

POISON

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

HY-MAL[®] INSECTICIDE

ACTIVE CONSTITUENT: 1150g/L MALDISON
(AN ANTICHOLINESTERASE COMPOUND)

GROUP 1B INSECTICIDE

Controls adult mosquitoes, Queensland fruit fly and chewing and sucking insect pests of Citrus, Grape vines, Lucerne, Oilseed crops, Ornamentals, Pastures, Peas, Pome and Stone Fruits, Rice, Tobacco and Vegetables as specified in the Directions for Use table.

IMPORTANT: READ THIS LEAFLET BEFORE USE

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APVMA Approval No.: 48992/62947

Contents: 5 Litres
20 Litres

DIRECTIONS FOR USE:

Restrictions

DO NOT apply to Melons or Cucumbers when wet.

CROP/SITUATION	PEST	STATE	RATE	WITHHOLDING PERIOD	CRITICAL COMMENTS
Bowling & Golf Greens	Argentine stem weevil (<i>Hyperodes bonariensis</i>)	SA, NSW, Vic, WA & NT only	55mL in 50L water/100 square metres	1 day	Lightly grass after application.
Canola	Rutherglen Bug (<i>Nysius vinitor</i>)	SA, Vic, WA & NT only	500mL/ha	-	Apply by aircraft or ground equipment when the pest first appears and repeat as necessary.
Citrus	Rutherglen bug (<i>Nysius vinitor</i>) Thrips	SA, NSW, Vic, Tas, WA & NT only	55mL/100L water	3 days	Apply when pests first appear.
	Bronze orange bug (<i>Musgraveia sulciventris</i>), Citrus aphid, Citrus butterfly, Spiny lemon bug, Tree hoppers	NSW, Vic, SA, WA & NT only			
	California red scale (<i>Aonidella aurantii</i>)		90mL/100L + 1.3L summer oil per 100L water		
	Purple scale (<i>Lepidosaphes beckii</i>), Soft brown scale (<i>Coccus hesperidum</i>) Pink wax scale (<i>Ceroplastes rubens</i>)	SA, NSW, Vic, Tas, WA & NT only			
Cucurbits	Pumpkin beetle (<i>Aulacophora hilaris</i>)	SA, NSW, Vic, WA & NT only	55-90mL/100L water	3 days	In later growth stages of the crop increase rate and volume of cover.

CROP/SITUATION	PEST	STATE	RATE	WITHHOLDING PERIOD	CRITICAL COMMENTS
Fruit Fly Lure Control Routine	All fruit fly species EXCLUDING Mediterranean Fruit Fly	NT, Qld, NSW, Vic, ACT & SA only	435mL/100L water	3 days	Use only in combination with the registered rate per 100 litres of water of a suitable product containing a yeast autolysate protein lure eg. Pinnacle®, or Natflav®. Do not apply mixtures of Hy-Mal with the protein Flavax®. Do not exceed the recommended rates of Hy-Mal or these proteins as phytotoxicity may occur. Some crops may be prone to phytotoxicity induced by the proteins. The risk is increased during hot dry conditions and re-application of spray to the same parts of the plant. Apply bait within 4 hours of sunrise to avoid phytotoxicity. Apply the Hy-Mal yeast autolysate lure to the foliage at the rate of 50-100mL per tree using a coarse spray. Use the lower volume on smaller trees. Commence application at least 6 weeks before normal ripening of the fruit and repeat at 4 to 10 day intervals while fruit remains on trees. Use the longer spray interval when spraying during colder weather when fruit flies are less active. Heavy rain will wash the bait off foliage. Shorter application intervals will be necessary during warm wet weather. Spraying the mixture onto the foliage of other fruit trees in or around the orchard will assist in control. DO NOT apply bait to grass or other foliage. Avoid contact of the bait with fruit. DO NOT add other pesticides to the Hy-Mal/yeast autolysate protein mixture.
Fruit Fly Lure Control Routine (Citrus only)			435mL/100L water		
Fruit Fly Lure Eradication only	All fruit fly species	All States	870mL/100L water	3 days	Mixing as above. Apply 50 – 100mL per tree for eradication purposes as a spot bait to every tree or every second tree in orchards in a fruit fly outbreak area. To avoid phytotoxicity bait should not be applied if the weather is excessively dry and hot. Where large fruit trees are treated it may be necessary to apply in several spots and up to 200mL of bait per tree. Continue baiting for the period prescribed for eradication in the Code of Practice for the Management of Queensland Fruit Fly or equivalent document (prepared for the eradication of other fruit fly species). In urban areas 8 trees per household block should be spot sprayed with 50-100mL of bait. To achieve successful eradication non-fruit trees and shrubs may need to be sprayed in order to achieve at least 100 spots/ha.
Grapevines	Grape vine scale (<i>Parthenolecanium persicae</i>)	SA, NSW, Vic, Tas, WA & NT only	90mL/100L + 1.3L summer oil per 100L water	3 days	For application during summer months if scale population increases.
	Mealy bug	SA, NSW, Vic, Tas, WA & NT only	90mL/100L water		Apply when the pest first appears.

