

POISON

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

TITAN

ALPHA-CYPERMETHRIN 300 SC INSECTICIDE

ACTIVE CONSTITUENT: 300g/L ALPHA-CYPERMETHRIN

GROUP **3A** INSECTICIDE

Controls: Certain insect pests, including Redlegged Earth Mite and Blue Oat Mite.

Uses: Field crops and pastures, fruit and vegetable crops as specified in the Directions For Use table.

APVMA Approval No.: 89988/126650

Pack Size: 5L-1000L



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SC

Formulation Type
Suspension Concentrate

IN A TRANSPORT EMERGENCY
• DIAL 000 • POLICE OR FIRE BRIGADE

TRANSPORT AND HANDLING NOT
A DANGEROUS GOOD ACCORDING
TO THE AUSTRALIAN DANGEROUS
GOODS (ADG) CODE FOR TRANSPORT
BY ROAD AND RAIL

DIRECTIONS FOR USE

Restraints: DO NOT apply if rain is expected within 6 hours after application.

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 INSTRUCTIONS.

CEREALS					
CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Cereals (Winter)	Cutworm (<i>Agrotis</i> spp.)	VIC, SA, WA only	25mL/ha	7 days (Harvest) 14 days (Stubble Grazing)	DO NOT apply more than a total of 180mL/ha per season to any one crop. 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 late afternoon or evening.
		QLD, NSW, ACT only	25mL/ha or 50mL/ha		Use the higher rate when the infestation is severe, or when there are larvae longer than 10mm, or when longer residual activity is required. In NSW, DO NOT apply before May or after August.
	Webworm (<i>Hednota</i> spp.)	NSW, ACT, VIC, SA, WA only	25mL/ha		Pre-planting: May be applied with knock-down 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 100L of water per hectare. Repeat as required. Post-crop emergence: Inspect crop regularly from emergence and apply at the first sign of pest activity. Repeat as required.
	Common Armyworm (<i>Mythimna convecta</i>), Southern Armyworm (<i>Persectania ewingii</i>)	ALL STATES	80mL/ha		Apply before "head topping" occurs when larval numbers exceed two or more per square metre. Spray in the cool of the day (late afternoon) when larvae are most active. Spray to achieve good crop penetration. This rate is effective against small (6mm) larvae and large (20mm) grubs. Monitor crop closely and re-treat if necessary. Poor control may occur on crops that have lodged. See application section for correct water rates.
	Redlegged Earth Mite (<i>Halotydeus destructor</i>)	NSW, ACT, VIC, TAS, SA, WA only	35mL/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>)		20mL/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.
	Aphid control to prevent Barley Yellow Dwarf Virus transmission		40mL/ha		Apply at 5 to 6 weeks after sowing. Repeat the application 4 to 5 weeks later to maintain protection against aphid transmission to BYDV until after stem elongation.
Maize	Corn Earworm (<i>Helicoverpa armigera</i>)	QLD, NSW, ACT, VIC, WA, NT only	100mL/ha or 135mL/ha	7 days (Harvest)	Thoroughly and regularly check the crop. Apply from early silking according to pest incidence. Use the higher rate if larvae longer than 10mm are present. In Qld, NSW and NT, preferably apply to eggs or apply to larvae only if they are less than 5mm long.
	Native Budworm (<i>Helicoverpa punctigera</i>)	ALL STATES			Thoroughly and regularly check the crop. Apply from early silking according to pest incidence. Use the higher rate if larvae longer than 10mm are present. Best results will be obtained by applying at egg hatch.
Rice (both aerial and drill sown)	Common Armyworm (<i>Mythimna convecta</i>)	NSW, WA only	70mL/ha	7 days	DO NOT apply more than a total 135mL/ha per season to any one crop. Inspect crops regularly for the presence of grubs from flowering onwards. Apply when rice damaging pests 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 re-treat if necessary. Poor control may occur in crops that have lodged. See application section for correct water rates.
	Bloodworm		35mL/ha		Apply to water immediately after sowing using 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 has been met.

