Authenticity assessment of medicinal plants and plant food supplements

Joana Amaral*[1,2], Isabel Mafra , and Liliana Grazina

[1]REQUIMTE-LAQV-Pharmacy Faculty, University of Porto, Portugal – Portugal
[2]CIMO- Mountain Research Center, Polytechnic Institute of Bragança – Portugal

Abstract

Plants have been used since ancestry in folk medicine for their potential to treat diseases or maintain health. During the last years, besides their implemented use as traditional herbal medicinal products (THMP), medicinal plants and products thereof are being increasingly used as ingredients in formulations sold as plant food supplements (PFS). This type of products has been growing in popularity, and their rising sales are also increasing the demand for plant material worldwide. Moreover, they frequently are commercialized at high market prices, therefore being susceptible targets of economically motivated frauds, either by the illegal addition of pharmaceutical drugs or by the intentional swap or misidentification of plant material. Misidentification can occur mainly with wild collected plants, but can also be potentiated by trade globalization phenomena that prompt the increasing use of plant species from foreigh regions in the EU. Therefore, accurate identification of botanicals in herbal products such as THMP and PFS, from raw materials until the finished products, is of utmost importance to protect the health and expectations of consumers. Up till now, different approaches have been suggested for the identification of plant species, including traditional methods, such as morphologic evaluation based on macro and microscopic observations, and more advanced techniques aiming at chemical profiling and DNA analysis. In opposition to chemical profiling, the use of molecular biology techniques has proved to be well suited for unequivocal identification of plant species since DNA is found in all tissues, not being affected by external or physiological plant conditions. However, while its use is more straightforward when applied to raw materials, the authentication of botanical products can be more challenging: pros and cons will be discussed.

Keywords: adulteration, botanicals, plant food supplements

*Speaker