Mosquitoes enlisted to combat fatal fever

By Danny Rose

Mosquitoes infected with a bacterium known to block transmission of dengue fever have been approved for release into the wild in Australia’s north, in a world first.

Scientists can soon begin field trials of a unique method for combating the potentially fatal infection, which now afflicts up to 100 million people a year across the tropics.

It will be announced today that the Eliminate Dengue Project, backed by the Bill and Melinda Gates Foundation, has received final regulatory and safety approvals.

The first of the mosquitoes to be infected with wolbachia – a bacterium otherwise found widely in fruit flies and other insects – will be set free at sites near Cairns early next year.

“We’re hoping that in the course of one wet season we should be able to take a study area and see the wolbachia invade the whole population of mosquitoes,” project leader Professor Scott O’Neill, from the University of Queensland, said.

Wolbachia bacteria is found naturally in up to 70 per cent of all insect species, though previously not in the mosquito that transmits dengue fever.

Scientists had to breed a new strain of wolbachia to enable it to live inside the mosquito, where it passes naturally to offspring and ensures its survival by spoiling the eggs of female mosquitoes that do not carry it. The bacteria also monopolises resources needed by the dengue virus, ensuring it can’t take hold on a mosquito, which in turn won’t go on to infect humans with dengue fever.

“It’s kind of like a vaccine but instead of giving it to people we give it to mosquitoes, and it ... should be self-sustaining,” Professor O’Neill said.

There were more than a thousand confirmed cases of dengue fever in far-north Queensland in the 2008-09 wet season.

About 2.5 billion people live in areas prone to dengue fever, which can be fatal for children or adults with repeat infections. AAP