CEREALS – continued

CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Sorghum	Corn Earworm (<i>Helicoverpa armigera</i>), Native Budworm (<i>Helicoverpa punctigera</i>)	QLD, NSW, ACT, WA, NT only	100mL/ha or 135mL/ha	7 days (Harvest)	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. To help contain pyrethroid resistance in <i>Helicoverpa armigera</i> in summer crops, DO NOT apply to larvae >5mm in Northern Qld and NSW. Repeat as required.
	Green Mirid (<i>Creontiades dilutus</i>)				Apply when pest levels reach economically damaging levels as indicated by field checks. Use the higher rate when pest pressure is high and when increased residual protection is required.
	Sorghum Midge (<i>Contarinia sorghicola</i>)		35mL/ha or 70mL/ha		Apply when midge 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.

COTTON

CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Cotton	Cotton Bollworm (<i>Helicoverpa armigera</i>), Native Budworm (<i>Helicoverpa punctigera</i>)	QLD, NSW, WA, NT only	100mL/ha	14 days (Harvest)	Apply as indicated by field checks. Application should be timed to coincide with egg hatching, before larvae are in the protected feeding sites. Apply when egg laying is light i.e. 5-20 brown eggs/m or 2-5 newly hatched larvae per 100 terminals.
			135mL/ha		Apply when egg laying is heavy and/or larvae are up to 5mm in length.
			170mL/ha		Apply when egg laying is continuous, larvae are up to 5mm in length and longer residual protection is required.
	Rough Bollworm (<i>Earias huegeli</i>)		100mL/ha or 135mL/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 10mm 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>)		100mL/ha or 135mL/ha		Apply at recommended threshold levels as indicated by field checks. Use higher rate when pest pressure is high and when increased residual protection is required.

GRAIN LEGUMES

CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Chickpeas	Native Budworm (<i>Helicoverpa punctigera</i>)	WA only	55mL/ha	21 days (Harvest)	Apply to open, less dense crops when numbers of newly hatched larvae first appear on the crop and repeat as necessary.
		QLD, NSW, ACT, VIC, TAS, SA, WA only	70mL/ha or 100mL/ha	5 weeks (Grazing)	Apply when pest numbers reach damaging levels and repeat if necessary. Use the higher rate when larvae longer than 10mm are present. Best results will be obtained when spraying at egg hatch.
	Redlegged Earth Mite (<i>Halotydeus destructor</i>)	NSW, ACT, VIC, TAS, SA, WA only	35mL/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>)		20mL/ha		Apply when mite numbers reach damaging levels. DO NOT apply as a pre-emergence treatment.
	Cutworm (<i>Agrotis</i> spp.)		25mL/ha		Check emerging or 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.
Faba Beans	Native Budworm (<i>Helicoverpa punctigera</i>)	WA only	55mL/ha	4 weeks (Harvest)	Apply to open, less dense crops when numbers of newly hatched larvae first appear on the crop and repeat as necessary.
		NSW, ACT, VIC, TAS, SA, WA only	70mL/ha or 100mL/ha	5 weeks (Grazing)	Apply when pest numbers reach damaging levels and repeat as necessary. Use the higher rate if larvae longer than 10mm are present. Best results will be obtained by spraying at egg hatch.
	Redlegged Earth Mite (<i>Halotydeus destructor</i>)	NSW, ACT, VIC, TAS, SA, WA only	35mL/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.

