



# POISON

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

Nufarm

# Chlorpyrifos 500EC

Insecticide

**ACTIVE CONSTITUENT: 500 g/L CHLORPYRIFOS (an anti-cholinesterase compound)**

**SOLVENT: 480 g/L LIQUID HYDROCARBONS**

GROUP **1B** INSECTICIDE

For the control of a wide range of insect pests on fruit, vegetables, oilseeds, cotton, cereals, pasture, turf and other situations as specified in the Directions For Use table.

THIS PRODUCT IS TOO HAZARDOUS FOR USE BY HOUSEHOLDERS. HOUSHOLDERS MUST NOT USE THIS PRODUCT IN OR AROUND THE HOME.

**IMPORTANT: READ THOROUGHLY BEFORE USING THIS PRODUCT**

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APVMA Approval No.: 32902/0809

## DIRECTIONS FOR USE

### 1. TREE AND VINE CROPS.

RATE					CRITICAL COMMENTS	
This table shows rates for dilute spraying. For concentrate spraying, refer to the Mixing/Application section					For all uses in this table: Apply by dilute or concentrate spraying equipment. Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods.	
CROP	INSECT	STATE	RATE		WHP <sup>1</sup>	CRITICAL COMMENTS
			Vol/ha	Vol/100L		
Apples, Pears	San Jose scale	NSW,SA, WA, Qld only	-	100mL (2% miscible winter oil may be added to the dormant spray)	14 days	<b>Dormant period:</b> Apply as late as possible ensuring thorough coverage of limbs and branches.
	Woolly aphid					<b>Seasonal period:</b> Apply to coincide with crawler activity in mid-late November and later as necessary. Ensure thorough coverage of branches, foliage and fruit.
	Mealy bugs	SA, WA only				Apply when infestation build-up is first noticed ensuring thorough coverage.
Avocado	Avocado leaf roller, Ivy leaf roller	Qld, WA only	1 or 2L	50 or 100mL	7 days	Use this rate in tank mix with 1L/ha (500mL/100L of water) of dichlorvos (500 g/L). For low volume spray equipment use L/ha rate. Apply at first sign of pest activity before larvae move to fruit. Use higher rate when populations are high.
	Ivy leaf roller	NSW,WA only				Apply at first sign of pest activity before larvae move to fruit. Use higher rate when populations are high.
	Latania scale, Hairy caterpillars, Light brown apple moth, Red shouldered leaf beetle					Apply when populations indicate treatment is required. Spot spray affected trees only. Repeat as necessary. Use higher rate when populations are high.
Citrus	California red scale ( <i>Aonidiella aurantii</i> )	NSW, Vic, SA,WA only	-	100mL alone or 50mL + 1L miscible summer spraying oil	14 days	Apply during November-March period. Two sprays may be required under conditions of heavy scale infestation. Apply with high volume sprayer to point of runoff. <b>Note: DO NOT use on citrus in areas where integrated control programmes are in operation.</b>
		Qld only				

RATE					CRITICAL COMMENTS	
This table shows rates for dilute spraying. For concentrate spraying, refer to the Mixing/Application section					For all uses in this table: Apply by dilute or concentrate spraying equipment. Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods.	
CROP	INSECT	STATE	RATE		WHP <sup>1</sup>	CRITICAL COMMENTS
			Vol/ha	Vol/100L		
Citrus, Pome fruit	Wingless grasshopper	NSW, Vic, Tas, SA, WA only	500mL	50mL	14 days	Spray areas of crop infested with grasshoppers. Apply also as a barrier across the line of advance, when grasshoppers are invading the crop.
Grape Vines	Light brown apple moth	All States	–	50mL	14 days	Apply initial spray just after berry set (early October). Later schedule sprays should be made as required.
	Grapevine moth ( <i>Phalaenoides glycinae</i> )	Qld, Tas, NSW, SA, WA only				
	Grapevine scale ( <i>Parthenolecanium persicae</i> )			100mL alone or 50mL plus 1L miscible winter oil	14 days	Apply as a dormant spray, post pruning (July).
Kiwifruit	Common armyworm, Southern armyworm, Light brown apple moth	NSW, Vic, WA, SA, Tas, Qld only	–	50mL	14 days	Apply at green tip at least 10 days after dormant lime sulphur application and at pre-blossom. DO NOT apply post blossom.
Mango	Common mango scale	Qld, WA only	–	100mL	21 days	Apply to coincide with crawler activity. Ensure thorough coverage of all branches, foliage and fruit.
Stonefruit	European earwig	NSW, WA only	2L	100mL	14 days	<b>Spray Application:</b> Apply in a minimum of 2000 L/ha in spring. If lower volume used increase concentration to apply 2L of product/ha.
		NSW, WA, Tas, SA only	200mL + 250mL sunflower oil/5kg cracked wheat or cracked sorghum			<b>Bait Application:</b> Apply 5kg of bait/ha in spring by fertiliser spreader. See General Instructions on preparation of cracked wheat or cracked sorghum bait.
	San Jose scale	Qld, WA, NSW only	–	100mL (2% miscible winter oil may be added to the dormant spray)		<b>Dormant Period:</b> Apply as late as possible ensuring thorough coverage of all branches. <b>Seasonal Period:</b> Apply to coincide with crawler activity in mid-late November and later if necessary. Ensure thorough coverage of all branches, foliage and fruit. <b>Note: Some fruit marking may occur if spraying is carried out under hot, dry conditions.</b>

