

**CAUTION**  
**KEEP OUT OF REACH OF CHILDREN**  
**READ SAFETY DIRECTIONS BEFORE OPENING OR USING**

# **Restrain\* 200**

## **Herbicide**

**ACTIVE CONSTITUENT: 200 g/L FLUROXYPYR present as  
the METHYLHEPTYL ESTER**

**SOLVENT: 586 g/L LIQUID HYDROCARBON**

**GROUP I HERBICIDE**

For the control of a wide range of broadleaf Weeds in Fallow, Lucerne, Maize, Millets, Pastures, Poppies, Sorghum, Sugar cane, Sweet corn, Winter Cereals. Also for the control of Woody Weeds in Agricultural Non-Crop areas, Commercial and Industrial Areas, Forests, Pastures and Rights-of-way, as specified in the Directions for Use.

APVMA APPROVAL No: 60051 / 1005

**THIS LEAFLET IS PART OF THE LABEL**



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## DIRECTIONS FOR USE

### RESTRAINTS

DO NOT apply to plants which may be stressed (not actively growing) due to prolonged periods of extreme cold, moisture stress (water-logged or drought affected) poor nutrition, presence of disease, or previous herbicide treatment as reduced levels of control may result.

Thorough coverage of both foliage and stems, to the point of runoff, is essential for high volume applications (see **GENERAL INSTRUCTIONS**; application methods **WOODY WEED SITUATIONS** section).

DO NOT spray if rain is likely to occur within one hour.

**Table 1: Woody Weeds in Agricultural Non-Crop Areas and Rights-of-Way, Commercial and Industrial Areas, Forests and Pastures.**

- Legumes present at the time of spraying will be severely damaged.

<b>HIGH VOLUME APPLICATION: Dilute product with water.</b>			
See General Instructions – Application Method for application details			
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>STATE</b>	<b>RATE mL/ 100L WATER</b>
Bathurst burr Noogoora burr	Seedlings and young plants up to 40 cm high	NSW, NT, Qld, WA only	75
Black bindweed (climbing buckwheat)	Seedlings and young plants before flowering	NSW, Qld only	300
<i>Mitrosa pigra</i>	Apply from mid to late summer	NT, WA only	
Common sensitive plant	Seedlings and young plants up to flowering	Qld, WA only	500
Bellyache bush		Qld, NSW, WA only	
Blackberry nightshade Bokhara clover		NSW, Qld only	
Caltrop (yellow vine) ( <i>Tribulus terrestris</i> ) (T. micrococcus)	Seedlings and young plants up to 30 cm diameter		
Cobblers pegs	Up to 15 cm high		
Cockspar thorn	Up to 3 m high		
Creeping lantana	At flowering		
			Add Uptake* Spraying Oil (see <b>General Instructions</b> ; Oils and surfactants).

HIGH VOLUME APPLICATION: Dilute product with water. See General Instructions – Application Method for application details				
WEEDS CONTROLLED	WEED GROWTH STAGE	STATE	RATE mL/100 L WATER	CRITICAL COMMENTS
Crofton weed Mistflower	Seedlings and young plants up to flowering	NSW, Qld only	500	
Docks ( <i>Rumex</i> spp.)	Seedlings and rosettes up to 30 cm high			
Hexham scent	Seedlings and young plants up to flowering			<b>Boom spray:</b> Restrain 200 at 0.3 L/ha + 0.5 L/ha of 2,4-D amine (500 g/L)
Honey locust	Seedlings and young plants up to 2 m high			
Small flowered mallow ( <i>Marshmallow</i> ) ( <i>Malva parviflora</i> )	Seedlings and young plants up to flowering			
Yellowflower Devil's claw	Seedlings and young plants up to flowering			

**Table 1: Woody Weeds in Agricultural Non-Crop Areas and Rights-of-Way, Commercial and Industrial Areas, Forests and Pastures.**

<b>HIGH VOLUME APPLICATION: Dilute product with water.</b>			
<b>See General Instructions – Application Method for application details</b>			
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>STATE</b>	<b>RATE mL/100L WATER</b>
Lantana	Seedlings and regrowth 0.5 to 1.2 m high	NSW, Qld only	500
	Plants and regrowth 1.2 to 2 m high		1000
Blue heliotrope	Flowering		
Limebush	Infestations up to 1.5 m high only		
Madeira vine	Apply at time of active growth		500
Milkweed ( <i>Euphorbia heterophylla</i> )	3 leaf to flowering	Qld only	1000
Common sowthistle	Seedlings and young plants up to bolting	NSW, Qld only	500
	Seedling and young plants before flowering		600
Prickly acacia	Seedling and young plants up to 2 m high	Qld only	750
Sida spp.	Seedling and young plants up to flowering	NSW, NT, Qld, WA	1000
Broadleaf Pepper tree ( <i>Schinus terebinthifolius</i> )	Mature leaves, fruiting	Qld only	500
Flannel weed ( <i>Sida cordifolia</i> )			

**CRITICAL COMMENTS**

Apply to actively growing plants from October to April. Some regrowth may occur particularly when treating old woody plants with sparse canopies.

Repeat applications will be necessary to control subsequent germinations.

Add a surfactant (see **GENERAL INSTRUCTIONS**; Oils and surfactants).

