

Assignment Name: _____	Phone number: _____
Farm Number(s): _____	ChemCert accreditation No: _____
Mill Area: _____	Date of plan: _____



**DO NOT APPLY UNREGISTERED HERBICIDES or PESTICIDES TO or WITHIN YOUR SUGARCANE CROP.**


Pricing/ha are a **GUIDE ONLY**, based on IBCPS chemical prices, plus some sourced prices for products we do not stock. They can be used as a rough tool to compare the likely cost of treatment options.

*Please keep in mind these prices can vary throughout the year.*

All recommendation are according to registered **LABEL RATES ONLY**.

**ALWAYS READ THE LABEL** before using any herbicides, pesticides or insecticides.

To view the full list of registered products for use in cane in Queensland refer to the APVMA website.

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# Chemicals Available at IBCPS

2019-2020

PRODUCT	ACTIVE	APVMA Approval No.	DRUM SIZE	APPLICATION RATE (Min-Max) * All depends on situation	HECTARES PER DRUM SIZE (Based on Label Application Rates )	\$\$ PER/ha (incl GST)
All \$\$ per/ha amounts are a general price to give a general guide on pricing . *Note (T.M = Tank Mix)						
Activator®	900g/L non Ionic Surfactant	41517/555748	10L	60- 120ml/100L	80 T.M/drum	\$1.53/T.M
Agritone 750	750 g/L MCPA present as the dimethylamine salt	60505/51789	20L	0.93-1.45L/ha	22.2-13.8 ha/ drum	\$8.85- \$14.24/ha
Amicide Advance® 700	700g/L 2,4-D Dimethylamine & monomethylamine salts	66167/52898	20L	1-3L	20-6 ha/drum	\$6.07- \$20.23/ ha
Associate®	600g/Kg Metsulfuron Methyl	46361/58247	500 gram	60g/100L	8 T.M	\$4.10/T.M
**NOT REGISTERED IN SUGARCANE CROPS –READ LABEL!						
ASTRAL™ 250EC	250g/L Bifenthrin	68017/57278	5L	375ml/ha	13.3 ha/drum	\$10.10/ha
			20L	375ml/ha	53.3 ha/drum	\$8.82/ha
Atradex® WG	900g/Kg Atrazine	45774/101935	15 Kg	2.2-3.3Kg/ha	6.8-4.5 ha/bag	\$16.35- \$24.71/ha
Banjo®	725g/L Methyl Etsres of Canola Oil	68451/58383	20L	.5-2L/100L	40-10 T.M/drum	\$2.42-\$9.69/ T.M
Barrage	468g/Kg Diuron 132g/Kg Hexazinone	59557/57972	10 Kg	0.9Kg/ha	11.1 ha/box	\$15.44/ha
Biffo	glufosinate-ammonium(200g/L)	62489/51389	20L	1-6L/ha	20-3.3 ha/drum	\$14.17- \$85.88/ha
BIFFO IS NOT REGISTERED IN SUGARCANE CROPS –READ LABEL!						
Bouncer®	960g/L Metolachlor - S	69615/101423	20L	1.7L-2L	8.8ha-6.8 ha	\$30.90- \$39.98/ha
Collide 700 (LI-700)	350 g/L Phospholipids 350g/L Propionic Acid	70329/106448	20L	250- 500ml/100L	80-40 T.M/drum	\$1.37-\$2.74/ T.M
Comet® 400	400g'L Fluroxypyr Methyl Heptyl Ester	61667/57862	10 L	0.65-0.8 L/ha	15.4-12.5 L/ha	\$22.95- \$28.27/ha
			20L	0.65-0.8L/ha	30.7-25 ha/drum	\$19.84- \$23.13ha
Conqueror®	300 g/L TRICLOPYR as the butoxyethyl ester+100 g/L PICLORAM as hexyloxypropylamine salt.	57783/58274	20L	0.5-3 L/ha	40-6.6 ha/drum	\$8.80- \$53.34/ha
**NOT REGISTERED IN SUGARCANE CROPS –READ LABEL!			5L	0.5-3 L/ha	10-1.6 ha/drum	\$14.61- \$91.27/ha
Daconate 720®	720g/L MSMA	67568/56366	10L	3 L/ha	3.3 ha/drum	\$38.72/ha
Diurex	900g/Kg Diuron	45772/63080	15Kg	0.5 Kg/ha	30 ha/bag	\$5.43/ha
Exert® 520	520g/L Haloxypop as haloxypop -R methyl etser	61678/0714	5L	150-800ml/ ha	33.3-6.25ha/ drum	\$5.34- \$28.43/ha
Gladiator® OptiMAX	540g/L Glyphosate as Potassium salt	62742/105433	20L	1.2-5L/ha	16.6-4 ha/drum	\$8.76- \$36.36/ha

PRODUCT	ACTIVE	APVMA Approval No.	DRUM SIZE	APPLICATION RATE (Min-Max) * All depends on situation	HECTARES PER DRUM SIZE (Based on Label Application Rates )	\$\$ PER/ha (incl GST)
Maestro	200g/L Fipronil	70280/62881	1L	Weevil: 2-5.7ml/100m Wireworm: 1.1ml/100m		
Nuprid® 350SC	350g/L Imidacloprid	60587/60151	10L	1-1.44 L/ha	10-7 ha/drum	\$32.55-46.50/ha
Palmero 750WG	750g/Kg Isoxaflutole	68600	2Kg	150g-200g/ha	10-13.34 ha/drum	\$19.76-\$26.35/ha
Revolver® (Spray Seed)	135g/L Paraquat + 115g/L Diquat	59311/0210	20L	1.2-2 L/ha	16.6-10 ha/drum	\$11.97-19.87/ha
Sempra®	750g/L Halosulfuron-Methyl	56620/107069	500 grams	65-130g/ha	7.7-3.8 ha/pkt	\$40.32-81.70/ha
SHIRTAN® (discontinued)	120g/L Mercury as Methoxy ethyl mercuric chloride	49572/0401	5L	250ml/200L water	20 applications/200L water	24.88/application
SINKER®	500g/L Flutriafol	67732/56753	5L	500ml/ha	10ha/drum	\$33.88 /ha
Shirquat® 250	250g/L Paraquat	53919/54631	20L	1.2-1.6L/ha	16.6-12.5 ha/drum	\$7.63-\$10.13/ha
Spark®	240g/L Imazapic as ammonium salt	67753/58253	5L	300-400ml/ha	16.6-12.5 ha/drum	\$7.31-\$9.71/ha
			20L	300-400ml/ha	66.6-50 ha/drum	\$6.27-\$8.35/ha
STOMP® XTRA	455 g/L Pendimethalin	52757/60740	10L	2.2-3.3L/ha	4.5-3.0 ha/drum	\$38.50-\$57.75/ha
suSCon® maxi intel	50g/Kg imidacloprid	58996/56188	15Kg	10-15Kg/ha	1.5-1 ha/box	\$254-\$382/ha *This covers you for 3-4 Yrs
Throttle 500	500g/L Propiconazole	60401/0309	20L	10ml/100L	500ha/drum	\$0.30/ha
Tomahawk® (discontinued)	750 g/kg METRIBUZIN	51313/60454	10Kg	0.8-2Kg/ha	12.5-5 ha/bag	\$41.60-\$104.20/ha
Trooper® 75-D	300 g/L 2,4-D present as the triisopropanolamine salt 75 g/L PICLORAM present as the triisopropanolamine salt	62751/58625	20L	0.7-1.5 L/ha	28.5-13.3 ha/drum	\$8.27-\$17.71ha
Weedmaster® ARGO®	540 g/L GLYPHOSATE (present as the potassium and isopropylamine salts)	68925/61433	20L	1.2-6 L/ha	16.6-3.3 ha/drum	\$9.45-\$47.53/ha
Zephyr® 625 Low Odour	625g/L 2,4-D as Diethanolamine and Triethanolamine salt	58990/56555	20L	1.8-3.5 L/ha	11.1-5.7 ha/drum	\$11.22-\$21.84/ha
If there is a chemical that is not on our list of available products, please do not hesitate to call your IBCPS store to enquire about the product and availability. <u>Please Note:</u> if you have purchased a product from another reseller (not through IBCPS) that is NOT registered in cane, we are NOT required to give you a recommendation. Please go back to the original reseller and enquire with them.						

## Spray Guide Key

CODE/ KEY	MEANING or SPRAY SITUATION	RECOMMENDED DROPLET & NOZZLE *	EXAMPLES
P-BOOM	Pre-emergent boom spray in PLANT CANE	Medium to coarse droplet	
R-BOOM	Pre-emergent boom spray in RATOON CANE	Medium to coarse droplet	
INTER-ROW	Inter-row boom/Irvine legs spray (PLANT or RATOON CANE)	Very Coarse to extremely coarse droplet	
HIGH - RISE	High clearance/rise tractor spray (PLANT or RATOON CANE)	<u>Top Nozzles</u> - Very to extremely coarse <u>Bottom Nozzles</u> - Medium to coarse	
S-BOOM	Salvage situation boom spray	Coarse to very coarse	
SO-BOOM	Final spray out boom spray	Coarse to very coarse	
SS	Spot spray with a hand gun	N/A	
FUN	Fungicide Application	Medium	
INS	Insecticide Application	Medium	
GRUB	Cane Grub Control Application	Medium	

### \*Disclaimer

This is a GUIDE ONLY. For more detailed information please refer to the latest GRDC nozzle chart - attached.

