

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

Genfarm Alpha Duo

I N S E C T I C I D E

ACTIVE CONSTITUENT: 100 g/L ALPHA-CYPERMETHRIN
SOLVENT: 755 g/L LIQUID HYDROCARBON

GROUP	3A	INSECTICIDE
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For the control of certain insect pests, including heliothis (*Helicoverpa* spp.) on various crops and red legged earth mite and blue oat mite on certain field crops and pastures and certain insect pests on fruit and vegetable crops as indicated in the DIRECTIONS FOR USE table in the attached booklet.

IMPORTANT: Read the attached booklet before using this product

Contents: 5, 20, 110, 200, 1000 Litres

Genfarm Crop Protection Pty Ltd
Suite 2, Level 3, 64 Talavera Road,
Macquarie Park,
NSW, 2113
Tel: (02) 9889 5400

STORAGE AND DISPOSAL (5L, 20L, 200L)

Store in the 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 container to recycler or designated collection point.

If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If not 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.

STORAGE AND DISPOSAL (110L, 1000L)

Store in the closed, original container, in a cool, well-ventilated area. Do NOT store for prolonged periods in direct sunlight. Empty containers and product should not be burnt.

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

SAFETY DIRECTIONS

Harmful if swallowed. Will irritate the eyes and skin. Facial skin contact may cause temporary facial numbness. Avoid contact with eyes and skin. Avoid inhaling vapour or spray mist. When preparing spray, wear cotton overalls buttoned to the neck and wrist, washable hat, elbow-length PVC gloves and face shield or goggles. If product in eyes, wash it out immediately with 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 poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia: 13 11 26).

MATERIAL SAFETY DATA SHEET

Additional information is listed in the Material Safety Data Sheet, which can be obtained from the supplier.

CONDITIONS OF SALE

The use of this product is beyond the control of Genfarm Crop Protection Pty Ltd. No warranty is expressed or implied regarding the suitability or efficiency for any purpose for which it is used by the buyer. Genfarm Crop Protection Pty Ltd accepts no responsibility for any consequences resulting from the use of this product. Genfarm Crop Protection Pty Ltd will not be held liable for any loss, injury or damage arising from the sale, supply or use of this product, whether through negligence or otherwise. No responsibility will be accepted for any consequences whatsoever resulting from the use of this product.

UN No. 3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (CONTAINS ALPHA-CYPERMETHRIN MARINE POLLUTANT
In a Transport Emergency Dial 000 Police or Fire Brigade	SPECIALIST ADVICE IN EMERGENCY ONLY 1 800 033 111 ALL HOURS – AUSTRALIA WIDE
PG III	HAZCHEM 2X

MISCELLANEOUS
DANGEROUS
GOODS
9



Genfarm Crop Protection Pty Ltd
Suite 2, Level 3, 64 Talavera Road,
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Batch No.

DOM

APVMA Approval No: 59595/5/0309
59595/20/0309
59595/110/0309
59595/200/0309
59595/1000/0309

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For the control of certain insect pests, including heliothis (*Helicoverpa* spp.) on various crops and red legged earth mite and blue oat mite on certain field crops and pastures and certain insect pests on fruit and vegetable crops as indicated in the DIRECTIONS FOR USE table in the attached booklet.

IMPORTANT: Read this booklet before using this product

APVMA Approval No: 59595/0309

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DIRECTIONS FOR USE

RESTRAINTS:

Do NOT apply if rain is expected within 6 hours of application.

Asparagus - Do Not apply more than 6 times per season.

NOTE: This product is ineffective against synthetic pyrethroid resistant *Helicoverpa armigera* larvae longer than 5mm. All *Helicoverpa armigera* in NSW and Qld should be treated as being resistant to synthetic pyrethroids. Refer to RESISTANCE MANAGEMENT under GENERAL DIRECTIONS.

This product is ineffective against synthetic pyrethroid-resistant *Plutella xylostella*.