Add Uptake\* Spraying Oil (see **GENERAL INSTRUCTIONS**; Oils and surfactants). Consult Tropical Weeds Research Centre, Charters Towers, for specific advice on application.

Winter application only. Contact Alan Fletcher Research Station for more information.

**Table 1: Woody Weeds in Agricultural Non-Crop Areas and Rights-of-Way, Commercial and Industrial Areas, Forests and Pastures.**

HIGH VOLUME APPLICATION: Dilute product with water. See General Instructions – Application Method for application details				
WEEDS CONTROLLED	WEED GROWTH STAGE	STATE	RATE mL/100L WATER	CRITICAL COMMENTS
Snakeweed (Dark and light blue)	Seedling and young plants before flowering	Qld only	750	Add Uptake® Spraying Oil (see GENERAL INSTRUCTIONS; Oils and surfactants).
Stinking Passion Flower	Established plants and regrowth	Qld, NT, WA	450	Use 70mL/15 L for a knapsack.
Wandering jew ( <i>Tradescantia albiflora</i> )	Young plants up to and including flowering	All States	1500	Some regrowth will usually occur and will require retreatment.
Wattles (including <i>Acacia auilacocarpa</i> <i>A. decora</i> <i>A. harpophylla</i> <i>A. leiocalyx</i> <i>A. salicina</i> )	Seedling plants or regrowth 0.5 to 1.2 m high	NSW, Qld only	500	Apply to actively growing plants when soil moisture is plentiful. Some regrowth may occur particularly when treating old woody plants with sparse canopies and under dry conditions.
	Plants or regrowth 1.2 to 2.0 m high only		1000	

**Table 1: Woody Weeds in Agricultural Non-Crop Areas and Rights-of-Way, Commercial and Industrial Areas, Forests and Pastures.**

<b>BASAL PARK AND CUT STUMP APPLICATION: Dilute product with diesel.</b> See General Instructions – Application Method for application details				
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>STATE</b>	<b>RATE L/100L of DIESEL</b>	<b>CRITICAL COMMENTS</b>
Celtis ( <i>Celtis sinensis</i> )	<b>Basal Bark only:</b> Young plants up to 2 m high and 20 cm basal diameter	Qld only	3.5	Treat stems from ground level to where multi-stemmed trunks branch.
	Up to 15 cm basal diameter		3	
Chinese apple	Up to 15 cm basal diameter		3	With basal bark, treat circumference of stem to a height of 45 cm from the ground. Contact the Land Protection Branch, Department of Lands, Qld, for further information on Chinese Apple.
Cockspur thorn	<b>Basal Bark only:</b> Up to 5 cm basal diameter		2	
Mimosa bush ( <i>Acacia farnesiana</i> )	Up to 5 cm basal diameter	Qld, WA only	3	
	Up to 10 cm basal diameter	Qld only	1.5	
Honey locust	Plants up to 10 cm basal diameter	Qld, NSW only	1.5	With basal bark, treat circumference of stem to a height of 45 cm from the ground. <b>For cut stump application</b> use a rate of 5L/100 diesel for all plant sizes. Contact the Land Protection Branch, Department of Lands, Qld, for further information on Honey Locust.
	Plants 10 to 20 cm basal diameter		3	
	Plants >20 cm basal diameter		5	
Sisal hemp ( <i>Agave</i> spp.)	All growth stages	Qld only	3	Treat as an overall spray. Contact The Land Protection Branch, Department of Lands, Qld for advice to control large infestations.
			10 mL undiluted product per plant	Lever out centre of plant with crowbar and immediately treat the exposed cut area.

**Table 1: Woody Weeds in Agricultural Non-Crop Areas and Rights-of-Way, Commercial and Industrial Areas, Forests and Pastures.**

<b>BROADCAST AND AERIAL APPLICATION: Dilute product with water.</b> See General Instructions – Application Method for application details					
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>STATE</b>	<b>RATE L/ha</b>	<b>CRITICAL COMMENTS</b>	
<i>Mimosa pigra</i>	Actively growing plants	NT, WA only	3L	Aerial application: Add Uptake Spraying Oil at the rate of 1 L/100 L spray mix. Apply to actively growing plants from mid to late summer. Contact the Department of Primary Industries and Fisheries, NT for further information.	
<b>LOW VOLUME, HIGH CONCENTRATE APPLICATION: Use a drench gun or gas-powered gun.</b> See General Instructions – Application Method for application details					
<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>STATE</b>	<b>RATE L/10L WATER</b>	<b>CRITICAL COMMENTS</b>	
Limebush	Isolated bushes up to 1.2 m high only	NSW, Qld only	1	Apply a 50 mL dose per 5m <sup>2</sup> of bush surface area.	
Tree violet ( <i>Hymenanthera dentata</i> )	Apply from late flowering to green fruit up to 1.2 m	NSW only		Apply a 50 mL dose per cubic metre of bush	

**Table 2: Established Grass Pastures**

<b>WEEDS CONTROLLED</b>	<b>WEED GROWTH STAGE</b>	<b>STATE</b>	<b>RATE L/ha</b>	<b>CRITICAL COMMENTS</b>
Blue billygoat weed Common sensitive plant Giant sensitive plant Spinyhead sida	Apply before flowering	Qld, WA only	1.5	Add Uptake Spraying Oil at 1 L/ha
St John's wort	Apply from bud to full bloom (usually late Nov to early Jan)	ACT, NSW and Vic only	3	Some regrowth will occur. Treat regrowth the following season for best results. Use at least 200 L water/ha.
Silverleaf nightshade	From onset of flowering to early berry - set (usually spring to mid-summer)	NSW only	0.75 or 0.375 +1.5 -2 2,4-D amine (500 g/L)	Add Uptake Spraying Oil at 1 L/ha. To ensure maximum effect, delay application until the majority of shoots have emerged. Follow - up treatment of regrowth is critical for best control.



