Identification of the *Biscogniauxia* teleomorph of *Cryptostroma corticale* for the development of sustainable strategies to protect sycamore from sooty bark disease

Brenken, Ann-Christin; Enderle, Rasmus; Riebesehl, Janett

Julius Kühn Institute (JKI) – Federal Research Centre for Cultivated Plants, Institute for Plant Protection in Horticulture and Urban Green, Braunschweig, Germany.
Email of corresponding author: ann-christin.brenken@julius-kuehn.de

Cryptostroma corticale (Ellis & Everh.) P.H. Greg. & S. Waller, the causal agent of sooty bark disease, has led to the death of sycamore (*Acer pseudoplatanus* L.) in many regions in Germany and other European countries in the recent years, especially supported by dry and hot summers. As a result, there is an urgent need for further scientific research on this pathogen in order to develop sustainable strategies for the protection of sycamore.

The fungus belongs to the ascomycetes and is classified in the genus *Biscogniauxia* Kuntze due to its genetic similarities. Unlike the other *Biscogniauxia* species, *C. corticale* is not known to have a teleomorphic fruiting body, despite a relatively diverse population structure has been demonstrated by somatic compatibility experiments. For these reasons, it is unlikely that *C. corticale* does not form a teleomorphic fruiting body. More likely, it can be assumed that it exists a teleomorphic fruiting body of *C. corticale*, but it has not yet been recognized as such. Therefore, it is possible that the teleomorph, for which it is searched, is not yet described or it could be found in the already described but not yet sequenced species of the genus *Biscogniauxia*.

In the current project, as many different cultures (mainly from material collected in Germany) and fungarium specimens (from around the world) as possible from the genus *Biscogniauxia* will be collected and gathered. Subsequently they will be evaluated and analyzed morphologically and phylogenetically with different marker genes.

First phylogenetic results with the marker gene region ITS confirm the partly high genetic similarity of *C. corticale* to the genus *Biscogniauxia*. However, a teleomorphic *Biscogniauxia* species that can be genetically assigned with certainty to the anamorphic species *C. corticale* has not yet been found. Furthermore, it appears that the previous taxonomic classification of some *Biscogniauxia* species is not conclusive in itself.

The further acquisition of marker sequences is necessary to further search for the teleomorphic fruiting body of *C. corticale*, as well as to perform a comprehensive phylogenetic analysis and to contribute to fungal DNA-barcoding.