## 2. FRUIT AND VEGETABLES

CROP	INSECT	STATE	RATE		WHP <sup>1</sup>	CRITICAL COMMENTS
			Vol/ha	Vol/100L		
Bananas	Banana scab moth ( <i>Nacoleia octasema</i> )	Qld, WA only	<b>Aerial</b> 1 or 2L in a minimum of 10L water	200mL in a minimum of 500L water/ha	14 days	Apply from the first appearance off lower bell and repeat as populations indicate until fingers are exposed. Use high rate with onset of wet weather and/or heavy insect pressure. <b>Note: Burning of young fruit may occur under poor drying conditions.</b>
	Banana weevil borer	Qld, NSW, WA only	–	1 or 1.8 L		After removal of trash, apply 500-700mL of spray depending on butt size, to the lower 30 cm of the butt and to the surrounding soil within a radius of 30 cm, ensuring thorough coverage of butt and suckers. <b>Sub-tropical areas:</b> Use high rate for annual control of borers. <b>Tropical areas:</b> Use high rate in September-November for initial spray and follow-up with low rate in February-April should insect pressure warrant a second application.
	Caterpillars	NSW only	–	200mL		Apply from the first appearance off lower bell and repeat as populations indicate until fingers are exposed. Use as ground application only. DO NOT apply by air.
Cabbage, Cauliflower	African black beetle	NSW, WA only	2L (Boom Spray)	300mL (Drench)	5 days	<b>Boom Spray:</b> Apply in 500-1000L of water/ha at or soon after planting as a 10-15 cm band spray. <b>Drench:</b> Apply 100mL of diluted spray to base of each plant. Treat as soon as the first signs of infestation are observed. <b>Note: If attack is prolonged follow-up boom spray or drench treatment may be necessary.</b>
Carrots	Light brown apple moth	All States	500 or 700mL	–	–	Apply when moths are first detected. Repeat at the higher rate if there is areoccurrence of infestation.
Cassava	Cutworm ( <i>Agrotis</i> spp.)	Qld, WA only	700mL			Apply to seedlings and soil at base of seedlings when cutworm activity is observed.

CROP	INSECT	STATE	RATE		WHP <sup>1</sup>	CRITICAL COMMENTS
			Vol/ha	Vol/100L		
Cole Crops including Cabbage, Cauliflower, Brussel Sprouts, Broccoli	Cabbage moth, Cabbage white butterfly, Cabbage aphid, Cluster caterpillar, Cabbage cluster caterpillar	NSW, Vic, Tas, SA, WA only	1.5 or 2L	150 or 200mL	5 days	Spray at 10-14 day intervals. Use high rate under heavy pressure. <b>Large plants:</b> Use 1,000 Spray/ha. To improve spray coverage add non-ionic wetting agents as recommended.
	Corn earworm, Native budworm ( <i>Helicoverpa</i> spp.)	Qld, WA only	1.5 L	150mL		Apply as pests indicate commencing when pests first appear. <b>Large plants:</b> Use 1,000L spray/ha.
	Corn earworm	NSW, Vic, SA, WA only	1.5 or 2L	150 or 200mL		Apply at 10-14 day intervals. Use high rate under heavy pest pressure. <b>Large plants:</b> Use 1,000L spray/ha.
	Native budworm ( <i>Helicoverpa punctiger</i> )	NSW, Vic, Tas, SA, WA only				Apply at 10 day intervals commencing when pests first appear. Apply at 7 day intervals under heavy pest pressure. <b>Large plants:</b> Use 1,000L spray/ha.
	Wingless grasshopper		500mL	50mL		Spray areas of crop infested with grasshoppers. Also apply as a barrier across the line of advance, when grasshoppers are invading the crop.
	Red legged earth mite, Blue oat mite	NSW, WA only	140 or 300mL	–		Use higher rate for severe infestations. Headlands and vegetation surrounding the crop may also need to be sprayed.
Cucurbits	White flies		–	50mL	Apply when pest is first detected. If required repeat application every 10-14 days.	
Ginger	Cutworm ( <i>Agrotis</i> spp.)	Qld, WA only	700 or 900mL	–	–	Apply when pest population is evident from damage to the primary shoot at or below ground, or to the first leaf during growth.
Pineapples	Pineapple mealybug, Ants	Qld, WA only	–	50 or 100mL	–	Apply when pests are first seen and repeat at 90 day intervals or as necessary. Use a minimum of 3000L of spray/ha. Use higher rate under heavy pest pressure.
	White grubs		5 L	–		Apply as a preplant spray to a freshly cultivated soil surface. Incorporate immediately by rotary hoeing to a depth of 10-20 cm.
Potatoes	African black beetle	NSW, WA only	3-6L	–		Apply the spray to the soil immediately prior to planting, ensuring thorough incorporation to a depth of 15cm. Use high rate under heavy pest pressure.
			900mL			Apply as a second spray as bands on either side of plants at final hilling-up. Ensure good incorporation of the spray immediately into the soil in the hill.
	White fringed weevil	NSW, Vic, WA only	6L			Apply preplant and incorporate into the soil immediately after application.
		WA, NSW only	1L			Apply at hilling-up or 7 weeks after planting as a follow-up to preplant incorporation.
	Wireworms	Vic, WA only	6L			Apply as a band spray to the soil surface incorporating immediately. Use before planting in areas where wire worms are a known problem.
Strawberries	Field crickets ( <i>Teleogryllus commodus</i> ), Mole crickets ( <i>Gryllotalpa</i> spp.)	Qld, WA only	100mL/10 kg bran <sup>2</sup>			Apply in recently ratooned strawberry patches or newly planted runners when damage or pest populations indicate. Broadcast, preferably in the late afternoon to base of plants and inter-row space. <b>See General Instructions for preparation of bran baits.</b>
Silver Beet	Redlegged earth mite, Blue oat mite	NSW, Tas, WA only	140 or 300mL			Use higher rate for severe infestations. Headlands and vegetation surrounding the crop may also need to be treated.
Tomatoes	Tomato grub ( <i>Helicoverpa armiger</i> )	Qld, Vic, NSW, WA only	1.5 or 2L	150 or 200mL	3 days	Spray on 7-10 days schedule commencing at flowering. Use high rate under heavy pest pressure.
	Native budworm ( <i>Helicoverpa punctiger</i> )	Tas, WA only				
	Green vegetable bug	Tas, SA, WA only				Spray at first sign of bug activity. Use higher rate under heavy pest pressure.
	Green peach aphid	Qld, Vic, Tas, SA, WA only	1L	100mL		Spray when aphids are seen. <b>Large Plants:</b> Use 1,000L spray/ha.
	Wingless grasshopper	NSW, Vic, Tas, SA, WA only	500mL	50mL		Spray areas of crop infested with grasshoppers. Also apply as a barrier across the line of advance, when grasshoppers are invading the crop.
	African black beetle	NSW only	2L (Boom Spray)	300mL (Drench)		–

