Mozzies infected in war on dengue

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BIOLOGICAL warfare will be unleashed on Queensland’s mosquito population within months in a bid to fight dengue fever, as part of a world-first $18 million program that experts hope will lead to a more effective brake on the disease.

The Australian researchers leading the international research push will today announce regulatory approval to begin releasing mosquitoes infected with bacteria they hope will stop dengue in its tracks.

The trial received $14m of its funding from the Bill and Melinda Gates Foundation, and if successful could have a huge impact in reducing the worldwide toll of dengue, which infects between 50 million and 100 million people annually.

The disease, which can be fatal in severe cases, has no vaccines or treatments and is currently causing concern for athletes travelling to the Commonwealth Games in Delhi, which is experiencing an outbreak with more than 3000 recent cases.

The bacterium, called wolbachia, does not harm the mosquitoes once it infects them, but once inside the insects displaces the dengue virus and prevents it from multiplying.

The only way wolbachia can be passed from mosquito to mosquito is through the generations, in infected eggs, and the researchers hope it will gradually spread through the wild mosquito population.

If a wolbachia-infected male mosquito mates with an uninfected female, her eggs will fail to hatch, whereas the eggs from two infected parents will grow normally.

Project leader Scott O’Neill, professor of biology at the University of Queensland, said the environmental risk of releasing the bacteria-infected insects had been assessed by both the CSIRO and the Australian Pesticides and Veterinary Medicines Authority as “negligible”.

The clearance means the releases can go ahead from January.

Professor O’Neill said wolbachia was thought to be already present in up to 70 per cent of insects, although not in the Aedes aegypti species of mosquito responsible for spreading dengue.

The bacteria could not live in humans and could not infect them or other animals mosquitoes feed on, because they are too large to travel down the insects’ salivary ducts, Professor O’Neill said.

Extensive studies of people bitten repeatedly by other species of mosquito that did carry the bacteria had failed to find any ill-effects, he said.

“With all of that, we are very confident that it poses no risk to human safety or the environment,” he said.

“In the laboratory it’s working beautifully, but it’s very hard to predict from that how it’s going to perform in the field. We are quietly confident, but we really need to do these tests before we can confidently say it’s going to work.”