GRAIN LEGUMES – continued					
CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Faba Beans – continued	Redlegged Earth Mite (<i>Halotydeus destructor</i>), Blue Oat Mite (<i>Penthaleus major</i>)	NSW, ACT, VIC, TAS, SA, WA only	20mL/ha	4 weeks (Harvest) 5 weeks (Grazing)	Apply when mite numbers reach damaging levels. DO NOT apply as a pre-emergence treatment.
	Cutworm (<i>Agrotis</i> spp.)		25mL/ha		Check emerging or 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.
Lupins	Native Budworm (<i>Helicoverpa punctigera</i>)	NSW, ACT, VIC, SA only	70mL/ha or 100mL/ha	4 weeks (Harvest)	DO NOT apply more than a total of 200mL/ha per season to any one lupin crop. Apply when damaging pest numbers first appear on the crop and repeat if necessary. Use the higher rate if larvae longer than 10mm are present. Best results will be obtained by spraying at egg hatch.
		WA only	40mL/ha or 70mL/ha		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.
	Cutworm (<i>Agrotis</i> spp.)	NSW, ACT, VIC, TAS, SA, WA only	25mL/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 late afternoon and evening.
	Common Armyworm (<i>Mythimna convecta</i>), Southern Armyworm (<i>Persectania ewingii</i>)	NSW, ACT, WA only	80mL/ha		Spray in the cool of the day (late afternoon) when larvae are most active.
	Redlegged Earth Mite (<i>Halotydeus destructor</i>)	NSW, ACT, VIC, TAS, SA, WA only	35mL/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>)		20mL/ha		Apply when mite numbers reach damaging levels. DO NOT apply as a pre-emergence treatment.
Field peas	Native Budworm (<i>Helicoverpa punctigera</i>)	NSW, ACT, VIC, TAS, SA, WA only	55mL/ha	4 weeks (Harvest)	Check crops for larvae every three to four days from the beginning of flowering. Apply to open, less dense crops when numbers of newly hatched larvae first appear on the crop and repeat as necessary.
			70mL/ha or 100mL/ha		Check crops for larvae every three to four days from the beginning of flowering. Apply when pest numbers reach damaging levels and repeat if necessary. Use the higher rate if larvae longer than 10mm are present. Best results will be obtained by spraying at egg hatch.
	Pea Weevil (<i>Bruchus pisorum</i>)	NSW, ACT, VIC, SA, WA only	55mL/ha or 70mL/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.)		25mL/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 late afternoon and evening.
	Redlegged Earth Mite (<i>Halotydeus destructor</i>)	NSW, ACT, VIC, TAS, SA, WA only	35mL/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>)		20mL/ha		Apply when mite numbers reach damaging levels. DO NOT apply as a pre-emergence treatment.
Soybeans	Corn Earworm (<i>Helicoverpa armigera</i>), Native Budworm (<i>Helicoverpa punctigera</i>)	QLD, NSW, ACT, WA, NT only	100mL/ha or 135mL/ha	7 days (Harvest)	Apply when flower or pod feeding numbers reach 1-2 per metre of row. Apply the higher rate when canopy is dense or if longer residual control is required. To help contain pyrethroid resistance in <i>Helicoverpa armigera</i> in summer crops, DO NOT apply to Corn Earworm larvae >5mm in Northern NSW & Qld. Best results will be obtained by applying at egg hatch.

GRAPEVINES					
CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Grapevines (non-bearing)	Pink Cutworm (<i>Agrotis munda</i>), Apple Weevil (Curculio Beetle) (<i>Otiorynchus cribricollis</i>), Garden Weevil (<i>Phlyctinus callosus</i>)	NSW, VIC, TAS, SA, WA only	Dilute Spraying 35mL/100L water Concentrate Spraying 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. 70-80mL 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).
OIL SEEDS					
CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Canola	Native Budworm (<i>Helicoverpa punctigera</i>)	NSW, ACT, VIC, TAS, SA, WA only	70mL/ha or 100mL/ha	21 days (Harvest) (Grazing)	DO NOT apply more than a total 135mL/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 30-35L/ha and apply in the cooler part of the day. Use the higher rate if larvae longer than 10mm are present.
	Tobacco Looper (<i>Chrysodeixis argentifera</i>)				Crops should be inspected as they emerge. Border sprays are required to control invading adults. TITAN Alpha-Cypermethrin 300 SC Insecticide should be applied when cotyledons and leaves are being eaten. Repeat as necessary.
	Vegetable Weevil (<i>Listroderes difficilis</i>)		135mL/ha		Apply according to pest pressure.
	Cabbage White Butterfly (<i>Pieris rapae</i>), Cabbage Moth (<i>Plutella xylostella</i>)				
	Redlegged Earth Mite (<i>Halotydeus destructor</i>)		35mL/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>)		20mL/ha		Apply when mite numbers reach damaging levels. DO NOT apply as a pre-emergence treatment.
Linola	Native Budworm (<i>Helicoverpa punctigera</i>)	NSW, VIC, TAS, SA, WA only	55mL/ha or 70mL/ha	12 weeks (Harvest)	DO NOT apply more than a total 135mL/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. For aerial application, apply during the cooler part of the day in a total volume of 30-35L/ha. Use the higher rate if larvae longer than 10mm are present. Refer to application section for water rates.
Linseed	Native Budworm (<i>Helicoverpa punctigera</i>)	NSW, ACT, VIC, TAS, SA, WA only	70mL/ha or 100mL/ha	14 days (Harvest)	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 10mm are present. Best results will be obtained by spraying at egg hatch. Refer to application section for water rates.
	Cutworm (<i>Agrotis</i> spp.)		25mL/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 late afternoon and evening.
Sunflowers	Native Budworm (<i>Helicoverpa punctigera</i>)	QLD, NSW, ACT, VIC, WA, NT only	100mL/ha or 135mL/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. 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 10mm 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 NSW and QLD, apply to larvae only if they are less than 5mm long. Repeat as required. Use the higher rate under heavy pest pressure.