CROP	INSECT	STATE	RATE		WHP <sup>1</sup>	CRITICAL COMMENTS
			Vol/ha	Vol/100L		
Vegetables <sup>3</sup> including asparagus, beans, beetroot, broccoli, Brussels sprouts, cabbage, cauliflower, capsicum, carrot, celery, eggplant, onion, peas, potato, radish, rhubarb, shallot, sweet potato, tomato, turnip	Wingless grasshopper	NSW, Vic, Tas, SA, WA only	500mL	50mL	Tomatoes 3 days	Spray areas of crop infested with grasshoppers. Apply also as a barrier across the line of advance when grasshoppers are invading the crop.
	Cutworm ( <i>Agrotis</i> spp.)	All States	700mL	70mL	Cole Crops Cucurbits 5 days	Apply immediately infestation is observed. Increase concentration to compensate if application is below 1000L spray/ha. Spray should cover soil out to at least 20 cm on both sides of row crop. Retreat as necessary.
	Field crickets ( <i>Teleogryllus commodus</i> ), Mole crickets ( <i>Gryllotalpa</i> spp.)	Qld, WA only	100mL /10kg bran <sup>2</sup>	–	Asparagus Celery 14 days	Apply as pest populations indicate. <b>See General Instructions on preparation of bran baits.</b>
	Vegetable weevil	NSW, WA only	800mL			Apply immediately infestation is observed. Apply as a band over the young plants and adjacent soil along the row. One treatment should be sufficient if plants are sprayed at the seedling stage or soon afterwards.

### 3. FIELD CROPS AND PASTURE

CROP	INSECT	STATE	RATE	WHP <sup>1</sup>	CRITICAL COMMENTS
Cereals, Pasture, Forage Crops	Southern armyworm ( <i>Persectania ewingii</i> ), Common armyworm ( <i>Mythimna convecta</i> )	All States	700 or 900mL/ha	Cereals 10 days (Harvest) 2 days (Grazing)	Spray over total crop area when infestation is widespread. When pests are moving as an "army" treat a broad strip over and in advance of the infestation. <b>Late Stage Instar:</b> Use higher rate when larvae 3 cm in length. Apply follow-up treatment as required.
Cereals	Pasture webworm ( <i>Hednota</i> spp.)	NSW, Vic, Tas, SA only	700mL/ha		Spray at first sign of damage. Apply from the ground with boom or mister or apply by air.
		WA only	300mL/ha		
Cereals, Pasture, Young Plants of Oilseeds	Cutworm ( <i>Agrotis</i> spp.)	Qld, Tas, NSW, WA only	900mL in a minimum of 100L water/ha		Apply immediately infestation is observed. Apply follow-up treatments as required.
Cereals, Pasture, Oil Seeds	Cutworm ( <i>Agrotis munda</i> and <i>A. infusa</i> )	Vic only	700mL in a minimum of 100L water/ha		
Cereals	Cereal curculio	SA, WA only	120mL/100kg seed	-	<b>Apply as a seed dressing</b> , through an accurately calibrated applicator just prior to sowing. <b>Note: A sowing rate of 95 kg/ha (min.) is necessary to ensure economic responses are achieved.</b>
Cereals, Pasture, Forage Crops	Spur-throated locust	Qld, Vic, NSW, WA only	1.25 or 1.5L/ha	Cereals 10 days (Harvest) 2 days (Grazing)	Spray areas of crop or pasture infested with locusts. Apply spray to trees or roosting sites to control swarming adult locusts. <b>Late stage hoppers and adults:</b> Use higher rate.
	Australian plague locust	Vic only	560mL/ha		<b>Adults:</b> Spray areas of crop or pasture infested with locusts.
			350mL/ha		<b>Hoppers:</b> Spray a swath in advance of marching band and then spray along the dense marching front. Continue spraying until all hoppers have been contacted.
		SA only	560mL/ha		<b>Adults:</b> Spray areas of crop or pasture infested with locusts.
		Qld, Vic, NSW, WA only	350mL/ha		<b>Hoppers:</b> Spray a swath in advance of marching band and then spray along the dense marching front. Continue spraying until all hoppers have been contacted.
	Migratory locust	Qld, WA only			Spray areas of crop, trees and roosting sites infested with locusts.
	Blue oat mite	All States	140mL/ha		Spray when pests appear in large numbers, 3-6 weeks after autumn rains. Respray as necessary. Avoid spraying when pests are sheltering. Spray when at least 2.5 cm cover of pasture or crop is present. DO NOT spray if rain is imminent.
	Lucerne flea	NSW, Vic, Tas, SA, WA only	70mL/ha		
Redlegged earth mite		140mL/ha			
Cereals, Pasture, Oil Seeds	Wingless grasshopper		500mL/ha		Spray areas of crop or pasture infested with grasshoppers. Apply also as a barrier across the line of advance, when grasshoppers are invading the crop.