CROP	INSECT PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Asparagus (Not for use on White Asparagus)	Garden weevil (<i>Phlyctinus callosus</i>)	WA only	100 mL/ 100 L	1 day	Apply in spring after weevil emergence, at up to 500 L spray solution per hectare. Day time spraying is effective but superior control may be achieved if spray is applied at night. Repeat applications as required, depending on pest pressure. Application to fern, after spear harvest may reduce carry-over of Garden weevil for the following season. Caution: Not for use on White Asparagus, there have been reports of some phytotoxicity when using Alpha-Cypermethrin.
Banksias	Banksia moth (<i>Danima banksiae</i>)	WA only	20 mL/100 L	-	Apply on a regular program at 2-week intervals at early flower development. Commence spraying when blooms are immature and continue until flowers are fully developed.
Broccoli, Brussels sprouts, Cabbages, Cauliflowers, Chinese cabbage, kale, kohlrabi, turnips.	Cabbage moth (<i>Plutella xylostella</i>), cabbage white butterfly (<i>Pieris rapae</i>), Native budworm <i>Helicoverpa punctigera</i> , Cotton bollworm <i>Helicoverpa armigera</i>	All States	LOW VOLUME 400 mL/ha	1 day (Harvest)	Apply according to pest incidence. When reinfestation is continuous, treatment every 7-10 days may be required. Add Wetter 1000 Wetting Agent at 30 mL per 100 L of spray mixture. LOW VOLUME: GROUND RIG APPLICATION: Apply in 100 to 600 L of water per hectare as a fine spray (ie. A droplet size of 100 to 200 microns). AERIAL APPLICATION: Apply in 20 to 60 L of water per hectare as a spray of 100 to 150 microns droplet size. HIGH VOLUME: Gradually increase the spray volume as the plants grow, from 600 L/ha just after transplanting to 1000 L/ha at maturity. Apply as a medium spray (ie. droplet size of 200 to 400 microns VMD). <i>Helicoverpa armigera</i> in NSW and Qld. Follow the application directions for the pest above. Apply as required according to pest incidence. Thorough and frequent crop checks are essential. Preferably apply to eggs. Apply to larvae only if they are less than 5 mm long.
	Cluster caterpillar (<i>Spodoptera litura</i>)	Qld, NSW, ACT, Vic, WA, NT only	HIGH VOLUME 50 mL/100 L		
Canola	Native budworm (<i>Helicoverpa punctigera</i>)	NSW, Vic, Tas, WA only	200 or 300 mL/ha	21 days (cutting for harvest or Stockfeed or grazing)	Do NOT apply more than a total 400 mL/ha per season to any one crop. Inspect the crop regularly during and immediately after flowering. Apply when damaging pest numbers first appear on the crop and repeat if necessary. For aerial application, use a total volume of 30-35 L/ha and apply in the cooler part of the day. Use the higher rate if larvae longer than 10 mm are present.
	Tobacco looper (<i>Chrysodeixis argentifera</i>)	NSW, Vic, Tas, SA, WA only			
	Vegetable weevil (<i>Listroderes difficilis</i>)	NSW, ACT, Vic, Tas, SA, WA only	400 mL/ha		Crops should be inspected as they emerge. Border sprays are required to control invading adults. Genfarm Alpha Duo 100 Insecticide should be applied when cotyledons and leaves are being eaten. Repeat as necessary.
	Cabbage white Butterfly (<i>Pieris rapae</i>) cabbage moth (<i>Plutella xylostella</i>),	NSW, ACT, Vic, Tas, SA & WA only	400 mL/ha	21 days (cutting for harvest or stockfeed or grazing)	Apply according to pest incidence.
	Redlegged earth mite (<i>Halotydeus destructor</i>)	All States except NT and Qld	100 mL/ha		Pre-emergence: Apply by ground rig only. Treat infested paddocks after sowing but prior to crop emergence when soil is moist. Monitor redlegged earth mite numbers and re-treat if necessary.
	Redlegged earth mite (<i>Halotydeus destructor</i>), Blue oat mite (<i>Penthaleus major</i>)		50 mL/ha		Post-emergence: Apply when mite numbers reach damaging levels. Do not apply as a pre-emergence treatment. Do NOT apply as a ULV application

Chickpeas	Native budworm (<i>Helicoverpa punctigera</i>)	WA only	160 mL/ha	21 days (harvest) 35 days (grazing)	Apply to open, less dense crops when numbers of newly hatched larvae first appear on the crop and repeat as necessary.	
		NSW, Vic, SA, WA only	200 or 300 mL/ha		Apply when pest numbers reach damaging levels and repeat if necessary. Use the higher rate if larvae longer than 10 mm are present. Best results will be obtained by spraying at egg hatch.	
	Redlegged earth mite (<i>Halotydeus destructor</i>)	NSW, Vic, Tas, SA, WA only	100 mL/ha		Pre-emergence: Apply by ground rig only. Treat infested paddocks after sowing but prior to crop emergence when soil is moist. Monitor redlegged earth mite numbers and re-treat if necessary. Do NOT apply as a ULV application	
	Redlegged earth mite (<i>Halotydeus destructor</i>), Blue oat mite (<i>Penthaleus major</i>)	NSW, Vic, Tas, SA, WA only	50 mL/ha		Apply when mite numbers reach damaging levels. Do not apply as a pre-emergence treatment. Do NOT apply as a ULV application	
	Cutworm (<i>Agrotis spp.</i>)		75 mL/ha		Check emerging and establishing crops in the late afternoon and evening for caterpillars crawling on the soil surface and feeding on the seedlings. Spray in the late afternoon or evening.	
Cotton	Native budworm (<i>Helicoverpa punctigera</i>)	NSW, NT, Qld, WA only		14 Days (Harvest)	For ULTRA LOW VOLUME see ULV application section of the label. Apply as indicated by field checks using rates appropriate for the infestation level determined. Application should be timed to coincide with egg hatching and before larvae are in protected feeding sites.	
			300 mL/ha		Apply when there are up to 75 eggs and/or up to 5 larvae less than 5 mm long per 100 terminals.	
			400 mL/ha		Apply when there are up to 150 eggs and/or up to 10 larvae less than 5 mm long per 100 terminals and/or when larvae between 5 and 10 mm are present.	
			500 mL/ha		Apply when there are more than 150 eggs and/or more than 10 larvae less than 5 mm long per 100 terminals and/or when larvae longer than 10 mm are present.	
	Cotton bollworm (<i>Helicoverpa armigera</i>)	NSW, NT, Qld, WA only		14 Days (Harvest)	Preferably apply to eggs. Apply to larvae only if they are less than 5 mm long.	
			300 mL/ha		Apply when there are up to 75 eggs and/or more than 5 larvae less than 5 mm long per 100 terminals.	
			400 mL/ha		Apply when there are up to 150 eggs and/or up to 10 larvae less than 5 mm long per 100 terminals.	
		500 mL/ha	Apply when there are more than 150 eggs and/or more than 10 larvae less than 5 mm long per 100 terminals.			
	Rough bollworm (<i>Earias huegeli</i>)		300 or 400 mL/ha		Apply when an average of 2 or more larvae are present per 100 bolls. It is essential to detect and treat infestations in the early stages before larvae are established or concealed in bolls deep in the canopy. Use the higher rate if larvae longer than 10 mm are present. Best results will be obtained by applying at egg hatch.	
	Green mirid (<i>Creontiades dilutus</i>) Apple Dimpling Bug (<i>Campylomma liebknechti</i>)				Apply at recommended threshold levels as indicated by field check. Use higher rate where pest pressure is high and when increased residual protection is required.	
	Cereals (Winter)	Cutworm (<i>Agrotis spp.</i>)	NSW, ACT, Vic, WA only	75 mL/ha	7 days (Harvest) 14 days (Stubble grazing)	DO NOT apply more than a total of 450mL/ha per season to any one crop. For ULTRA LOW VOLUME see ULV application section of the label. Check emerging and establishing crops in the late afternoon and evening for caterpillars crawling on the soil surface and feeding on the seedlings. Spray in the late afternoon or evening.
			Qld only	75 or 150 mL/ha		In QLD, use the higher rate when the infestation is severe, or when there are larvae longer than 10 mm, or when longer residual activity is required.
Webworm (<i>Hednota spp.</i>)		NSW, Vic, SA, WA only	75 mL/ha	Do NOT use as a ULV application. Pre planting: May be applied with knockdown herbicides prior to planting. Apply from the last week in May when the larvae have emerged. Do NOT apply to dense pasture. All pasture should be closely grazed prior to application to ensure adequate spray penetration. Apply in a minimum of 100 L of water per hectare. Repeat as required. Post crop emergence: Inspect crop regularly from emergence and apply at first sign of pest activity. Repeat as required.		

