

READ SAFETY DIRECTIONS BEFORE OPENING OR USING

ABRADE™

ABRASIVE BARRIER Insecticide

ACTIVE CONSTITUENT: 450g/L AMORPHOUS SILICA

For the control of *Helicoverpa punctigera* and *H. armigera* in cotton, Brassica vegetables and Capsicums and Diamond back moth in Canola and Brassica vegetables. Also for the control of various stored insect pests in grain bins, silos and storage facilities, food processing and warehousing facilities as per the Directions for Use.

CONTENTS: 1L, 5L, 20L, 110L, 700L, 1000L

DISTRIBUTED BY:
GROW CHOICE PTY. LTD.
113 Fitzroy Street
Tamworth NSW 2340
ACN 069 839 961
Tel: 02 67 663 979

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DIRECTIONS FOR USE:**RESTRAINTS:****DO NOT apply if rain is expected within 48 hours as this may disrupt the desiccant function of the product.**

SITUATION	PEST	RATE	CRITICAL COMMENTS
Cotton	Native budworm (<i>Helicoverpa punctigera</i>) Cotton bollworm (<i>Helicoverpa armigera</i>)	2.5 to 5L/ha	Best results are obtained when the product is applied during the egg lay to egg hatch period. Larvae larger than very small (< 3mm) will NOT be controlled. Use the higher rate on higher egg populations. Best results are obtained from two sequential applications 6-7 days apart. Under very high egg pressure, commercially acceptable control may not be achieved.
Sweet corn	Aphids (<i>Aphis gossypii</i>) Suppression only	3.5L/ha	Apply at first signs of aphid activity on tassels and repeat applications as necessary if infestation continues. Commercially acceptable control may not be achieved
Capsicums	Helicoverpa (<i>Helicoverpa spp.</i>) Cluster caterpillar (<i>Spodoptera litura</i>)	2.5L to 5L/ha	Best results are obtained from applications on egg lay and early hatchlings. Use the higher rate on higher egg populations. Best results are obtained from two sequential applications 6-7 days apart. Under very high egg pressure, commercially acceptable control may not be achieved.
Canola	Diamond Back Moth (<i>Plutella xylostella</i>)	1L to 2L/ha	Apply in the early stages of insect development. If pest population is predominately medium to large larvae a mixture with Dipel at 1L/ha is recommended.
Brassica vegetables	Diamond Back moth (<i>Plutella xylostella</i>), Heliothis (<i>Helicoverpa spp.</i>)	2.5L to 5L/ha	Best results are obtained when applied at egg lay or early hatchlings. For mixed populations of eggs and larvae the addition of a larvicide (Dipel at labelled rates) is recommended.

SITUATION	PEST	RATE	CRITICAL COMMENTS
Empty silos, bins and other storage areas - spray application	Major species of stored grain pests including: Red-Flour beetle (<i>Tribolium castaneum</i>), Lesser Grain Borer (<i>Rhyzopertha dominica</i>), Granary Weevil (<i>Sitophilus granarius</i>), Rice Weevil (<i>Sitophilus oryzae</i>), Sawtoothed Grain Beetle (<i>Oryzaephilus surinamensis</i>), Tropical Warehouse Beetle (<i>Ephestia cautella</i>)	240mL per 1L water applied at 5L/100m ²	For small storages apply with a standard back-pack or mechanical sprayer through flat-fan jet nozzles at 300-400kPa (40-60 psi). For large storages use spray equipment delivering a narrow spray band through appropriate flat fan nozzles. Spray to just below the point of run-off. This application rate is equivalent to 6g amorphous silica per m ² , dry basis. Reticulation/agitation of spray mix is important to maintain good dispersion of Abrade in the spray mix.
Food processing and warehousing facilities - spray application	 <u>NOTE: Cool climate species such as Granary Beetles or Confused Flour Beetles may not be completely controlled.</u>		Treatment of building structure only. See spray application above. Apply mainly to structural cracks, crevices and inaccessible areas. Do not treat floors or areas that are frequently cleaned. Avoid treatment of moving parts, electrical components and food contact surface of plant and equipment. Clean up spills and overspray with damp mop or cloth. Abrade will leave a visible residual on treated surfaces and should not be used where such residues are unacceptable. Avoid the application of high pressure air to treated surfaces.

