

# SHELTERBELT WEED CONTROL

**Extension Bulletin W-1097, "Weed Control in Tree Plantings" provides additional information.**

Read and follow label directions. Most herbicides can injure trees if applied in a manner inconsistent with label directions. Only use herbicide formulations that are labeled in shelterbelts and only as described on the label. Eliminate perennial weeds prior to planting trees. Many herbicides are NOT labeled for over-the-top application to trees and must be applied through directed application. Some herbicides (Stinger) can be applied over-the-top to coniferous (cone bearing) trees but not over-the-top to deciduous (leaf bearing) trees. Some herbicides should be applied in fall or early spring before weeds germinate and trees begin leaf growth.

Herbicide	Product/A (ai/A)	Remarks																														
Casoron (dichlobenil)	100 to 200 lb 4G (4 to 8 lb)	Volatile, especially on wet soil. Preemergence herbicide for control of annual and perennial weeds in new plantings established at least 4 weeks. Most effective when applied in November or March just before rain or snow to activate and move dichlobenil into the soil.																														
Finale (glufosinate)	2 to 6 qt (0.5 to 1.5 lb)	Non-selective, non-residual, contact herbicide. Directed application only. Controls many annual and perennial weeds. Use 1.5 to 4 fl oz/gal for spot application. Use 3 to 4 qt/A for weeds less than 6 to 8 inches tall or 5 to 6 qt/A for weeds greater than 6 to 8 inches tall.																														
Fusilade DX (fluazifop-P)	1 to 1.5 pt (0.25 to 0.38 lb)	Translocated, postemergence, non-residual herbicide for control of annual and perennial grasses. Spot spray or apply over-the-top of woody species. Add oil additive at 1 qt/A.																														
Roundup / generic glyphosate	2% solution or Up to 1.125 lb ae See Remarks.	<table border="0"> <tr> <td>lb ae/gal</td> <td>lb ai/gal</td> <td>0.38 ae</td> <td>0.57 ae</td> <td>0.75 ae</td> <td>1.125ae</td> </tr> <tr> <td>3</td> <td>4</td> <td>= 16 fl oz</td> <td>24 fl oz</td> <td>32 fl oz</td> <td>48 fl oz</td> </tr> <tr> <td>4/4.17</td> <td>5.4/5.1</td> <td>= 12 fl oz</td> <td>18 fl oz</td> <td>24 fl oz</td> <td>36 fl oz</td> </tr> <tr> <td>4.5</td> <td>5.5</td> <td>= 11 fl oz</td> <td>16 fl oz</td> <td>22 fl oz</td> <td>32 fl oz</td> </tr> <tr> <td>5</td> <td>6.1</td> <td>= 10 fl oz</td> <td>15 fl oz</td> <td>20 fl oz</td> <td>30 fl oz</td> </tr> </table> <p>Non-selective, non-residual, translocated, postemergence herbicide. Effective on annual and perennial plants. Directed spray only. Add AMS at 8.5 to 17 lb/100 gal. Avoid contact to desirable species. For hand-held sprayers: use 1 to 1.5 fl oz/gal for small annual weeds or 2.5 to 3 fl oz/gal for perennial weeds. Refer to label for adjuvant use. A4-7 X1</p>	lb ae/gal	lb ai/gal	0.38 ae	0.57 ae	0.75 ae	1.125ae	3	4	= 16 fl oz	24 fl oz	32 fl oz	48 fl oz	4/4.17	5.4/5.1	= 12 fl oz	18 fl oz	24 fl oz	36 fl oz	4.5	5.5	= 11 fl oz	16 fl oz	22 fl oz	32 fl oz	5	6.1	= 10 fl oz	15 fl oz	20 fl oz	30 fl oz
lb ae/gal	lb ai/gal	0.38 ae	0.57 ae	0.75 ae	1.125ae																											
3	4	= 16 fl oz	24 fl oz	32 fl oz	48 fl oz																											
4/4.17	5.4/5.1	= 12 fl oz	18 fl oz	24 fl oz	36 fl oz																											
4.5	5.5	= 11 fl oz	16 fl oz	22 fl oz	32 fl oz																											
5	6.1	= 10 fl oz	15 fl oz	20 fl oz	30 fl oz																											
Goal (oxyfluorfen)	5 to 10 pt 1.6E 4 to 8 pt 2XL (1 to 2 lb)	Residual, preemergence or contact herbicide for control of broadleaf weeds including kochia and some grass weeds. <u>General:</u> Do not incorporate in soil. Apply POST with NIS at 0.25% v/v. Can be applied with a residual herbicide or as a split application. <u>Conifers:</u> Apply pre-transplant, POST or POST-directed prior to bud-break or after new foliage has hardened off. <u>Hardwoods:</u> Apply pre-transplant or POST-directed prior to bud-break. Spray only the base of deciduous trees and <u>not over- the-top</u> . If a non-dormant application is required, apply after new foliage has expanded and hardened off and NOT during periods of new growth. Avoid direct or indirect spray contact with foliage of deciduous trees.																														