CROP	INSECT	STATE	RATE	WHP <sup>1</sup>	CRITICAL COMMENTS
Field peas, Broad beans, Chickpeas, Lupins, Lucerne, Lucerne Pastures & Clover Seed Crops, Rapeseed/ Canola, Linseed, Safflower, Wheat, Oats, Barley, Rye, Triticale, Improved Annual Pastures, Established Perennial Pastures	Blue oat mite, Redlegged earth mite	NSW, WA only	140 or 300mL/ha	Cereals 10 days (Harvest) 2 days (Grazing)	Apply as a ground spray immediately prior to seedling emergence using sufficient water to give good coverage. If mite activity is severe also spray headlands and surrounding vegetation prior to seedling emergence.
Cotton (Young Plants)	Cutworm ( <i>Agrotis</i> spp.)	Qld, NSW, WA only	900mL in minimum of 100L water/ha	4 weeks (Harvest) 4 weeks (Grazing)	Apply immediately infestation is observed. Apply follow-up treatments as required.
	Southern armyworm ( <i>Persectania ewingii</i> ), Common armyworm ( <i>Mythimna convecta</i> )		700 or 900mL/ha		Spray over total crop area when infestation is widespread. When pests are moving as an "army" treat abroad strip over and in advance of the infestation. <b>Late stage instar:</b> Use higher rate when larvae 3 cm in length. Apply follow-up treatments as required.
	Pink spotted boll worm moth	Qld, WA only	1L/ha		Apply when 10-15 moths are trapped on two consecutive nights. This prevents infestation of bolls by larvae.
	Spur-throated locust	Qld, WA, NSW only	1.25 or 1.5L/ha		Spray areas of crop infested with locusts. Apply spray to trees or roosting sites to control swarming adult locusts. <b>Late stage hoppers or adults:</b> Use higher rate.
	Wingless grasshopper		500mL/ha		Spray areas of crop infested with grasshoppers. Apply also as a barrier across the line of advance when grasshoppers are invading the crop.
	Cotton aphid		300 or 400mL/ha		Apply when pests first appear. Respray as indicated by field inspection. Use higher rate for higher populations.
	Cotton flea beetle, Reshouldered leaf beetle		900mL or 1.5 L/ha		Apply when pests are present. Use higher rate under heavy pest pressure.
	Springtails		300mL/ha		Spray when large numbers of pests occur and damage is evident. Respray as necessary.
	Migratory locust	Qld, WA only	350mL/ha		Spray areas of crop, trees and roosting sites infested with locusts.
Hops	Common armyworm ( <i>Mythimna convecta</i> ), Southern armyworm ( <i>Persectania ewingii</i> )	Tas, WA only	160mL/100L water/ha	-	Apply as pests indicate, commencing when they first appear.
	Light brown apple moth				
Lucerne (Young Plants)	Cutworm ( <i>Agrotis</i> spp.)	Qld, Tas, NSW, WA only	900mL in a minimum of 100L water/ha	2 days (Grazing)	Apply immediately infestation is observed. Apply follow-up treatments as required.
		Vic only	700mL in a minimum of 100 L water		
Lucerne	Cutworm ( <i>Agrotis munda</i> and <i>A. infusa</i> )	SA, WA only			
	Web spinner caterpillar ( <i>Loxostege</i> spp.)	NSW, WA, Qld only	700mL/ha		Spray when pests appear.
Lucerne and Medics in Pasture and Forage Crops	Lucerne leaf roller ( <i>Merophyas divulsana</i> )		300 or 400mL/ha		Apply when pests first appear. <b>Late stage instar:</b> Use higher rate when larvae 1.5cm in length are present and/or under heavy pest pressure.
	Spotted alfalfa aphid, Bluegreen aphid	NSW, WA only	200 or 300mL/ha		Spray when aphids first appear. Use the higher rate when large numbers of aphids are invading the crop. <b>Seedling Lucerne, Medics:</b> Apply when 1-2 aphids/plant are observed. <b>Established Lucerne, Medics:</b> Apply when 20-40 aphids/stem are observed.
	Pea aphid	Qld, Vic, NSW, Tas, SA, WA only			
	Sitona weevil	NSW, Vic, Tas, SA, WA only	350mL/ha		Apply October to December or in autumn when adults occur in damaging numbers.
Maize, Soybeans Sunflower	False wireworm, Cockroaches, Field crickets	Qld, WA only	100mL/ha plus 125mL sunflower oil /2.5 kg cracked wheat or cracked sorghum <sup>4</sup>	-	Apply at planting of crop. <b>See General Instructions on preparation of cracked wheat or sorghum bait.</b>

