDON application for soil activation.