

First exploratory Zika study in Suriname

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After the Zika virus appeared in Brazil in the spring of 2015, it was then discovered in Suriname last autumn. Will it also lead to congenital defects in babies there? Together with virologists from Rotterdam, Wageningen entomologist Sander Koenraadt travelled to Suriname in February for a first exploratory study.

The Zika [virus](#) has been known since 1947, when it was first found in a rhesus monkey in the Ugandan Zika Forest. It only became a major

global issue last year, however, when it was detected in Brazil. In addition to 'Zika fever' it appeared that the virus was also – very likely – the cause of microcephaly (abnormal smallness of the head, resulting in incomplete brain development) in unborn children.

In Suriname the Zika virus was not discovered until October 2015. "It is not yet clear whether it will result in congenital defects in babies here," says entomologist Koenraadt. "The first children conceived in Suriname after the virus appeared will not be born until this summer."

Nonetheless, Koenraadt decided to travel to the country already to perform a first exploratory study. "Together with Suriname entomologist H         Hiwat, who obtained her doctorate at Wageningen in 2011 with a study of malaria control in Suriname, we looked into the possibility of setting up a research project, and, more particularly, obtaining the necessary financing."

Are Suriname mosquitoes susceptible?

One of the main questions that Koenraadt would like answered is how susceptible [mosquitoes](#) in Suriname are to Zika. "The virus is transmitted by mosquitoes of the Aedes genus; the same genus that transmits the diseases chikungunya and dengue. In Wageningen we have a Biosafety III-lab; the second highest safety classification for laboratories which can be used to perform research into dangerous viruses. Our Rotterdam colleagues have already isolated the virus itself. This would allow us to study whether or not the mosquitoes of the Aedes aegypti genus in Suriname are able to transmit the Zika virus."

Pioneering ecology

Koenraadt underlines that very little is known about the transmission of the Zika virus. "The biology and ecology of the virus are still at a very

early stage. A first priority is to capture mosquitoes in Suriname and determine the infection rate. We now aim to obtain financing for this research. In addition to serving as a form of development aid for organisations such as the European Union, studies like this are also relevant to European countries now that we know that the disease is probably sexually transmissible."

Vaccine or genetically modified mosquitoes?

Alongside the fundamental research involving the biology of the virus and transmission, Koenraadt is also working with Gorben Pijlman from the Laboratory of Virology on possible control options. Koenraadt: "A vaccine would be the obvious choice, but it is not yet available. The Laboratory of Virology is currently carrying out its first studies in this regard. Another option is dealing with the mosquitoes that transmit the disease. This may involve the widespread control of mosquitoes using biological methods or insecticides, or possibly the application of genetically modified, sterile *Aedes* mosquitoes. While these types of measures may be a sensitive issue in Europe, such objections seem far less relevant when you actually encounter [congenital defects](#) in newborns."

Provided by Wageningen University

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