CROP	INSECT	STATE	RATE	WHP <sup>1</sup>	CRITICAL COMMENTS
Pasture	Lawn armyworm ( <i>Spodoptera mauritia</i> )	Qld, NSW, WA only	700mL/ha	2 days (Grazing)	Spray over total crop area when infestation is widespread. When pests are moving as an "army" treat a broad strip over and in advance of the infestation. Apply follow-up treatments as required.
	Sod webworm ( <i>Herpetogramma licarsialis</i> )	Qld, WA only			Spray as early as possible once pests appear. Apply from the ground with boom or mister. Respray as necessary.
	Blackheaded pasture cockchafer	NSW, Tas, Vic, SA, WA only	900mL/ha		Treat when larvae are actively foraging as indicated by numerous piles of fresh soil, or casts on the surface. This usually occurs after showers of rain following short dry spells. Apply by ground-rig boom.
	Corbie ( <i>Oncopera intricata</i> )	Tas only	1.5L/ha		Apply May to July for Winter Corbie and August to September for Corbie before grub populations reach damaging numbers. Check pastures regularly (as recommended by the Tasmanian Department of Primary Industries) from early May onwards for winter corbies and early August onwards for corbies and apply Nufarm Chlorpyrifos 500EC to winter corbie larvae that are 20mm or less in length and corbie larvae that are 40mm or less in length. Application to larger larvae may result in unsatisfactory control. Aim to apply to dry pastures that have been recently grazed during mid to late afternoon to obtain the best control.
	Winter Corbie or Underground grass grub ( <i>Oncopera rufobrunnea</i> )	Tas, Vic, NSW only	1.5L/ha		
Pasture, Forage Crops	Underground grass grub or Underground grass caterpillar ( <i>Oncopera fasciculatus</i> )	SA, Vic, WA only	900mL/ha	2 days (Grazing)	Apply when caterpillars are actively feeding. Spray before noticeable damage has occurred. Graze pasture prior to spraying to ensure penetration of spray into the pasture sward.
	Underground grass grub ( <i>Oncopera rufobrunnea</i> )	NSW only			
	Brown pasture looper ( <i>Ciampa arietaria</i> )	NSW, Vic, Tas, SA, WA only	700mL/ha		Spray at first sign of pasture infestation.
	Pasture webworm ( <i>Hednota</i> spp.)				Spray at first sign of damage. Apply from the ground with boom or mister or apply by air.
Rapeseed/Canola	Wireworm, False wireworm	Qld, WA only	1 or 1.5L/ha	–	Apply as a broadcast application. Use higher rate with extreme population numbers. See General Instructions on soil application.
Rice	Bloodworm	NSW, WA only	60 or 150mL/ha	10 days	Use higher rate when water more than 15cm or amount of decaying plant material is high.
	Brown plant hopper	Qld, WA only	1.5L/ha		Apply when pest numbers reach 1-2 per tiller and repeat as necessary.
Sorghum  NOTE: DO NOT use on Sugar Drip or Alpha Sorghum. Check new varieties before applying to entire crop	Southern armyworm ( <i>Persectania ewingii</i> ), Common armyworm ( <i>Mythimna convecta</i> )	NSW, Qld, WA only	700 or 900mL/ha	2 days (Harvest) 2 days (Grazing)	Spray over total crop area when infestation is widespread. When pests are moving as an "army" treat a broad strip over and in advance of the infestation. Late stage instar: Use higher rate when larvae 3 cm in length. Apply follow-up treatments as required.
	Cutworm ( <i>Agrotis</i> spp.)		900mL in minimum of 100L water/ha		Apply immediately infestation is observed. Apply follow-up treatments as required.
	Spur-throated locust		1.25 or 1.5L/ha		Spray areas of crop infested with locusts. Apply spray to trees or roosting sites to control swarming adult locusts. <b>Late stage hoppers and adults:</b> Use higher rate.
	Australian plague locust		350mL/ha		<b>Adults:</b> Spray areas of crop infested with locusts. <b>Hoppers:</b> Spray a swath in advance of marching band and then spray along the dense marching front. Continue spraying until all hoppers have been contacted.
	Migratory locust	Qld, WA only	350mL/ha		Spray areas of crop, trees and roosting sites infested with locusts.
	Sorghum midge Corn aphid ( <i>Rhopalosiphum maidis</i> )	Qld, NSW, WA only	500mL/ha		Check regularly (preferably in the morning) and apply when 1-2 midge per head are present from first emergence of boot to pollen shedding. With repeated attack spray at intervals of 5 days or less.
	False wireworm, Cockroaches, Field crickets	Qld, WA only	100mL/ha plus 125mL sunflower oil / 2.5 kg cracked wheat or cracked sorghum <sup>4</sup>		2 days (Grazing)

CROP	INSECT	STATE	RATE	WHP <sup>1</sup>	CRITICAL COMMENTS
Sugarcane	Southern armyworm (Persectania ewingii), Common armyworm (Mythimna convecta)	Qld, WA only	700 or 900mL/ha	7 days (Harvest) 2 days (Grazing)	Spray over total area when infestation is widespread. When pests are moving as an "army" treat a broad strip overhand in advance of the infestation. <b>Late stage instar:</b> Use higher rate when larvae 3 cm in length. Apply follow-up treatments as required.
	Spur-throated locust		1.25 or 1.5L/ha		Spray areas of crop infested with locusts. Apply spray to trees or roosting sites to control swarming locusts. <b>Late stage hoppers &amp; adults:</b> Use higher rate.
	Australian plague locust, Migratory locust		350mL/ha		<b>Adults:</b> Spray areas of crop infested with locusts. <b>Hoppers:</b> Spray a swath in advance of marching band and then spray along the dense marching front. Continue spraying until all hoppers have been contacted. Spray areas of crop, trees and roosting sites infested with locusts.
	Sugarcane wireworm	Qld, WA, NSW only	1.5L/ha		Apply as a low pressure (less than 35kPa) or gravity feed spray onto the plant sett and adjacent soil, at the point of exit from the rear of the planting machine, immediately prior to soil cover being brought in over the sett.
	Symphylids	Qld, WA only	2L/ha		
	African black beetle, Black beetle	NSW, WA only	1.5L/ha		Apply at planting or ratooning. Apply as a low pressure (less than 35kPa) or gravity feed spray onto the plant sett and adjacent soil through a nozzle placed above the planter boards. Repeat treatment within 12 weeks of planting if black beetles reoccur.
Tobacco	Wireworm, False wireworm, Cutworm	Vic, WA only	3L/ha	-	Apply as a preplant spray to cultivated soil surface. Incorporate immediately by rotary hoeing to a depth of 10 cm.