Karmex/Direx (diuron)	2.5 to 5 lb DF (2 to 4)	Preemergence herbicide for plantings established at least one year. Apply as directed spray. Tolerance of labeled species is fair to very good. Do not use on light soil or in low, wet areas.																														
Plateau (imazapic)	8 to 12 fl oz (2 to 3 oz ae)	Apply with MSO at 2 qt/A. Controls many broadleaf weeds including leafy spurge. Can spray in and around tree species. Do not use on new plantings or seedling trees. Fall treatment will kill lilac and will cause temporary yellowing of spruce candles. Higher rates will reduce grass stands. Refer to label for list of tolerant tree species. Use caution on trees not listed on label.																														
Poast/Vantage (sethoxydim)	1.5 to 2.5 pt Poast 2.25 to 3.75 pt Vntg (0.1 to 0.5 lb)	Translocated, postemergence, non-residual herbicide for control of annual and perennial grasses. Spot spray or apply over-the-top of most woody species. Add oil additive at 1 qt/A. Spray to wet foliage.																														
Princep / generic simazine	2 to 4 qt 2.2 to 4.4 lb DF (2 to 4 lb)	<b>Use only on tree plantings at least three years old.</b> Preemergence herbicide that is most effective on annual broadleaf weeds. For adequate annual grass control apply with a preemergence, residual grass herbicide. Apply in fall or spring in full or split-rate applications. Use high rate in fine textured soils. Refer to label for list of registered tree species.																														
Stinger / generic clopyralid	0.25 to 0.67 pt (0.1 to 0.25 lb ae)	<b>Safe to only some conifer species.</b> Translocated, postemergence, broadleaf herbicide. Effective on weeds in the legume, smartweed (polygonum) and sunflower (composite) families. Provides excellent control of Canada thistle and knapweeds. Apply to actively growing weeds.																														
Stomp Pendulum (pendimethalin)	2 to 4 qt 3.3 to 6.6 lb WDG (2 to 4 lb)	Preemergence herbicide for residual control of annual grasses and some small-seeded broadleaf weeds. Apply before bud break to avoid potential growth suppression. Apply with preemergence broadleaf herbicide for broad spectrum annual weed control.																														
Treflan / generic trifluralin	1 to 2 pt (0.5 to 1 lb) 80 lb 5G (4 lb)	Apply PPI for new plantings or established trees. Gives season-long control of many annual grasses and some broadleaf weeds. Does not control weeds in the sunflower, legume or mustard family. Poor perennial weed control but may suppress field bindweed. Cultivation may be required for broadleaf weed control the first season. Apply with a residual preemergence broadleaf herbicide for broad-spectrum weed control.																														
2,4-D amine	1 to 2 qt 4EC/SL (1 to 2 lb ae)	Translocated, postemergence, broadleaf herbicide. Directed application only. Used to reduce infestations of perennial weeds. Broadleaf plants and deciduous trees very sensitive. Avoid drift to desirable species. Use only amine formulations. Use low pressure, coarse spray droplets and apply only in calm weather.																														

# TOTAL VEGETATION WEED CONTROL

Herbicides should be applied to bare soil to improve herbicide performance. Add glyphosate to kill existing vegetation if present. Initial high rates of a residual herbicide or combination of residual herbicides followed by treatment in subsequent years at rates of 1/3 to 2/3 the initial rate will give satisfactory extended control. For short term bare-ground control, non-residual herbicides can be applied several times per year. General precautions when using soil sterilant are:

1. Do not move treated soil and avoid applying where wind or water will move the treated soil.
2. Avoid spray drift and reduce drift potential by applying during lower wind and temperature, reducing spray pressure, and selecting nozzles that produce larger droplets.
3. Do not apply where roots of desirable vegetation may extend into the treated area.
4. Be familiar with and know the risks of the product to be applied.
5. Use a combination of herbicides with different modes of action to avoid resistant weeds.

