

THE PRODUCTS OF THE "AQUATAIN" FAMILY AS ALTERNATIVE TOOLS AND MEASURES FOR THE INTEGRATED MOSQUITO MANAGEMENT

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Abstract Aquatain AMF is a ready-to-use silicone-based liquid (polydimethylsiloxane – PDMS), easy to apply on the surface of standing and stagnant water. It prevents the development of mosquitos by forming an ultra-fine film over the water's surface. This chemical is not considered a biocide under UE laws, as it implements a physical-mechanical action, long-lasting and effective for at least 4 weeks. There is no possibility of developing any resistance phenomena. It is not a dangerous product according to the "CLP" EU Regulation. Aquatain AMF is widely used in several Countries, such as in Italy, as an alternative product to microbiological biocide-products and to manage the resistance to the larvicide difluzenuron. This chemical reduces surface tension and prevents the larvae and pupae from taking in the atmospheric oxygen they require to develop into adults and preventing the correct development of the mosquito in its immature stages (larvae and pupae). Although it is a physical action, it does not occlude the mosquito siphon and it does not create a solid / impermeable patina on water.

Field tests conducted on *Aedes albopictus* and *Culex pipiens* showed a high index of inhibition to emerging from their pupae, confirming laboratory and semi-field tests. The urban context undoubtedly represents the main application scenario. The product and application systems have been optimized to improve the efficiency of the treatments in these contexts. Further field trials will also be planned for extra-urban applications. Some experiences of applications in natural areas have shown the efficacy of the product and at the same time an insignificant impact on non-target species. However, during the planning of treatments in these areas, it is necessary to carefully evaluate and monitor the fauna present (eg arthropods and benthic fauna) in order to select the most appropriate method of intervention.

Key words Mosquito control, silicone, *Aedes albopictus*, *Culex pipiens*