Product	
For Active Ingredient information refer to detailed chemical table on pages 2 & 3	
<b>Group I Herbicides</b> e.g. Amicide Advance 700, Zephyr 625 Low Odour, Trooper 75D, Comet 400	⇒ Ensure high water rates and avoid spraying in the heat of the day to minimise crop damage ⇒ Minimum Mandatory droplet is a <b>Very Coarse</b> . Advised to use Extremely Coarse. Use of Blue, Red or Brown Air Induction Nozzles @ no more than 2 Bar is advised. ⇒ Seek advice for varietal susceptibility ⇒ <b>Do not</b> apply in a manner that may cause an unacceptable impact or cause contamination outside the application site from spray drift. ⇒ Recommended water pH between 4 – 6 ⇒ Boom height is restricted to a maximum of 50cm-above target or canopy whichever is higher. ⇒ Must adhere to Buffer Zones for downwind vegetation and aquatic areas. (please refer to label for these zone distances) ⇒ Use higher water rates for better efficacy ⇒ Record you Spray within 24 hours of application ⇒ Record Nozzle info Inc. Brand, Size, Pressure etc. also record Boom height.
<b>Atradox® WG</b>	⇒ Must be incorporated within 10 days or pre-emergent control will be reduced ⇒ <b>Not to be used</b> within <b>60 metres of a permanent lake</b> or dam or <b>20 metres from natural water</b> course ⇒ <b>Max rate of 3kg/ha</b> of active <b>per any 12 month period</b> ⇒ Good for pre and post control for some annual grasses and broadleaf weeds ⇒ Water pH needs to be less than 8 ⇒ Effectiveness greatly reduced by hard water
<b>Agritone 750</b>  <b>(MCPA)</b>	⇒ Ensure high water rates and avoid spraying in the heat of the day to minimise crop damage ⇒ Ensure correct droplet size for product in use ⇒ Seek advice for varietal susceptibility ⇒ Avoid drift onto neighbouring crops, public places & neighbouring gardens ⇒ Recommended water pH between 4 – 6 ⇒ Best option as a replacement for 2,4-D when near sensitive crops ⇒ Rainfast in 6 hours ⇒ <b>USE IN PLACE OF 2,4-D IF AERIAL SPRAYING, high clearance spraying or next to sensitive horticulture crops.</b>
<b>Agtryne MA</b>  <b>(MCPA + terbutyene)</b>	⇒ Works similar to Agritone but the addition active ingredient (terbutyene) covers grass knockdown. ⇒ For a more effective control on grass, Ametryn need to be added to the mix. ⇒ Very safe product to use around horticulture/sensitive crops such as bananas and paw paw. ⇒ Use in temperature above 22 degrees Celsius. ⇒ Do not apply using a high clearance tractor or aerial applications. Use as a direct spray application only.
<b>Barrage</b>	⇒ FNQ/Wet Tropics has strict restriction ⇒ <u>Can be used all year as long as the following rates and application method is are followed Direct Spray (Plant &amp; Ratoon):</u> you can only use <b>0.9 Kg/ha in the Wet Tropics PLUS Paraquat.</b> <b>*Paraquat must be added</b> ⇒ <b>The use of Boom/Banded spray is Prohibited ALL year for Wet Tropics.</b> ⇒ Spot Spraying: you can use <b>1 KG/100L</b> at any time up to a <b>maximum of 5% of your total farm.</b> ⇒ 25m downwind buffer from water bodies and 50m downwind buffer from other vegetation and crops. ⇒ <b>Do not</b> apply more then once per calendar year. ⇒ <b>Do not</b> replant areas treated with Diuron with a 2 years period. ⇒ <b>Do not</b> use on light/sandy soils.
<b>Bouncer 960S®</b>	⇒ Can be used as a pre or post emerge. Typically used in PLANT cane as a pre-emergent instead of Stomp Xtra. ⇒ Apply ONCE per year only. ⇒ Application should be made to moist soils before weeds and gasses have germinated. ⇒ If you get caught out with DRY CONDITIONS for 10+ days after application, there is a chance of semi-successful weed control. Really need that moisture to allow for effective control. ⇒ Always add a non-ionic surfactant (i.e. Activator)



Product	Product Notes and Handy Hints
<b>Diurex</b>  <b>You <u>MUST Record</u> use of Diuron on your farm within 24hrs of application and for the last 2 years.</b>	⇒ FNQ/Wet Tropics has strict restriction—so please read and understand the current label correctly, it is <b>your responsibility</b> as the growers to <b>READ</b> the label, <b>RATES</b> -follow all rates correctly and <b>RECORD</b> (up to 2yrs) each spray within 24 hrs. ⇒ <u>Boom/blanket applied</u> : you can only use <b>0.5 Kg/ha in the Wet Tropics PLUS Paraquat</b> ⇒ <u>Directed Band Spray</u> (MAX 60% of crop area): <b>Prohibited ALL year for Wet Tropics.</b> ⇒ <b>Do not</b> apply more then once per calendar year. ⇒ <b>Do not</b> spot spray more then 5% of your farm. ⇒ <b>Do not</b> replant areas treated with Diuron with a 2 years period. ⇒ <b>Do not</b> use on light/sandy soils. ⇒ Good for controlling pre-tillering grasses and small broadleaf. ⇒ Can apply over sugarcane from planting up to spike stage or as directed spray where sugarcane has emerged. Broadcast or band spray over ratoon cane before emergence.
<b>Glyphosate (540 strength)</b>  <b>-Gladiator® OptiMAX</b>  <b>-Weedmaster® ARGO®</b>	⇒ Do not spray weeds if they are stressed, waterlogged or covered with dust. ⇒ Perennial weeds should be sprayed just prior to flowering ⇒ BE AWARE of spray drift when working close to crops. ⇒ Always add a wetter to your glyphosate mix, typically Activator/Liase. ⇒ Weedmaster Duo are registered for spraying over water (i.e. drains, creeks) ⇒ Compatible with Spark, Sempra, Comet400. ⇒ Use a coarse to very coarse droplet at a lower water rate 100-150. ⇒ For ratoon spray out allow ratoon to grow to 0.6-1.2 metre high before applying. ⇒ Gladiator Optimax is rainfast after 6 hours, Weedmaster Argo rainfast 20mins prior to a shower
<b>Shirquat® 250 and Revolver® 250</b>	⇒ <b><u>WARNING:</u></b> This is an <b>S7 chemical (DANGEROUS GOODS)</b> and extreme care must be taken when handling the product ⇒ Translocation activity is enhanced if applied late in day or at night ⇒ Commonly used for crop safety to reduce potential phytotoxicity of post emergent herbicides consider adding paraquat to the mix. (Amount dependent on weed size). ⇒ Do Not use Shirquat in Dirty Cloudy Water.
<b>Palmero 750 WG</b>  <b>OR</b>  <b>Balance 750WG</b>	⇒ UV stable and can remain on soil service for extended periods of time. ⇒ Product activated by rainfall/irrigation; weeds may emerge prior to activation and require additional control methods. ⇒ Effective for control of problem perennial grasses in Out Of Hand blocks. ⇒ Apply higher rates for long-term control. ⇒ <b>DO NOT</b> use in sodic soils. ⇒ Consider soil cation exchange capacity (CEC) and organic carbon levels (OC) before application; CEC above 4.5 meq/100g ⇒ Or if Organic Carbon levels are below 1.0%, CEC needs to be above 9meq/100g ⇒ <b><u>HELPFUL HINT</u></b> - always use a knockdown to minimise the absorption of Balance® into the crop. <u>Note:</u> No restriction on repeated use of product ⇒ <b>DO NOT ADD A WETTER</b>
<b>Soccer® 700 WG</b>  <b>OR</b>  <b>Tomahawk®</b>	⇒ Use as a tank mix where there is a broad spectrum of grass and broadleaf weeds ⇒ Ensure good incorporation for target death ⇒ Incorporate by rain or irrigation before 10 days ⇒ Do not irrigate within 48 hrs of application ⇒ Use top end label rates for extended vine control ⇒ Use at least 250 litres of water/Ha
<b>Spark® 240</b>  <b>OR</b>  <b>Flame® 240:</b>	⇒ UV stable and can remain on soil service. ⇒ Product activated by rainfall/irrigation; weeds may emerge prior to activation and require additional control methods. ⇒ Lower rates for lighter textured soils ⇒ Levels of weed controlled may be reduced by high organic matter soils and recent application mill mud/ash ⇒ Ensure good calibration and accurate measurement of product. ⇒ DO NOT apply more than 400 ml/ha per season. ⇒ Good for nutgrass control ⇒ Must be irrigated/rained into soil profile to work efficiently on target ⇒ Avoid water with a high iron content ⇒ <b><u>HELPFUL HINT:</u></b> always use a knockdown such as paraquat to minimise the adsorption of Flame® into the cane plant

**PLEASE NOTE:** Each suggested chemical mix has a reference number that can be used for recording purposes. This is to save you time, you can now easily write down the number that correlates with your selected mix either in your record book, spreadsheet or your farm maps (however you record your chemical use) and refer it to this IBCPS document for the full details.