#### 4. MISCELLANEOUS RESTRAINTS

**DO NOT spray polycarbonate surfaces/roof sheeting or aged vinyl wall cladding as solvent may cause etching.**

CROP	INSECT	STATE	RATE	CRITICAL COMMENTS
Domestic and public places. Commercial and industrial areas	Cockroaches (residual control and/or heavy infestations) Spiders	All States	95mL/10L water/ha	Apply as a coarse, low pressure spray to the point of run-off, to cracks, crevices, harbourages and other places where pests may occur. For optimum control of webbing spiders, use a 2-part treatment. After applying as a coarse, low-pressure spray to harbourages where the spiders may occur, apply a light spray over the surfaces of the building.
	Silverfish, Cockroaches (light infestations)		50mL/10L water/ha	
	Ants		95mL/10L water /ha. Use at least 1L of spray/10m <sup>2</sup> infested area	
	Argentine ants	NSW, Vic, Tas, SA, WA only		Locate ant nests and treat appropriately. Spray ant tracks, nests or where ant activity is noticed. Apply to paths in continuous 30cm bands. Apply to base of buildings, walls, fences, rockworks, trunks of shrubs and trees and other hard surfaces to a height of 30cm. <b>Note: Argentine ants in WA: for domestic use only. All occurrences of Argentine ants are to be reported to the WA Department of Agriculture. Note: DO NOT apply inside buildings except as a crack and crevice treatment. DO NOT apply to surface areas such as interior floors and walls.</b>
	Fleas (outdoor use only)	Qld, NSW, Tas, SA, WA, NT only	90mL/10L water/ha	Apply as a fine particle spray. <b>Outdoors:</b> Treat where animals rest and/or where pests have been seen. Remove animals during treatment and until spray deposits dry. <b>DO NOT treat pets with this product. Pets should be treated with a product registered for application to animals.</b>
Light vegetation	Mosquito larvae	Qld, NSW, Vic, WA, NT only	30mL/ha	Apply diluted in water as a spray to areas infested with mosquitoes.
Medium vegetation			60mL/ha	
Heavy vegetation			105mL/ha	
Light to Medium vegetation	Mosquito adults	All States	60mL/ha	
Medium to Heavy vegetation			105mL/ha	
Polluted Water Impoundments	Mosquitoes (larvae and adults)		2mL/10,000L water/ha or 20mL/100m <sup>3</sup>	
Hides/ skins	Hide beetles	All States	200mL/100L water/ha. Use at least 30mL of spray/skin	Apply spray to flesh side of skins or hides sufficient to moisten them. Ensure coverage of ears and lugs. To minimise the chance of later infestation, storage areas should be sprayed regularly. Repeat application every three months. Access through bales should be maintained for application of insecticides.

**4. MISCELLANEOUS (Cont)**

SITUATION	INSECT	STATE	RATE	WHP <sup>1</sup>	CRITICAL COMMENTS
Turf	Crickets	Qld, WA only	2.5kg/ha bran bait <sup>2</sup>	2 days (Grazing)	Baits should only be used on turf farms not on recreational turf. <b>See General Instructions for Bait preparation.</b>
	Funnel ant	Qld, WA, NSW only	<b>Field Application:</b> 2L/ha <b>Spot Spraying:</b> 5mL/5L water		For spot spraying apply 30mL spray to each mound. In areas of high density repeat application may be necessary to ensure thorough mound coverage.
	African black beetle	Qld, NSW, Vic, WA only	6L/ha or 60mL/100m <sup>2</sup>		Apply to lawn when pests appear. Water in immediately after application.
	Argentine stem weevil	NSW, Vic, Tas, SA, WA only	4L/ha or 40mL/100m <sup>2</sup>		Lightly water following application. Apply as late in the day as possible.
	Blackheaded pasture cockchafer		900mL/ha or 9mL/100m <sup>2</sup>		Use sufficient water to give even coverage. Apply as late in the day as possible.
	Brown pasture looper		700mL/ha or 7mL/100m <sup>2</sup>		Apply when pests first appear.
	Pasture webworm	Spray at first sign of damage. Apply with ground-rig boom or mister. Apply as late in the day as possible.			
	Lawn armyworm	Qld, NSW, Vic, SA, WA only			Spray over total lawn area when infestation is present. When pests are moving treat strip over and in advance of infestation. Apply follow-up treatments as required.
	Sod webworm	All States			Apply as soon as pests appear. Repeat as required.
	Underground grass grub ( <i>Oncopora fasciculatus</i> )	NSW, Vic, SA, WA only	900mL/ha or 9mL/100m <sup>2</sup>		Apply when caterpillars are actively feeding. Spray before noticeable damage has occurred. Apply as late in the day as possible.
	Winter Corbie ( <i>Oncopera rufobrunnea</i> ) Corbie ( <i>Oncopera intricata</i> )	Tas only	900mL/ha		Apply May to July for Winter Corbie and August to September for Corbie.
	Crickets	Qld only	20mL/20L water/ha		Apply as required preferably late in the day.

1. Refer Withholding Period Statements below.

2. Refer to Mixing instructions on preparation of bran bait.

3. Including: asparagus, beans, beetroot, broccoli, brussel sprouts, cabbages, cauliflowers, capsicums, carrots, celery, eggplants, onions, peas, potatoes, radishes, rhubarb, shallots, sweet potatoes, tomatoes and turnips.

4. Refer to mixing instructions on preparation of cracked wheat or cracked sorghum bait.

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

### WITHHOLDING PERIOD

Grain sorghum crops: DO NOT HARVEST FOR 2 DAYS AFTER APPLICATION.

Tomatoes: DO NOT HARVEST FOR 3 DAYS AFTER APPLICATION.

Cole crops, cucurbits: DO NOT HARVEST FOR 5 DAYS AFTER APPLICATION.

Sugarcane, Avocado: DO NOT HARVEST FOR 7 DAYS AFTER APPLICATION.

Cereal crops: DO NOT HARVEST FOR 10 DAYS AFTER APPLICATION.

Bananas, Celery, Citrus, Grapevines, Pome fruit, Stone fruit, Kiwifruit, Asparagus: DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION.

Mango: DO NOT HARVEST FOR 21 DAYS AFTER APPLICATION.

Cotton: DO NOT HARVEST FOR 4 WEEKS AFTER APPLICATION. DO NOT GRAZE OR CUT FOR STOCKFOOD FOR 4 WEEKS AFTER APPLICATION.

Cereal, grains, legumes, animal feeds, grasses, glass like plants & other forages/forage crops:

DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 2 DAYS AFTER APPLICATION.

Turf: DO NOT FEED TURF/LAWN CLIPPINGS FROM TREATED AREA TO POULTRY OR LIVESTOCK.