OIL SEEDS – continued					
CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Sunflowers – continued	Grey Cluster Bug (<i>Nysius clevelandensis</i>), Rutherglen Bug (<i>Nysius vinitor</i>)	QLD, NSW, ACT, VIC, TAS, WA, NT only	100mL/ha or 135mL/ha	21 days (Harvest)	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	85mL/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.
PASTURES					
CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Lucerne (Seed and forage crops)	Native Budworm (<i>Helicoverpa punctigera</i>)	NSW, ACT, VIC, TAS, SA, WA only	55mL/ha	14 days (Grazing or cutting for stockfeed)	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 5mm 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.
Pastures (Legume and grass based pastures)	Wingless Grasshopper (<i>Phaulacridium vittatum</i>)	ALL STATES	55mL/ha	3 days (Grazing) 14 days (Cut for stockfeed)	DO NOT apply more than a total of 110mL/ha per season. 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.
	Brown Pasture Looper (<i>Ciampa arietaria</i>)	NSW, ACT, VIC, TAS, SA, WA only	20mL/ha		Apply when pest infestation reaches an economically damaging level.
	Blackheaded Pasture Cockchafer (<i>Aphodius tasmaniae</i>)		35mL/ha		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.
	Redlegged Earth Mite (<i>Halotydeus destructor</i>)		35mL/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>)	NSW, ACT, VIC, TAS, SA, WA only	20mL/ha		Apply when mite numbers reach damaging levels. Autumn/Winter Apply after the opening rains in late autumn/early winter 2-3 weeks after egg hatch occurs. TITAN Alpha-Cypermethrin 300 SC Insecticide is rainfast after spray deposits have dried on the leaf surface. TITAN Alpha-Cypermethrin 300 SC 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. TITAN Alpha-Cypermethrin 300 SC 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.
POME & STONEFRUIT					
CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Pome fruit: Apples, Pears	Apple Weevil (<i>Otiorhynchus cribricollis</i>), Garden Weevil (<i>Phlyctinus callosus</i>)	NSW, VIC, SA, WA only	Dilute Spraying 35mL/100L water	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)
Stone Fruit: Apricots, Nectarines, Peaches, Plums	Apple Weevil (<i>Otiorhynchus cribricollis</i>), Garden Weevil (<i>Phlyctinus callosus</i>)	WA only	Concentrate Spraying Refer to the Mixing/ Application Section		