CROP/SITUATION	PEST	STATE	RATE	WITHHOLDING PERIOD	CRITICAL COMMENTS
	Grapevine moth (<i>Phalaenoides glyciniae</i>)	SA, NSW, Vic, Tas, WA & NT only	55mL/100L water	3 days	Apply when the pest first appears.
	Fruit fly (all species)	ACT, NSW, NT, QLD, SA, TAS and WA	BAIT SPRAY 435mL + recommended rate of yeast autolysate protein lure/100L water		<p>Prepare a bait solution by mixing 435mL per 100L water plus the recommended rate of yeast autolysate protein lure (eg. Pinnacle or Natflav). Apply prepared bait at 15-20L per hectare. <u>Wine Grapes and Table Grapes</u></p> <p>Apply as a spot spray to the top third of trellis posts. Avoid contact of the prepared bait with foliage or fruit.</p> <p>DO NOT apply mixtures of Hy-Mal with the protein Flavax.</p> <p>Avoid spraying in windy weather that may cause drift onto fruit.</p> <p>Commence application at least 6 weeks before normal ripening of the fruit and repeat at 4-10 day intervals while fruit remains on the plants. Use longer spray interval when spraying during cold weather when fruit fly is less active. Shorter intervals will be necessary during warm wet weather.</p> <p><u>Heavy rain will wash bait off foliage.</u></p> <p><u>Phytotoxicity precautions:</u></p> <p>To avoid phytotoxicity, bait should not be applied if the weather is excessively dry and hot and avoid re-application of the spray to the same locations on the plants.</p> <p>The sensitivity of all varieties of the crops to be treated under this permit has not been fully evaluated. It is advisable, therefore, to only treat a small number of plants to ascertain their reaction before treating the whole crop.</p> <p>Yeast protein (yeast autolysate protein) can cause leaf and fruit phytotoxicity - necrosis of leaf and fruit tissue.</p>
Table Grapes	Qld Fruit Fly Mediterranean Fruit Fly		55mL/100L		<p><u>Spray to the point of run-off. As evidenced by visual inspection or by Cue lure traps within the vineyard, apply when pest first appears and repeat as required. DO NOT exceed a maximum of 3 applications per crop with at least 7-10 days between consecutive applications. DO NOT spray any plants in flower while bees are foraging.</u></p> <p><u>Phytotoxicity precautions:</u></p> <p>To avoid phytotoxicity, bait should not be applied if the weather is excessively dry and hot and avoid re-application of the spray to the same locations on the plants.</p> <p>The sensitivity of all varieties of the crops to be treated under this permit has not been fully evaluated. It is advisable, therefore, to only treat a small number of plants to ascertain their reaction before treating the whole crop.</p> <p>Yeast protein (yeast autolysate protein) can cause leaf and fruit phytotoxicity - necrosis of leaf and fruit tissue.</p>
Lucerne	Black Field Cricket (<i>Teleogryllus commodus</i>)	SA, Vic, Tas, WA & NT only	BAIT 110mL/10kg kibbled grain/ha Use clean wheat, barley or oats. Do not use dusty grain.	1 day	<p>IMMATURE CRICKETS</p> <p>Mix in a drum or cement mixer. It is not necessary to leave treated grain standing to absorb Hy-MAL as it is absorbed rapidly and can be used immediately after treatment.</p>

