

International Conference on

# Mycology & Mushrooms

September 12-14, 2016 San Antonio, USA

## The small gene pool of American and European *Psilocybe cyanescens* proves its suspected spreading by globalization

**Alexander Giessler**

University of Gottingen, Germany

*Psilocybe cyanescens* Wakefield., is an understudied, potently psychoactive species of the . Since its holotype found in Kew Gardens (London) has been described in 1946 there is an ongoing discussion about the species origin and taxonomical position. Meanwhile, colonies of this synanthrope occur in urban areas all over Europe and Northwest America. Mycologists on both continents regard *P. cyanescens* as an invasive neomycete anthropogenously introduced, e.g. by ship and promoted by mulch usage in gardening. Mating experiments with haploid strains from 17 German and 7 American colonies revealed the presence of merely four mating types in the tetrapolar mating system of this heterothallic species. Furthermore, its compatibility with *P. azurescens* Stamets & Gartz and *P. allenii* Borov. Rockefeller & P.G. Werner questions the current species concepts based on fruit body morphology and ITS sequences. An AFLP analysis using seven different primer combinations substantiated the mating results. Contrary to its wide distribution, *P. cyanescens* is characterized by an extremely small gene pool without noticeable indications of an allopatric differentiation. This indicates that the rapid spreading of this fungus started, from an evolutionary point of view, only recently. The ancestor may be found in a *P. subaeruginosa* population in Australia.

### Biography

Alexander Giessler has completed his BSc and the MSc degree in Forest Science at the University of Dresden and the University of Gottingen, Germany. He is currently working on his PhD thesis about *Psilocybe cyanescens* in Germany and aims for a scientific or official career in nature conservation.

oeko.junior@gmx.de

### Notes: