

Discovering *Alternaria* diversity in South Africa

Alternaria is a diverse fungal genus that occurs ubiquitously on especially plant material, where species can live as saprophytes, endophytes and/or pathogens. In recent years, *Alternaria* was redefined using phylogenetic data. This resulted in many changes to its taxonomy and, as with many other fungal genera like *Aspergillus*, *Cladosporium*, *Fusarium* and *Penicillium*, DNA sequences are now a necessity to identify strains to species level. This project aims to expand, document and disseminate our understanding of the diversity of the genus *Alternaria* in South Africa, with special focus on the agricultural sector. This will be achieved by DNA barcoding and sequencing of reference strains from the PPRI collection (of the National Collections of Fungi, ARC-PHP, South Africa), while obtaining the bulk of strains during routine diagnostic work done at the ARC-PHP Biosystematics (Mycology) unit. Firstly, we will compile and curate a reference sequence database to include all reputable sequences for *Alternaria* and closely related genera in Pleosporaceae. We will then target the GAPDH (glyceraldehyde-3-phosphate dehydrogenase) gene region, since this gene distinguishes between most species and is the most commonly sequenced for the genus. In case GAPDH does not provide an identification, including when a new species is found, the ITS rDNA region, RPB2 (RNA polymerase second largest subunit) and TEF1 (translation elongation factor 1-alpha) genes will be sequenced and compared to our curated dataset. Strains will be accessioned into the PPRI and CBS collections (Westerdijk Fungal Biodiversity Centre, the Netherlands). At the same time, we will update existing collection data. New species will be described using morphology and multigene sequences, and published in international peer-reviewed journals.