CROP/SITUATION	PEST	STATE	RATE	WITHHOLDING PERIOD	CRITICAL COMMENTS
			BAIT 110 - 220mL per 10 -20kg whole or kibbled grain/ha. Use clean wheat, barley or oats. Do not use dusty grains.		MATURE CRICKETS: Mix in a drum or cement mixer. It is not necessary to leave treated grain standing to absorb Hy-MAL as it is absorbed rapidly and can be used immediately after treatment. Treated grain remains active for 4-6 weeks. Any excess grain therefore will be available to kill moderate numbers of re-invading crickets. Higher baiting rates (20kg per ha) should be used where populations are dense, where plentiful alternative feed exists, or when the extra expense is considered a small premium to pay for greater certainty of control. Spread late in afternoon and evening early in the season and the morning late in the season. Baiting may fail if large quantities of pasture seed are present.
			SPRAY 610mL in 25-50L water		Apply in the evening. Pasture cover must be low so that the chemical will have direct contact with the crickets. The method may fail if cold weather keeps crickets below the ground for a day or two, or if rain falls after application.
	Lucerne Flea (<i>Sminthurus viridis</i>)	NSW, Vic, WA, SA & Tas only	60-130mL/ha		Rates vary according to stages of growth. For low volume application use sufficient water to give adequate cover at 3-4 week intervals after opening rains.
	Spotted Alfalfa Aphid	NSW, WA, SA & Vic only	500mL/ ha		Apply when insect appears. Use sufficient water to give thorough coverage.
Mosquito resting sites, breeding ground and other areas	Adult mosquitoes	WA & NT only	300mL/ha	-	Apply preferably at dusk without dilution through aircraft using ULV spray application equipment.
			FOGGING 200-300mL/ha		For areas of sparse cover use the lower rate. For areas of dense cover use the higher rate. COLD FOGGERS (Leco, Beeco). Use undiluted. THERMAL FOGGERS (Pulsfog, Swingfog). Use 200 - 300mL/10L of diluent/hectare. Dilutents: Diesel distillate or power kerosene. Dilution rate depends on machine output, speed and swath width. Consult the operator manual for further details.
Onions	Onion thrip (<i>Thrips tabaci</i>)	SA, Vic, WA & NT only	75mL/100L water	3 days	Apply at first sign of infestation. Repeat each 10 days or as necessary.
Ornamentals (Flowers & Shrubs)	Aphids, Azalea lace bug (<i>Stephanitis pyroides</i>) Caterpillars Thrips	SA, NSW, Vic, Tas, WA & NT only	55mL/100L water	-	Apply when pest first appears and repeat if necessary.
	Scale insects on hardy plants	SA, NSW, Vic, Tas, WA & NT only	90mL/100L + 1.3L summer oil per 100L water		

CROP/SITUATION	PEST	STATE	RATE	WITHHOLDING PERIOD	CRITICAL COMMENTS
Passionfruit	All fruit fly species	NSW & Qld only	BAIT SPRAY 435mL+ recommended rate of yeast autolysate protein lure/100L water	3 days	Prepare a bait solution by mixing 435mL per 100L water plus the recommended rate of yeast autolysate protein lure (eg. Pinnacle or Natflav). <u>Apply prepared bait via foliar spot or strip spray at 15-20L per hectare. Apply as a skirt spray targeting plant foliage avoiding contact of prepared bait with fruit.</u> <u>Phytotoxicity precautions:</u> To avoid phytotoxicity, bait should not be applied if the weather is excessively dry and hot and avoid re-application of the spray to the same locations on the plants. The sensitivity of all varieties of the crops to be treated under this permit has not been fully evaluated. It is advisable, therefore, to only treat a small number of plants to ascertain their reaction before treating the whole crop. Yeast protein (yeast autolysate protein) can cause leaf and fruit phytotoxicity - necrosis of leaf and fruit tissue.
Pastures (Plus Cereals and non-crop areas)	Black Field Cricket (<i>Teleogryllus commodus</i>)	SA, Vic, Tas, WA & NT only	BAIT - 110mL/10kg kibbled grain/ha. Use clean wheat, barley or oats. Do not use dusty grain.	1 day	IMMATURE CRICKETS: Mix in a drum or cement mixer. It is not necessary to leave treated grain standing to absorb Hy-MAL as it is absorbed rapidly and can be used immediately after treatment. MATURE CRICKETS: Mix in a drum or cement mixer. It is not necessary to leave treated grain standing to absorb Hy-MAL as it is absorbed rapidly and can be used immediately after treatment. Treated grain remains active for 4-6 weeks. Any excess grain therefore will be available to kill moderate numbers of re-invading crickets. Higher baiting rates (20kg per ha) should be used where populations are dense, where plentiful alternative feed exists, or when the extra expense is considered a small premium to pay for greater certainty of control. Spread late in the afternoon and evening early in the season and the morning late in the season. Baiting may fail if large quantities of pasture seed are present.
			BAIT - 110-220mL per 10-20kg whole or kibbled grain/ha. Use clean wheat, barley or oats. Do not use dusty grain.		
	Black Field Cricket (<i>Teleogryllus commodus</i>)	SA, Vic, Tas, WA & NT only	SPRAY - 610 mL in 25-50 L water	1 day	Apply in the evening. Pasture cover must be low so that the chemical will have direct contact with the crickets. The method may fail if cold weather keeps crickets below the ground for a day or if rain falls after application.
	Australian Plague Locust (<i>Chortoicetes terminifera</i>) Large Hoppers	NSW, SA, WA & NT only Vic only	750mL/ha 950mL/ha	1 day	GROUND APPLICATION ONLY BOOM: Apply in 110L water/ha MISTING: Apply in 2.5L water/ha. Repeat application as necessary.
Plague Locust Small Hoppers	NSW, SA, Tas, WA & NT only Vic only	520mL/ha 950mL/ha			
Pastures (Medic)	Spotted Alfalfa Aphid (<i>Therioaphis trifolii</i>)	NSW, WA & SA only	500mL/ha		
Peas	Pea Weevil (<i>Bruchus pisorum</i>)	SA, Vic, WA & NT only	550mL/ha	3 days	Spray when first flowers begin to wither. Do not add water. Use undiluted through calibrated spray equipment designed for ultra low volume application.