TREE & ORNAMENTALS					
CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Eucalypt Plantations	Adults and larvae of Tasmanian Eucalyptus Leaf Beetle (<i>Chrysophtharta bimaculata</i>), Eucalyptus Weevil (<i>Gonipterus</i> spp.), Autumn Gum Moth (<i>Mnesampela</i> spp.), Bronzed Field Beetle (<i>Adelium</i> spp.), Adults of <i>Liparetrus</i> spp. & <i>Cadmus</i> spp.	ALL STATES	85mL/ha to 100mL/ha	–	Ground or aerial applications depending on size of trees. Apply by fixed wing aircraft or by helicopter using hydraulic nozzles 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.
Banksias, Ornamentals	Banksia Moth (<i>Danima banksiae</i>)	WA only	7mL/100L	–	Apply on a regular programme at 2 week intervals at early flower development. Commence spraying when blooms are immature and continue until flowers are fully developed.
TOBACCO					
CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Tobacco	Native Budworm (<i>Helicoverpa punctigera</i>), Tobacco Budworm (<i>Helicoverpa armigera</i>)	QLD, VIC, WA only	10mL/100L or 13mL/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 200L/ha just after transplanting to 1000L/ha at maturity. Use the higher rate when larvae longer than 10mm are present or when egg laying is intense.
VEGETABLES					
CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Asparagus (Not for use on White Asparagus)	Garden Weevil (<i>Phlyctinus callosus</i>)	WA only	35mL/100L	1 day (Harvest)	Caution: Not for use on white asparagus, there have been reports of some phytotoxicity when using alpha-cypermethrin. Apply in spring after weevil emergence, at up to 500L spray solution per ha. Day time spraying is effective but superior control may be achieved if spray is applied at night. Depending on pest pressure, repeat applications may be required. Application to fern, after spear harvest, may reduce carry-over of Garden Weevil for the following season.
Mung Beans, Navy Beans	Native Budworm (<i>Helicoverpa punctigera</i>)	QLD, NSW, ACT, WA, NT only	100mL/ha or 135mL/ha	7 days (Harvest)	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 10mm are present or when canopy is dense. Best results will be obtained by spraying at egg hatch.
	Green Mirid (<i>Creontiades dilutus</i>)				Target nymphs and/or adults when they reach economically damaging levels. Repeat as necessary. Use higher rate when pest pressure is high and when increased residual protection is required.
	Corn Earworm (<i>Helicoverpa armigera</i>)				Thoroughly and regularly check the crop. Apply when the infestation reaches an economically damaging level and repeat as required. Preferably apply to eggs. To help contain pyrethroid resistance of <i>Helicoverpa armigera</i> in summer crops, DO NOT apply to larvae >5mm in Northern Qld and NSW. Use the higher rate when pest pressure is high.
	Green Vegetable Bug (<i>Nezara viridula</i>)		135mL/ha		Apply with Agral* (10mL/100L) from flowering, using a medium spray quality. Repeat as necessary.

