

Professor Leo van Griensven on His 75th Birthday

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On February 15, 2016, Professor Leonardus Johannes Lambertus Donatus van Griensven (known as “Leo” to his friends and acquaintances) celebrated his 75th birthday. Professor Leo van Griensven was born during a British air raid on German-occupied Eindhoven, the Netherlands. Interestingly, his fourth Christian name, Donatus, refers to the patron saint who is considered by Catholics to protect against thunderstorms. Professor van Griensven has made prominent contributions to the worlds of phytopathology, cell biology, mycology, virology, all aspects of the cultivation of mushrooms, and—especially in the past 25 years—medicinal mushroom science. He has had a long and fruitful career in biological sciences. He speaks four languages (Dutch, German, French, and English), which has helped him in his travels, in his work, and in gaining expertise working in foreign laboratories around the world. He started his academic career at Wageningen University in 1959. In 1966, he graduated with a degree in phytopathology, with virology as a major and biochemistry and colloid chemistry as minors. At the time there was no such science as molecular biology. In 1962, he worked as a student trainee in the Virology Lab at Purdue University in West Lafayette, Indiana. In 1969–1970, he did his postdoctorate on experimental leukemia research at the Hospital St. Louis, Paris, France. Afterward he continued his work on experimental leukemia research as a visiting professor at the Salk Institute for 2 years (1977–1979), in San Diego, California, and also worked as a consultant while setting up mushroom cultivation in India and Indonesia.

Professor Leo van Griensven went on to graduate from Wageningen University with a PhD in 1970. He studied the replication of the RNA of a 2-component plant virus. RNA replication was very new in plant virology; the only previous research on the



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replication of viral RNA was done by Sol Spiegelman and Charles Weissman using Q β and MS-2 bacteriophages. It was a fascinating time because this was a new area of biology—really the early beginning of molecular biology. Professor van Griensven got a job at the Rotterdam Medical School (currently known as Erasmus University) in 1969 but was sent to Paris for a year to learn more about oncogenic viruses. He returned to Rotterdam Medical School, and his first task was to set up an experimental pathology unit in the Department of Pathology under Professor Marco J. De Vries, who was an expert in graft-versus-host processes occurring in patients after organ transplantation and who was involved in early bone marrow transplants designed to cure various immune diseases. Rejection processes, tumor

growth, and viral diseases were some of the reasons why it was important to study the effects of various oncogenic RNA viruses on hematopoietic stem cells. One of the observed effects was that apoptosis was responsible for the disappearance of embryos of mice when infected with the leukemogenic Rauscher virus during pregnancy.

From 1977 until 1979, van Griensven also worked as a visiting scientist at the Salk Institute with Marguerite Vogt and Inder Verma on malignant catarrhal fever virus of mice. These viruses were natural recombinants from wild murine viruses causing leukemia in inbred laboratory mice and had apparently picked up evolutionary genetic information for tumor growth and combined this with species-specific information for infection and replication. Professor van Griensven considers this the most fascinating period of his scientific life. His work contributed interesting data on the role of xenotropic viruses and the recombinants with the regular Moloney leukemia virus that commonly induced T-cell lymphoma, but in the combination created an erythroid leukemia.

Professor van Griensven was employed by the Netherlands Ministry of Agriculture as the Director of the Mushroom Experimental Station from 1981 to 2001. There he established the most advanced institute for edible fungi in the late 1980s and 1990s, which became a worldwide commercial success thanks to the exploitation of “breeders’ rights” on the world’s first inbred white button mushroom strain, Horst-U1, created by Dr. Gerda Fritsche. While working for the Ministry of Agriculture he also worked (1986–1987) as a director to merge the National Institute for Plant Race Research and the National Institute for Seed Control.

From 1988 to 2003, he was an extraordinary professor of applied mycology at the Radboud University Nijmegen in the Netherlands, in which capacity he supervised a number of intelligent PhD students in achieving their doctorates.

The research was devoted to all aspects of mushroom cultivation, initially trying to develop indoor composting methods without a strong unpleasant smell but continuing the high yield and quality of conventional pungent composting. Together with the

technology of the composting process, the students studied various metabolic routes induced by degrading lignocellulose. Pests and diseases were studied, followed by studies of morphology and development and, most important, the genetic aspects of the button mushroom, *Agaricus bisporus*, which led to highlighting significant properties of the mushroom and producing higher incomes for mushroom growers and for the Mushroom Experimental Station, furthering its research efforts. Around the year 2000 the Ministry of Agriculture, as well as the industry, stopped financing applied research in agriculture, mostly for political reasons.

From 2001 to the present, Professor Leo van Griensven has held the position of guest scientist at the Plant Research International of Wageningen University and has combined 2 facets of his earlier expertise in the field of medicinal mushrooms. He is currently researching the extraction and characterization of components of medicinal mushrooms, immunomodulation, cell morphology, pro- and antioxidation, glycolysis, and oxidative phosphorylation.

Professor van Griensven has worked in the field of medicinal mushrooms for the past 25 years. He has made major contributions on national and global levels. He took part in all 8 medicinal mushrooms conferences starting in September 2001 in Kiev, Ukraine. For each conference he organized symposia and was an invited speaker.

He was invited as a member of the editorial board of the first scientific journal in the field—the *International Journal of Medicinal Mushrooms (IJMM)*—and since 2014 he has been a scientific editor of this journal. He is a diligent and creative reviewer and editor of the *IJMM*. He has published more than 40 papers in the field of medicinal mushrooms, some of which have been published in the *IJMM*, for example, “Pro- and Antioxidative Properties of Medicinal Mushroom Extracts” (*Int J Med Mushrooms* 2008;10:315–24); “Culinary-Medicinal Mushrooms: Must Action Be Taken?” (*Int J Med Mushrooms* 2009;11:281–6); and “Did the Iceman Know Better? Screening of the Medicinal Properties of the Birch Polypore Medicinal Mushroom, *Piptoporus betulinus* (Higher

Basidiomycetes)” (Int J Med Mushrooms 2015;17: 1113–25).

Several other important papers on medicinal mushrooms by Professor Leo van Griensven were published in highly respected journals with high impact factors, including *PLoS One*, *Molecules*, *Food & Function*, *Food Research International*, *Carbohydrate Polymers*, *Journal of Bioenergetics and Biomembranes*, and *Food Chemistry*.

Professor van Griensven has written 5 books and contributed over 150 scientific articles. A list of all his publications can be found online (https://www.researchgate.net/profile/Leo_Van_Griensven/

publications/). He is a friendly and communicative scientist and has been a collaborator in many countries in the world. He published papers on medicinal mushrooms with collaborators from Thailand, Turkey, Russia, China, countries of the former Yugoslavia, and others.

Professor Leo van Griensven is an outstanding scientist and a warm and friendly colleague. His colleagues, friends, collaborators, and students wish him the best success in continuing his scientific activity for the benefit of mushroom biology and medicinal mushroom science. Together, we also wish him good health to continue in his long and productive career.