### Pre-emergent control in PLANT and RATOON Cane

Situation	Ref # for Chemical Records	Herbicide	Rates	Water Rate L/ha	\$\$/ha (GST Incl)
Add paraquat when weeds are present. Add Barrage (0.9 Kg/ha) for small Guinea Grass (Both as directed application only)					
Aim for water rates of a minimum of 200 + lt/ha for pre-emergence herbicides .					
<b>Plant</b>  <b>Grasses &amp; Broadleaf weeds</b>  <b>OR</b>  <b>In ratoon with no trash</b>	<b>P-BOOM 1.</b>	Stomp® Xtra + Atradex® WG	2.2 -3.3L/ha +1.7 – 2.2 kg/ha	200 +	\$54.85-\$82.46/ha
	<b>P-BOOM 2.</b>	Bouncer® 960S + Atradex® WG	1.7 - 2 L/ha +1.7 – 2.2 kg/ha	200 +	\$47.25-\$64.69/ha
	<b>P-BOOM 3.</b>	Bouncer® 960S +Tomahawk® (Soccer)	1.7 - 2 L/ha +1 - 2 kg/ha	200 +	\$50.40-\$88.70/ha
	<b>P-BOOM 4.</b>	Valor 500 WG  (IBCPS do not sell this product)	0.35-0.56kg/ha	200+	\$58.90-\$95/ha
<b>RATOON</b>  <b>Grasses &amp; Broadleaf Weeds</b>  <b>After Harvest to 3 leaf stage</b>  <b>(From 3-4 Leaf stage of Ratoon Cane add Paraquat to mixes containing Balance or Spark to avoid crop damage)</b>  <b>Add knockdowns when cane has reached 4-5 leaf stage (ie. Paraquat/2,4-D) for larger weeds if you missed straight after harvest (Directed application only)</b>	<b>R-BOOM 5.</b>	Spark® 240 + Atradex® WG	300 – 400ml/ha +2.2 kg/ha	200 +	\$26.05(5L) \$24.70 (20L)
	<b>R-BOOM 6.</b>	Spark® 240 + Barrage	300 – 400ml/ha +0.9 kg/ha	200 +	\$25.15 (5L) \$23.80 (20L)
	<b>R-BOOM 7.</b>	Spark 240 + Shirquat 250	300-400ml/ha +1.2L/ha	200+	\$17.35 (5L) \$16 (20L)
	<b>R-BOOM 8.</b>	Palmero® 750 WG + Atradex® WG	150g/ha +2.2 kg/ha	250 +	\$36.10/ha
	<b>R-BOOM 9.</b>	Palmero® 750 WG + Shirquat 250	150g/ha +1.2L /ha	250 +	\$27.40/ha
	<b>R-BOOM 10.</b>	Palmero® 750 WG +Diurex 900DF	150 g/ha +0.5kg/ha	250+	\$25.20/ha
	<b>R-BOOM 11.</b>	Barrage	0.9 Kg/ha	250+	\$16/ha
	<b>R-BOOM 12.</b>	Bobcat i-MAXX 10L  (IBCPS do not sell this product)	2.5L/ha (Plant and Ratoon)	300-400	\$63 /ha \$\$ based on local prices
	<b>R-BOOM 13.</b>	Valor 500 WG  (IBCPS do not sell this product)	0.56-0.7 kg/ha	200+	\$95-\$117/ha \$\$ based on local prices
	<b>R-BOOM 14.</b>	Amitron  (IBCPS do not sell this product)	0.5-1 kg/ha	200+	\$50-60/ha \$\$ based on local price

# Broadleaf Weed Control and Knockdowns

2019-2020

Situation	Ref # for Chemical Records	Herbicide	Rates	Water Rate L/ha	\$\$/ha (GST Incl)
Use Agritone 750 @ 930ml-1.45L/ha in place of 2,4-D products where you border a sensitive crop or when Downwind Buffer zones come into effect.					
Broadleaf Weeds General - SMALL	INTER-ROW 14.	Amicide® Advance700 +Atradex® WG	1.1 – 2.2kg/ha + 1.2 L/ha (Amicide)	110 – 250	\$22-\$26
Broadleaf Weeds General - <u>LARGE A.</u>	INTER-ROW 15.	Atradex® WG OR +Amicide® Advance 700	2kg/ha (Atradex) + 1.5 L/ha (Amicide)	200-300	Atradex \$27
Broadleaf Weeds General - <u>LARGE B.</u> Comet 400 or Trooper 75D depends on what is present.	INTER-ROW 16.	Amicide® Advance 700 + Comet ® 400 OR + Trooper™ 75-D	1 L/ha (Amicide) or +.65L/ha OR 1L/ha	200-300	\$27.00 (Comet 400 +Amicide) \$19 (Trooper75D +Amicide) \$24.70
Broadleaf weeds, vines& GSP& Milkweed	INTER-ROW 17.	Comet® 400 +Amicide® Advance 700	0.7 L/ha + 1L/ha or	100 – 400	\$27.00
	INTER-ROW 18.	Trooper™ 75-D +Amicide® Advance 700	0.75 - 1.5 L/ha + 1L/ha or	100 – 400	\$14.35-\$23.80
	INTER-ROW 19.	Comet® 400 +Atradex 900 WG	0.8L/ha + 1.1 – 2.2 kg/ha	100 – 400	\$31.31-\$39.48
For sicklepod	INTER-ROW 20.	Trooper™ 75-D + 2,4-D Amicide® Advance 700	0.8L/ha + 0.7L/ha	200 +	\$13.67
For large sicklepod	INTER-ROW 21.	Trooper™ 75-D + 2,4-D Amicide® Advance 700 + Comet ® 400	0.8 L/ha + 0.7 L/ha + 0.8 L/ha	200 +	\$43
Grass & broadleaf weeds (Directed application)	INTER-ROW 23.	Barrage + Shirquat 250	0.9kg/ha + 1.2-1.6L/ha	250 – 350	\$23-\$25.60
Grass & broadleaf weeds if there are quite a few broadleaf present (Directed application)	INTER-ROW 24.	Shirquat 250 + Diurex + Amicide® Advance 700	1.6 L/ha + 0.5 kg/ha + 0.7 L/ha	250 – 350	\$19.80
	INTER-ROW 25.	Bobcat® i-MAXX (IBCPS do not sell this product) + Shirquat 250	2.9L - 3.8L + 1.6L	400 – 600	\$77-\$98



Specific Broadleaf Situations					
Advanced Calipo Balsm Pear Native Bryony Milkweed	INTER-ROW 26.	Amicide® Advance 700 +Comet ® 400	1L/ha +0.6 - 0.7 ml/ha	100 – 250	\$27.00-\$30.33
GSP Sicklepod	INTER-ROW 27.	Amicide® Advance 700 +Trooper™ 75-D	1L/ha + 0.75 - 1.5 L/ha	100 – 250	\$14.35-\$23.80
Wild Rose Bluetop Square Weed Young Calipo	INTER-ROW 28.	Amicide® Advance 700 +Trooper™ 75-D	1L/ha + 1 L/ha	100 – 250	\$19
Broadleaf control in cane blocks surrounding horticulture (Bananas/ Paw Paw	INTER-ROW 29.	Agritone 750® +Trooper™ 75-D OR Comet ® 400	930ml - 1.45L/ha +1L/ha OR +600-700ml/ha	100-250	Comet \$32.10-\$43.06 Trooper \$22.87-\$28.74
Broadleaf & Grass control in cane blocks surrounding horticulture	INTER-ROW 30.	Agtryne MA	2-4L/ha	100-250	\$31.70-\$63.38

**Out Of Hand ( Top and Bottom Sprays)**

*These recommendations really only depend on what grass and broadleaf is present at this stage in your crop. For further advice book a paddock inspection with Bianca/Josh.*

Situation	Ref # for Chemical Records	Herbicide	Rates	Water Rate L/ha	\$\$/ha (GST Incl)
Always have a wetter present in your mix. Activator (120-150ml/100L) is the best option for knockdown. If it was for TOP sprays, Banjo (Canola) is the safest option to reduce drift.					
Broadleaf Weeds  <u>TOP SPRAYS</u>	HIGH-RISE 31.	Agritone 750® + Comet ® 400 OR +Trooper™ 75-D	930ml - 1.45L/ha +.65L/ha OR 1L/ha	200-300	Comet 400 \$32.10-\$43.06 Trooper 75D \$22.87-\$28.74
*Depends on what hard to kill broadleaf you have)	HIGH-RISE 32.	2,4-D Amicide® Advance 700 + Comet ® 400 OR +Trooper™ 75-D	1 L/ha +.65L/ha OR 1L/ha	200-300	Comet \$27.00 Trooper \$19
Broadleaf and Grass Weeds  <u>BOTTOM SPRAYS</u>	HIGH-RISE 33.	Shirquat 250 +Diurex OR +Barrage	1.2-1.6 L/ha +0.5 Kg/ha OR +0.9 Kg/ha	250 – 350	Diurex \$13-\$15.50 Barrage: \$23-\$25
Depends on what broad- leaf + grass you have)	HIGH-RISE 34.	Shirquat 250 + Balance/Palmero	1.2-1.6L/ha + 150 g/ha	200-300	\$27.40
	HIGH-RISE 35.	Shirquat 250 + Spark 240	1.2-1.6L/ha + 300-400ml/ha	200-300	\$13.90-\$18.50

## 'Salvage Situation'

Established Grass and broadleaf weeds in Ratoon (>10cm tall)

Situation	Ref # for Chemical Records	Herbicide	Rates	Water Rate L/ha	\$\$/ha (GST Incl)
2nd Round of 33 application ( roughly 3 weeks after 1st application), you can LEAVE OUT Barrage and Diuron. This is the most effective salvage application.					
Can be applied over cane (4-5 leaf stage or larger) · Will burn cane foliage <b><u>MUST WEAR PPE!</u></b>	S-BOOM 36.	Daconate® 720 (MSMA) + Diurex OR Palmero (Balance)	3L/ha + 0.5kg/ha OR +150 g/ha	400+	Diurex \$44.15 Palmero \$58.50
Can be applied over cane · May burn cane foliage	S-BOOM 37.	Asulox®	5.5 – 8.5 L/ha +1.5 L/ha	200 - 400	\$159/ha
Perennial grasses (Including guinea grass)	S-BOOM 38.	Shirquat 250 + Diurex OR +Barrage	1.2-1.6 L/ha +0.5 Kg/ha OR +0.9 Kg/ha	200-400	Diurex \$13-\$15.50 Barrage \$21
Perennial grasses <b><u>PARA-GRASS / PANICUM GRASS</u></b>	S-BOOM 39.	Rattler® 400 /ASULOX® (Will NOT control Guinea Grass)	8.5 L/ha	200-400	\$159/ha

