# REPORT OF THE EIGHTH WORKING GROUP MEETING

## WHO/HQ, GENEVA 1–3 DECEMBER 2004

Review of: NOVALURON 10% EC



WORLD HEALTH ORGANIZATION

COMMUNICABLE DISEASE CONTROL, PREVENTION AND ERADICATION WHO PESTICIDE EVALUATION SCHEME





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### 1. INTRODUCTION

The eighth meeting of the WHOPES Working Group, an advisory group to the WHO Pesticide Evaluation Scheme (WHOPES), was convened at WHO headquarters in Geneva, Switzerland, on 1–3 December 2004. The objectives of the meeting were: (i) to review the reports of the testing and evaluation of novaluron 10% EC (emulsifiable concentrate) by Makhteshim Chemical Works Ltd., Israel, and to make recommendations to WHOPES on its use for mosquito larviciding; and (ii) to review and revise WHO guidelines on laboratory and field testing of chemical and bacterial larvicides and insect growth regulators (IGRs) against mosquito larvae.

The meeting was opened by Dr Lorenzo Savioli, Coordinator, Strategy Development and Monitoring for Parasitic Diseases and Vector Control (PVC). In his opening remarks he referred to the recent development of a *Global strategic framework for integrated vector management*<sup>1</sup> by WHO, with the objective to strengthen vector control activities at the global and national levels, optimizing the use of vector control methods and resources and promoting inter- and intrasectoral collaboration and community participation.

Dr Morteza Zaim, Scientist in charge of WHOPES, presented the objectives of the meeting as well as an overview of the Scheme to the participants. Dr Zaim noted that the recommendations of WHOPES are intended to expedite registration of public health pesticides by Member States. He also noted the close collaboration of the Scheme with the WHO Programme on Chemical Safety (PCS) and emphasized that no public health pesticide is considered by the Scheme for field testing until its

<sup>&</sup>lt;sup>1</sup> *Global strategic framework for integrated vector management*. Geneva, World Health Organization (WHO/CDS/CPE/PVC/2004.10; available at: http://whqlibdoc.who.int/hq/2004/WHO\_CDS\_CPE\_PVC\_2004\_10.pdf, accessed 23 December 2004).

safety has been assessed by PCS. He also noted that the reports of the WHOPES Working Group Meetings are a consolidation of the available information on pesticides evaluated by the Scheme and other published/unpublished reports and that these are excellent resource for pesticide registration authorities and national control programmes. He emphasized that every effort is made to ensure that the reports are useful and widely available.

The meeting was convened in plenary sessions and working groups at which the reports of the WHOPES supervised trials and relevant published literature (see Annex 1: References) were reviewed and discussed. The meeting was attended by 11 scientists (see Annex 2: List of participants). Dr Mir S. Mulla was appointed as Chairman and Dr Purushothaman Jambulingam as Rapporteur. Recommendations on the use of novaluron 10% EC were made. The Group also reviewed and revised the draft guidelines on laboratory and field testing of chemical and bacterial larvicides and insect growth regulators against mosquito larvae, to be published as a separate document by WHOPES.

#### 2. REVIEW OF NOVALURON 10% EC

#### 2.1 Safety assessment

Novaluron is an IGR of the benzoyl urea family, acting as a chitin synthesis inhibitor. It has a low vapour pressure and is of low water solubility, which is independent of pH. Novaluron is stable to hydrolysis at pH 5 and 7 but is slowly hydrolysed at pH 9 at 25 °C. It undergoes only slow photolysis (pH 5).

Novaluron is of generally low-acute, subacute and chronic toxicity. Positive assessments were obtained in skin and eye irritation and skin sensitization tests of the EC formulation but did not occur with the technical material, indicating that novaluron itself is neither an irritant nor a sensitizer. Tests on carcinogenicity, mutagenicity and teratogenicity were negative. Novaluron does not show signs of reproductive or developmental toxicity.

Novaluron is of low toxicity to birds, fish, earthworms and aquatic plants but is highly toxic to some crustacea. A WHO assessment of the human and eco-toxicity of novaluron is available on the WHOPES home page on the Internet<sup>2</sup> as part of the development of specifications for the technical material and the EC formulation of novaluron.

The following are the extracts from the material safety data sheet of the manufacturer, Makhteshim, for novaluron 10% EC.

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