Cereals (cont)	Common armyworm (<i>Mythimna convecta</i>), southern armyworm (<i>Persectania ewingii</i>).	All States	240 mL/ha	7 days (Harvest) 14 days (Stubble grazing)	Apply before "head lopping" occurs and when there are 2 or more larvae per square metre. Spray in the cool of the day (usually late afternoon) when larvae are most active. Ensure the spray penetrates the crop. This rate is effective on larvae up to 20 mm in length. Monitor crop closely and re-treat if necessary. Poor control may occur in crops that have lopped. See application section for correct water rates.
	Redlegged earth mite (<i>Halotydeus destructor</i>)	NSW, ACT, Vic, Tas, SA, WA only	100 mL/ha		Pre-emergence: Apply by ground rig only. Treat infested paddocks after sowing but prior to crop emergence when soil is moist. Monitor redlegged earth mite numbers and re-treat if necessary.
	Redlegged earth mite (<i>Halotydeus destructor</i>), Blue oat mite (<i>Penthaleus major</i>)		50 mL/ha		Apply when mite numbers reach damaging levels. Spray seedling crops if silvering or whitening (bleaching) of the leaves is causing a reduction in crop growth. If possible, spray on a calm, mild morning when mites are actively feeding on crop leaves. Do NOT apply as a pre-emergence treatment.
	Aphids (<i>Rhopalosiphum</i> spp.) (barley yellow dwarf virus vectors)	NSW, ACT, Vic, Tas, SA & WA only	125 mL/ha	7 days (Harvest) 14 days (Stubble grazing)	To control aphids, sprays should be applied at 3 and 7 weeks after emergence to reduce aphid colonisation and the spread of Barley Yellow Dwarf Virus. This will also reduce the effect of feeding aphid damage.
Eucalypt plantations	Adults and larvae of Tasmanian eucalyptus leaf beetle (<i>Chrysophtharta bimaculata</i>), Eucalyptus weevil (<i>Gonipterus</i> spp.), Autumn Gum moth (<i>Msesampela</i> spp.), Bronzed Field Beetle (<i>Adelium</i> spp.) Adults of <i>Liparetrus</i> spp., <i>Cadmus</i> spp.	All States	250 mL/ha	-	Apply by fixed wing aircraft or by helicopter using hydraulic or Micronair equipment, to the crowns of eucalypt trees. Micronair application in 5 litres of water/ha has proved effective. Apply before insect damage causes severe defoliation. Treatment will control small and large larvae as well as adult beetles. For ULTRA LOW VOLUME see ULV application section of the label.
Faba Beans	Native budworm (<i>Helicoverpa punctigera</i>)	WA only	160 mL/ha	4 weeks (Harvest) 35 days (Grazing)	Apply to open, less dense crops when numbers of newly hatched larvae first appear on the crop and repeat as necessary.
		NSW, Vic, Tas, SA, WA only	200 or 300 mL/ha		Apply when pest numbers reach damaging levels and repeat if necessary. Use the higher rate if larvae longer than 10 mm are present. Best results will be obtained by spraying at egg hatch.
	Redlegged earth mite (<i>Halotydeus destructor</i>)		100 mL/ha		Pre-emergence: Apply by ground rig only. Treat infested paddocks after sowing but prior to crop emergence when soil is moist. Monitor redlegged earth mite numbers and re-treat if necessary. Do NOT apply as a ULV application
	Redlegged earth mite (<i>Halotydeus destructor</i>). Blue oat mite (<i>Penthaleus major</i>)		50 mL/ha		Post-emergence: Apply to established crops when mite numbers reach damaging levels. Do NOT apply as a pre-emergence treatment. Do NOT apply as a ULV application
	Cutworm (<i>Agrotis</i> spp.)		75 mL/ha		Check emerging and establishing crops in the late afternoon and evening for caterpillars crawling on the soil surface and feeding on the seedlings. Spray in the late afternoon and evening

