READ SAFETY DIRECTIONS BEFORE OPENING OR USING

VectoBac® AS

BIOLOGICAL LARVICIDE

ACTIVE CONSTITUENT: *Bacillus thuringiensis* subsp. *israelensis* serotype H14
(Manufactured by Abbott Laboratories in North Chicago) active solids and solubles

GROUP **11B** INSECTICIDE

For specific control of first to early fourth instar mosquito (Family Culicidae) larvae as per Directions for Use table.

GENERAL INSTRUCTIONS

INSECTICIDE RESISTANCE WARNING

GROUP **11B** INSECTICIDE

For insecticide resistance management, VectoBac AS is a Group 11B insecticide.
Some naturally occurring insect biotypes resistant to VectoBac AS and other Group 11B insecticides may exist through normal genetic variability in any insect population. The resistant individuals can eventually dominate the insect population if VectoBac AS or other Group 11B insecticides are used repeatedly. The effectiveness of VectoBac AS on resistant individuals could be significantly reduced. Since occurrence of resistant individuals is difficult to detect prior to use, Valent BioSciences accepts no liability for any losses that may result from the failure of VectoBac AS to control resistant insects.
VectoBac AS may be subject to specific resistant management strategies. For further information contact your local supplier, Sumitomo representative or local agricultural department agronomist.

Mixing:
Stir or shake the product thoroughly before using. VectoBac AS may be applied either undiluted or diluted with water. DO NOT mix with alkaline or dirty water.

For Ground Application, VectoBac AS may be applied either undiluted or diluted with water. The volume of application must be sufficient to provide uniform coverage of the target area and will be influenced by weather, application equipment and mosquito habitat.
For diluted applications, half fill the spray vat with water and start agitation. Pour the required amount into the vat, continue filling with water. Apply in a total volume determined by calibration of the application equipment being used (a guide for practical volumes of application range from 2 to 150 L/ha).
For undiluted applications, apply 0.3 to 1.2 L/ha of VectoBac AS through airblast, mist blower, etc, spray equipment.

For Aerial Application, VectoBac AS may be applied either undiluted or diluted with water.
For undiluted applications, apply 0.6 to 1.2 L/ha of VectoBac AS through fixed wing or helicopter aircraft equipped with either conventional boom and nozzle systems or rotary atomisers.
For diluted applications, fill the mix tank with the desired quantity of water. Start the mechanical or hydraulic agitation to provide moderate circulation before adding the VectoBac AS. VectoBac AS suspends readily in water and will stay suspended over normal application periods. Brief recirculation may be necessary if the spray mixture has sat for several hours or longer.

Avoid excessive recirculation during application of undiluted VectoBac AS, as this may change physical properties.

Larvicidal activity, due to destruction of the midgut epithelium, occurs within 12 hours of ingestion. Because 4th instar larvae do not feed prior to pupation, application has to be made in the early stages of the life cycle. When more than 50% of the larval population is in the lat 4th instar stage, the use of this product is not recommended. Do not mix with alkaline or dirty water.

PRECAUTIONS

Keep away from foodstuffs.

STORAGE AND DISPOSAL

Keep out of reach of children.

This product is a biological larvicide containing crystals of protein and bacterial spores. Activity can be impaired unless protected from high temperatures at all times.

VectoBac AS must be kept in its original, properly labelled container, well sealed and stored in a cool, dry and well ventilated place. When transporting, keep shaded. Avoid standing containers in direct sunlight in the field or on airstrips. DO NOT leave in

car boot or other enclosed space on a sunny day.

DO NOT STORE AT 30°C OR ABOVE.

VectoBac AS remains potent for two years from date of manufacture, if stored at temperatures less than 24°C; three years from date of manufacture in refrigerated storage.

Triple rinse containers before disposal. Add rinsings to tank mix or dispose of rinsate in a disposal pit. This pit must be away from aquatic areas and in a suitable area specifically marked and set up for the purpose. DO NOT dispose of undiluted chemicals on-site.
Destroy empty containers by breaking, crushing or puncturing them. Dispose of the containers at a local authority landfill that does not burn its refuse. If there is no local authority landfill readily available in your area, bury the containers at a depth of 500 mm or more at an approved disposal site.
DO NOTburn empty containers or product.

SAFETY DIRECTIONS
Avoid contact with eyes and skin. DO NOT inhale spray mist. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water.

FIRST AID
If poisoning occurs contact a doctor or Poisons Information Centre (ph: 13 11 26).

MATERIAL SAFETY DATA SHEET
Additional information is listed in the Material Safety Data Sheet (MSDS).

EXCLUSION OF LIABILITY
Unless otherwise expressly stated in writing neither Valent BioSciences, Sumitomo Chemical Australia Pty Ltd ("the Companies") nor the distributor has any knowledge or the particular use to which the buyer proposes to put this product. In purchasing this product the buyer must rely solely upon his own skill and judgement as to its suitability for the particular purpose for which it is required. Except to the extent that exclusion or denial of liability is prohibited under the Trade Practices Act or any relevant state legislation, the Companies and the distributor expressly exclude any warranty as to the quality or fitness of any goods sold for any purpose whatsoever and deny all responsibility in contract tort negligence or otherwise for any harm or damage resulting from the use of such goods or from acting on the advice or recommendations as to such use given in good faith by any representative of the Companies or the distributor. If these conditions are unacceptable to the buyer, the goods should be returned to Sumitomo Chemical Australia Pty Ltd unopened within seven (7) days for refund of purchase price.

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DIRECTIONS FOR USE

DO NOT allow diluted spray to remain in the tank for more than 48 hours.

SITUATION	INSECT PEST	RATE OF TREATMENT	CRITICAL COMMENTS
Stagnant and standing ponds, flood and irrigation water, ditches	eg. *Aedes notoscriptus*, *Culex annulirostris* (common banded mosquito), *Culex australicus*, *Anopheles annulipes* (common Australian anopheline)	300 mL to 600 mL per hectare	1. Use for control of 1st to early 4th instar. 2. Use lower rate when 1st to 3rd instar larvae predominate; higher rate when late 3rd to early 4th instar larvae predominate. 3. May be applied by ground or by air, undiluted or diluted with water. 4. Reapply as needed.
Tidal water and salt marshes, storm water retention areas	eg. *Aedes vigilax* (saltmarsh mosquito), *Culex sitiens* (saltwatwer culex)	600 mL to 1.2 L per hectare	
Water with moderate to high organic content, sewage settling ponds, etc.	eg. *Culex quinquefasciatus* (brown house mosquito)	1.2 L per hectare	

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

WITHHOLDING PERIOD: NOT REQUIRED WHEN USED AS DIRECTED.