Herbicide	Product/A (lb ai/A)	Remarks																									
Roundup / generic glyphosate	Up to 1.5 lb ae <b>See Remarks.</b>	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">lb ae/gal</td> <td style="text-align: left;">lb ai/gal</td> <td style="text-align: left;">0.75 ae</td> <td style="text-align: left;">1.125 ae</td> <td style="text-align: left;">1.5 ae</td> </tr> <tr> <td>3</td> <td>4</td> <td>= 32 fl oz</td> <td>48 fl oz</td> <td>64 fl oz</td> </tr> <tr> <td>4/4.17</td> <td>5.4/5.1</td> <td>= 24 fl oz</td> <td>36 fl oz</td> <td>48 fl oz</td> </tr> <tr> <td>4.5</td> <td>5.5</td> <td>= 22 fl oz</td> <td>32 fl oz</td> <td>44 fl oz</td> </tr> <tr> <td>5</td> <td>6.1</td> <td>= 20 fl oz</td> <td>30 fl oz</td> <td>40 fl oz</td> </tr> </table> <p>Non-selective, <b>non-residual</b>, translocated herbicide. Effective on annual and perennial grass and broadleaf plants. May be mixed with 2,4-D or dicamba for broad-spectrum of weed control. A4-6</p>	lb ae/gal	lb ai/gal	0.75 ae	1.125 ae	1.5 ae	3	4	= 32 fl oz	48 fl oz	64 fl oz	4/4.17	5.4/5.1	= 24 fl oz	36 fl oz	48 fl oz	4.5	5.5	= 22 fl oz	32 fl oz	44 fl oz	5	6.1	= 20 fl oz	30 fl oz	40 fl oz
lb ae/gal	lb ai/gal	0.75 ae	1.125 ae	1.5 ae																							
3	4	= 32 fl oz	48 fl oz	64 fl oz																							
4/4.17	5.4/5.1	= 24 fl oz	36 fl oz	48 fl oz																							
4.5	5.5	= 22 fl oz	32 fl oz	44 fl oz																							
5	6.1	= 20 fl oz	30 fl oz	40 fl oz																							
<b>Frequency</b> (topramazone)	<b>Up to 4 fl oz</b> (0.089 lb)	Selective, <b>residual</b> , translocated herbicide. Add MSO at 2 pt/A and AMS at up to 3 lb/A. For annual broadleaf and grass weeds. Some perennial grasses are tolerant. Apply with other herbicides registered for total vegetation weed control. Refer to label for control herbicides.																									
<b>Ignite 280</b> (glufosinate)	<b>3 to 5 pt</b> (0.88 to 1.46 lb)	Non-selective, <b>non-residual</b> contact herbicide for use in non-crop and farmsteads. Use 4 fl oz/gal for spot application. Apply with AMS at up to 3 lb/A.																									
paraquat <b>RUP</b>	<b>2 to 2.7 pt</b> (0.75 to 1 lb)	Non-selective, <b>non-residual</b> , contact herbicide. Controls only top-growth of perennial species. Add NIS and repeat application as necessary. Avoid drift and contact with desirable species.																									
Karmex / generic diuron	<b>1 to 8 gal</b> <b>5 to 15 lb</b> (4 to 32 lb)	Refer to label for use in irrigation ditches. Higher rates needed for perennial grasses and broadleaf weeds. Deep rooted perennials will require retreatment. <b>Long residual.</b>																									
<b>Hyvar X</b> <b>Hyvar X-L</b> (bromacil)	<b>3 to 15 lb DF</b> <b>0.75 to 6 gal L</b> (2.4 to 12 lb DF 1.5 to 12 lb L)	Apply PRE or EPOST. Requires moisture for activation. <table style="width: 100%; border-collapse: collapse;"> <tr> <td></td> <td style="text-align: center;">Annual weeds</td> <td style="text-align: center;">Perennial weeds</td> <td style="text-align: center;">Woody plants</td> </tr> <tr> <td>Hyvar X</td> <td style="text-align: center;">3 to 6 lb DF</td> <td style="text-align: center;">7 to 15 lb</td> <td style="text-align: center;">7 to 15 lb</td> </tr> <tr> <td>Hyvar X-L</td> <td style="text-align: center;">1 to 3 gal/A</td> <td style="text-align: center;">3 to 6 gal/A</td> <td style="text-align: center;">3 to 6 gal/A</td> </tr> </table> Non-corrosive and non-volatile. Refer to label for tank-mix options. <b>Bromacil can move horizontally in soil after application. Long residual.</b>		Annual weeds	Perennial weeds	Woody plants	Hyvar X	3 to 6 lb DF	7 to 15 lb	7 to 15 lb	Hyvar X-L	1 to 3 gal/A	3 to 6 gal/A	3 to 6 gal/A													
