



INSECTICIDES - LARVICIDES

	<i>Bti</i>	S-Methoprene
What it is	A biological or naturally occurring Bacterium found in soils. <i>Bacillus thuringiensis israelensis</i>	A synthetic Insect Growth Regulator (IGR) that mimics the natural juvenile hormone (JH), which must be absent for pupal molt.
How it works	Larvae feed on the <i>Bti</i> . <i>Bti</i> spores produce a toxin in the gut of the mosquito larvae, which destroys the larvae gut lining causing death.	Pellets dissolve into the water releasing S-Methoprene; the larvae are exposed through the skin and filtration inducing morphological changes which interfere with normal development. These effects, not immediately apparent, result generally in the failure of adult mosquitoes to emerge from pupae.
How it looks (formulation)	Granules Liquid Dunks	Pellets
Where to use it	Open water Natural water containers Water containers	Larval Traps Water Containers (previous delimited areas using GPS data)
How much to use	Granules: 1tbp per 7 m ² or 1/2tsp per m ² Dunks: 1 per 2-10m ² Liquid: 100mL per L	1tbp per m ² 2-4 Pellets/m ²
Pros	Non-toxic to humans and non-target organism, fish safe and animal friendly. Dunks can be broken into quarters	Not a direct toxin. Target-specific and doesn't harm mammals, waterfowl or beneficial predatory insects. Does not require the mosquito larvae to feed Not affected by organic content of water Ongoing residual effect with programmed application
Cons	Delivery timing critical (mid-late non feeding 4 th Instar larvae and pupae won't be affected) Frequent applications often required if water has high organic loading (<i>Bti</i> readily binds to organic matter making it unavailable to larvae) Accurate targeting required	Minimal effect on fourth instars not already exposed and has no effect on mosquitoes which have reached the pupal or adult stage prior to treatment. Live larvae and pupa remain present. Adults observed cause confusion. Note they may have flown in from neighbouring untreated areas. Reduced effectiveness in deeper waters (species variable).
How long is effective	Usually 7 – 14 days granules Up to 30 days dunks 2-3 days liquid <i>Bti</i> All formulations are affected by organic loading	Up to 30 days
Expiry times	Granules 2 years in sealed container (cool, dark and dry conditions) Dunks more than 2 years	Does not expire: Best before 1-2 years from date of manufacture. Stored in cool, dark and dry conditions.