Field peas	Native budworm (<i>Helicoverpa punctigera</i>)	WA only	160 mL/ha	4 weeks (Harvest)	For ULTRA LOW VOLUME see ULV application section of the label. Apply to open, less dense crops when numbers of newly hatched larvae first appear on the crop and repeat as necessary.
		NSW, Vic, Tas, SA, WA only	200 or 300 mL/ha		Apply when pest numbers reach damaging levels and repeat if necessary. Use the higher rate if larvae longer than 10 mm are present. Best results will be obtained by spraying at egg hatch.
	Pea weevil (<i>Bruchus pisorum</i>)	NSW, ACT, Vic, SA, WA, only	160 or 200 mL/ha		Apply during flowering prior to egg laying when the adult weevil population reaches one or more per 25 sweeps of a sweep net. Use the higher rate for longer residual protection
	Cutworm (<i>Agrotis</i> spp.)	NSW, ACT, SA, WA only	75 mL/ha		Check emerging and establishing crops in the late afternoon and evening for caterpillars crawling on the soil surface and feeding on the seedlings. Spray in the late afternoon and evening
	Redlegged earth mite (<i>Halotydeus destructor</i>)	NSW, Vic, Tas, SA & WA only	100 mL/ha		Pre-emergence: Apply by ground rig only. Treat infested paddocks after sowing but prior to crop emergence when soil is moist. Monitor redlegged earth mite numbers and re-treat if necessary. Do NOT apply as a ULV application
	Redlegged earth mite (<i>Halotydeus destructor</i>). Blue oat mite (<i>Penthaleus major</i>)	NSW, Vic, Tas, SA, WA only	50 mL/ha		4 weeks (Harvest)
Grapevines (non-bearing)	Pink cutworm (<i>Agrotis munda</i>), apple weevil (Curculio beetle) (<i>Otiorynchus cribricollis</i>), garden weevil (<i>Phlyctinus callosus</i>)		<u>Dilute Spraying</u> 100 mL/ 100L <u>Concentrate Spraying</u> Refer to the Mixing/ Application Section	-	Monitor young vines during spring and early summer and apply at the first signs of leaf damage. Spray the leaves, canes and the soil around each vine to a diameter of 30cm. 70-80 mL of dilute spray should be sufficient for each vine. If pest infestation persists, a second application may be required after three weeks. Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods (See General Instructions)
Lettuce	<i>Helicoverpa</i> spp.	All States	LOW VOLUME 400 mL/ha HIGH VOLUME 50mL/ 100L	3 days (Harvest)	Thoroughly and regularly check the crop. Apply at the first sign of pest activity. Preferably apply to eggs. Apply to larvae only if they are less than 5 mm long. Repeat according to pest incidence.
Linola	Native budworm (<i>Helicoverpa punctigera</i>)	NSW, Vic, Tas, SA, WA only	160 or 200 mL/ha	12 weeks (Harvest)	Do NOT apply more than a total 400 mL/ha per season to any one crop. For ULTRA LOW VOLUME see ULV application section of the label. Inspect the crop regularly during and immediately after flowering. Apply when damaging pest numbers first appear on the crop. For aerial application, apply during the cooler part of the day in a total volume of 30-35 mL/ha. Use the higher rate if larvae longer than 10 mm are present. Refer to the application section for water rates.
Linseed	Native budworm (<i>Helicoverpa punctigera</i>)	NSW, Vic, Tas, SA, WA only	200 or 300 mL/ha	14 days (Harvest)	For ULTRA LOW VOLUME see ULV application section of the label. Inspect the crop regularly during and immediately after flowering. Apply when damaging pest numbers first appear on the crop and repeat if necessary. Use the higher rate if larvae longer than 10 mm are present. Refer to the application section for water rates.
	Cutworm (<i>Agrotis</i> spp.)	NSW, ACT, Tas, SA, WA only	75 mL/ha		Check emerging and establishing crops in the late afternoon and evening for caterpillars crawling on the soil surface and feeding on seedlings. Spray in the late afternoon and evening.
Lucerne (Seed and forage crops)	Native budworm (<i>Helicoverpa punctigera</i>)	NSW, VIC, Tas, SA, WA only	160 mL/ha	14 days (Grazing or cutting for stockfeed)	For ULTRA LOW VOLUME see ULV application section of the label. Do NOT apply more than one application per cut or grazing for animal feed. Apply when pest populations reach economically damaging levels. Apply to larvae less than 5 mm in length.
	Green mirid (<i>Creontiades dilutus</i>)				Do NOT apply more than one application per cut or grazing for animal feed. Apply when pest populations reach economically damaging levels.