Table 3: Sorghum, Maize, Millets and Sweet Corn (NSW & Qld Only)

CROP	CROP GROWTH STAGE	WEEDS CONTROLLED	WEED GROWTH STAGE	RATE L/ha	CRITICAL COMMENTS
Sorghum	Apply when secondary roots are present, from 4 fully expanded leaves (15 cm tall) up to boot (also see CRITICAL COMMENTS)	Annual ground cherry	2 to 8 leaf Up to 15 cm tall	0.5	<b>Sorghum:</b> From 8 leaf to boot stage, use dropper nozzles to prevent herbicide coming in contact with the crop's leaves and the growing point (meristem).
		Wild gooseberry ( <i>Physalis</i> spp.)	15 to 30 cm tall	0.75	
Maize & Sweet corn	Apply when secondary roots are present, from 3 fully expanded leaves (10 cm tall) up to just before tasselling (see CRITICAL COMMENTS)	Apple-of-Peru	Seedling plants up to 15 cm tall		<b>Maize and sweet corn:</b> From 6 leaf to just before tasselling, use dropper nozzles to prevent the herbicides coming in contact with the crop's leaves and the growing point (meristem).
		Bathurst burr Noogoora burr	2 to 8 leaf Up to 20 cm tall	0.5	
		Pigweed ( <i>Portulaca oleracea</i> )	20 to 50 cm tall Up to 10 cm diameter 10 to 30 cm diameter	0.75 0.5 0.75	
Millets	Spray when secondary roots have developed, usually early to mid-tillering, and not later than before heads start to form at the base of tillers. (See CRITICAL COMMENTS)	Sesbania pea	2 to 6 leaf Up to 10 cm tall	1.5	<b>Millets: DO NOT</b> use mixes with atrazine.  ( <sup>1</sup> ) This treatment may be slightly damaging to the crop.  To minimise crop damage apply using dropper nozzles <b>at all crop stages</b> .
		Silverleaf nightshade (NSW only) ( <sup>1</sup> )	Full flower to early berry	0.75 + Uptake at 1 L/ha	
		Starburr ( <i>Acanthospermum hispidum</i> ) (Qld only)	Up to 12 leaf and before flowering	1.5 or 0.75 + 2 L atrazine (500 g/L)	
		Thornapples ( <i>Datura</i> spp.)	2 to 8 leaf Up to 15 cm tall	0.75	
		Volunteer sunflower	2 to 5 leaf Up to 20 cm tall	1	

Table 3: Sorghum, Maize, Millets and Sweet Corn (NSW & Qld Only)

Restrain 200 in tank - mixes with atrazine: Sorghum, Maize and Sweet corn.					
CROP	CROP GROWTH STAGE	WEEDS CONTROLLED	WEED GROWTH STAGE	RATE L/ha	CRITICAL COMMENTS
Sorghum Maize & sweetcorn Millets (continued)	Spray when secondary roots have developed, usually early to mid-tiltering, and not later than before heads start to form at the base of tillers. (See CRITICAL COMMENTS)	<i>Amaranthus</i> spp. including: Boggabri weed, Dwarf amaranth, Green amaranth, Redshank, Anoda weed, Bladder ketmia Black pigweed ( <i>Trianthema portulacastrum</i> ) Caltrope (yellow vine), including <i>Tribulus terrestris</i> , <i>T. microoculus</i> and <i>T. maximus</i> Cowvine (peach vine) ( <i>Ipomoea lonchophylla</i> ) Hairy wandering jew ( <i>Commelina benghalensis</i> ) Mintweed  <i>Euphorbia davidii</i>	Seedling plants up to 15 cm tall or rosettes up to 15 cm diameter	0.5 + 1.5 of atrazine flowable (500 g/L) or 0.75 + 2 of atrazine flowable (500 g/L)	<b>Use the low rate</b> (0.5 + 1.5 L) when weeds are small (5-7 cm tall / diameter).  <b>Use the high rate</b> (0.75 + 2 L) when the weeds are larger (7- 15 cm tall / diameter).  Restrain 200 is generally more compatible with <b>Liquid atrazine products</b> (see <b>GENERAL INSTRUCTIONS; compatibility section</b> ).  Add a surfactant (See <b>GENERAL INSTRUCTIONS; Oils and surfactants</b> ).  <b>DO NOT</b> add an oil to mixtures of Restrain 200 and atrazine.
<b>Sweet Corn: Tasmania Only</b>					
CROP	CROP GROWTH STAGE	WEEDS CONTROLLED	WEED GROWTH STAGE	RATE L/ha	CRITICAL COMMENTS
Sweet corn only	3 to 5 leaf	Blackberry nightshade Volunteer potatoes	3 to 5 leaf	1	

Table 4: Winter Cereals (Wheat, Barley, Oats and Triticale)