CROP/SITUATION	PEST	STATE	RATE	WITHHOLDING PERIOD	CRITICAL COMMENTS
Pome Fruit (Apples & Pears)	Apple leaf hopper (<i>Typhlocyba froggatti</i>), Codling moth (<i>Cydia pomonella</i>), Thrips, Woolly aphid (<i>Eriosoma lanigerum</i>)	NSW, Vic, SA, Tas, WA & NT only	55mL/100L water	3 days	Apply when pests first appear or apply every 10 - 14 days from 2 weeks after full bloom. Wet trees thoroughly.
Rice	Rice Bloodworm larvae (<i>Chironomus tepperi</i>)	NSW & WA only	260mL/ha	-	Premix in at least an equal volume of water and apply the product in 10-30 litres of water per hectare by aircraft to rice bays at sowing time or within 24 hours of sowing or when infestations occur after the application of permanent water.
Rice Seed			Apply 260mL to the quantity of seed required to sow one hectare	-	Apply only to pre germinated rice seed prior to aerial sowing. Dilute the 260mL of product in 750mL - 1Litre of water. Just prior to sowing pour the diluted solution evenly over the pre germinated rice seed in the aircraft hopper or in the hopper of the aircraft loading auger. Ensure thorough mixing. Do not sow treated seed outside the boundaries of the flooded rice field. Treated seed must not be used for human and/or animal consumption.
Stone Fruit	Black cherry aphid, Black peach aphid (<i>Brachycaudus persicae</i>), Green peach aphid (<i>Myzus persicae</i>), Oriental fruit moth (<i>Cydia molesta</i>)	SA, NSW, Vic, Tas, WA & NT Only	55mL/100L water	3 days	Apply when pest first appears or apply every 10 - 14 days from blossoming. Wet trees thoroughly.
Sunflower	Rutherglen Bug (<i>Nysius vinitor</i>)	SA, Vic, WA & NT only	500mL/ha	-	Spray at bud stage for Sunflowers. Apply by aircraft or with suitable ground equipment.
Tobacco - Field - Seed Bed	Small plague grasshoppers (<i>Austroicetes cruciata</i>) Vegetable weevil (<i>Listroderes obliquus</i>)	WA & Vic only	45mL/100L water	-	Apply when pest first appears and repeat if necessary.
Tomatoes	Tomato russet mite (<i>Aculops lycopersici</i>)	SA, NSW, Vic, Tas, WA & NT only	55 - 90mL/100L water	3 days	Apply when pest first appears. Adequate coverage is essential in later growth stages of these crops and rate and volume should be increased to give additional cover.
Vegetables (Beans, cabbage, Carrots, Cauliflowers, Celery, Lettuce, Tomatoes)	Aphids Cabbage moth (<i>Plutella xylostella</i>) Cabbage white butterfly (<i>Pieris rapae</i>) Green vegetable bug (<i>Nezara viridula</i>) Jassids Leaf Hoppers Rutherglen bug (<i>Nysius vinitor</i>) Thrips				

CROP/SITUATION	PEST	STATE	RATE	WITHHOLDING PERIOD	CRITICAL COMMENTS
All Crops Listed Above	Australian Plague Locust (<i>Chortoicetes terminifera</i>)	All States	No greater than the label rate for the crop being treated	Fruit and vegetable - 3 days (harvest) Cereals, Lucerne and pasture - 1 day (grazing)	The application on individual crops must not be above the maximum existing label rate or exceed the maximum number of applications for that crop, or be applied at intervals shorter than those specified for that crop, or be applied at a timing of application later than specified in the directions for use for that crop.