Lupins	Native budworm (<i>Helicoverpa punctigera</i>)	NSW, ACT, Vic, SA only	200 or 300 mL/ha	4 weeks (Harvest)	<p>Do NOT apply more than a total 600 mL/ha per season to any one lupin crop. For ULTRA LOW VOLUME see ULV application section of the label. Apply when damaging pest numbers first appear on the crop and repeat if necessary. Use the higher rate if larvae longer than 10 mm are present. Best results will be obtained by spraying at egg hatch.</p> <p>Spraying should be timed to precede the first visible damage to the pods. Use the higher rate when the infestation is severe, or when residual activity is required.</p> <p>Check emerging and establishing crops in the late afternoon and evening for caterpillars crawling on the soil surface and feeding on seedlings. Spray in late afternoon and evening.</p> <p>Spray in the cool of the day (late afternoon) when larvae are most active.</p> <p>Pre-emergence: Apply by ground rig only. Treat infested paddocks after sowing but prior to crop emergence when soil is moist. Monitor redlegged earth mite numbers and re-treat if necessary. Do NOT apply as a ULV application</p> <p>Apply when mite numbers reach damaging levels. Do NOT apply as a pre-emergence treatment. Do NOT apply as a ULV application</p>
		WA only	120 or 200 mL/ha		
	Cutworm (<i>Agrotis</i> spp.)	NSW, ACT, Vic, Tas, SA, WA only	75 mL/ha		
	Common armyworm (<i>Mythimna convecta</i>), southern armyworm (<i>Persectania ewingii</i>)	ACT, NSW, WA only	240 mL/ha		
	Redlegged earth mite (<i>Halotydeus destructor</i>)	NSW, Vic, Tas, SA & WA only	100 mL/ha		
	Redlegged earth mite (<i>Halotydeus destructor</i>). Blue oat mite (<i>Penthaleus major</i>)		50 mL/ha		
Maize	Corn earworm (<i>Helicoverpa armigera</i>)	Qld, NSW, ACT, Vic, NT, WA only	300 or 400 mL/ha	7 days (Harvest)	<p>For ULTRA LOW VOLUME see ULV application section of the label. Thoroughly and regularly check the crop. Apply from early silking according to pest incidence. Use the higher rate if larvae longer than 10 mm are present. In Qld, NSW and NT, preferably apply to eggs or apply to larvae only if they are less than 5 mm long.</p> <p>Thoroughly and regularly check the crop. Apply when infestation reaches an economically damaging level and repeat if necessary. Best results will be obtained by applying at egg hatch. Use the higher rate if larvae longer than 10 mm are present.</p>
	Native budworm (<i>Helicoverpa punctigera</i>)	All States			
Mung beans, navy beans	Native budworm (<i>Helicoverpa punctigera</i>)	Qld, NSW, ACT, NT, WA Only	300 or 400 mL/ha		<p>For ULTRA LOW VOLUME see ULV application section of the label. Crop checking should be aimed to detect larvae as they hatch. Small larvae are easier to kill than large larvae. Apply when the number of larvae feeding on flowers or pods reach 1 to 2 per metre of row. Repeat as required. Use the higher rate when larvae larger than 10 mm are present or when canopy is dense. Best results will be obtained by spraying at egg hatch.</p> <p>Thoroughly and regularly check the crop. Apply when the infestation reaches an economically damaging level and repeat as required. Preferably apply to eggs. In Qld and NSW, apply to larvae only if they are less than 5 mm long. Use the higher rate when pest pressure is high.</p>
	Corn earworm (<i>Helicoverpa armigera</i>)				

Pastures (Legume and grass based pastures)	Wingless grasshopper (<i>Phaulacridium vittatum</i>)	All States	160 mL/ha	3 days (Grazing) 14 days (Cut for stockfeed)	Do NOT apply more than a total 320 mL/ha per season. For ULTRA LOW VOLUME see ULV application section of the label. Apply to infested areas and repeat as necessary. Spraying is most effective on newly emerged hoppers before they begin dispersing. Later sprays should be applied before the start of egg laying. Good coverage is essential. Apply when pest infestation reaches an economically damaging level. Spraying is most effective when larvae are detected and treated early. Suspect paddocks should be dug after the first substantial rain in April/May and inspected to ensure grubs are present in sufficient numbers to warrant treatment. Spraying after June will give poorer results. Pre-emergence: Apply by ground rig only. Treat infested paddocks after sowing but prior to crop emergence when soil is moist. Monitor redlegged earth mite numbers and re-treat if necessary. Do NOT apply as a ULV application Post-emergence: Apply when mite numbers reach damaging levels. Do NOT apply as a ULV application Autumn/Winter: Apply 4 to 7 weeks after the opening rains in late autumn/early winter when RLEM are present (2-3 weeks after egg hatch occurs). Genfarm Alpha Duo Insecticide is rainfast after spray deposits have dried on the leaf surface. Genfarm Alpha Duo Insecticide can be mixed with herbicides used for winter cleaning of sub clover pastures. Consult the compatibility section of this label for details. Spring : If RLEM/BOM numbers increase in the spring, spray again before diapause egg production begins. Genfarm Alpha Duo Insecticide can be mixed with herbicides used for spray topping pastures. Consult the compatibility section of this label for details. Do NOT apply as a pre-emergence treatment.
	Brown pasture looper (<i>Ciampa arietaria</i>)	NSW, Vic, Tas, SA, WA only	50 mL/ha		
	Blackheaded pasture cockchafer (<i>Aphodius tasmaniae</i>)		100 mL/ha		
	Redlegged earth mite (<i>Halotydeus destructor</i>)	ACT, NSW, SA, Tas, Vic,	100 mL/ha		
	Redlegged earth Mite (<i>Halotydeus destructor</i>), Blue oat mite (<i>Penthaleus major</i>)	WA only	50 mL/ha		
Pome fruit: apples, pears	Apple weevil (<i>Otiorhynchus cribricollis</i>), Garden weevil (<i>Phlyctinus callosus</i>)	NSW, Vic, SA, WA only	<u>Dilute Spraying</u> 100 mL/100L <u>Concentrate Spraying</u> Refer to the Mixing/ Application Section	14 days (Harvest)	Spray approx. 1-2 litres of solution onto the crotch, trunk and the soil at the base of each tree at peak weevil emergence. This is usually late October - late November for garden weevil, and late November - mid December for apple weevil. Monitor weevil emergence using a single sided cardboard trunk band. Continue monitoring after spraying as a second spray may be needed 3-4 weeks later. Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods (See General Instructions)
Rice (both aerial and drill sown)	Common armyworm (<i>Mythimna convecta</i>)	NSW, WA only	200 mL/ha	7 days	Do NOT apply more than a total 400 mL/ha per season to any one crop. Inspect crops regularly for the presence of grubs from flowering onwards. Apply when rice damaging pest numbers first appear. Apply by aircraft in 20-30 litres of water/ha, to drained fields only. Spray in the cool of the day (early morning or late afternoon) when larvae are most active. Monitor crop closely and retreat if necessary. Poor control may occur in crops that have lodged. See Application Section for correct water rates. Apply to water immediately after sowing used a helicopter or fixed wing aircraft. A second treatment may be required approximately 10 to 14 days later. Plants are not vulnerable to bloodworm damage after secondary roots have developed. DO NOT release water from treated areas off farm until the retention period specified by local irrigation authorities have been met.
	Bloodworm		100 mL/ha		