	Annual weeds	Perennial weeds	Woody plants																								
Hyvar X	3 to 6 lb DF	7 to 15 lb	7 to 15 lb																								
Hyvar X-L	1 to 3 gal/A	3 to 6 gal/A	3 to 6 gal/A																								
Krovar I / generic bromacil + diuron	<b>6 to 16 lb DF</b> (4.8 to 12.8 lb)	Apply PRE for control of annual grass and broadleaf weeds. Requires moisture for activation. Refer to label for registered tank-mixes. <b>Bromacil can move horizontally in soil after application. Long residual.</b>																									
<b>Oust XP</b> (sulfometuron)	<b>2 to 4 oz DF</b> (1.5 to 3 oz)	Use high rate in high moisture areas except in residential properties. Will control leafy spurge at 3 oz/A. Do not spray near water. <b>Long residual.</b>																									
<b>Landmark MP</b> (sulfometuron & chlorsulfuron)	<b>1 pkg/5 A to</b> <b>1 pkg/2.5 A</b> (1.5 to 3 oz)	Apply PRE to EPOST for broadleaf weeds. Will control/suppress leafy spurge. May be applied with Krovar I DF or Hyvar X to control ALS resistant weeds. <b>Long residual.</b>																									
<b>Plateau</b> (imazapic)	<b>8 to 12 fl oz</b> (2 to 3 oz ae)	Add MSO at 2 pt/A. Controls many broadleaf weeds including leafy spurge. May use up to 12 fl oz in combination with Arsenal, Karmex/generics, Roundup/generics, Oust, Sahara, and other total vegetation control herbicides. T12																									
<b>Pramitol 25E</b> (prometon)	<b>5 to 10 gal</b> (10 to 15 lb)	Use 5 to 7.5 gal/A for annual and susceptible perennial weeds, 7.5 to 10 gal/A for hard-to-kill perennial weeds. Apply before weeds emerge or EPOST. <b>Long residual.</b>																									
<b>Spike 20P</b> (tebuthiuron)	<b>3.75 to 20 lb 20P</b> <b>1.25 to 5 lb 80DF</b> (1 to 4 lb)	For long-term woody plant and some broadleaf weed control. Avoid application in areas with surface or high water tables. Do not exceed 4 lb ai/A in a three year period. See label for specific species controlled, grazing and haying restrictions. <b>Long residual.</b>																									
<b>Sahara</b> (imazapyr & diuron)	<b>3 to 4 A/copack or</b> <b>6.5 to 13 lb DF</b> (0.5 to 1 lb ae & 4 to 8 lb)	Provides residual PRE and POST control of annual weeds and POST control of perennial weeds. Apply Sahara POST with NIS at 0.25% v/v or MSO-type oil at 1.5 to 2 pt/A + UAN at 2 to 3 pt/A. Can be tank-mixed with Banvel/generics, Ignite, Garlon, Roundup/generics, Hyvar X, Krovar, and Oust. Do not apply with 2,4-D due to reduced weed control. <b>Long residual.</b>																									
<b>Throttle</b> (chlorsulfuron & sulfometuron & sulfentrazone)	<b>12.5 oz</b> (1.125 oz & 2.25 oz & 6 oz)	Provides residual PRE and POST control of annual weeds and POST control of perennial weeds. <b>Long residual.</b>																									

