

FUND RESURRECTS ECOLOGICAL VIROLOGY

‘Lute Bos is still contributing to virology’

Harvest losses can be prevented by applying ecological knowledge about plant viruses in horticulture and agriculture. Endowed professor René van der Vlugt is going to breathe new life into research and education in this field. Thanks to a legacy from the Wageningen plant virologist Lute Bos.

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Pathogenic viruses such as HIV, Ebola and the bird flu all made the leap from animals to humans at some point. Something similar happens in the case of plant viruses, which get transferred from wild plants to agricultural crops. Sometimes with disastrous consequences. ‘A couple of years ago a virus spread like wildfire through cassava crops in East Africa, causing famine,’ says René van der Vlugt. He is a researcher at Plant Research International, part of Wageningen UR, and since 1 January 2014, endowed professor of Ecological Plant Virology at Wageningen University, part of Wageningen UR. Farmers cannot combat plant viruses with pesticides. The only thing that does help is thorough preventive measures such as using clean propagation material and keeping close checks so as to identify diseased plants or seeds in good time. ‘That is well organized in the Netherlands. But it still goes wrong sometimes. In 1999 a new to-

mato virus turned up which lead to such major infestations for some growers that they had to clear out whole greenhouses, sometimes as big as 10,000 square metres,’ says Van der Vlugt.

DISASTROUS CONSEQUENCES

In spite of the sometimes disastrous consequences of plant viral infections, they have not come in for the attention they deserve in recent decades. ‘There has been much more emphasis on molecular and cellular research,’ explains Van der Vlugt. ‘Ecological plant virology, which studies the place of viruses in farming systems and in nature, got squeezed out.’

That ‘green’ plant virology was precisely the field that Lute Bos (1928-2010) worked in, and was his passionate interest. Back in 1957, Bos was the first PhD student at the Wageningen Virology chair group. In the course of his career as a researcher at the former DLO institute Plant Virology

Research (IPO), he wrote more than 300 scientific articles, as well as several standard works such as *Symptoms of Virus Diseases in Plants*, and *Introduction to Plant Virology*. After retiring in 1993, Bos remained active and was a regular visitor at IPO, where René van der Vlugt succeeded him in 1994. ‘We often had lively discussions. Lute was extremely passionate about his work and he took a holistic view of things. He wanted to know how the environment, plants, the virus and the virus carrier influence each other,’ says Van der Vlugt. Bos was very sorry to see the declining interest in his field.

IDENTIFYING VIRUSES

Bos, himself a farmer’s son, believed that knowledge about plant virology was crucial to food security in developing countries. Regions he worked in included Africa, Syria and the former eastern bloc in Europe. ‘People from all over the





Cassava in Thailand damaged by viruses.

world came knocking at Bos's door to learn how to identify viruses. Everyone was always welcome to consult him and he had a vast knowledge of the literature,' says Just Vlak. Vlak is personal professor of Virology at Wageningen University, and led the Virology chair group until he retired in 2013.

Lute Bos died of a heart attack in 2010 while in Norway, giving a lecture on potato viruses. With a legacy from his estate, his relatives established the L. Bos Fund for Ecological Plant Virology. The fund promotes research and education in ecological plant virology by facilitating the appointment of René van der Vlugt as endowed professor for one day a week. For the next five years he will lecture in the Virology chair group and recruit and supervise MSc and PhD students.

'It is fantastic that ecological plant virology is being put back on the map in

Wageningen,' says Just Vlak. 'We often had to turn away students who wanted to do something in this area, and there was no more research on it going on because of cutbacks. Now the entire field is covered again.'

Plant virology will gain in importance, Vlak expects, due to climate change and to globalization, which makes it easy for viruses to hitch lifts.

One of newly appointed endowed professor Van der Vlugt's projects is a PhD study in Uganda which focuses on both virological and socio-economic issues. Farmers in Uganda are used to eating the large, healthy potatoes and using the small 'diseased' ones for seed. Van der Vlugt: 'We train the farmers to recognize healthy plants as well as to change their habits. It has been shown that planting healthy tubers increases the yield of a field by 30 percent in just one year.' ■



LUTE BOS (1928-2010)

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