Sorghum	Corn earworm (<i>Helicoverpa armigera</i>), Native budworm (<i>Helicoverpa punctigera</i>)	Qld, NSW, ACT, NT, WA Only	300 or 400 mL/ha	7 days (Harvest)	For ULTRA LOW VOLUME see ULV application section of the label. Crop checking should commence when the head emerges from the boot and continue at daily intervals until the end of flowering for midge and at weekly intervals until maturity for <i>Helicoverpa armigera</i> . Do NOT apply to tight headed varieties. Apply when there are 2 or more actively feeding larvae per head, or when numbers are sufficient to cause economic damage. Use the higher rate if longer residual control is required. Preferably apply to eggs. Apply to larvae only if they are less than 5 mm long. Repeat as required.	
	Sorghum midge (<i>Contarinia sorghicola</i>)		100 or 200 mL/ha		Apply when numbers reach 1 to 2 per head, between head emergence and the end of flowering. Repeat as required. Use the higher rate for increased residual protection.	
Soybeans	Native budworm (<i>Helicoverpa punctigera</i>)	Qld, NSW, ACT, NT, WA Only	300 or 400 mL/ha		For ULTRA LOW VOLUME see ULV application section of the label. Thoroughly and regularly check the crop. Apply when the number of larvae feeding on flowers plus pods reaches 1 to 2 per metre of row. Repeat as required. Use the higher rate if larvae longer than 10 mm are present. Best results will be obtained by applying at egg hatch.	
	Corn earworm (<i>Helicoverpa armigera</i>)				Thoroughly and regularly check the crop. Apply when numbers are sufficient to cause economic damage. Preferably apply to eggs. In Qld and NSW, apply to larvae only if they are less than 5 mm long. Repeat as required. Use the higher rate when pest pressure is high.	
Stone fruit: apricots, nectarines, peaches, plums	Apple weevil (<i>Otiorhynchus cribricollis</i>), garden weevil (<i>Phlyctinus callosus</i>)	WA only	<u>Dilute Spraying</u> 100 mL/100L <u>Concentrate Spraying</u> Refer to the Mixing/ Application Section	14 days (Harvest)	Spray approx. 1-2 litres of solution onto the crotch, trunk and soil at the base of each tree at peak weevil emergence. This is usually late October - late November for garden weevil, and late November - mid December for apple weevil. Monitor weevil emergence using a single sided cardboard trunk band. Continue monitoring after spraying as a second spray 3-4 weeks later may be needed. Apply the same total amount of product to the target crop whether applying this product by dilute or concentrate spraying methods (See General Instructions)	
Sunflowers	Native budworm (<i>Helicoverpa punctigera</i>)	Qld, NSW, Vic, ACT, NT, WA only	300 or 400 mL/ha	21 days (Harvest)	TO PROTECT BEES and ensure adequate pollination, application during flowering should be avoided. If application is necessary at flowering apply early morning or late afternoon when bees are not actively foraging. For ULTRA LOW VOLUME see ULV application section of the label. Crop checking should be aimed to detect larvae as they hatch. Small larvae are easier to kill than large larvae. Apply when the infestation reaches an average of 2-3 larvae per head or when economic damage is occurring. Repeat as required. Apply before the heads turn downwards to ensure adequate coverage. Use the higher rate if larvae longer than 10 mm are present. Best results will be obtained by applying at egg hatch.	
	Corn earworm (<i>Helicoverpa armigera</i>)	Qld, NSW, Vic, ACT, NT, WA only	300 or 400 mL/ha	21 days (Harvest)	Thoroughly and regularly check the crop. Apply when numbers are sufficient to cause economic damage. Preferably apply to eggs. In NSW and Qld, apply to larvae only if they are less than 5 mm long. Repeat as required. Use the higher rate under heavy pest pressure.	
	Grey cluster bug (<i>Nysius clevelandensis</i>) Rutherglen bug (<i>Nysius vinitor</i>)					Apply from budding when adult numbers per plant reach 10 to 15 in dryland crops and 20 to 25 in irrigated crops. After flowering, apply when adult numbers on the face of heads reach 20 to 25. Repeat as required. The higher rate should be used when numbers are very high.
	Rutherglen bug (<i>Nysius vinitor</i>)	Vic, Tas, WA only	250 mL/ha			Apply from budding when adult numbers per plant reach 10 to 15 in dryland crops and 20 to 25 in irrigated crops. After flowering, apply when adult numbers on the face of heads reach 20 to 25. Repeat as required.