# TROUBLESOME WEEDS IN PASTURE, RANGELAND, AND NONCROPLAND

Weed	Herbicide	Product/A	Remarks and Paragraphs
<b>Buckbrush/ West. snowberry</b>	2,4-D amine or ester Cimarron X-tra / generics*	2 to 3 qt 4EC/SL 2 oz DF	Apply 2,4-D in spring only. Apply anytime during the growing season.
<b>Baby's breath</b>	Escort + Banvel + NIS	0.3 to 0.6 oz DF + 1 pt + 0.25% v/v	Best when applied from bolting to pre-flower.
<b>Black henbane</b>	Escort / generics* + NIS Banvel or Tordon / generics	0.5 to 1 oz DF + 0.25% v/v 1 to 3 pt	Apply herbicides during rosette to early flower. Tordon at 1 to 2 pt: Mix with 2,4-D at 1 to 2 pt/A.
<b>Burdock</b>	2,4-D amine or ester Cimarron X-tra / generics* Banvel / generics	1 qt 4EC/SL 0.25 to 0.5 oz DF 1 pt	Early summer prior to flowering.
<b>Curly dock</b>	Cimarron X-tra / generics* Banvel / generics Escort / generics* + NIS Starane 1.5/2.8EC/40DG Tordon + 2,4-D RUP	0.25 to 0.5 oz DF 0.5 to 1 pt 0.1 oz + 0.25 to 0.5% v/v 0.67 pt / 0.35 pt / 5 oz 0.5 to 1 pt + 1 to 2 pt 4EC/SL	Early spring to bolting is best. Herbicides will control curly dock when treated later in the summer but will need higher rates.
<b>Dandelion</b>	2,4-D amine or ester 2,4-D + MCPA + Banvel Express / generics* + NIS	2 to 4 pt 4EC/SL See label 0.167 to 0.33 oz + 0.25 to 0.5% v/v	Best in early fall following several light frosts. Express is labeled only on cropland and fallow.
<b>Foxtail barley</b>	Plateau + MSO + 28% UAN	8 to 12 fl oz + 1 qt/A + 1 qt/A	
<b>Goldenrod</b>	2,4-D amine or ester Cimarron X-tra / generics* Escort / generics* + NIS Tordon + 2,4-D RUP	3 to 6 pt 4EC/SL 1 oz DF 0.33 to 0.5 oz+0.25 to 0.5% v/v 1 pt + 1 qt 4EC/SL	Mid-June through flowering when plants are not stressed.
<b>Gumweed</b>	2,4-D amine or ester Cimarron X-tra / generics* Escort / generics* + NIS	1.5 to 2 pt 4EC/SL 1 oz DF 1 oz + 0.25 to 0.5% v/v	Early spring when plants are not stressed.
<b>Halogeton</b>	2,4-D amine or ester Escort / generics* + NIS Plateau + MSO	1 to 2 pt 4EC/SL 0.75 oz DF + 0.25% v/v 1 to 3 oz + 1 qt	2,4-D: Apply very early in spring prior to flowering. Escort: Apply to actively growing plants. Apply PRE to POST. Use higher rates for POST.
<b>Houndstongue</b>	2,4-D amine or ester Escort / generics* + NIS Plateau	2 pt 4EC/SL 1 to 2 oz + 0.25 to 0.5% v/v 8 to 12 oz	2,4-D: Apply to 1 <sup>st</sup> year plants from May to June. Met: Very effective through the growing season. Plateau: Controls plants applied PRE and POST.
<b>Mint</b>	Cimarron X-tra / generics* Banvel / generics + 2,4-D Escort / generics* + NIS Tordon + 2,4-D RUP	1 oz DF 1 pt + 1 qt 4EC/SL 1/3 to 1/2 oz + 0.25 to 0.5% v/v 1 pt + 1 qt 4EC/SL	Apply mid-June through flowering when plants are not stressed.
<b>Poison ivy</b>	Crossbow Garlon 3A or 4	1.5 gal 3 to 4 pt or 2 to 3 pt	Apply to plants actively growing.
<b>Prairie wild rose</b> (State flower of ND)	Cimarron X-tra / generics* Banvel / generics + 2,4-D Tordon + 2,4-D RUP	0.5 oz DF 1 pt + 1 qt 4EC/SL 0.5 pt + 1 qt 4EC/SL	Apply anytime during the growing season when plants are not stressed.
<b>Prickly pear cactus</b>	Tordon RUP	2 pt	Apply late-spring to early summer.
<b>Ragweed</b>	Cimarron X-tra / generics* Tordon + 2,4-D RUP	0.25 oz DF 1 pt + 1 qt 4EC/SL	Apply mid to late summer.
<b>Fringed sagebrush</b>	2,4-D ester Cimarron X-tra / generics* Tordon RUP	2 to 4 pt 4EC/SL 1 oz DF 1 to 2 pt	Best when applied in May. Plants should be leafed out and growing in good moisture conditions.
<b>Silver sagebrush</b>	2,4-D ester	2 to 4 pt 4EC/SL	
<b>Green sagewort</b>	2,4-D ester Tordon + 2,4-D RUP	4 pt 4EC/SL 1 pt + 1 qt 4EC/SL	
<b>WY big sagebrush</b>	2,4-D ester	4 pt 4EC/SL	
<b>Swamp smartweed</b>	Banvel / generics Escort / generics* + NIS Tordon + 2,4-D RUP Weedmaster	0.5 to 1 pt 0.1 oz + 0.25 to 0.5% v/v 1 pt + 1 qt 4EC/SL 1 pt	Apply to plants 1 to 4 inches tall.  Apply in mid to late summer.
<b>Trees, volunteer</b>	Crossbow Tordon+2,4-D+Remedy RUP	2% solution or 2 gal/A 2% or 1 pt + 1 qt 4EC/SL + 1 pt	Add NIS at 0.5% v/v. Apply after tree leaves have fully expanded.
<b>Wild licorice</b>	2,4-D amine or ester	1 to 2 pt 4EC/SL	Apply in early June when plants are not stressed.