CROP GROWTH STAGE	WEEDS CONTROLLED	WEED GROWTH STAGE	STATE	RATE L/ha	CRITICAL COMMENTS
Apply from 3 leaf to flag (Zadoks 13 to 39)	Bedstraw ( <i>Galium tricomutum</i> )	1 to 3 whorl	Vic, SA, WA	1	<sup>(1)</sup> Add either Uptake or a surfactant (see GENERAL INSTRUCTIONS; Oils and surfactants).
	Cleavers ( <i>Galium aparine</i> )		NSW, Vic only		
	Black bindweed ( <i>Climbing buckwheat</i> )	2 to 4 leaf 2 to 6 leaf	NSW, Qld only	0.5 <sup>(1)</sup> 0.75 or 0.5 + 5g Metsulfuron methyl <sup>(1)</sup>	Useful suppression only. <b>Mixtures:</b> Mixing partners with Restrain 200 may reduce crop selectivity. Apply at crop growth stages according to the mixing partner's recommendation.
	Common sowthistle ( <i>Sonchus oleraceus</i> )	2 to 5 leaf		1	
	Deadnettle	2 to 6 leaf	NSW, SA, Qld, WA	1.5 or 0.5 + 5g Metsulfuron methyl <sup>(1)</sup>	
	Spiny emex (Doublegee, Three cornered jack)	2 to 4 leaf			
	Prickly lettuce	2 to 5 leaf	NSW, Qld, Tas, Vic, WA	1	Plants 15 to 30 cm tall will only be suppressed.
	Volunteer lupins	2 to 8 leaf	NSW, Vic, WA only	1.5	
	Volunteer potato	10 to 15 cm tall	WA and Tas only		
	Wireweed	2 to 3 leaf	NSW, Qld, SA, Tas, Vic, WA	NSW and Qld only	0.5 + 5 g Metsulfuron methyl <sup>(1)</sup>
Bittercress ( <i>Coronopus didymus</i> ) Mustards Shepherd's purse Turnip weed Wild radish Wild turnip	Up to 8 leaf and up to 15 cm diameter	Qld, NSW, Vic, SA, Tas, WA	0.5 to 1.5 + Metsulfuron methyl <sup>(1)</sup> or Eclipse <sup>(1)</sup> or MCPA LVE or MCPA amine		

Table 5: Summer Fallow

WEEDS CONTROLLED	WEED GROWTH STAGE	STATE	RATE mL/100L WATER	CRITICAL COMMENTS
Annual ground cherry Wild gooseberry ( <i>Physalis</i> spp.)	2 to 8 leaf, up to 15 cm tall	NSW, Qld only	0.75 <sup>(2)</sup>	<sup>(1)</sup> Add Uptake* Spraying Oil (see <b>GENERAL INSTRUCTIONS</b> ); Oils and surfactants).  When mixing with Glyphosate 450 to control both grass and broadleaf weeds, refer to the Glyphosate 450 label for use rates and adjuvants recommended for the grasses (see <b>GENERAL INSTRUCTIONS</b> ; compatibility section).  <sup>(2)</sup> Delay treatment until the maximum number of shoots have emerged, but before the onset of fruiting (late summer).  DO NOT treat plants showing symptoms from previous treatment. Use the high rate when longer term weed control (6- 10 months) is required and delay planting crops during this period. The low rate will require follow-up treatments.
	2 to 8 leaf, up to 20 cm tall	NSW, Qld, Vic, WA only	0.5 + 1.2 Glyphosate 450	
Bathurst burr Noogoora burr	Pre-flowering	NSW, Qld only	0.5 + 1.0 Glyphosate 450	
Bellvine Bladder ketmia	4 to 8 leaf, up to 10 cm tall		0.75 <sup>(1)</sup>	
Cowvine (Peach vine) <i>Ipomoea tomentosifolia</i>	2 to 10 leaf up to 10 cm diameter		0.75 + 1.0 Glyphosate 450	
Caltrop (yellow vine), including <i>Trifolium terrestris</i> , <i>T. maximum</i> and <i>T. microccus</i>	Up to 15 cm diameter		0.75 <sup>(1)</sup>	
Pigweed ( <i>Portulaca oleracea</i> )	Up to 10 cm diameter		0.75 + 1.0 Glyphosate 450	
	Up to 60 cm diameter		1 <sup>(1)</sup> or 0.5 + 1.2 Glyphosate 450	
<i>Polymeria pusilla</i>	2 to 10 leaf up to 20 cm diameter		1 <sup>(1)</sup> or 0.375 + 0.8 Glyphosate 450	
Rhynchosia	Seedlings to early flowering		1 <sup>(1)</sup>	
Smallflower mallow or Marshmallow ( <i>Malva parviflora</i> )	Up to 8 leaf up to 20 cm diameter		0.75 <sup>(1)</sup> or 0.5 + 1.2 Glyphosate 450	
Thornapples ( <i>Datura</i> spp.)	2 to 8 leaf up to 15 cm diameter	NSW, Qld, WA only		

Table 5: Summer Fallow

WEEDS CONTROLLED	WEED GROWTH STAGE	STATE	RATE mL/100L WATER	CRITICAL COMMENTS
Sesbania pea	2 to 6 leaf up to 10 cm tall	NSW, Qld only	1.5 <sup>(1)</sup> or 0.5 + 1.2 Glyphosate 450	
Perennial Ground Cherry ( <i>Physalis virginiana</i> ) <sup>(2)</sup>	Bud to early flowering up to 20 cm tall		1.5 or 3 <sup>(1)</sup>	
Silverleaf nightshade	Full flower to early berry-set (usually Dec – Feb)	NSW only	0.75 of 0.375 + 1.5 – 2 2,4-D amine (500 g/L)	Add Uptake Spraying Oil at the rate of 1 L/100 L spray mixture. To ensure maximum effect, delay application until the majority of shoots have emerged. Follow-up treatment will be required to control regrowth and is critical for optimum control. If wanting to prevent seed set repeat applications may be needed in the same season, although this does not lead to better long term control.
Volunteer peanuts	Up to 15 cm diameter	Qld only	1 + 4.5 atrazine flowable (500 g/L)	Add a surfactant (see <b>General Instructions</b> ; Oils and surfactants). <b>Important:</b> see <b>GENERAL INSTRUCTIONS</b> ; compatibility section).
Volunteer sunflowers	2 to 5 leaf up to 20 cm	NSW, Qld only	1	Add Uptake Spraying Oil (see <b>General Instructions</b> ; Oils and surfactants section).

Table 6: Winter Fallow

WEEDS CONTROLLED	WEED GROWTH STAGE	STATE	RATE L/ha	CRITICAL COMMENTS
Bedstraw ( <i>Gallium tricornutum</i> )	Up to 5 whorl	Vic, SA, WA only	1 <sup>(1)</sup>	<p><sup>(1)</sup> Add Uptake Spraying Oil (see <b>GENERAL INSTRUCTIONS</b>; Oils and surfactants section).</p> <p><sup>(2)</sup> Add Uptake or a surfactant (see <b>GENERAL INSTRUCTIONS</b>; Oils and surfactants section).</p> <p>When mixing with Glyphosate 450 to control both grass and broadleaf weeds, refer to the Roundup CT label for use rates and adjuvants recommended for the grasses (see <b>GENERAL INSTRUCTIONS</b>; Compatibility Section).</p>
Cleavers ( <i>Gallium aparine</i> )		NSW, Vic only	0.75 <sup>(1)</sup>	
Black bindweed (Climbing buckwheat)	2 to 8 leaf up to 10 cm diameter	NSW, Qld only	1.0 <sup>(1)</sup> or 0.5 + 0.6 Glyphosate 450	
Common sowthistle ( <i>Sonchus oleraceus</i> )	2 to 5 leaf up to 10 cm diameter		1.5 <sup>(1)</sup> or 0.5 <sup>(2)</sup> + 5 g Metsulfuron methyl (600 g/kg)	
Prickly lettuce			1.5 <sup>(1)</sup> or 0.5 <sup>(2)</sup> + 5 g Metsulfuron methyl (600 g/kg) or 0.5 <sup>(2)</sup> + 0.6 Glyphosate 450	
Spiny emex (Doublegee, Three cornered jack)	2 to 8 leaf			
Wireweed	2 to 3 leaf up to 10 cm tall			

Table 7: Sugar cane (Qld, NSW, NT and WA only)

CROP STAGE GROWTH	WEEDS CONTROLLED	WEED GROWTH STAGE	RATE L/ha	CRITICAL COMMENTS
From early tillering to maturity	Balsam pear Blackberry nightshade Blue billygoat weed Centro Cowpea Giant sensitive plant Lablab bean Noogoora burr Phasey bean Pinkburr Prickly African cucumber Spinyhead sida Stinking passion flower (seedlings only)	Apply from 2 to 3 leaf until flowering	<b>Ground:</b> 1.3 <b>Aerial:</b> 1.5	For optimal weed control, delay application until just before the "close-in" stage. <b>Aerial application:</b> Apply in not less than 60 L/ha water and add Uptake Spraying Oil at 1 L/100 L spray mixture. <b>Ground application:</b> Apply in 100 – 400 L/ha water and add Uptake Spraying Oil at 500 mL/100 L of spray mixture.
	Bellvine, Morning glory Red or pink convolvulus Star-of-Bethlehem		As above + 1 2,4-D amine (500 g/L)	
Stinking passion flower	Established or ratoon plants with at least 1.0 m of regrowth		<b>High volume:</b> 450 mL/100 L water <b>Knapsack</b> 70 mL/15 L water	
	Milkweed ( <i>Euphorbia heterophylla</i> )	Seedlings and young plants up to flowering.	3 or 2.3 + 4 atazine flowable (500 g/L)	Better control will be achieved with the atrazine mixture. Delay application until just before the cane reaches the "close-in" stage. This will improve control and minimise the number of seedlings that germinate.