### GENERAL INSTRUCTIONS

Before opening, carefully read Directions for Use, Precautionary Statements, Safety Directions and First Aid Instructions. Thorough coverage is essential.

### MIXING

Slowly add the required amount of this product to water in spray tank under agitation. The special formulation of this product ensures rapid mixing.

### AERIAL APPLICATION

For application by aircraft apply in 10-50L water per hectare.

### DILUTE SPRAYING

Use a sprayer designed to apply high volumes of water up to the point of run-off and matched to the crop being sprayed. Set up and operate the sprayer to achieve even coverage throughout the crop canopy. Apply sufficient water to cover the crop to the point of run-off. Avoid excessive run-off. The required water volume may be determined by applying different test volumes, using different settings on the sprayer, from industry guidelines or expert advice. Add the amount of product specified in the Directions for Use table for each 100L of water. Spray to the point of run-off.

The required dilute spray volume will change and the sprayer set up and operation may also need to be changed, as the crop grows.

### CONCENTRATE SPRAYING

Use a sprayer designed and set up for concentrate spraying (that is a sprayer which applies water volumes less than those required to reach the point of run-off) and matched to the crop being sprayed. Set up and operate the sprayer to achieve even coverage throughout the crop canopy using your chosen water volume. Determine an appropriate dilute spray volume (See Dilute Spraying above) for the crop canopy. This is needed to calculate the concentrate mixing rate. The mixing rate for concentrate spraying can then be calculated in the following way:

#### EXAMPLE ONLY

1. Dilute spray volume as determined above: For example 1500L/ha
2. Your chosen concentrate spray volume: For example 500L/ha
3. The concentration factor in this example is: 3X (i.e.  $1500L \div 500L = 3$ )
4. If the dilute label rate is 10mL/100L, then the concentrate rate becomes  $3 \times 10$  that is 30mL /100L of concentrate spray.

The chosen spray volume, amount of product per 100L of water, and the sprayer set up and operation may need to be changed as the crop grows. For further information on concentrate spraying, users are advised to consult relevant industry guidelines, undertake appropriate competency training and follow industry Best Practices.

### SOIL APPLICATION

#### PREPARATION OF BRAN BAIT

Mix 10mL of this product per kg of bran using sufficient water to give a moist crumb structure. Allow to stand for 2-3 hours before application. Gloves should be worn when preparing and applying bait.

#### PREPARATION OF CRACKED WHEAT OR CRACKED SORGHUM BAIT

Mix the required volume of this product and sunflower oil together. Then, add to the wheat or sorghum, mixing thoroughly. Gloves should be worn when preparing the bait.

### SPRAY DRIFT MINIMISATION

Spray drift may occur under adverse meteorological conditions or from certain spray equipment. DO NOT allow spray to drift onto sensitive areas including, but not limited to, natural streams, rivers or waterways and human dwellings. A spray drift management strategy such as those in the 'Best Management Practices Manual for Cotton Growers' or the 'Pilots and Operators Manual' should be applied.

Options for minimising drift to sensitive areas include not spraying within a certain distance of sensitive areas when the wind is blowing towards them (see table for guidance) or ensuring that drifting spray will be intercepted by a catching surface such as a row of shelter trees, an unsprayed row of orchard trees, or hail netting.

Situation	Recommended buffer distance (m)
Orchard (dormant trees, citrus, large trees)	30
Cotton (aerial application)	300
Other crops (aerial application)	100

### INSECTICIDE RESISTANCE WARNING

GROUP	<b>1B</b>	INSECTICIDE
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For insecticide resistance management Nufarm Chlorpyrifos is a Group 1B insecticide. Some naturally occurring insect biotypes resistant to Nufarm Chlorpyrifos and other Group 1B insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if Nufarm Chlorpyrifos or other Group 1B insecticides are used repeatedly. The effectiveness of Nufarm Chlorpyrifos on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, Nufarm Australia Limited accepts no liability for any losses that may result from the failure of Nufarm Chlorpyrifos to control resistant insects. Nufarm Chlorpyrifos may be subject to specific resistance management strategies. For further information contact your local supplier, Nufarm Australia Limited representative or local agricultural department agronomist.

### COMPATIBILITY

This product is compatible with the following:

Herbicides: Atrazine, Bromoxynil, Chlorsulfuron, Diclofop-methyl, Diuron, Flamprop-methyl, Fluometuron, Paraquat, Paraquat + Diquat, Pendimethalin, Trifluralin.

Insecticides and Miticides: Acephate, Azinphos-methyl, Carbaryl, Cypermethrin, Deltamethrin, Demeton-s-methyl, Diazinon, Dichlorvos, Dicofof, Dimethoate, Endosulfan, Ethion, Fenvalerate, Maldison, Methidathion, Methomyl, Monocrotophos, Oils, Oxythioquinox, Parathion, Phosalone, Phosmet, Tetradifon, Trichlorfon.

Fungicides: Benomyl, Chorothalonil, Thiram, Tradimefon, Zineb\*, Ziram\*.

Fertilizers: Diammonium Phosphate, Limestone, Miloreanite, Monoammonium sulfate, Potash, Sulphurcoated urea, Triple superphosphate, Urea.

Adjuvants: Activator® Surfactant, Chemwet 1000.

### INCOMPATIBILITY

This product is incompatible with the following:

Herbicides: Dicamba, MCPA, Tordon\* 75-D, Tordon\* 242, 2,4-D.

Fungicides: Fixed coppers, liquid and organic coppers, wettable sulphur.

Fertilizers: Iron sulphate, Manganese sulphate, Zinc oxysulphate.