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

WITHHOLDING PERIOD

Fruit and vegetables – DO NOT apply later than 3 days before harvest.

Cereals, lucerne, pastures - DO NOT graze or cut for stock feed for 1 day after application.

GENERAL INSTRUCTIONS

RESISTANT WEED WARNING

GROUP	1B	INSECTICIDE
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For insecticide resistance management Hy-MAL Insecticide is a Group 1B insecticide. Some naturally occurring insect biotypes resistant to Hy-MAL Insecticide and other Group 1B insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if Hy-MAL Insecticide or other Group 1B insecticides are used repeatedly. The effectiveness of Hy-MAL Insecticide on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, Crop Care Australasia Pty Ltd accepts no liability for any losses that may result from the failure of Hy-MAL Insecticide to control insects. Hy-MAL Insecticide may be subject to specific resistance management strategies. For further information contact your local supplier, Crop Care Australasia Pty Ltd representative or local agricultural department agronomist. Hy-MAL is a high concentrate formulation of maldison which can be mixed with clean water for the control of a wide range of chewing and sucking insects.

MIXING

When mixing this product with water, good tank agitation must be maintained throughout the mixing and spraying operation.

APPLICATION

For high volume application on vegetables and row crops apply approximately 1000 Litres of water/ha. For tree crops apply approximately 2000 Litres of water/ha. Apply in high volume, low volume or through mister or aircraft spray equipment. Thorough uniform coverage is essential for effective insect control. This product may be diluted with diesel distillate and used through thermal fogging machines, or it can be applied undiluted by aircraft or suitable ground equipment designed for ultra low volume application.

COMPATIBILITY

This product is compatible with summer spraying oil which may be added at a rate of 1.3L/100Litres of water when recommended.

PROTECTION OF LIVE STOCK

Dangerous to bees. DO NOT spray on plants in flower while bees are foraging. DO NOT spray over or upwind of beehives. Remove bees from area before blanket spraying. DO NOT place baits in locations which are accessible to domestic animals, livestock or birds. DO NOT feed treated grain to animals including poultry.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

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

STORAGE AND DISPOSAL

Store in the closed, original container in a dry, well ventilated area, as cool as possible out of direct sunlight. Store in a locked room or safe place away from children, animals, food, feedstuffs, seeds or fertilizers. Triple or (preferably) pressure rinse containers before disposal. Add rinsings to the spray tank. DO NOT dispose of undiluted chemical on site. Break, crush, puncture and bury empty containers in a local authority landfill. If not available bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, vegetation and roots. Empty containers and product should NOT be burnt.

SAFETY DIRECTIONS

Harmful if swallowed. Will irritate the eyes and skin. Avoid contact with eyes and skin. Repeated exposure may cause allergic disorders. When opening the container and preparing spray wear cotton overalls buttoned to the neck and wrist and a washable hat and elbow-length PVC gloves. 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 and contaminated clothing.

FIRST AID

If swallowed, splashed on skin or in eyes, or inhaled, contact a Poisons Information Centre Phone Australia 131126; New Zealand 0800764766 or a doctor at once. Remove any contaminated clothing and wash skin thoroughly. If swallowed, activated charcoal may be advised. Give atropine if instructed.

MATERIAL SAFETY DATA SHEET

Additional information is listed in the Material Safety Data Sheet which can be obtained from your supplier or from the Crop Care website – www.cropcare.com.au

Conditions of sale

Crop Care Australasia Pty Ltd will not accept any responsibility whatsoever and howsoever arising and whether for consequential loss or otherwise in connection with the supply of these goods other than responsibility for the merchantable quality of the goods and such responsibilities mandatorily imposed by Statutes applicable to the sale or supply of these goods. To the extent allowed by such Statutes the liability of Crop Care Australasia Pty Ltd is limited to the replacement of the goods or (at the option of Crop Care Australasia Pty Ltd) the refund of the price paid and is conditional upon a claim being made in writing and where possible sufficient part of the goods to enable proper examination being returned to Crop Care Australasia Pty Ltd within thirty days of delivery.

In a Transport Emergency Dial 000 Police or Fire Brigade	SPECIALIST ADVICE IN EMERGENCY ONLY 1800 033 498 ALL HOURS - AUSTRALIA WIDE
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