## Nut Grass and Sedge

Situation	Ref # for Chemical Records	Herbicide	Rates	Water Rate L/ha	\$\$/ha (GST Incl)
The most effective time to spray is in early summer months (NOVEMBER—MARCH) when Sedge / Nut Grass is actively growing. Do not spray in winter.					
Blanket application <b><u>Navua Sedge &amp; Nutgrass</u></b>	BOOM 40.	Sempra® Herbicide + Banjo® OPTIONAL +Activator®	65 – 130g/ha +1L/100L OPTIONAL +200ml/100L	100+	\$37-\$76 (not incl Banjo)
NON CROP AREAS, FALLOW LAND, RIGHTS OF WAY	BOOM 41.	Sempra® Herbicide + Banjo® + Gladiator® OptiMAX	65 – 130 g/ha +1 L/100L +3 L/ha	100+	\$55-\$148 (not incl Banjo)

### NAVUA SEDGE APPLICATION TIMING FOLLOWING OPENING WET SEASON RAINFALL, UNTIL APRIL/MAY

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
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NAVUA SEDGE



Standard NUT GRASS

## Ratoon Spray Out and Legume Fallow

Situation	Ref # for Chemical Records	Herbicide	Rates	Water Rate L/ha	\$\$/ha (GST Incl)
<b>Ratoon Cane Spray Out</b>					
Cane control in Fallows Cane should be fully emerged and actively growing (+ annual and perennial weeds)	<b>SO-BOOM 42.</b>	Weedmaster® ARGO® 540  Must ADD wetter = Collide 700 or Activator®	4 – 6L/ha  *Use Higher Rate for Control	100-150	\$29-\$37/ha
Cane control in Fallows Cane should be fully emerged and actively growing (+ annual and perennial weeds)	<b>SO-BOOM 43.</b>	Gladiator® Optimax 540  Must ADD wetter = Collide 700® or Activator®	4 – 6L/ha  *Use Higher Rate for Control	100-150	\$32-\$47.50 /ha
<b>Legume Fallow Management</b>					
Control cane volunteers & grasses Controls grasses in legume crops	<b>L-BOOM 44.</b>	Exert 520	400-600ml/ha + Banjo	160-200	\$19.16-\$35
Broad spectrum control in Fallows (annual & perennial grass, vines, & broadleaf weeds)	<b>L-INTER 45.</b>	Basta/Biffo	1 – 5L/ha Or 500mls/100L for spot spraying	300-500	\$14.50-\$71



### Legume Management and Practices for the Wet Tropics Area

Legume/Bean (Size of Bags)	Precision Planter (P) KG/ha	Broadcast Planter (B) Kg/ha	Inoculant Group (\$14-\$20/bag)	\$\$/25Kg bag
Please contact IBCPS to book in the legume planter. Speak to you extension officer to decide on what legume is best for your farm/fallow blocks. IF MIXING COWPEA AND LABLAB—MIX HALF OF RECOMMENDED RATE EACH				
Meringa Cowpea (25Kg)	15-25	30	I	\$72
Caloona Cowpea (25Kg)	20-30	30	I	\$82
Ebony Cowpea (25Kg)	15-25	30	I	\$80
Leichardt Soybean (25Kg)	50	Not Recommended	H	\$50
Mitchell Soybean (25Kg)				
Stuart Soybean (25Kg)				
Ebony Soybean (25Kg)				
Highworth Dolichos (Black LabLab (25Kg)	20	40	J	\$58
Rongai Dolichos (Brown LabLab) (25Kg)				\$65



(+61 7) 4093 3743  
nqtropicalseeds@tpg.com.au



## Spot Spraying and Drains

2019-2020

Situation	Ref # for Chemical Records	Herbicide	Rates
The best time to spray plant is just after first spike through ground (around a week or so while it's spiking). ADD 2,4-D Amine @100-200 ml/100L of water to improve broadleaf kill.			
Perennial grasses (including guinea grass)	SS 46.	Barrage (Can only be used on 5% of total farm area when spot spraying)	1 Kg/100L of water
Perennial grasses (including guinea grass)	SS 47.	Barrage + Shirquat 250	1 kg/100L of water +200 ml/100L of water
Perennial grasses (including guinea grass)	SS 48.	Daconate® 800 (MSMA) ( Best results in hot dry conditions with Temperature above 25° C)	1 L/ 100 L of water
Perennial grasses (including guinea grass)	SS 49.	Daconate® 720 (MSMA) + Barrage OR +Diurex 900 DF ( Best results in hot dry conditions with Temperature above 25° C)	1 L + 0.9 kg/ 100L of water OR +0.5 kg/100L of Water
Perennial grasses (including guinea grass)	SS 50.	Daconate® 800 (MSMA) + Palmero® 750 WG (Don't add wetter to this mix)	1L +50g/100L of water
Perennial grasses (including guinea grass)	SS 51.	Gladiator® Optimax 540	0.9 – 1.3 L/100L of water
Sicklepod	SS 52.	Trooper™ 75-D +Amicide Advance 700	300ml + 150ml/ 100L of water
Perennial grasses ( Including guinea grass and vines)	SS 53.	Asulox® (needs temperature above 17° C & 80% humidity for best results)	2L/100L of water
NON CROP AREAS, FALLOW LAND, INDUSTRIAL & COMMERCIAL AREAS, RIGHTS-OF-WAY <b><u>BE CAREFUL OF SPRAY DRIFT ONTO CANE!</u></b>	SS 54.	Weedmaster® Argo or Gladiator® Optimax +Associate (if Singapore Daisy is present) +Collide 700/Activator	1L +10 grams +300 ml/100L of water
Nut Grass and Sedge	SS 55.	Sempra + Banjo	<b>Knapsack Application</b> 1g/100m <sup>2</sup> (Sempra) +100ml/100 (Banjo) (Add 1g Sempra to 10L of water + Banjo and apply 1L of mix to 100m <sup>2</sup> )  <b>Tractor Mounted Handgun</b> 50g/5000m <sup>2</sup> (Sempra) +1L/100L (Banjo) (Add 50g Sempra to 100L of water + Banjo and apply 100L of mix to 5000m <sup>2</sup> )

## Fungicides/Insecticides

Product	Ref # for Chemical Records	Pack Size	Application Rates	Water Rate	\$\$/200L Mix (GST Incl)
<b>PLANTING FUNGICIDES</b>					
Shirtan® 120	FUN 56.	5L	250mL/200L applied	100L/ha	\$10.22
Sinker® *add Activator to mix @75ml/100L	FUN 57.	5L	500ml/ha 50ml/100L for dip	350L/ha (minimum)	\$33.88/ha \$3.38/100L dip
Throttle 500	FUN 58.	20L	10ml/100L	100L/ha	\$0.30/100L

Product	Ref # for Chemical Records	Pack Size	Pest Controlled	Application Rates	Water Rate	\$\$/ha (GST Incl)
<b>INSECTICIDES</b>						
Chlorpyrifos™ 500 EC	INS 59.	2.0L	Armyworms Australian plague Locusts Spur-throated locust Symphylids Wireworms	700 – 900mL/ha 350 mL/ha 1.25 – 1.5L/ha 2.0L/ha 1.5L/ha	50-200L/ha	\$8 - \$11 \$4 \$15 - \$17 \$23 \$17
Astral® 250EC	INS 60.	5L or 20L	Wireworms	375mL/ha (in furrow)	100L/ha	\$10.10/ha (5L) \$8.32/ha (20L)
Maestro 200SC	INS 61.	1L	Wireworms	300-400ml/ha	50-200L/ha	\$29.40

## Grey Back Cane Grub

Product	Ref # for Chemical Records	Pack Size	Application Rates	Water Rate	\$\$/ha (GST Incl)
<b>Grey Back Cane Grubs</b>					
SuSCon® Maxi Intel	GRUB 62.	15kg	10 – 15kg/ha or 150-225g/100m row	N/A	\$268 - \$401.50 (over 4 years)
Nuprid 350SC	GRUB 63.	10L	1.05 – 1.45L/ha	50-200L/ha	\$34.50 - \$48

### Monitoring Cane Grubs in Your Cane

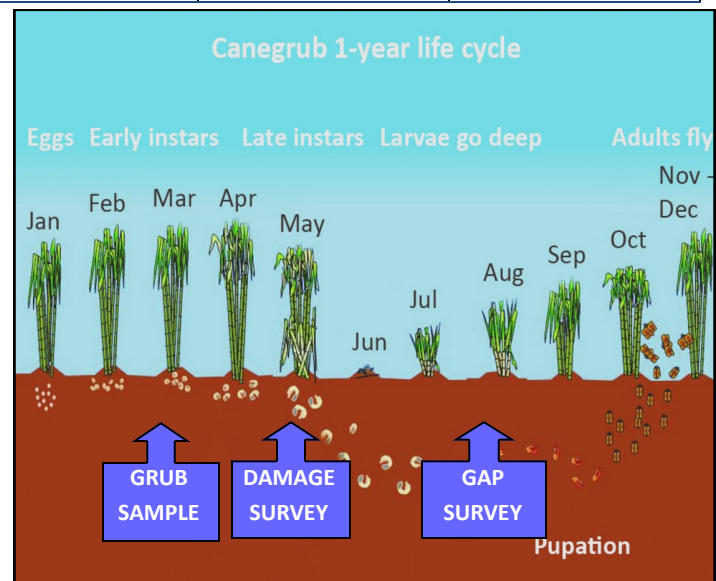
#### Crop Symptoms:

- \* Yellowing of cane and poor growth.
- \* Stools Will pull out easily, in turn a poor root system
- \* You will ID Cane grubs if present in Spring (Nov-June = Potential damage form Cane Grubs). They will look for your early cut ratoon to lay in.

#### Monitoring and Risk Assessment FNQ:

- \* Sample high risk blocks between MARCH-JUNE. (20 stools/block)
- \*  $AVG < 0.5$  grubs/stool = **not likely to affect yield this season.**
- \*  $AVG$  of 0.5-2 grubs/stool = **likely to reduce yield and CCS this season**
- \*  $AVG > 2$  grubs/stool = **very likely to be already suffering yield and CCS loss and may require plough out after harvest**

Sourced from SRA





## Machinery and Equipment Hygiene

Product	Situation	Pack Size	Application Rates	Notes
<b>Hygiene Products</b>				
<b>Sterimax Biocide</b> (Has a 3-4 year shelf life if correctly stored)	For Machinery and Equipment Hygiene	10L	100ml/10L water (1% solution)	Clean Equipment of all debris and sugar sap, which will reduce strength of solution. Immerse in solution for a minimum of 5 minutes making sure equipment is completely covered with solution. When mixed with clean water the solution can last a week.
<b>Sporekill</b>	For Machinery and Equipment Hygiene	5L or 20L	100ml/10L water (1% solution)	Apply to appliances that are clean and free of detergent. Apply 1% solution of the disinfectant to all parts of the appliance and keep the surfaces wet for a minimum of 5 minutes.

## Rodent Control in Sugarcane

Product	Pack Size	Application Rates	\$\$/200L Mix (GST Incl)
<b>Rat Baits</b>			
<b>Ratoff Zinc Phosphide</b>	2kg	100 sachets(1kg)/ha	\$42.35/ha
	10kg		\$26.02/ha
<b>ZP Rat</b>	4Kg	100 sachets(1kg)/ha	\$32.18/ha
<b>Racumin Blocks</b> (IBCPS do not stock this product)	2Kg	60g (2 Blocks per Bait Station)	\$3.80 per bait station
	5Kg		

### WHAT DO I NEED TO RECORD FOR IBCPS PERMIT?

Registered Rat Baits in Sugarcane are Ratoff, ZP Rat and Racumin.

The Following information is required from growers in order for IBCPS to continue holding a blanket permit for our cane growing district.

**Farm Name and Number**

**Block Number**

**Date Baiting Started and Finished**

**\*Product that was Purchased and Used**

**\*Baited Area (ha)**

A copy of the these details need to be provided to IBCPS monthly

All data can remain anonymous at growers request.

\*This information is compulsory

<p>Crop Stage: _____</p> <p>Mix #: _____</p> <p>Nozzle Type: _____</p> <p>Pressure range: _____</p> <p>Weed Situation: _____</p> <p>_____</p> <p><u>Mix Includes:</u></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p><u>Additional Comments:</u></p>	<p>Crop Stage: _____</p> <p>Mix #: _____</p> <p>Nozzle Type: _____</p> <p>Pressure range: _____</p> <p>Weed Situation: _____</p> <p>_____</p> <p><u>Mix Includes:</u></p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p><u>Additional Comments:</u></p>
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2019-2020      HERBICIDE RECORD KEEPING      Grower Name: \_\_\_\_\_ Completed with: \_\_\_\_\_

CHEMICAL MIX REF #	FARM NUMBER	BLOCK NUMBER	DATE	TIME START	TIME FINISH	WIND SPEED	COMMENTS

2019-2020      HERBICIDE RECORD KEEPING      Grower Name: \_\_\_\_\_ Completed with: \_\_\_\_\_

CHEMICAL MIX REF #	FARM NUMBER	BLOCK NUMBER	DATE	TIME START	TIME FINISH	WIND SPEED	COMMENTS





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PRODUCTIVITY SERVICES

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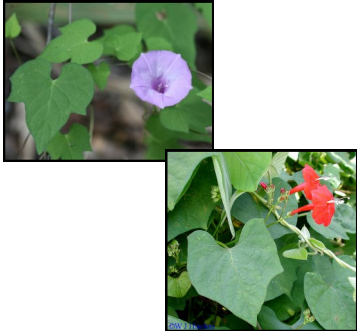

# Herbicide Application Practical Guide to Ensure a Successful Herbicide Management Plan


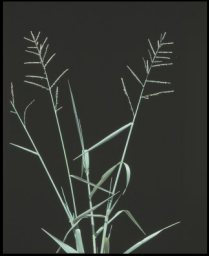





**DO NOT APPLY UNREGISTERED HERBICIDES or PESTICIDES TO or**  
**WITHIN YOUR SUGARCANE CROP.**

- ♦ Have you checked the label?
  - ♦ Has your herbicide sprayer been calibrated for this spray season?
  - ♦ Have you check your spray pattern in you crop?
  - ♦ Do you know your water quality? This will help select your adjuvant.
  - ♦ Have you checked the current and predicted weather conditions?
  - ♦ Is the weather predicted in accordance to recommended incorporation of products?
- ⇒ Pre-emergent require rainfall incorporation (minimum of 10mm)
- ⇒ Daconate requires hot dry conditions.

## Additional Broadleaf and Grass Notes

Situation / Weed or Grass	Suggested Herbicide in General	Side Notes
<p><b>Guinea Grass or Hamil Grass</b></p> 	<p>Barrage Stomp/Bouncer 960S Balance/Palmero Paraquat 250 Barrage Daconate</p>	<ul style="list-style-type: none"> <li>• Best Controlled at Pre-emerge/seedling stage with pre-emerge herbicides.</li> <li>• Shirquat 250 is best option for kill on emerged seedlings</li> <li>• Spot spraying old stools amongst cane stool = with Barrage or Daconate. (IMPORTANT to Thoroughly wet the stool!)</li> <li>• *Krismat is NOT effective on it's own and always requires the addition of Diurex/Barrage. NOTE: This mix can be phototoxic to young cane and specific varieties (Q186,Q250?)</li> </ul>
<p><b>Balsm Pear Vine (Chinese Cucumber)</b></p> 	<p>2,4-D Amine Comet 400 Trooper 75D</p>	<ul style="list-style-type: none"> <li>• Best controlled with Comet 400 and 2,4-D mixes.</li> <li>• 2,4-D and Atradox does not control it.</li> <li>• Trooper 75D is not as effective as a Comet 400 mix.</li> </ul>
<p><b>Calopo Vine</b></p> 	<p>2,4-D Amine Comet 400 Trooper 75D Tomahawk</p>	<ul style="list-style-type: none"> <li>• Is a hard to kill vine when it reaches flowering stages.</li> <li>• Can be simply killed with 2,4-D and Atradox mix at young stages.</li> <li>• At later stages/flowering, best kill is with Comet 400 and Trooper 75D.</li> <li>• To get on top of Calopo pressure at an early stage, tomahawk should be used for pre-emerging PLANT CROPS.</li> </ul>
<p><b>Convolvus Vine Red/Pink</b></p> 	<p>2,4-D Amine products</p>	<ul style="list-style-type: none"> <li>• All Convolvus can be killed with 2,4-D.</li> <li>• If there are other broadleaf present, ADD Atrazine.</li> </ul>
<p><b>Mile-a-minute</b></p> 	<p>2,4-D Amine products</p>	<ul style="list-style-type: none"> <li>• All Convolvus can be killed with 2,4-D.</li> <li>• If there are other broadleaf present, ADD Atradox.</li> </ul>

Situation / Weed or Grass	Suggested Herbicide in General	Side Notes
<b>Giant Sensitive Plant (GSP)</b> 	2,4-D Amine Comet 400 Trooper 75D	<ul style="list-style-type: none"> <li>• 2,4-D + Atradox is effective up to the flowering stage. (Use high rates of Atradox @ 3.3 kg)</li> <li>• Trooper 75-D is also quite effective</li> <li>• Comet 400 has erratic results on GSP</li> <li>• Conqueror is the most effective but NOT registered in cane.</li> <li>• For NON-CANE situations use Glyphosate or Conqueror.</li> </ul>
<b>Para Grass or Panicum Grass</b> 	Asulux Glyphosate	<ul style="list-style-type: none"> <li>• In a fallow situation, best controlled with glyphosate 540.</li> <li>• Asulux is effective in cane but very expensive and does not control any Guinea grass.</li> </ul>
<b>Sicklepod (Arsenic Weed)</b> 	Trooper 75-D 2,4-D Amine	<ul style="list-style-type: none"> <li>• Trooper 75-D + 2,4-D is registered mix for Sicklepod and is very effective.</li> <li>• Sprayseed/Revolver is registered as a knockdown for Sicklepod and can sometimes ringbark even large stands.</li> <li>• Shirquat 250 + 2,4-D will kill young seedlings.</li> <li>• Conqueror is ONLY for pastures and NOT registered in cane.</li> </ul>
<b>Singapore Daisy</b> 	Associate	<ul style="list-style-type: none"> <li>• Associate is the ONLY effective chemical on SD. Not usually a problem in cane as it doesn't like to be covered.</li> <li>• Associate is NOT registered in Cane</li> </ul>
<b>Sour Grass</b> 	Daconate	<ul style="list-style-type: none"> <li>• Daconate works to a certain extent but sour grass will come back.</li> <li>• Presence of Sour grass is often indicative of a calcium deficiency and will be observed in poor crops.</li> </ul>

## Adjuvants

Adjuvant	Active	Rate/100L Water	Comments
Always read the label for information about what wetters are appropriate for individual chemicals. Also check the recommended nozzle requirements (coarse/extra coarse).			
<b>Activator</b>	900 g/L Non-ionic surfactant	60-120ml	A premium non-ionic, rain-fast wetting agent with low foaming qualities. Can be useful for foliar and soil applied herbicides. Has neutral impact on droplet size
<b>Collide 700 (LI 700)</b>	350g/L Non-ionic surfactant/other	100-500ml	Acidifying and penetrating surfactant. Assists in management of spray droplet size.
<b>Liase</b>	417 g/L Ammonium sulphate	2L	For use with Glyphosate based herbicides to minimise antagonism with tank mixing with flowable herbicides and improve performance under adverse environmental conditions ( <b>READ LABEL: mixing order</b> )
<b>Banjo</b>	725g/L Methyl Ester of Canola Oil	0.5-2L	Increasing penetration through waxy cuticles, increasing wetting and spreading of spray droplets, reducing spray droplet evaporation rates.
<b>Protec Plus</b>	Esterified oil product with non-ionic surfactant	200ml-1L	Increasing penetration through waxy cuticles, increasing wetting and spreading of spray droplets, reducing spray droplet evaporation rates.
<b>Chemwet 1000</b>	Non-ionic surfactant, 100% wetting agent	25-400ml	A Non-ionic 100% Wetting agent, for the improvement of spray coverage when using agricultural chemicals
<b>Deluge 1000</b>	950 g/L non ionic fatty acid and ethoxylates	100-400ml	Deluge 1000 is a bio-degradable spray additive containing 100% non ionic surfactant for use with all types of herbicides. It increases herbicide activity by better wetting and absorption and improved spray coverage. DELUGE 1000 can be used with both acid and alkaline sprays and mixes easily with all types of water

## Have you Read the Label?

### The 3 RRR's

#### 1. READ the label

#### 2. RATES: Check what rates apply to your area (**WET TROPICS/QLD**) and crop (**Sugarcane**)

#### 3. RECORD: Each spray for each block, on a farm map, diary, Canegrowers Record Book or your own spread sheet.

**Barrage Herbicide**

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

**Barrage** Herbicide  
ACTIVE CONSTITUENTS: 468 g/kg DIURON  
132 g/kg HEXAZINONE

GROUP **C** HERBICIDE

For the control of a wide range of annual and perennial grasses, broadleaf weeds and vines in established sugarcane.

