

WHOPES-recommended compounds and formulations for control of mosquito larvae

Insecticide compounds and formulation(s) ¹	Class group ²	Dosage (active ingredient) ³			Status of WHO specification for quality control ^c
		General (open water bodies)		Container-breeding	
<i>Bacillus thuringiensis israelensis</i> , strain AM65-52 (3000 ITU/mg), WG	BL	125–750 g/ha	12.5–75 mg/m ²	1–5 mg/L	Available
<i>Bacillus thuringiensis israelensis</i> , strain AM65-52 (200 ITU/mg), GR	BL	5,000–20,000 g/ha	500–2000 mg/m ²	-	Available
<i>Bacillus thuringiensis israelensis</i> (strain AM65-52) + <i>B. sphaericus</i> strain ABTS-1743; 50 Bsph (ITU/mg), GR	BL	5,000–20,000 g/ha	500–2000 mg/m ²	60–80 mg/L	Available
<i>Bacillus thuringiensis israelensis</i> , strain 266/2 (≥ 1200 ITU/mg), SC	BL	30–50 L/ha	3–5 mL/m ²	0.01–0.04 mL/L	Not available ⁴
Chlorpyrifos EC	OP	11–25 g/ha	1.1–2.5 mg/m ²	-	Available
Diflubenzuron DT, GR, WP	BU	25–100 g/ha	2.5–10 mg/m ²	0.02–0.25 mg/L	Available
Novaluron EC	BU	10–100 g/ha	1–10 mg/m ²	0.01–0.05 mg/L	Available
Pyriproxyfen GR	JH	10–50 g/ha	1–5 mg/m ²	0.01 mg/L	Available
Pyriproxyfen 2 MR	JH	-	-	1 disc (40 mg AI)/40L	Available
Fenthion EC	OP	22–112 g/ha	2.2–11.2 mg/m ²	-	Available
Pirimiphos-methyl EC	OP	50–500 g/ha	5–50 mg/m ²	1 mg/L	Available
Temephos EC, GR	OP	56–112 g/ha	5.6–11.2 mg/m ²	1 mg/L	Available
Spinosad DT, EC, GR, SC	SP	20–500 g/ha	2–50 mg/m ²	0.1–0.5 mg/L	Available
Spinosad 83.3 monolayer DT	SP	250–500 g/ha	25–50 mg/m ²	-	Available
Spinosad 25 extended release GR	SP	250–400 g/ha	25–40 mg/m ²	-	Available
<i>Open bodies of water</i>	SP	1000–1500 g/ha	100–150 mg/m ²	-	Available
<i>Control of Culex quinquefasciatus in open bodies of water with high organic matter</i>	SP				

¹ DT = tablet for direct application; EC = emulsifiable concentrate; GR = granule; MR = matrix release Formulation; SC = suspension concentrate; WG = water-dispersible granule; WP = wettable powder.

² BL = Bacterial larvicide; BU = Benzoylureas; JH = Juvenile hormone mimics; OP = Organophosphates; SP = Spinosyns.

³ For the BL Class group, the dosage are of the formulated product and not of the active ingredient.

⁴ The manufacturer's dossier is under evaluation, hence the product specification has not been finalized.

Notes:

- a) Reports of the WHOPES Working Group Meetings (available at: <http://www.who.int/whopes/recommendations/en/>) and the WHOPES publication "*Pesticides and their application for control of vectors and pests of public health importance* (available at http://whqlibdoc.who.int/hq/2006/WHO_CDS_NTD_WHOPES_GCDPP_2006.1_eng.pdf) should be consulted for guidance on use and recommendations;
- b) The WHO Guidelines for drinking-water quality (http://www.who.int/water_sanitation_health/publications/2011/dwq_guidelines/en/) provides authoritative guidance and should be consulted for application of insecticides in potable water for mosquito larviciding; and
- c) WHO recommendations on the use of pesticides in public health are valid ONLY if linked to WHO specifications for their quality control (available at: <http://www.who.int/whopes/quality/en/>).