Sweet corn	Native budworm (<i>Helicoverpa punctigera</i>) Corn earworm (<i>Helicoverpa armigera</i>)	All States	300 or 400 mL/ha	7 days (Harvest)	For ULTRA LOW VOLUME see ULV application section of the label. Thoroughly and regularly check the crop. The level of cob damage tolerated varies with market requirements. Fresh Market Corn: Apply at 5-8 day intervals, accordingly to pest incidence, from tassel emergence until the silks wither. Processing Corn: Apply from early silking according to pest incidence. Larvae in protected feeding sites within the cob are not effectively controlled. Apply before this situation occurs. Best results will be obtained by applying at egg hatch. Use the higher rate if larvae longer than 10 mm are present. To help contain pyrethroid resistance in <i>Helicoverpa armigera</i> in summer crops, do NOT apply to corn earworm longer than 5 mm.
Tobacco	Native budworm (<i>Helicoverpa punctigera</i>), tobacco budworm (<i>Helicoverpa armigera</i>)	Vic, WA, Qld only	30 or 40 mL/100L	7 days (Harvest)	Apply from just after transplanting on a 7 to 10 day schedule, according to pest incidence. Apply as a medium to fine spray using hollow and/or solid cone nozzles. The spray volume should be gradually increased as the plants grow, from 200 L/ha just after transplanting to 1000 L/ha at maturity. Use the higher rate when larvae longer than 10 mm are present or when egg laying is intense.
Tomatoes (bush and trellis)	Native budworm (<i>Helicoverpa punctigera</i>)	All States	ULTRA LOW VOLUME: 300 or 400 mL/ha LOW VOLUME: 200, 300 or 400 mL/ha HIGH VOLUME: 20, 30 or 50mL/ 100 L	1 day (Harvest)	Do NOT apply to trellis tomatoes by aircraft. Apply on a 7 to 10 day schedule while the pests are active. Use the middle rate when pest activity is high and/or when larvae between 10 and 20 mm in length are present. Use the highest rate when larvae longer than 20 mm are present and/or when interruption of the schedule enables a very severe infestation to develop. ULTRA LOW VOLUME: See ULV Application Section in this label. LOW VOLUME: By ground-rig: apply in 100 to 400 L of water per hectare as a fine spray. By aircraft: apply in a minimum of 10 L of water per hectare as a spray of 100 to 150 microns VMD. HIGH VOLUME: Apply as a medium to fine spray. Gradually increase the spray volume as the plants grow, from 200 L/ha just after transplanting establishment to 1000 L/ha at maturity.
	Tomato grub (<i>Helicoverpa armigera</i>)	Vic, Tas, SA, WA only			
	Cluster caterpillar (<i>Spodoptera litura</i>)	Qld, NSW, ACT, WA, NT only			
	Tomato grub (<i>Helicoverpa armigera</i>)	Qld, NSW, NT only			
	Plague thrips (<i>Thrips imaginis</i>)	All States		1 day (Harvest)	Thoroughly check the crop at 2-3 day intervals from transplanting/emergence. Apply according to pest incidence. Preferably apply to eggs. Apply to larvae only if they are less than 5 mm long. Apply using the methods described for native budworm above. The crop should be frequently checked when it is flowering for the presence of the pest. Apply when the infestation reaches an economically damaging level, using the application methods described for native budworm above.

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

WITHHOLDING PERIODS:

Asparagus, Broccoli, Brussels Sprouts, Cabbages, Cauliflowers, Chinese Cabbage, Kale, Kohlrabi, Tomatoes, Turnips: DO NOT HARVEST FOR 1 DAY AFTER APPLICATION.

Lettuce: DO NOT HARVEST FOR 3 DAYS AFTER APPLICATION.

Pastures: DO NOT GRAZE FOR 3 DAYS AFTER APPLICATION. DO NOT CUT FOR STOCKFEED FOR 14 DAYS AFTER APPLICATION.

Maize, Mung Beans, Navy Beans, Rice, Sorghum, Soybeans, Sweet Corn, Tobacco: DO NOT HARVEST FOR 7 DAYS AFTER APPLICATION.

Winter Cereals: DO NOT HARVEST FOR 7 DAYS AFTER APPLICATION. DO NOT GRAZE TREATED STUBBLE FOR 14 DAYS AFTER APPLICATION.

Lucerne: DO NOT GRAZE OR CUT FOR STOCKFEED FOR 14 DAYS AFTER APPLICATION. Cotton, Linseed, Pome Fruit, Stone Fruit: DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION.

Canola: DO NOT GRAZE OR CUT FOR STOCK FEED FOR 21 DAYS AFTER APPLICATION. DO NOT CUT AND WINDROW FOR HARVEST FOR 21 DAYS AFTER APPLICATION.

Chickpeas: DO NOT HARVEST FOR 21 DAYS AFTER APPLICATION. DO NOT GRAZE OR CUT FOR STOCKFEED FOR 35 DAYS AFTER APPLICATION.

Sunflowers: DO NOT HARVEST FOR 21 DAYS AFTER APPLICATION.

Field Peas, Lupins: DO NOT HARVEST FOR 4 WEEKS AFTER APPLICATION.

Faba Beans: DO NOT HARVEST FOR 4 WEEKS AFTER APPLICATION. DO NOT GRAZE OR CUT FOR STOCKFEED FOR 35 DAYS AFTER APPLICATION.

Linola: DO NOT HARVEST FOR 12 WEEKS AFTER APPLICATION.

GENERAL INSTRUCTIONS

Genfarm Alpha Duo 100 Insecticide is a contact and residual insecticide. It can be used as a protective treatment when applied at regular intervals or as a knockdown treatment to control existing infestations.

This product can be applied mixed either with a water carrier or oil based bulking agents such as D-C-TRON Cotton Spray Oil or compatible ULV products.

Insecticide Resistance Warning

GROUP	3A	INSECTICIDE
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For insect resistance management Genfarm Alpha Duo 100 Insecticide is a group 3A Insecticide. Some naturally occurring insect biotypes resistant to this product and other group 3A insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if this product or other Group 3A insecticides are used repeatedly. The effectiveness of this product on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, Genfarm Crop Protection Pty Ltd accepts no liability for any losses that may result from the failure of this product to control resistant insects.

Genfarm Alpha Duo 100 Insecticide may be subject to specific resistance management strategies. For further information contact your local supplier, Genfarm Crop Protection Pty Ltd representative or local agricultural department agronomist.

In NSW and Qld, application of this product to *Helicoverpa armigera* larvae longer than 5 mm may not only be ineffective but it may increase the level of synthetic pyrethroid resistance.

This product should NOT be used to treat infestations that were not controlled by an earlier application of it or another synthetic pyrethroid.

Infestations not controlled by this product should be treated with an insecticide from another chemical group. Application of this product with an insecticide from another chemical group such as Methomyl will assist with the management of synthetic pyrethroid resistant *Helicoverpa armigera*.