VEGETABLES – continued

CROP	PESTS	STATE	RATE	WHP	CRITICAL COMMENTS
Cabbages, Cauliflowers, Brussels Sprouts, Broccoli, Kale, Kohlrabi, Chinese Cabbage, Turnips	Cabbage White Butterfly (<i>Pieris rapae</i>), Cabbage Moth (<i>Plutella xylostella</i>), Cluster Caterpillar (<i>Spodoptera litura</i>), <i>Helicoverpa punctigera</i> , <i>Helicoverpa armigera</i>	ALL STATES	LOW VOLUME 135mL/ha HIGH VOLUME 20mL/100L	1 day (Harvest)	Apply according to pest incidence. When reinfestation is continuous, treatment every 7-10 days may be required. Add Wetspray Wetting Agent at 30mL per 100L of spray mixture. LOW VOLUME: Ground Rig Application: Apply in 100 to 600L of water per hectare as a fine spray (i.e. a droplet size of 100 to 200 microns). Aerial Application: Apply in 20 to 60L 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 600L/ha just after transplanting to 1000L/ha at maturity. Apply as a medium spray (i.e. a 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 5mm long.
Cauliflowers	Staphylinid Beetle (up to 3 mm length)	WA only	LOW VOLUME 135mL/ha HIGH VOLUME 20mL/100L		Apply by boomspray. Spray when pests first appear.
Lettuce	<i>Helicoverpa</i> spp.	ALL STATES	LOW VOLUME 135mL/ha HIGH VOLUME 20mL/100L	3 days (Harvest)	Spray at first sign of activity. Good spray coverage is essential. Recheck crop at regular intervals. If no specific resistance strategy exists, DO NOT use insecticides from the same mode of action group for consecutive sprays. To help contain pyrethroid resistance in <i>Helicoverpa armigera</i> in summer crops, DO NOT apply to Corn Earworm larvae >5mm in Northern NSW and QLD.
Sweet Corn	Corn Earworm (<i>Helicoverpa armigera</i>), Native Budworm (<i>Helicoverpa punctigera</i>)	ALL STATES	100mL/ha or 135mL/ha	7 days (Harvest)	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 10mm are present. To help contain pyrethroid resistance in <i>Helicoverpa armigera</i> in summer crops, DO NOT apply to Corn Earworm longer than 5mm.
Tomatoes (bush and trellis)	Native Budworm (<i>Helicoverpa punctigera</i>), Tomato Grub (<i>Helicoverpa armigera</i>)	ALL STATES	Programme Application: LOW VOLUME 70mL/ha or HIGH VOLUME 7mL/100L or 10mL/100L Established Infestations LOW VOLUME 135mL/ha HIGH VOLUME 20mL/100L	1 day (Harvest)	DO NOT apply to trellis tomatoes by aircraft. PROGRAMME APPLICATION: Apply on a 7 to 10 day schedule whilst pests are active. Use the higher rate when egg laying is intense. Apply as a fine spray using hollow cone nozzles. For low volume application apply in 100 to 400L/ha by ground or minimum of 10L/ha by air. For high volume application apply 200L of spray mixture per hectare after transplanting and increase gradually to 1,000L/ha at maturity. ESTABLISHED APPLICATION: Apply these rates to established infestations or escape situations. DO NOT apply to Tomato Grub larvae >5mm in length.
	Cluster Caterpillar (<i>Spodoptera litura</i>)	QLD, NSW, ACT, WA, NT only			LOW VOLUME: By ground rig: Apply in 100 to 400L of water per hectare as a fine spray. By aircraft: Apply in a minimum of 10L 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 200L/ha just after transplanting establishment to 1000L/ha at maturity.
	Plague Thrips (<i>Thrips imaginis</i>)	ALL STATES	LOW VOLUME: 45mL/ha HIGH VOLUME: 6mL/100L		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:

Harvest

ASPARAGUS, CABBAGES, CAULIFLOWERS, CHINESE CABBAGE, BRUSSELS SPROUTS, BROCCOLI, KALE, KOHLRABI, TURNIPS, TOMATOES: DO NOT HARVEST FOR 1 DAY AFTER APPLICATION.

LETTUCE: DO NOT HARVEST FOR 3 DAYS AFTER APPLICATION.

MAIZE, MUNG BEANS, NAVY BEANS, RICE, SORGHUM, SOYBEANS, SWEET CORN, TOBACCO, WINTER CEREALS: DO NOT HARVEST FOR 7 DAYS AFTER APPLICATION.

COTTON, LINSEED, POME FRUIT, STONE FRUIT: DO NOT HARVEST FOR 14 DAYS AFTER APPLICATION.

CHICKPEAS, SUNFLOWERS: DO NOT HARVEST FOR 21 DAYS AFTER APPLICATION.

FABA BEANS, FIELD PEAS, LUPINS: DO NOT HARVEST FOR 4 WEEKS AFTER APPLICATION.

LINOLA: DO NOT HARVEST FOR 12 WEEKS AFTER APPLICATION.

CANOLA: DO NOT HARVEST FOR 21 DAYS AFTER APPLICATION. DO NOT APPLY LATER THAN 21 DAYS BEFORE CUTTING AND WINDROWING FOR HARVEST.

Grazing

CANOLA: DO NOT GRAZE OR CUT FOR STOCKFEED FOR 21 DAYS AFTER APPLICATION.

CHICKPEAS, FABA BEANS: DO NOT GRAZE OR CUT FOR STOCKFOOD FOR 5 WEEKS.

LUCERNE: DO NOT GRAZE OR CUT FOR STOCK FOOD FOR 14 DAYS AFTER APPLICATION.