READ COMPLETE DIRECTIONS FOR USE BEFORE USING THIS PRODUCT.

Nufarm Australia Limited  
ACN 004 377 180  
103-105 Pipe Road, Laverton North Victoria 3026  
Tel: (03) 9382 1000  
nufarm.com.au

APVMA Approval No.: 59557/100309

**Check for the most current label**

**RECORD your APVMA No**

**ALWAYS read directions for use**

**Make sure you are looking at the correct crop situations SUGARCANE**

**ALWAYS read rates for the correct state QLD**

**Always have a read of the Critical Comments. They are very informative for your selected area and crop.**

**Barrage Herbicide** Approved: 30 August 2017 Page 3

**MANDATORY NO-SPRAY ZONES - Barrage-Paraquat mixtures (Shirquat® 250 Herbicide)**  
DO NOT apply when there is non-target vegetation within 50m downwind from the application area.  
DO NOT apply when there are aquatic and wetland areas including aquacultural ponds, surficial streams and rivers within 25m downwind from the application area.

CROP	WEEDS CONTROLLED	WEED GROWTH STAGE	STATE	RATE / ha	CRITICAL COMMENTS
Sugarcane	Amoranthus spp, Arsenic Weed, Avena, Barnyard Grass, Barrage Grass, Blue-top (Bilgoot Weed), Cayote Vine, Centro, Coast Button Grass, Cobber's Pegs, Common Morning-glory, Common Sensitive Plant, Common Sida, Crowfoot, Grass, Cupid's Flower (Star-of-Bethlehem), Giant Sensitive Plant, Green Summer Grass, Guinea Grass, Ith Grass, Millweed, Passion Fruit Vine, Phyllanthus, Pigweed, Pink Burr, Pink Convolvulus, Rattlepod, Red Convolvulus, Setaria spp., Siam, Square Weed, Striking Passion Flower, Summer Grass, Thatchhead, Wild Rose.	Up to 5 cm high	QLD, NSW, WA, NT only	550 g plus 1.2 to 1.6 L of Shirquat 250	Apply only as directed spray on plant and ration cane using an in-line spray boom (or similar equipment). Complete spray coverage on the weed is essential. For weeds up to 5 cm high, use a minimum spray volume of 250 L/ha.
		Up to 100 cm high		900g plus 1.2 to 1.6 L of Shirquat 250	For weeds up to 100 cm high use a minimum spray volume of 350 L/ha. Use the higher rate of Shirquat 250 for dense and more mature weeds. Always add 85 L/1000 at 100 mL/100L of final spray volume (0.1% volume/volume).

**NOT TO BE USED FOR ANY PURPOSE, OR IN ANY MANNER, CONTRARY TO THIS LABEL, UNLESS AUTHORIZED UNDER APPROPRIATE LEGISLATION. WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED.**

**GENERAL INSTRUCTIONS**  
Barrage is a soil residual, broad spectrum, general herbicide for control of a wide range of annual and perennial grasses, broadleaf weeds and vines. Best results are achieved if Barrage is applied just before weed growth occurs. For boom application, well established weeds should first be removed by other means. For best results soil should be well prepared. Apply to moist soil. Results vary with soil type and environmental conditions. Effects are six weeks up to 12-25cm on moist soils, 25-50cm on dry soils (in the form of a carry over product for the next zone of the germinating weeds). Best results are obtained if used after application.

**With irrigation, high spray wet up entire treated area, however, cane should be taken not to over-Barrage are exposed as overall rates. Use proportionately less, ie, use only half of the overall rate. Temporary effects of lower leaves may occur. To minimise this injury use low directed spray or should be determined before treating large areas.**

**RESISTANT WEEDS WARNING**  
Barrage (Paraquat) is a member of the triazine and urea group of herbicides. Barrage inhibits photosynthesis at photosystem II mode of action. For weed resistance management Barrage Herbicide should be used in rotation with other Group C herbicides. Barrage Herbicide is naturally-occurring weed biotypes resistant to Barrage Herbicide and other Group C herbicides in availability in any weed population. The resistant individuals can eventually dominate the weed population. These resistant weeds will not be controlled by Barrage Herbicide or other Group C herbicides. Resistant weeds are difficult to detect prior to use. Nufarm Australia Limited accepts no liability for a of Barrage Herbicide to control resistant weeds. Strategies to minimise the risk of herbicide resistant chemical supplier, consultant, local Department of Agriculture or Primary Industries, or local Nufarm representative.

**EQUIPMENT AND MIXING**  
This product mixes readily with water, no pre-mixing is required. Fill the spray tank at least half full with water. Weigh the correct amount of Barrage Herbicide. To prevent nozzle blockage, strainer and nozzle screens should be 30 mesh or coarser. Add Barrage to the spray tank (GLASSY and STAGNANT) with continuous agitation. DO NOT DUMP all required product into tank at once. Continue agitation in the spray tank is required to keep the material in suspension. Mechanical agitation is preferred, although hydraulic agitation is satisfactory if pump has sufficient volume to return at least 5% of the tank capacity per minute when the sprayer is in operation. When by-pass or return line is used, it should terminate at the bottom of the tank to minimise foaming. DO NOT USE AIR AGITATION. When the product has been thoroughly dispersed, add surfactant / wetting agent if required. Agitate vigorously from the bottom if allowed to stand.





**Load Boom Power Sprayer**  
Sugarcane must be shut off while starting, turning, slowing or stopping, as overuse may result in injury to the crop. Use sufficient water 50-100L/ha of area actually sprayed to provide thorough and uniform coverage. Use sufficient pressure to allow to penetrate, 250-300kPa is the pressure range generally used. Higher pressures should be avoided to prevent spray drift on to non-target areas. Use of surfactant or wetting agent  
Weed growth is established and cannot be removed by other means the use of non-ionic surfactant may increase wetting of leaves and reduce the knockdown effectiveness of the treatment. Use 85-1000 at 250-500mL/100L of final spray volume (0.25%-0.5% volume/volume). For perennial weeds and grasses use the higher rate of surfactant. Best results are obtained where weeds and grasses are growing under conditions of high humidity and temperatures higher than 21°C.



## CHEMICAL MIXING ORDER FOR APPLICATION EQUIPMENT

Steps	Product Examples
<b>STEP 1.</b> Fill tank with water to 60-80% full. Run pump for water agitation	
<b>STEP 2.</b> Add any water conditioners if water testing indicates they are required	Bonus®, Liase, Collide 700®
<b>STEP 3.</b> Add any wettable powders	Mancozeb
<b>STEP 4.</b> Add Dry Flowable Granules (WDGs)	Diurex®, Barrage®, Atradox®, Tomahawk®, Ametrex® 800WG, Balance® 750WG
<b>STEP 5.</b> Add any Suspension concentrates (flowables)	Gesapax® Combi, Diuronflowable
<b>STEP 6.</b> Add a wetting agent at this stage if an EC (Emulsifiable Concentrate) is to be added next	Activator 90®, Agral, Collide 700®
<b>STEP 7.</b> Add Emulsifiable Concentrate (if being used)	Triflur® X, Stomp® Xtra
<b>STEP 8.</b> Add Water soluble concentrates and or Aqueous solutions	Amicide® Advance 700, Revolver® 250 Shirquat® 250, Kamba 750, MCPA 500, Glyphosate
<b>STEP 9.</b> Add a Wetting agent if not previously added at Step 2 or at Step 5.	Activator 90®, Agral, Collide 700® (Non ionic surfactant) or Banjo
<b>STEP 10.</b> Complete filling the tank with water	

### Water Rate Selection

TARGET WEED SIZE	WATER RATE (L/ha)	COMMENTS
<b>Small Emerged Weeds</b> 	<b>100-200 L</b> Medium—Coarse Droplet.	Lower water rates are more effective on small grass (2-3 leaf stage) and broadleaf weeds (< 4 leaf stage).
<b>Established Seedlings</b> 	<b>100-200 L</b> Medium—Coarse Droplet.	Increase the water rate for grass that has tillered and for mature broadleaf.
<b>Broadleaf (using 2,4-D)</b>	<b>50-400 L</b> Very Coarse-Ultra Coarse	Use Higher Water Rates for Better efficacy
<b>Large Grass</b> 	<b>200-300 L</b> Coarse—Very Coarse Droplet.	High water rates are required to ensure good coverage on all leaves.
<b>Nut Grass</b> 	<b>85 + L</b> Medium—course droplet	-
<b>Ratoon Spray Out</b>	<b>100-200 L</b> Coarse—Very Coarse Droplet	Cane Size restrictions 60cm-120cm
<b>Residual Application to soil</b>	<b>300 - 400 L</b> Coarse—Very Coarse Droplet	High water rates are required to give adequate coverage of the soil surface to maximise the length of residual control.
<b>Insecticides</b>	<b>50-200 L</b> Medium Droplet	-