\* Addition of 2,4-D at 1 to 2 pt/A may improve control.

## TROUBLESOME WEEDS IN CROPLAND AND OTHER AREAS

Weed	Herbicide	Product/A	Remarks and Paragraphs
<b>Alfalfa</b>	2,4-D + Banvel / generics Stinger / Curtail / generics	2 pt 4EC/SL + 0.5 pt 0.67 pt / 4 pt	Roundup / generics (2 to 4 pt/A) is less effective.
<b>Buffalobur</b>	Banvel / generic dicamba	0.5 pt	Cobra, 2,4-D, MCPA, and Pursuit are less effective.
<b>Cleavers/Catchweed bedstraw</b>	Starane 1.5/2.8EC/40DG Affinity / generics Orion	0.67 pt / 0.35 pt / 5 oz DF or SG - See label for rate. 17 oz	Ignite 280 is less effective. Apply Affinity with NIS at 0.125 to 0.25% v/v. Add NIS at 0.25% v/v.
<b>Cattail</b>	Roundup (only 4 lb ae/gal no adjuvant formulations) Arsenal / generic imazapyr	4.5 pt of 4 lb ae/gal conc. 2 to 4 pt (1% v/v solution)	Add an approved NIS at 0.5% v/v. Apply at early to full bloom stage (late July to mid August). A4 Apply to cattail with green foliage/after leaf elongation.
<b>Curly dock</b>	Stinger / Curtail / generics Most SU herbicides	0.67 pt / 2 pt See label for rates.	Stinger/Curtail has crop rotation restrictions. Apply SUs with NIS at 0.25 to 0.5% v/v.
<b>Common milkweed</b>	Roundup / generic glyt Express + 2,4-D + Banvel	2% 0.33 oz + 0.75 pt + 2 fl oz	Glyt - Suppression only. Will require retreatment. A4 Exp+2,4-D+Banvel - Apply high rates for spot treatment.
<b>Dandelion</b>	2,4-D amine or ester Stinger / generic clopyralid Banvel / generic dicamba Express / generics + NIS Roundup / generic glyt Callisto / Impact / Laudis	2 to 4 pt 4EC/SL Refer to premix label. 0.5 pt. Apply with 2,4-D DF or SG - See label for rate. 1 to 3 lb ae 3 / 0.75 / 3 fl oz	2,4-D - Best control when applied in fall. Stinger - Apply premixes - Curtail and WideMatch. Banvel - Residue may injure crop to be planted. Express - Partial control. Apply with 2,4-D Roundup - Best control when applied in fall. Callisto/others - Only partial control. Add oil adjuvant.
<b>Equisetum</b> (Horsetail) (Scouring rush)	MCPA Permit Python Remedy/Garlon Glean / Oust / generics	1 qt/A 4EC/SL 1.33 oz DF + MSO 1.33 oz DF + MSO 2 qt 3 oz DF + adjuvant	Glyphosate is less effective. Retreatment necessary. Permit - Apply two applications each at 1.33 oz/A. Python - Apply with NIS or oil adjuvant PRE or POST. Remedy/Garlon and MCPA - Apply fall or spring. Telar and Oust - Will result in total vegetation control.
