

Are sterile mosquitoes the answer to malaria elimination?

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The Sterile Insect Technique (SIT), the release of sexually sterile male insects to wipe out a pest population, is one suggested solution to the problem of malaria in Africa. A new supplement, published in BioMed Central's open access *Malaria Journal*, reviews the history of the technique, and features details about aspects of its application in the elimination of malaria.

The supplement, edited by Dr Mark Benedict, who along with the other editors led the development of this technology at the International Atomic Energy Agency in Vienna, describes how SIT may be used against the vectors for <u>malaria</u> in sub-Saharan Africa, Anopheles <u>mosquitoes</u>. He said, "In the context of elimination, SIT could play a unique role. As part of an area-wide integrated pest management programme, the SIT may be able to minimize problems due to insecticide resistance to antimalarial drugs. Because it is uniquely effective at low mosquito densities, SIT might be just the thing to deliver the final blow to mosquito populations and to completely remove malaria from a given area".

SIT involves the generation of 'sterile' male mosquitoes, which are incapable of producing offspring despite being sexually active. Because female mosquitoes only mate once during their lifetimes, a single mating with a sterile male can ensure that she will never breed. This leads to an increasing reduction in the population over time, in contrast to insecticides, which kill a certain fraction of the <u>insect population</u>. The supplement features articles reviewing the history of the technique;



ethical, legal and social concerns that might arise from it; and detailed reviews of all of the elements required for a successful SIT programme.

Speaking about this new, freely available resource, Benedict said, "The SIT has proven highly effective over large areas when used against other insects. We produced this supplement because we believe that the technique has been overlooked as an anti-mosquito method. Its efficiency in low vector-population settings precisely complements insecticide-treated bednets, indoor residual spraying and larval control: when they are at their weakest, SIT is at its strongest. This supplement gives researchers and public health authorities information about the state-of-the-art as well as identifying specific challenges and requirements for successful implementation."

<u>More information</u>: Development of the sterile insect technique for African malaria vectors, Edited by Mark Q Benedict, Alan S Robinson and Bart GJ Knols, *Malaria Journal* 2009, 8(Suppl 2):I1 (16 November 2009), <u>www.malariajournal.com/supplements/8/S2</u>

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