



Photo: Bauer, Valent BioSciences

VectoBac®

Some commonly asked questions on the use of VectoBac

1. What is VectoBac?

VectoBac is a biological larvicide used to control mosquitoes, black flies and other nuisance flies. The active ingredient in VectoBac is a naturally occurring soil bacteria: *Bacillus thuringiensis* serotype H-14

2. How does VectoBac work?

VectoBac kills mosquitoes and/or black flies in the larval stage of their life cycle. Either scattered across or sprayed upon the surface of aquatic breeding sites, the larvicide becomes a part of the food eaten by the larvae in the water.

The larvae ingest the insecticide, consisting of *B.t.* H-14 spores and crystals produced by the bacteria. The toxins become active only when the crystal proteins are dissociated into protoxins under the high alkaline pH found in the mid-gut of the larvae and after their activation by the larva's specific enzymes. They quickly bind on receptors on the gut walls where they start their destructing action on the cells. The larvae stop feeding almost immediately and die from 6 to 24 hours after absorption.

3. What is *Bacillus thuringiensis* H-14 (*B.t.* H-14)?

Bacillus thuringiensis H-14 (*B.t.* H-14) is a bacterium which occurs naturally in the environment. It has a highly specific mode of action and efficiently controls mosquito, black fly, midge and fungus gnat larvae.

B.t. H-14 has demonstrated virtually no adverse effects to mammals, fish or other wildlife at recommended field rates.

4. When should I use VectoBac and what are the most common sites?

When to use VectoBac:

- Univoltine broods or single-generation species
- Sites that don't hold water long enough to develop a second brood
- Sites where residual control is not necessary due to single-generation mosquito species
- Permanent water habitats (*Culex*)
- Multivoltine broods of susceptible mosquito species or multi-generation species
- Known *Culex*, *Aedes* and *Anopheles* sites
- Intermittently flooded sites that stay wet long enough to develop a second brood
- Sites where residual control is needed

Common sites to apply VectoBac:

- River flood plains
- Woodland pools
- Mangrove Swamps
- Some salt marshes
- Prairie potholes
- Certain flood irrigated pastures
- Snow melt ponds
- Waste lagoons
- Ditches
- Duck clubs
- Flood citrus furrows
- Inland floodwater pools
- High salt marshes
- Pastures that remain wet
- Catch basins
- Irrigation runoff areas
- Continuously irrigated crops (i.e. rice)
- Marshes
- Fresh water swamps

5. How safe is the use VectoBac?

One benefit of these active ingredients is their specific action. VectoBac is effective against the larvae of the mosquitoes without harming populations of beneficial insects and other organisms.

In addition, tests have shown that both brands have little effect on plants, fish or other organisms that live in water.



Because of their specificity, these products are well suited for use in mosquito-infected waters in cities, suburbs, recreational sites and all environmentally sensitive locations.

6. Why should I use biological larvicides?

VectoBac (*B.t.* H-14) only affects the larval stage and not the adult stage of the mosquito or black fly's life cycle. With each application, the *B.t.* H-14 destroys the mosquito or black fly larvae before they can leave the water as adults.

Results: An entire generation of swarming biters is wiped out with each application. This will last until the next generation.

Many chemical larvicides are prohibited from being used in rivers and streams. Sprayed over land to control adult mosquitoes and black flies, chemicals tend to kill all the insects present, including bees and other beneficial species. In the case of adulticides there is little or no residual control since the chemical kills only the pests present during the spray application..

7. What is the best way to apply VectoBac?

The granular formulation of VectoBac-VectoBac G- can be applied through ground or aerial application.

Ground: Ground applications include manually or mechanically driven devices relying on a whirling disk and air-blast applicators.

Aerial: VectoBac G can be applied aerially with conventional fixed-wing aircrafts or helicopters equipped with a granule spreader.

For both ground and aerial application, it is important to properly calibrate each piece of equipment before application.

The wettable dispersible formulation-VectoBac WG- may be applied with conventional ground or aerial spraying equipment with quantities of water sufficient to provide uniform coverage of the breeding site

8. What are the basic steps necessary to use VectoBac effectively against mosquitoes?

- a) Survey the area for sources of mosquito larvae (ponds, ditches, open containers with water)
- b) Sample the water with a mosquito dipper to confirm the presence of larvae.
- c) Select the formulation (granules vs. WG)
- d) Determine application rate (follow label guidelines; use the highest recommended use rates in water which has heavy vegetation , is highly polluted, or with a high infestation of larvae).
- e) Calibrate application equipment
- f) Apply VectoBac uniformly across the water surface.



- g) Determine effectiveness by sampling treatment sites 24 hours after VectoBac application.

9. Exclusive distributor of VectoBac in Algeria:



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10. Who is producing VectoBac?



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