PASTURES: DO NOT GRAZE FOR 3 DAYS AFTER APPLICATION. DO NOT CUT FOR STOCK FOOD FOR 14 DAYS AFTER APPLICATION.

WINTER CEREALS: DO NOT GRAZE TREATED STUBBLE FOR 14 DAYS AFTER APPLICATION.

GENERAL INSTRUCTIONS

TITAN Alpha-Cypermethrin 300 SC 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.

MIXING

Low Volume and High Volume applications by ground rig or aircraft when TITAN Alpha-Cypermethrin 300 SC Insecticide is applied with water carrier. Add the required quantity of TITAN Alpha-Cypermethrin 300 SC Insecticide to water in the spray tank and mix thoroughly.

Maintain agitation during mixing and application.

APPLICATION

Dilute Spraying (Pome and Stone Fruit, Grapes)

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 TITAN Alpha-Cypermethrin 300 SC Insecticide 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 (Pome and Stone Fruit, Grapes)

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 concentrate factor in this example is 3X (i.e. $1500L \div 500L = 3$)
4. If the dilute label rate is 125mL/100L, then the concentrate rate becomes 3×125 , that is 375mL/100L of concentrate spray.

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

Low Volume and High Volume by ground rig or aircraft when TITAN Alpha-Cypermethrin 300 SC Insecticide is applied with water carrier.

TITAN Alpha-Cypermethrin 300 SC 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 night.

Ground Application – water carrier

For low volume spraying of field crops with ground rigs, use a total volume of 50-200L/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 (0.3m). The application should be made as a fine spray, preferably using hollow cone nozzles, unless otherwise directed in the Critical Comments.

Aerial Application – water carrier

DO NOT apply to trellis tomatoes by aircraft. Use a minimum spray volume of 20L/ha. For spring/early summer application to cereals, canola, and to other dense crops, apply in a total spray volume of 30 to 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.

COMPATIBILITY

Low Volume and High Volume applications by ground rig or aircraft when TITAN Alpha-Cypermethrin 300 SC Insecticide is applied with water carrier.

TITAN Alpha-Cypermethrin 300 SC Insecticide is compatible with 2,4-D amine and ester, 2,4-DB, Amitraz 200, Ammonium sulphate e.g. Liase*, Aphidex® 800, Axiom® MZ, Bumper® 625, Captan, Cavalier®, Cavalry®, Chief®, Colt®, Countdown®, Cutlass®, D-C-Tron® Cotton Spray Oil, dimethoate, diquat, Electra® 225, Farnazine®, Howzat®, Kocide*, Lascar®, Legacy® MA, liq. nitrogen (e.g. Flexi N), mancozeb, Mandate®, Marvel®, MCPA 750, MCPA LVE, Miti-Fol® EC, Orius®, Phosdrin*, Platinum®, Platinum® Xtra 360, Radial®, Rustler*, Shogun®, Simanex®, Soprano®, Spraytop®, Strike-Out®, Triathlon®, Trilogy®, Veritas®, Vezir® 700, Vortex®, Weedmaster* Agro, Wipe-Out® Pro, Wipe-Out® 450, Wuxal*, YaraVita* Glytre® ZnP*, Zulu® XT.

Add surfactants/adjuvants to the tank mix as per the relevant product label recommendations.

DO NOT mix TITAN Alpha-Cypermethrin 300 SC Insecticide with wettable powders and water dispersable granules BEFORE addition to the spray tank.

INSECTICIDE RESISTANCE WARNING

For insecticide resistance management TITAN Alpha-Cypermethrin 300 SC Insecticide is a Group 3A insecticide. Some naturally occurring insect biotypes resistant to TITAN Alpha-Cypermethrin 300 SC Insecticide 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 TITAN Alpha-Cypermethrin 300 SC Insecticide or other Group 3A insecticides are used repeatedly. The effectiveness of TITAN Alpha-Cypermethrin 300 SC Insecticide on resistant individuals could be significantly reduced.

Since occurrence of resistant individuals is difficult to detect prior to use TITAN AG Pty Ltd accepts no liability for any losses that may result from the failure of TITAN Alpha-Cypermethrin 300 SC Insecticide to control resistant insects.