### RE-ENTRY PERIODS

Fields crops, tree crops and vines: DO NOT allow entry into treated crops until spray deposits have dried. If prior entry is required, limit duration of entry and wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves. Clothing must be laundered after each day's use. Greenhouses: DO NOT allow entry into greenhouses until spray deposits have dried and treated areas are adequately ventilated. If prior entry is required, limit duration of entry and wear cotton overalls buttoned to the neck and wrist (or equivalent clothing) and chemical resistant gloves and half face piece respirator. Clothing must be laundered after each day's use. Cotton chippers: DO NOT allow entry into treated areas until spray deposits have dried. After this time, wear shoes, or boots, socks, long trousers, long sleeved shirt, gloves and hat.

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

Care should be taken when applying this product to any released sorghum hybrid or variety. Treat a small area first and observe for 3-4 days.

**PROTECTION OF LIVESTOCK**

Dangerous to bees. DO NOT spray any plants in flower while bees are foraging.

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

Highly toxic to birds and reptiles. Very highly toxic to fish and aquatic invertebrates. DO NOT contaminate streams, rivers or waterways with the chemical or used containers. DO NOT apply if heavy rains or storms that are likely to cause surface runoff are forecast in the immediate area within two days of application. DO NOT reapply to the same crop within 7 days (unless specifically recommended in the Directions for Use). DO NOT apply when irrigating, or to waterlogged soil, or while water remains on the surface or in furrows, unless tail water is captured on farm. DO NOT allow contaminated runoff water from treated paddocks to enter adjacent areas or water bodies. Runoff contaminated by irrigation events (tail water) and a 25mm rain storm should be captured on farm for two days after application.

**SMALL SPILL MANAGEMENT**

Wear appropriate clothing and protective equipment whilst cleaning up small spills (see SAFETY DIRECTIONS). Apply absorbent material such as earth, sand, and cat litter or clay granules to spill. Sweep up material and contain in a refuse vessel for disposal. If spilled inside a building, wash contaminated surfaces to deactivate the chlorpyrifos with a dilute solution of bleach (sodium hypochlorite), prepared according to the bleach label instructions. Dispose of the contaminated material in accordance with STORAGE AND DISPOSAL instructions below.

**STORAGE AND DISPOSAL****(5L, 20L only)**

Store in closed, original container in a cool, well ventilated area. DO NOT store for prolonged periods in direct sunlight. Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. DO NOT dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. If no landfills available, bury the containers below 500mm 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.

**Envirodrum 110L Mini Bulk Returnable Container (110L only)**

Store the original sealed Envirodrum in a cool well ventilated area. DO NOT store for prolonged periods in direct sunlight. DO NOT tamper with the Micro Matic valve or the security seal. DO NOT contaminate the Envirodrum with water or any foreign matter. After each use of the product, please ensure that the Micro Matic coupler, delivery system and hoses are disconnected, triple rinsed with clean water and drained accordingly. When the contents of the Envirodrum have been used, please return the empty Envirodrum to the point of purchase. The Envirodrum remains the property of Nufarm Australia Limited.

**Refillable containers (1000L only)**

Store in the closed, original container in a cool, well ventilated area away from children, animals, food, feedstuffs, seed and fertilizers. DO NOT store for prolonged periods in direct sunlight. Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.

**SAFETY DIRECTIONS**

Product is poisonous if absorbed by skin contact, inhaled or swallowed. Repeated minor exposure may have a cumulative poisoning effect. Will irritate the eyes and skin. Avoid contact with eyes and skin. DO NOT inhale vapour or spray mist. When opening container, preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist, washable hat, elbow-length PVC gloves, face shield or goggles. If product on skin, immediately wash area with soap and water. After use and before eating, drinking or smoking wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves, face shield or goggles and contaminated clothing.

**FIRST AID**

If swallowed, splashed on skin or in eyes, or inhaled, contact a Poisons Information Centre (Phone Australia 131126) or a doctor at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed, activated charcoal may be advised. Give atropine if instructed. If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

**MATERIAL SAFETY DATA SHEET**

For further information refer to the Material Safety Data Sheet (MSDS) which can be obtained from your supplier or the Nufarm website - [www.nufarm.com.au](http://www.nufarm.com.au)

**In case of emergency: Phone 1800 033 498** Ask for shift supervisor. Toll free 24 hours.

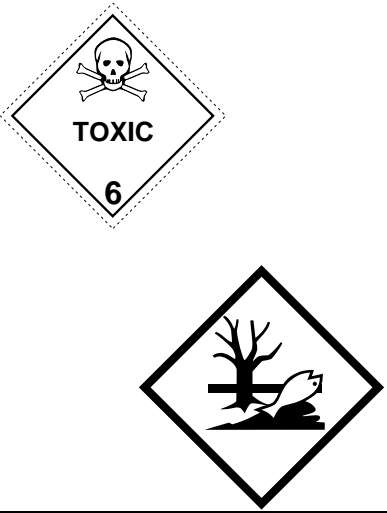
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"Any provisions or rights under the Trade Practices Act 1974 or relevant state legislation which cannot be excluded by those statutes or by law are not intended to be excluded by these conditions of sale. Subject to the foregoing, all warranties, conditions, rights and remedies, expressed or implied under common law, statute or otherwise, in relation to the sale, supply, use or application of this product, are excluded. Nufarm Australia Limited and/or its affiliates ("Nufarm") shall not accept any liability whatsoever (including consequential loss), or howsoever arising (including negligence) for any damage, injury or death connected with the sale, supply, use or application of this product except for liability which cannot be excluded by statute."

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<p><b>ORGANOPHOSPHOROUS PESTICIDE, LIQUID, TOXIC, N.O.S. (CONTAINS CHLORPYRIFOS)</b></p>	
<p><b>UN No: 3018</b></p>	
<p><b>PACKING GROUP: III</b></p>	
<p><b>HAZCHEM: 2 X</b></p>	<p><b>SPECIALIST ADVICE IN EMERGENCY ONLY 1800 033 498 ALL HOURS - AUSTRALIA WIDE</b></p>
<p><b>IN AN EMERGENCY DIAL: 000 POLICE OR FIRE BRIGADE</b></p>	