# Nozzle Output Chart - Good for Quick Calibrations

NOTE: COLOUR CODING FOR NOZZLE SIZES ARE NOT RELATED TO COLOUR CODING FOR SPRAY QUALITIES

BROADCAST AND TURF APPLICATIONS																	
L/HA 50CM NOZZLE SPACING																	
Bar	Flowrate	6 km/h	8 km/h	10 km/h	12 km/h	14 km/h	15 km/h	16 km/h	17 km/h	18 km/h	20 km/h	22 km/h	24 km/h	25 km/h	26 km/h	28 km/h	30 km/h
01 Orange	2	0.33	66	49	39	33	28	26	25	23	22	20	18	16	15	14	13
	3	0.4	80	60	48	40	34	32	30	28	27	24	22	20	19	18	17
	4	0.46	92	69	55	46	40	37	35	32	31	28	25	23	22	21	20
	5	0.52	104	78	62	52	44	41	39	36	35	31	28	26	25	24	22
	6	0.57	114	85	68	57	49	45	43	40	38	34	31	28	27	26	25
	7	0.61	122	92	73	61	52	49	46	43	41	37	33	31	29	28	26
	8	0.65	130	98	78	65	56	52	49	46	43	39	35	33	31	30	28
	9	0.69	138	104	83	69	59	55	52	49	46	42	38	35	33	32	30
	10	0.73	146	110	88	73	63	59	55	52	49	44	40	37	35	34	32
	2	0.49	98	74	59	49	42	39	37	35	33	30	27	25	24	23	21
02 Green	3	0.6	120	90	72	60	51	48	45	42	40	36	33	30	29	28	26
	4	0.69	138	104	83	69	59	55	52	49	46	42	38	35	33	32	30
	5	0.78	156	116	93	78	66	62	58	55	52	47	42	39	37	36	33
	6	0.85	170	127	102	85	73	68	64	60	57	51	46	42	41	39	37
	7	0.92	184	138	110	92	79	73	69	65	61	55	50	46	44	42	40
	8	0.98	196	147	118	98	84	79	74	69	65	59	54	49	47	45	42
	9	1.04	208	156	125	104	89	83	78	74	69	63	57	52	50	48	45
	10	1.1	220	164	131	110	94	87	82	77	73	66	60	55	52	50	47
	2	0.65	130	98	78	65	56	52	49	46	43	39	35	33	31	30	28
	3	0.8	160	120	96	80	69	64	60	56	53	48	44	40	38	37	35
03 Yellow	4	0.92	184	139	111	92	79	74	70	65	61	56	50	46	44	43	40
	5	1.03	206	155	124	103	89	83	78	73	69	62	56	52	50	48	45
	6	1.13	226	170	136	113	97	91	85	80	75	68	62	57	54	52	49
	7	1.22	244	183	147	122	105	98	92	86	81	74	67	61	59	57	53
	8	1.31	262	196	157	131	112	105	98	92	87	79	71	65	63	60	56
	9	1.39	278	208	166	139	119	111	104	98	93	83	75	69	66	64	60
	10	1.46	292	219	175	146	125	117	110	103	97	88	80	73	70	67	63
	2	0.82	164	122	98	82	70	65	61	58	55	49	45	41	39	38	35
	3	1	200	150	120	100	86	80	75	71	67	60	55	50	48	46	43
	4	1.15	230	173	138	115	99	92	87	81	77	69	63	58	55	53	50
04 Lilac	5	1.29	258	194	155	129	111	103	97	91	86	78	70	65	62	60	56
	6	1.41	282	212	170	141	121	113	106	100	94	85	77	71	68	65	61
	7	1.53	306	229	183	153	131	122	115	108	102	92	83	76	73	70	66
	8	1.63	326	245	196	163	140	131	123	115	109	98	89	82	78	75	70
	9	1.73	346	260	208	173	148	139	130	122	115	104	95	87	83	80	74
	10	1.83	366	274	219	183	157	146	137	129	122	110	100	91	88	84	79
	2	0.98	196	147	118	98	84	79	74	69	65	59	54	49	47	45	42
	3	1.2	240	180	144	120	103	96	90	85	80	72	65	60	58	55	52
	4	1.39	278	208	166	139	119	111	104	98	93	83	75	69	66	64	60
	5	1.55	310	232	186	155	133	124	116	109	103	93	85	77	74	72	67
05 Blue	6	1.7	340	255	204	170	145	136	128	120	113	102	93	85	82	78	73
	7	1.83	366	275	220	183	157	147	138	129	122	110	100	92	88	85	79
	8	1.96	392	294	235	196	168	157	147	138	131	118	107	98	94	90	84
	9	2.08	416	312	249	208	178	166	156	146	139	125	113	104	100	96	89
	10	2.19	438	329	263	219	188	175	165	155	146	132	120	110	105	101	94
	2	1.31	262	196	157	131	112	105	98	92	87	79	71	65	63	60	56
	3	1.6	320	240	192	160	137	128	120	113	107	96	87	80	77	74	69
	4	1.85	370	277	222	185	158	148	139	131	123	111	101	92	89	85	79
	5	2.07	414	310	248	207	177	165	155	146	138	124	113	103	99	95	89
	6	2.26	452	339	272	226	194	181	170	160	151	136	124	113	109	105	97
06 Red	7	2.44	488	367	293	244	209	195	184	172	163	147	133	122	117	113	105
	8	2.61	522	392	313	261	224	209	196	184	174	157	142	131	125	120	112
	9	2.77	554	416	333	277	238	222	208	196	185	167	151	139	133	128	119
	10	2.92	584	438	351	292	250	234	219	206	195	176	160	146	140	135	125

	Pre-Orifice (RUN ABOVE 1.5-2 BAR)					Low Pressure Air Induction (RUN ABOVE 2-3 BAR)																High Pressure Air Induction (RUN ABOVE 3-4 BAR)															
BRAND	Lechler	TeeJet	Hardi	TeeJet	TeeJet	Hygro	TeeJet	Lechler	Agrotop	Hygro	Hardi	Hardi	Lechler	TeeJet	Hygro	Bella-flow	ARAG	Aleux	TeeJet	ARAG	Lechler	Albuz	Albuz	ARAG	ARAG	Hardi	ARAG	Agrotop	TeeJet	TeeJet	TeeJet						
MODEL	AD-110	DG-110	LD-110	TT-110	TT80 Twin Jet	Guardian Air Twin	AD3070 TeeJet	IDK-120	Airmix	Guardian Air	MesaB-DXO twijet	Misistit	IDXT twijet	AUXR	ULD-120	bubble-jet	CFA	CVI	AIRT900 twijet	AFC	ID	AVI-twin	AVI	CFA-US UT&A	TFLD twijet	Injet	TFA twin jet	Turbo-drop TD-XL-C	AI	TT80 twijet	TTI						
SPRAY QUALITY STANDARD	ASAE R9CPC	ASAE S721	ASAE R9CPC	ASAE S721	ASAE S721	ASAE S721	ASAE S721	ASAE R9CPC	ASAE R9CPC	ASAE S721	ASAE R9CPC	ASAE R9CPC	ASAE R9CPC	ASAE S721	ASAE S721	ASAE S721	ASAE S721	ASAE S721	ASAE S721	ASAE S721	ASAE S721	ASAE R9CPC	ASAE S721	ASAE S721	ASAE S721	ASAE R9CPC	ASAE S721	ASAE S721	ASAE S721	ASAE S721	ASAE S721	ASAE S721					
Nozzle Size	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR	BAR					
01 ORANGE	1.5			M	C												XC		1.5																		
	2.0			M	M												?		2.0																		
	3.0			M	M														3.0																		
	4.0	not available in this size	not available in this size	M	F		not available in this size		M	F	not available in this size	not available in this size	not available in this size	not available in this size	not available in this size	not available in this size		not available in this size	4.0																		
	5.0			F	F				M	F									5.0																		
	6.0				F				F	F									6.0																		
	7.0																		7.0																		
	8.0																		8.0																		
01S GREEN	1.5	M		M	C			VC	C		UC				VC	UC		VC	VC	1.5	XC												UC				
	2.0	M	M	M	M			C	C	XC	XC				C	XC	XC	?		2.0													UC				
	3.0	M	F	M	M			M	C	C	C				C	VC	VC	C	VC	3.0													UC				
	4.0	F	F	M	F		not available in this size		M	M	C	M			M	C	C	C		4.0													XC				
	5.0	F		M	F			F	M	C	M				M	C	C	C		5.0													XC				
	6.0	F			F			F	F	M	M				M	C	C	C		6.0													XC				
	7.0							F			M									7.0													VC				
	8.0																			8.0																	
02 YELLOW	1.5	C		M	C	C		VC	VC		XC				VC	UC	VC	XC	VC	1.5	XC	UC											UC				
	2.0	M	M	M	C	C		C	VC	C	C				VC	XC	C	?		2.0													UC				
	3.0	M	M	M	M	M		C	C	C	C				C	C	C	C	C	3.0	C	XC	VC		XC	VC	XC	XC	XC	XC	XC	UC	UC				
	4.0	M	M	M	M	M		M	M	M	M	C			M	C	M	C		4.0	C	VC	C	XC	VC	VC	VC	XC	XC	XC	VC	UC	UC				
	5.0	F		M	F	M		M	M	M	M	M			M	C	M	C		5.0	M	C	C	C	VC	C	?	?	XC	VC	XC	VC	XC				
	6.0	F			F	M		M	F	M	M	M	M			M	M	C		6.0	M	C	C	C	C	VC	C	C	VC	C	VC	XC	XC				
	7.0							F			M									7.0	M	C	C	C	C	C	C	C	C	C	C	C	VC				
	8.0																			8.0																	
02S LILAC	1.5			C	C	VC			XC	VC					XC	XC	XC	XC	VC	1.5	XC	XC											UC				
	2.0			C	C	C			UC	XC	VC	VC	VC	VC	VC	VC	VC	VC		2.0														UC			
	3.0	not available in this size	not available in this size	M	M	C			VC	C	C	C	C	C	C					3.0	C	VC	VC											UC			
	4.0	not available in this size	not available in this size	M	M	M			M	M	C	C	M	C	C			?		4.0	C	VC	VC	VC	VC	VC	VC	VC	XC	XC	VC	UC	UC				
	5.0			M	F	M			M	M	M	M	M	M						5.0	M	C	C	VC	VC	VC	VC	VC	XC	XC	VC	VC	XC				
	6.0				F	M			M	M	M	M	M	M						6.0	M	C	C	C	C	VC	VC	VC	VC	VC	VC	XC	XC				
	7.0								M	M										7.0	M	C	C	C	VC	VC	VC	VC						XC			
	8.0								M											8.0																	
03 BLUE	1.5	C		C	VC	VC			XC		VC			UC	VC	VC	C	XC	XC	1.5	UC	XC												UC			
	2.0	C	C	C	C	C			C	VC	VC	VC	VC	C	VC	XC	XC	?		2.0														UC			
	3.0	M	M	M	M	M			C	C	C	C	C	C	C	C	C	VC		3.0	C	VC	VC											UC			
	4.0	M	M		M	M			M	C	C	C	C	M	C	C	C	VC		4.0	C	VC	VC											UC			
	5.0	M		M	M	M			M	M	C	M	C	M	C	C	C	VC		5.0	C	?	?	VC	VC	VC	VC	VC	VC	VC	VC	VC	XC	UC			
	6.0	F			M	M			M	M	M	M	M		F	M	M	C	?	6.0	M	C	C	C	C	VC	VC	VC	VC	VC	VC	VC	XC	UC			
	7.0								M	M										7.0	M	C	C	C	C	VC	VC	VC	?						XC		
	8.0								M											8.0																	
04 RED	1.5	C		C	VC	VC			UC	VC			XC	VC	VC	VC	VC	XC	UC	1.5	UC	XC													UC		
	2.0	C	C	C	C	C			VC	XC	VC	VC	VC	C	VC	C	XC	UC	XC	2.0	XC	XC													UC		
	3.0	C	M	C	C	C			C	VC	VC	C	C	C	VC	C	VC	UC	C	3.0	VC	XC	XC												UC		
	4.0	M	M		M	M			M	VC	C	C	M	M	C	M	VC	XC	C	?	4.0	C	VC	VC	XC	XC	XC	XC	XC	XC	XC	XC	UC	UC			
	5.0	M			M	M			M	C	C	C	M	M	C	C	XC	C	VC		5.0	C	?			VC	VC	VC	VC	VC	VC	VC	XC	UC			
	6.0	M			M	M			M	C	C	M	M	M	C	M	C	VC	C	?	6.0	M	C	C	VC	C	VC	VC	VC	VC	VC	VC	VC	XC	UC		
	7.0																				7.0	M	C	C	C											XC	
	8.0								M												8.0																
05 BROWN	1.5			C	VC	VC			UC	XC			XC	VC	VC	VC	VC	XC	UC	1.5	UC	UC													UC		
	2.0			C	C	VC	C		VC	XC	VC	VC	VC	C	VC	C	VC	XC	UC	2.0	XC	XC	?												UC		
	3.0			C	C	C			C	VC	VC	C	C	C	C	VC	C	VC	XC	3.0	VC	XC	XC												UC		
	4.0	not available in this size		C	C	C	M		M	VC	C	C	C	M	C	C	VC	XC	C	?	4.0	VC	VC	XC	XC	XC	XC	XC	XC	XC	XC	XC	UC	UC			
	5.0			C	C	M	M		M	M	C	C	M	C	M	C	VC	C	VC		5.0	C	VC	VC	VC	VC	VC	VC	?	UC	VC	XC	UC	UC			
	6.0			C	M	M			M	C	C	M	M	M	C	M	C	VC	C	VC	6.0	M	VC	VC	C	VC	VC	VC	VC	VC	VC	VC	VC	XC	UC		
	7.0								M	C											7.0	M															
	8.0																				8.0																