<b>False chamomile</b>	Bronate / generics Most SU herbicides Orion Roundup / generic glyt	1 pt 4EC See label + adjuvant 17 oz 2 pt of a 3 lb ae/gal conc.	Bronate - Plants should be <4 inches tall. SU herbicides - Add NIS at 0.25% v/v. Add NIS at 0.25% v/v. Roundup - Avoid spraying desirable vegetation. A4
<b>Flax, volunteer</b>	Flexstar/Reflex Paramount Pursuit + Sencor (PRE) Starane 1.5/2.8EC/40DG Affinity / generics Express / generics + 2,4-D Pulsar + MCPA ester	0.5 to 0.75 pt + oil adjuvant 0.33 oz DF + MSO adjuvant 0.375 + 1 to 2 fl oz 0.67 pt / 0.35 pt / 5 oz DF or SG - See label for rate. DF or SG + 0.75 pt 4EC/SL 8.3 fl oz + 8.3 fl oz	Flexstar/Reflex - Apply oil adjuvant at 1% v/v. Paramount - Apply with MSO adjuvant at 1.5 pt/A. Apply with recommended adjuvants. Starane - No adjuvant needed. Affinity - Add NIS at 0.25% v/v. Express - Add NIS at 0.25% v/v. Apply to flax <4 inches tall.
<b>Hemp dogbane</b>	2,4-D + Banvel / generics Roundup / generic glyt	1 to 2 pt 4EC/SL + 1 pt 2% v/v	Banvel at 2 pt/A will injure some crops planted the next year. A4
<b>Horseweed</b> (Marestail)	2,4-D Callisto, Impact, Laudis FirstRate Hornet Python Spartan Harmony / generics Valor	1 to 2 pt 4EC/SL 3 fl oz, 0.75 fl oz, 2 to 3 fl oz 0.3 oz WDG + adjuvant 3 to 4 oz WDG + adjuvant 1 oz WDG 3 to 6 fl oz DF or SG - See label for rate. 2 to 3 oz WDG	2,4-D (preplant) to some labeled crops is effective. Roundup, atrazine, paraquat are less effective. Pursuit is not effective. Most herbicides listed have rotational crop restrictions. Follow label guidelines.
<b>Nightflowering catchfly</b>	Affinity / generics Harmony / generics Huskie (not confirmed)	DF or SG - See label for rate. DF or SG - See label for rate. 15 fl oz	Add NIS at 0.25% v/v. Add NIS at 0.25% v/v. Huskie also controls other cockle species.
<b>Sowthistle</b> (Ann. or perennial)	Cimarron X-tra / generics Ally / generics Express / generics	0.25 to 0.5 oz + 1 to 2 pt 1/10 oz DF + adjuvant DF or SG - See label for rate.	2,4-D, Banvel, Curtail, and Roundup are less effective. Apply Ally and Express with NIS at 0.25% v/v.
<b>Waterpod</b>	2,4-D, Pursuit or SUs	See label.	See Pursuit label for crop rotation restrictions.
<b>Wild cucumber</b>	Banvel / generics Roundup / generics	0.5 to 1 pt 0.38 to 0.75 lb ae	Banvel may injure or kill trees. Mechanical control or handweed is best. Banvel may injure trees. A4
<b>Yellow nutsedge</b>	Permit Basagran (sequential apps)	0.67 to 1.33 oz DF+adjuvant 1.5 pt fb 1.5 pt + oil adjuvant	Pursuit, Dual, Roundup are less effective. Permit may injure crops planted the following years.