Table 8: Lucerne (NSW only)

CROP STAGE GROWTH	WEEDS CONTROLLED	WEED GROWTH STAGE	RATE L/ha	CRITICAL COMMENTS
Established crops at least eighteen months old	Annual ground cherry Bathurst burr Noogoora burr Wild gooseberry	2 to 8 leaf up to 15 cm high	0.5	To minimise crop injury and to maximise weed control, cut, slash or heavily graze the lucerne before application. Wherever possible, irrigate before application to stimulate weed growth.  <b>DO NOT</b> treat crops growing on sandy or stony soils.  <b>DO NOT</b> treat crops after the summer growing season (after end of March). To broaden the spectrum of weeds controlled, Restrain 200 can be mixed with 2.4-DB Amine.
	Pigweed	Up to 10 cm diameter		

Table 9: Poppies (Tas only)

CROP STAGE GROWTH	WEEDS CONTROLLED	WEED GROWTH STAGE	RATE L/ha	CRITICAL COMMENTS
4 to 6 leaf	Cleavers Fumitory	2 to 6 leaf	1	
	Shepherd's purse Wireweed		1 + 5 Asulox	
8 to 10 leaf	Common sowthistle Prickly lettuce	2 to 5 leaf	1	<b>DO NOT</b> apply Restrain 200 to poppies later than the 8 to 10 leaf growth stage as a reduction of alkaloid content could occur.
	Black nightshade	Cotyledon to 4 leaf	1.5	
	Fumitory Volunteer potato	6 to 10 leaf Initiation to flower bud		

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL UNLESS AUTHORISED UNDER APPROPRIATE LEGISLATION.**

**WITHOLDING PERIODS**

**CROPS AND PASTURES:**

**DO NOT** GRAZE FAILED CROPS AND TREATED PASTURES OR CUT FOR STOCK FOOD FOR 7 DAYS AFTER APPLICATION.

**POPPIES:**

**DO NOT** SPRAY POPPIES LATER THAN 10 WEEKS BEFORE HARVEST.



**MINIMUM RECROPPING PERIODS**

<b>PLANT-BACK PERIODS FOR CROPS FOLLOWING THE APPLICATION OF RESTRAIN 200 FOR RATES UP TO 1.5 L/HA</b>			
<b>RATE L/ha</b>	0.375	0.75	1.5
<b>CROP</b>	<b>DAYS</b>		
Barley	7	7	7
Wheat	7	7	7
Chickpea	7	7	7
Cotton	14	14	28
Soybean	7	7	14
Sunflower	7	7	7
Maize	7	7	7
Sorghum	7	7	7

**NOTE:** Before using Restrain 200 in tank mixes with other herbicides, check the plant-back information on all product labels. The time between spraying and planting will be determined by the most residual product, i.e. the product with the longest plant-back period.

## GENERAL INSTRUCTIONS

### MIXING

Restrain 200 may be mixed with water or diesel.

Mix only sufficient chemical for each day's use and avoid storing.

**Mixing in Water:** Half fill the spray tank with water and add the required quantity of Restrain 200 and complete filling. Agitate continuously to ensure thorough mixing before and during application.

**Mixing in Diesel:** Half fill the tank with diesel and add the required quantity of Restrain 200. Add the remainder of the diesel and agitate or shake to mix contents.

**Tank mixtures:** Wettable powder or dry flowable formulations (e.g. water dispersible granules) should be added to the spray tank first, followed by suspension concentrates (flowables), water soluble salts and then emulsifiable concentrate formulations (Restrain 200). Add spraying oils and surfactants (wettors) last.

### OILS AND SURFACTANTS

#### Oils

Use only Uptake Spraying Oil at the rate of 500 mL/100 L of spray mix. When using less than 100 L/ha spray volume, ensure a minimum of 250 mL/ha of Uptake is used, unless 1 L/100 L or 1 L/ha is specified.

#### Surfactants (wettors)

Use a 100% concentrate non-ionic surfactant such as BS1000® at 100 mL/100 L of spray mix where required.

### COMPATIBILITY

Restrain 200 is compatible with the herbicides listed. Follow any regional restrictions, and all directions and restrictions on the label, of any chemical mixed with Restrain 200.

Atrazine (see below)	Glyphosate 360
Metsulfuron methyl (600 g/kg)	Glyphosate 450
Broadstrike	Topik 240 EC (see below)
Eclipse	Tordon 75-D
Diclofop methyl	Tordon 242
Tricopyr (600 g/L)	Touchdown
Lontrel	2,4-D
MCPA	2,4-DB
Puma S	

## ATRAZINE

### AVOID USING HARD WATER WHEREVER POSSIBLE.

Where hard water cannot be avoided, the addition of CALGON water conditioning agent to the spray tank, at 100 g/100 L water, before adding any herbicide may improve compatibility.

### AGITATION IS VERY IMPORTANT WHEN MIXING RESTRAIN AND ATRAZINE.

Restrain plus atrazine tank mixes must be agitated vigorously and continuously during mixing and application. After mixing DO NOT allow to stand without agitation. Ensure that the time from mixing to the end of application is not more than 2 hours. If settling out occurs re-suspension is difficult, even with vigorous agitation.

Agitation using only the pump's by-pass is usually inadequate, particularly with larger tanks (more than 2000 L). Additional mechanical agitation will be necessary in large tanks, computer sprayers and mixing tanks.

When additional surfactant is required, add a 100% concentrate non-ionic surfactant at 100 mL/100 L of spray mix. DO NOT use a spraying oil when tank mixing Restrain 200 and atrazine.

