Phytopathogenic microorganism collection database of quarantine and alien species to Brazil

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Abstract:

Living organisms have always been transported beyond their place of origin. Hazardous risks of plant pests have increased over the decades, associated with the movement of plants and their products in the international trade, transport, travel and tourism. The avoidance and mitigation of factors related to biological invasions that can harm biodiversity, hydric resources, agriculture, livestock, forestry, food and nutrition is of major concern to Brazilian biosecurity. In Brazil, the quarantine of plant germplasm is realized by EMBRAPA, at the research unit of Genetic Resources and Biotechnology. Imported germplasm as well as commodities have been tested according to appropriate procedures against alien and quarantine pests. Intercepted phytopathogens and other alien related species have been isolated, characterized, identified and maintained in a culture collection. Last year, enrichment was significant due to the increasingly imports of soybeans, corn, ornamental plants and also some other species for the national program of agroenergy. Phytobacteria and fungi collection comprising about 400 organisms are linked to a microbial network project of a genetic resources platform. Such phytopathogens have been used for undertaking research of quarantine purpose, and to develop more accurate diagnosis methods. More recently, efforts have been made to organize the collection in a database, Infomicro (http://plataformarg.cenargen.embrapa.br/pnrg/rede-microbiana/colecoes-de-cultura/). After testing the conidial viability of the filamentous fungi preserved by a long term method on silica gel the collection will be joining the same database of the phyto bacteria. Another goal is the preservation of fungi by different techniques to assure their conservation *ex situ*. Moreover, high input is giving to the collection by the Quality System aiming the standardization of methods in the collection. General operational activities were made following the ISO/IEC 17025 which included the writing of Standard Operational Procedures, training and availability of qualified personnel, documentation and registering management, biosafety and biosecurity requirements to handling the collection appropriately.

Key words: filamentous fungi, phytobacteria, quarantine, database, preservation