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

WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED

GENERAL INSTRUCTIONS

Abrade is based on amorphous silica. Insecticidal activity is provided through physical cutting and abrading, not through any chemical action on the insect.

This product will control organo-phosphate tolerant strains of insects in stored grain.

When used in grain protection situations, protection of up to 12 months can be expected, provided excess moisture is not present.

Compatibility

Abrade can be mixed with the following insecticides for control of pests in cotton: Alpha-Duop 100 Insecticide (100g/L alpha-cypermethrin), Tracer*, Dominex*, Biopest*, Lannate, Dipel, Ovasyn*, Folimat* Aminofeed, Gemstar*, Vivus*, Vivus Gold.

Compatibility with other pesticides has not been tested. Always mix small quantities of the proposed mixture before mixing commercial quantities.

Mixing

Thoroughly shake and invert the container several times before opening.

Half fill the spray tank with water with the agitator system engaged. Add the required amount of Abrade and add the remainder of the water required to apply the correct rate of Abrade.

Application

NOTE: The abrasive action of the spray solution can be severe on brass nozzles. It is recommended to apply through ceramic nozzles.

The mixed product dries rapidly and "caking" of droplets may occur on nozzles when spray application ceases. It is recommended that the spray tank be completely emptied after use. The tank, hoses and spray nozzles should be flushed several times with clean water.

Avoid leaving the spray mixture for extended periods in the spray tank without constant agitation. Only mix the required quantity of product required for immediate use.

Cotton, Canola

Ground application: Apply in 80-100 litres of water per hectare using ceramic nozzles following an egg lay.

Aerial Application: Apply in 30L to 60L water per hectare.

Grain storages

For small storages apply with a standard back-pack or mechanical sprayer through flat-fan jet nozzles at 300-400kPa (40-60 psi). For large storages use spray equipment delivering a narrow spray band through appropriate flat fan nozzles. Spray to just below the point of run-off. Reticulation/agitation of spray mix is important to maintain good dispersion of Abrade in the spray mix.

Horticultural Crops

Ground application: Apply in 200L to 750L/ha following an egg lay.

Resistance Warning

This product acts by cutting and abrading and therefore is not a member of any chemical group. Although there is little chance of resistance developing to such a mode of action, other non-biochemical resistance mechanisms may occur, and therefore users are cautioned to follow practices which do not lead to excessive sole use of this product.

PRECAUTIONS

DO NOT use human flaggers/markers unless they are protected by engineering controls such as enclosed cabs.

Re-entry Period

DO NOT allow entry into treated areas until the spray has dried.

PROTECTION OF WILDLIFE, FISH, CRUSTACEANS AND ENVIRONMENT

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

SPRAY DRIFT may occur under adverse meteorological conditions from certain spray equipment.

DO NOT apply under weather conditions or from equipment that may cause spray drift onto sensitive areas including but not limited to, non target plants/crops, cropping land, pasture, natural streams, rivers, wetlands and human dwellings.

Field testing of Abrade Abrasive Barrier Insecticide indicated no adverse effects on populations of transverse ladybird and Broken Backed Bug, but reduced mean numbers of spiders, Carabid Beetles, Apple Dimpling Bugs, predatory bugs and general competitors compared to untreated control plots. Therefore the use of this product poses some risk to beneficial organisms and may temporarily disrupt IPM systems, but populations will generally recover.

STORAGE AND DISPOSAL

Keep out of reach of children. Store in the closed, original container in a dry, cool, well-ventilated area, out of direct sunlight.

Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm 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. Discharge excess spray slurry onto absorbent ground or soil.

SAFETY DIRECTIONS

May irritate the eyes and skin. Avoid contact with eyes and skin. DO NOT inhale spray mist. If product in eyes, wash out immediately with water. Wash hands after use. Repeated exposure may cause allergic disorders.

When opening the container and preparing spray, wear cotton overalls buttoned to neck and wrist and a washable hat, elbow length PVC gloves and goggles. When using the prepared spray, wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow length PVC gloves, goggles and a disposable mist mask. 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 13 11 26).

MATERIAL SAFETY DATA SHEET

Additional information is listed in the Material Safety Data Sheet which is available from the supplier.

NOTICE TO BUYER

Grow Choice Pty. Ltd. will not be held liable for any loss, injury or damage, indirect or consequential, arising from the sale, supply, use or application of this product. The product is not to be used for any purpose or in any way contrary to label instructions.

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Batch No:

Date of Manufacture:

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