### GUIDELINES FOR TANK - MIXING RESTRAIN 200 AND COMMON ATRAZINE FORMULATIONS

TANK MIX (L/HA)	RATE	WATER HARDNESS			MINIMUM WATER VOLUME (L/HA)		CRITICAL COMMENTS
		Soft	Medium	Hard	Ground	Aerial	
Restrain	0.75	✓	✓	✓	50	35	
Restrain + Gesaprim 500FW	0.75 + 2	✓	✓	✓	50 – 100	35	Precipitate can be easily resuspended
Restrain + Atradex 900WG	0.75 + 1.1	✓	✗	✗	100	Do not use	Precipitate may be difficult to resuspend and may block nozzles.
Restrain + Nu-Trazine DF	0.75 + 1.1	✓	✗	✗	100	Do not use	Sediment may be difficult to resuspend and may block nozzles.
Restrain + Nu-Trazine 500FW	0.75 + 2	✓	✓	✗	100	Do not use	Precipitate may be difficult to resuspend and may block nozzles.

## **TOPIK 240 EC**

Always use Uptake Spraying Oil with Restrain 200 + Topik 240 EC tank-mixes at 500 mL/100 L of spray mix with a minimum of 250 mL/ha.

DO NOT mix Restrain 200 with Topik 240 EC if the grass weeds are not actively growing. Always use the maximum label rate of Topik 240 EC for the appropriate grass growth stage.

DO NOT use Restrain at more than 0.75 L/ha in tank mixes with Topik 240 EC.

## **GLYPHOSATE 450**

When mixing Restrain with Glyphosate 450 to control both grass and broadleaf weeds, refer to the Glyphosate 450 label for use rates and adjuvants recommended for the grasses. DO NOT use Glyphosate 450 at less than 1.2 L/ha in tank mixes with Restrain 200, when barnyard grass, buffongrass, crowfoot grass, native millet and liverseed grass are the target species.

## **APPLICATION METHODS and WATER RATES**

### **BROADCAST APPLICATION IN CROPPING, PASTURE AND FALLOW SITUATIONS**

#### **A. Ground application (Boom)**

Apply Restrain 200 with an accurately calibrated boom sprayer, in at least 50 L/ha water (100 - 400 L/ha for sugar cane).

Flat nozzles are recommended using pressures in the range 200 to 300 kPa.

Set the boom at a height to ensure a double overlap of the nozzle patterns.

#### **B. Ground directed application (Dropper nozzles)**

To minimise crop effects, dropper nozzles should be used in sorghum when the crop is beyond the 8 leaf growth stage and in maize and sweet corn when the crop is beyond the 6 leaf growth stage.

Adjust the nozzles to direct the spray into the base of the crop and away from the leaves and the growing point. See manufacturers directions for setting up and calibration of dropper nozzles

#### **C. Aerial application**

Apply in a minimum volume of at least 35 L/ha water (60 L/ha in sugarcane).

Use equipment calibrated to produce droplets with an average diameter (Volume Mean Diameter; VMD) of 250 – 350 microns.

DO NOT apply when the temperature is above 30°C, when there is no wind or when the wind is blowing toward susceptible crops.

### **WOODY WEED SITUATIONS**

Weeds must be actively growing to attain optimal effect. Delay the treatment of regrowth following bulldozing, slashing, burning, ploughing or a previous chemical treatment until it has at least 1 metre of new, vigorous, growth.

## **A. High Volume Application**

### **Hand Gun**

Apply the recommended mix to obtain full coverage of leaves and stems using a number 6 – 8 tip at 700 to 1500 kPa. To obtain good coverage, a spray volume of 1500 to 4000 L/ha (15 to 40 L/100 m<sup>2</sup>) is required per infested hectare.

Ensure thorough coverage to the point of runoff.

### **Knapsack**

Knapsack sprayers may be used on smaller infestations where penetration and coverage of the canopy is easier to achieve. Use the same use rate and spray techniques as for handgun application.

## **B. Low Volume, High Concentrate Application**

### **Drench Gun or Gas-Powered Gun**

Apply the recommended mixture uniformly across the foliage by applying 50 mL shots to cover 4 to 5 m<sup>2</sup> of surface area of plant. This is approximately equivalent to 20 droplets per cm<sup>2</sup> of the leaf surface. Use a marking agent as recommended by the equivalent manufacturer to check spray coverage.

## **C. Basal Bark and Cut Stump Application**

### **Basal Bark**

DO NOT apply to wet stems as this can repel the diesel mixture.

Spray or paint the recommended mixture around the base of each stem from ground level to a height of at least 30 cm from the ground, wetting the bark to the point of runoff.

Apply with a paint brush or a pressure sprayer with an approximate lance and solid cone nozzle. If using spray equipment use low pressures (</\_ 200 kPa) sufficient to form a cone of spray.

Old rough bark will require more spray than smooth or young thin bark.

### **Cut Stump**

Apply the recommended mixture liberally to the freshly cut stump immediately after cutting.

Apply by spraying or painting the cut surface and sides of the stump.

Best results are obtained when the stems are cut less than 15 cm above the ground.

## **CLEANING SPRAY EQUIPMENT**

**Rinse water should be discharged onto a designated disposal area or, if this is unavailable, onto wasteland away from desirable plants and water courses.**

**Cleaning equipment after using water-based sprays:**

**Rinsing:** After using Restrain 200 Herbicide, empty the tank completely and drain the whole system. Thoroughly wash inside the spray unit using a pressure hose. Drain and clean any filters in the tank, pump, lines, hoses and nozzles.

After cleaning the tank as above, quarter fill the clean water and circulate through the pump, lines and nozzles. Drain and repeat the rinsing procedure twice.

