World Health Organization

WHO Prequalification Programme / Vector Control Product Assessment

WHO Public Assessment Report:

Change assessment

SumiLarv 2MR
(Sumitomo Chemical Co., Ltd) 001-006
PQC-VCP-2024-0017

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1. Introduction

The primary purpose for the use of a pesticide is the control of a pest, including disease transmitting vectors. Vector control tools, including formulated pesticides, which provide effective management or control of vectors, may be used as part of a resistance management programme. Vector control products for use in public health are a component of Integrated Vector Management (IVM), which is a programme that relies on a suite of diverse interventions and implementations of best practices to manage the vector and chemical/behavioural resistance.

SumiLarv 2MR is a larvicide product formulated with 2% w/w pyriproxyfen in a controlled release polymer matrix. The product is intended to control container breeding mosquitoes in clean water used for drinking or other domestic purposes. The premise of the pyriproxyfen in the product is the action as a juvenile hormone analogue, which disrupts the transformation of late instar larvae to pupae and then to adult.

Evidence to support the request to extend the use pattern of the product to include *Anopheles stephensi* was submitted.

2. Efficacy studies

Efficacy studies conducted for larvicide products include simulated field studies, in which large containers are used to simulate water bodies, and field studies, in which natural breeding sites are used. Based on the existing requirements and established decision framework, the inhibition of adult emergence is considered the primary endpoint for assessment.

2.1 Simulated field studies

Data on the efficacy of SumiLarv 2MR in simulated field studies were provided. These data were obtained from studies conducted according to established standards. These summary results are based on studies using product batch 9Z01MRW.

One simulated field study was presented to support the efficacy of the product against An. stephensi in volumes of water up to 1 disc/ 500 litres, conducted in 2023 in Ethiopia. In the study, water exchange was employed to mimic realistic water use conditions. The negative control in the simulated field studies was untreated water.

The endpoint used to evaluate bioavailability was the percentage reduction in adult emergence. The duration of efficacy in a range of water volumes was considered to be the duration of at least 80% inhibition of adult emergence.

The product was tested against *An. stephensi* larvae collected from natural breeding sites in Eastern Ethiopia, and then reared in the laboratory until use in the study.

The results from the simulated field study are presented in Table 1. In the simulated field study, the percentage reduction in adult emergence was greater than 80% for up to:

- 35 weeks for doses up to 1 disc per 250 litres of water
- 31 weeks for doses up to 1 disc per 500 litres of water.

Table 1. Inhibition of *An. stephensi* adult emergence by SumiLarv 2MR in volumes of clean water from 100 – 500 litres and SumiLarv 2MR dosages of 1 disc per 100L to 1 disc per 500L, with water exchange, for 35 weeks in Ethiopia.

Dose	Container	Study week																	
		1	3	5	7	9	11	13	15	17	19	21	23	25	27	29	31	33	35
		Inhibition of adult emergence (%, SD)																	
1 disc/ 100L	Polyethylene	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	95 (7)
1 disc/ 250L	Polyethylene	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	99 (2)	99 (2)	93 (8)
1 disc/ 500L	Polyethylene	100	100	100	100	100	100	100	100	100	100	100	100	100	98 (5)	96 (10)	83 (26)	67 (34)	66 (27)

2.2 Simulated field studies conclusions

The submitted simulated field study demonstrates that the bioavailability of SumiLarv 2MR was sustained for up to 31 weeks post-water treatment against *An. stephensi* collected from natural breeding sites in Ethiopia.

3. Change assessment conclusions

The data presented support an extension in the use pattern of the product to include *Anopheles stephensi* up to 1 disc per 500 litres of water for up to 31 weeks.