TITAN Alpha-Cypermethrin 300 SC Insecticide may be subject to specific resistance management strategies. For further information, contact your local supplier, TITAN AG representative or local agricultural department agronomist.

In NSW and QLD, application of this product to *Helicoverpa armigera* larvae longer than 5mm 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 Electra® will assist with the management of synthetic pyrethroid resistant *Helicoverpa armigera*.



PROTECTION OF LIVESTOCK

Dangerous to bees. DO NOT spray on any plants in flower while bees are foraging. TITAN Alpha-Cypermethrin 300 SC 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 life such as yabbies.

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

Water from treated rice fields must not be released off-farm until the retention period specified by local irrigation authorities has been met.

DO NOT apply or allow spray drift onto adjacent non-target aquatic areas.

Allow sufficient buffer distance between downwind non-target water bodies and the sprayed area. Run-off from areas must be prevented from entering drains or waterways.

STORAGE AND DISPOSAL

Store in the closed, original container in a cool, well-ventilated area. DO NOT store for prolonged periods in direct sunlight.

5L-20L: This container can be recycled if it is clean, dry, free of visible residues and has the *drumMUSTER* logo visible. Triple-rinse container before disposal. Dispose of rinsate by adding it to the spray tank. DO NOT dispose of undiluted chemical on-site. Wash outside of the container and the cap. Store cleaned container in a sheltered place with cap removed. It will then be acceptable for recycling at any *drumMUSTER* collection or similar container management program site. The cap should not be replaced, but may be taken separately. If not recycling, break, crush or puncture and deliver empty packaging to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500mm below the surface in a disposal pit specifically marked and set up for this purpose, clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. DO NOT burn empty containers or product.

Returnable container with Micro Matic Valve (60L-110L): DO NOT tamper with the Micro Matic valve or the security seal. DO NOT contaminate the container 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 container have been used, close all valves and return to the point of purchase for refill or storage. The container remains the property of TITAN AG Pty Ltd.

Refillable mini-bulk Containers (1000L): Storage must be secure so that contents cannot be tampered with. All locks and/or seals must be in order. If locks or seals are broken prior to initial use then the integrity of this product cannot be assured. If this occurs TITAN AG Pty Ltd should be advised immediately. This minibulk container is reusable and remains the property of TITAN AG Pty Ltd. DO NOT rinse empty container. Empty contents fully into application equipment. Close all valves and return to point of supply or other designated collection point for refill or storage. This container remains the property of TITAN AG Pty Ltd.

SAFETY DIRECTIONS

Harmful if inhaled. Will irritate the eyes. Facial skin contact may cause temporary facial numbness. Avoid contact with eyes and skin. DO NOT inhale spray mist. When opening the container, preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat and elbow-length PVC gloves and goggles. Wash hands after use. After each day's use, wash gloves, goggles and contaminated clothing.

FIRST AID

If poisoning occurs, contact a doctor or Poisons Information Centre. Phone Australia 131126; New Zealand 0800 764 766.

SAFETY DATA SHEET

Additional information is listed in the safety data sheet (SDS). A safety data sheet for TITAN Alpha-Cypermethrin 300 SC Insecticide is available from TITAN AG Pty Ltd on request. Call Customer Service on (02) 9999 6655 or visit www.titanag.com.au

CONDITIONS OF SALE: TITAN AG Pty Ltd shall not be liable for any loss injury damage or death whether consequential or otherwise whatsoever or howsoever arising whether through negligence or otherwise in connection with the sale supply use or application of this product. The supply of this product is on the express condition that the purchaser does not rely on TITAN AG's skill or judgment in purchasing or using the same and every person dealing with this product does so at his own risk absolutely. No representative of TITAN AG Pty Ltd has any authority to add to or alter these conditions.

Additional statements required by Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia: Toxic if swallowed. May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects. Precautionary Statements: Do not breathe dust/fume/gas/mist/vapours/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Specific treatment (see on this label). Rinse mouth. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. Get medical advice/attention if you feel unwell. Collect spillage. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations.



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