**Decontamination (before spraying cotton and other sensitive crops; see PROTECTION OF CROPS):** Wash the tank and rinse the system as above. Then quarter fill the tank and add an alkali detergent (e.g. liquid SURF, OMO, DRIVE) at 500 mL/100L of water or the powder equivalent at 500 g/100 L and circulate throughout the system for at least fifteen minutes.

Drain the whole system. Remove filters and nozzles and clean them separately. Finally flush the system with clean water and allow to drain.

**Cleaning equipment after using diesel-based sprays:**

On completion of spraying, use a degreaser such as Caltex Kwik-D-Grease to remove traces of diesel from the sprayer. Rinse tank and spray through nozzles with water to remove degreaser.

Then quarter fill the tank and add an alkali detergent (e.g. liquid SURF, OMO, DRIVE) at 50 mL/10L of water or the powder equivalent at 50 g/10 L. Shake sprayer to circulate the washing solution throughout the sprayer, then spray the solution through the nozzles. Rinse well with clean water to remove the detergent.

To clean brushes and containers, spray liberally with degreaser. Hose off with clean water and repeat using detergents as above.

DO NOT use this equipment for any other purpose.

## RESISTANT WEEDS WARNING

GROUP	I	HERBICIDE
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Restrain 200 Herbicide is a member of the pyridine group of herbicides. The product has the disrupters of plant cell growth mode of action. For weed resistance management, the product is a Group I Herbicide.

Some naturally -occurring weed biotypes resistant to the product and other Group I herbicides may exist through normal genetic variability in any weed population. The resistant individual can eventually dominate the weed population if these herbicides are used repeatedly. These resistant weeds will not be controlled by this product or other Group I herbicides.

Since the occurrence of resistant weeds is difficult to detect prior to use, Grow Choice Pty Ltd accepts no liability for any losses that may result from the failure of this product to control resistant weeds.

Strategies to minimise the risk of herbicide resistance are available. Contact your farm chemical supplier, consultant, local Department of Agriculture, or Grow Choice representative.

## **PROTECTION OF CROPS, NATIVE AND OTHER NON - TARGET PLANTS**

Susceptible crops include but are not limited to clovers, cotton, fruit, hops, lupins, ornamentals, peas, pine tree, potatoes, navy beans, safflower, shade trees, soybeans, sunflower, tobacco, tomatoes, vegetables and vines.

Restrain 200 can be damaging to susceptible crops during both growing and dormant periods.

Grasses are normally unaffected by Restrain 200 and establish quickly after treatment. Transitory damage can occur on some species particularly those that spread by stolons such as cough grass (*Cynodon dactylon*), Kikuyu grass and carpet grass (*Axonopus* sp.)

DO NOT allow spray to drift onto susceptible crops, shade trees and *Pinus* spp.

DO NOT use under weather conditions or from spraying equipment which could cause spray to drift onto nearby susceptible plants.

## **PROTECTION OF LIVESTOCK**

DO NOT graze or cut treated crops or plants for food except as specified under withholding periods.

Poisonous plants may become more palatable after spraying therefore stock should be kept out of the area until the plants have died down.

DO NOT allow stock to re - enter paddocks containing treated poisonous plants, until the plants have died down.

## **PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT**

DO NOT contaminate streams, rivers or waterways with the chemical or used containers.

Alongside waterways, treat only noxious weeds and poisonous plants.

## **STORAGE AND DISPOSAL**

### **Storage for all containers**

Store in closed, original container in a cool, well ventilated area. Do not store for prolonged periods in direct sunlight.

### **Disposal**

#### **Recycled containers:**

This container can be recycled if it is clean, dry, free of visible residues and has the drumMUSTER logo visible.

Triple or pressure rinse container before disposal. Dispose of rinsate by adding to the spray tank. Do not dispose of undiluted chemicals on site. Wash outside of the container and the cap. Store cleaned container in a sheltered place with cap removed. It will then be acceptable for recycling at a drumMUSTER collection or similar container management site. The cap should not be replaced but may be taken separately.

### **Non-recycled containers:**

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. Break, crush or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

### **Refillable containers**

Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

### **SMALL SPILL MANAGEMENT**

Wear protective equipment (See **SAFETY DIRECTIONS**). Apply absorbent material such as earth, sand, clay granules or cat litter to the spill. Sweep up material for disposal when absorption is completed and contain in a refuse vessel for disposal (see **STORAGE AND DISPOSAL** section).

If necessary wash the spill area with an alkali detergent and water and absorb the wash liquid for disposal.

### **SAFETY DIRECTIONS**

Avoid contact with eyes and skin. When opening the container, preparing the spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow length PVC gloves, a face shield or goggles. Wash hands after use.

After each day's use, wash gloves, face shield or goggles and contaminated clothing.

### **FIRST AID**

If poisoning occurs, contact a doctor or Poisons Information Centre (PHONE AUSTRALIA: 13 11 26).

If swallowed DO NOT induce vomiting. Give a glass of water.

### **MATERIAL SAFETY DATA SHEET**

Additional information is listed on the Material Safety Data Sheet which is available from the supplier.

### **NOTICE TO BUYER**

Grow Choice Pty. Ltd. will not be held liable for any loss, injury or damage, indirect or consequential, arising from the sale, supply, use or application of this product. The product is not to be used for any purpose or in any way contrary to label instructions.