Mixing/ Application

Low Volume and High Volume applications by ground rig or aircraft when Genfarm Alpha Duo Insecticide is applied with a water carrier.

Add the required quantity of Genfarm Alpha Duo Insecticide to water in the spray tank and mix thoroughly. Maintain agitation during mixing and application.

Ultra Low Volume (ULV) application by aircraft when Genfarm Alpha Duo Insecticide is applied with oil based bulking agents.

This product can be applied mixed either with D-C-TRON Cotton Spray Oil or other compatible products (See Compatibility Section).

First add the mixing partner to the spray tank and then, with the agitator on motion, add the required quantity of Genfarm Alpha Duo Insecticide direct to the spray tank. Do not mix with water and ensure that no water is in the spraying system.

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 spray volume : For example 500L/ha
3. The concentration factor in this example is; 3X (ie. 1500L divided by 500L = 3)
4. If the dilute label rate is 10mL/100L, then the concentrate rate becomes 3 x 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.

Low Volume and High Volume applications by ground rig or aircraft when Genfarm Alpha Duo Insecticide is applied with a water carrier.

Genfarm Alpha Duo Insecticide can be applied by ground or aircraft with a water carrier. Thorough coverage is essential to ensure adequate control. Always apply with a non-ionic surfactant unless detailed on the label of a tank mix partner. Apply during the cooler parts of the day or at night.

Ground Application – water carrier

For low volume spraying of field crops with ground rigs, use a total volume of 50-200 L/ha except for sweet corn, tomatoes and tobacco where higher volumes should be used. Drop arms should be used on ground rigs in row crops taller than 30cm (0.3 m). The application should be made as a fine spray, preferably using hollow cone nozzles, unless directed in the Critical Comments.

Aerial Application – water carrier

Do NOT apply to trellis tomatoes by aircraft. Use a minimum spray volume of 20 L/ha. For spring/early application to cereals, Linola, canola, rice and to other dense crops, apply in a total spray volume of 30 – 35L/ha. If possible, spray in a crosswind. Avoid spraying in calm conditions or when wind is light and variable in direction. Apply as a spray of 100-150 microns VMD.

Ultra Low Volume (ULV) application by aircraft

Genfarm Alpha Duo Insecticide, mixed with DC-TRON Cotton spray Oil and other compatible products should be applied in a minimum total spray volume of 1.5L/ha. It should only be applied by aircraft with suitable equipment to provide a droplet size of approximately 80-100 microns VMD. Applications should be made in the cooler part of the day or at night. Avoid application in very calm or windy conditions. Preferably apply in light to moderate cross winds.

Compatibility

Low Volume and High Volume application by ground rig or aircraft when Genfarm Alpha Duo Insecticide is applied with a water carrier

This product is compatible with AZODRIN 400, DC-TRON Cotton spray Oil, Dithane+M45, Kelthane EC, Kocide, NUDRIN INSECTICIDE, NUDRIN 225, Parathion 500, Parathion M500, PHOSDRIN, Pirate 300, Ridomil, Wuxal, Select, dimethoate, paraquat, diquat, Glyphosate, Tigrex, Jaguar, simazine, spinnaker, 2,4-D amine and ester., 2,4-DB and MCPA.

DO NOT mix Genfarm Alpha Duo Insecticide with wettable powders and WDG's BEFORE addition to spray tank. Genfarm Alpha Duo Insecticide can be mixed with Penncozeb DF providing the mixture is agitated efficiently and used immediately.

Ultra Low Volume (ULV) application by aircraft

This product should be mixed only with specific ULV formulations or other insecticides, eg AZODRIN 400, NUDRIN 225, Pirate 300 and PBO synergists, when mixed according to the directions on the PBO synergist labels.

PROTECTION OF LIVESTOCK

Dangerous to bees. Do NOT spray on any plants in flower while bees are foraging. Genfarm Alpha Duo Insecticide is known to have a deterrent effect on foraging bees for a short period of time after spraying. Risk to bees is reduced by spraying in early morning and late evening while bees are not foraging.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

Dangerous to fish and aquatic invertebrates such as yabbies. Do NOT contaminate fish ponds, dams, drains, rivers or streams with the chemical or used containers. Drift and run-off from treated areas may be hazardous to fish or crustaceans in adjacent sites.

STORAGE AND DISPOSAL

Store in the 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 container to recycler or designated collection point.

If not recycling, break, crush or puncture and bury empty containers in a local authority landfill. If not 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.

Refillable containers (1000L only): Empty contents fully into application equipment and return to point of supply for refill or storage.

SAFETY DIRECTIONS

Harmful if swallowed. Will irritate the eyes and skin. Facial skin contact may cause temporary facial numbness. Avoid contact with eyes and skin. Avoid inhaling vapour or spray mist. When preparing spray, wear cotton overalls buttoned to the neck and wrist, washable hat, elbow-length PVC gloves and face shield or goggles. If product in eyes, wash it out immediately with 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 poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia: 13 11 26).

MATERIAL SAFETY DATA SHEET

Additional information is listed in the Material Safety Data Sheet, which can be obtained from the supplier.

CONDITIONS OF SALE

The use of this product is beyond the control of Genfarm Crop Protection Pty Ltd. No warranty is expressed or implied regarding the suitability or efficiency for any purpose for which it is used by the buyer. Genfarm Crop Protection Pty Ltd accepts no responsibility for any consequences resulting from the use of this product. Genfarm Crop Protection Pty Ltd will not be held liable for any loss, injury or damage arising from the sale, supply or use of this product, whether through negligence or otherwise. No responsibility will be accepted for any consequences whatsoever resulting from the use of this product.

FOR SPECIALIST ADVICE IN AN EMERGENCY ONLY
PHONE 1 800 033 111
24 HOURS

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