\*NOTE: 2,4-D products require SPRAY QUALITY according to ASABE 55721 (highlighted in light green). All data in this chart has been sourced from the manufacturers or their websites as at December 2018. Always confirm spray quality data before purchase, as standards may change. While GRDC attempts to include data on as many nozzles relevant to Australian grain growers as possible in this chart, it may not include all of the nozzle models or sizes available at the time of publication. **Always check product label requirements for spray quality as well as the source of the spray quality information.** Compiled & updated by [bill.gordon@ispray.com.au](mailto:bill.gordon@ispray.com.au) 0429 976 565

Nozzle spacing	25 cm spacing	30 cm spacing	35 cm spacing	40 cm spacing	45 cm spacing
Conversion factor	2	1.66	1.43	1.25	1.11
<p>This 50 cm nozzle spacing table can still be used for booms with different nozzle spacing by using the above conversion factors. <b>For example</b>, if pressure and speed are given, the L/ha value for 30 cm spacing can be calculated by multiplying the given L/ha table value by 1.66. And the other way around. <b>For example</b>, a grower wants to use 80 L/ha. His boom nozzle spacing is 30 cm. To use this table he needs to divide 80 L/ha by the 30 cm conversion factor (= 1.66). <math>80 \text{ L/ha} / 1.66 = 48.2 \text{ L/ha}</math> = a 48.2 L/ha value in this 50 cm spacing table reflects a 80 L/ha value for 30 cm spacing.</p>					

## Travel Speed

$$\text{Speed (km/h)} = \frac{\text{Distance (m)} \times 3.6}{\text{Time (sec)}}$$

For accurate application it is important to calibrate the speed of the tractor. An easy way to do so is to drive in the gear the application will be done in, measure the time it takes to travel **100 m** and apply this simple formula. For example, it takes the farmer **20 sec** to drive **100 m**. His application speed is **18 km/h**.

$$100\text{m} \times 3.6 \div 20 \text{ sec} = 18 \text{ km/h}$$

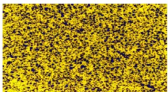
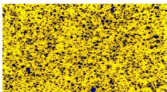
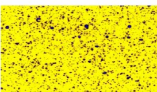
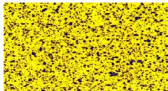
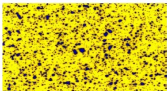
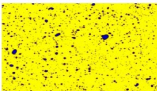
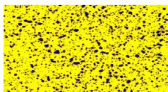
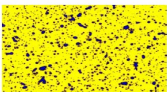
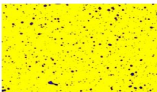
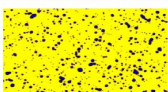
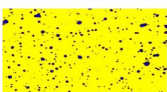
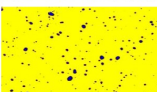
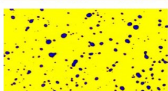

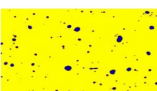
## Pressure

**1 bar (bar)**  
**= 100 kilopascal (kPa)**  
**= 14.5 pound per square inch (PSI)**

**1 pound per square inch (PSI)**  
= **6.89 kilopascal (kPa)**  
= **0.0689 bar (bar)**

As a rule of thumb, to double the flow through a nozzle, the pressure must be increased four times.

## Spray Quality and Volume Matrix

	125 L/ha	85 L/ha	45 L/ha
Fine			
Medium			
Coarse			
Very Coarse			
Extra Coarse			

This matrix is a handy tool to visualize and assess the coverage you're getting from a specific application method.

On average, you will want to see deposits similar to those in the middle of the matrix.

Matrix sourced from  
Sprayers101

# Herbicide Spray Calibration - Keep as a Record

2019-2020

**STEP 1. Drive tractor in field conditions for 100 metres ( Point A to point B ) twice.**

DATE



**STEP 2. Measure the time it takes from point A to point B.**

Run 1:	sec
Run 2:	sec
Average of two:	sec

Tractor Model

Engine RPM

Speed (Km/hr)

Gears (if needed)

Bar/PSI

Nozzle Size

**STEP 3. Collect output (L) for the same amount of time from ONE nozzle.**

Collection 1:	(L)
Collection 2:	(L)
Average of two:	(L)

**STEP 4. Collect nozzle output (L) PER ROW.**

Avg Output of ONE Nozzle	x Number of Nozzles/Row	= L/Row
L	Nozzles/row	L/row



**STEP 5. Calculate the WATER RATE output PER ROW = L/ha .**

Nozzle Output (L/row)	X 100	/ Row Spacing (m)	= Water Rate (L/ha)
L/row			L/ha

**STEP 6. Calculate HECTARES per TANK.**

Tank size (L) /	Water Rate (L/ha)	= hectares/tank
L	L/ha	Ha/tank



**STEP 7. Calculate AMOUNT OF CHEMICAL per TANK MIX.**

Label Rate (Kg or L/ha)	X Hectares per Tank	= amount of product per tank
Kg or L/ha	Ha/tank	Kg or L/tank

**Grower Notes**

**All Information is sourced from the following resources:**

- Nufarm Guide to Sugar Cane (Second Edition), 2018 (Plus Chemical Labels)
- Advice from Nufarm Representatives Mark Rantucci and Nicholas Matthews.
- Nufarm Spray Nozzle Guide + Croplands, 2012
- GRDC 2019 Nozzle Chart
- BSES Weed Management Manual, 2010
- SRA Weed Management Manual,
- HCPSL Weed and Pest Management Guide, 2018
- SRA Grub Management Plan—Northern Region
- SRA website for various information and images
- Sprayers 101 Australia
- Knowledge and input of chemical mixes from local grower feedback on products.

## **REEF WISE FARMING**

- ✓ Follow label rate and application timing for your cane growing region
- ✓ Diurex, Barrage, Ametryne and Atradex all per label for your region
  - ✓ Frequency of application refers to any 12 month period
  - ✓ Ensure recordkeeping is adequate and up-to-date

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