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Old remedies for new valorizations: A cross-cultural, phytochemical, pharmacological study

African and Arab areas represent a unique hotspot of biological and cultural diversity in the world, which allows for interesting cross-cultural, ethnobotanical, phytochemical, pharmacological studies and valorization. The aims of this presentation are threefold: to document the state of traditional knowledge related to local plants uses from different communities in African and Arab areas; to introduce phytochemical and pharmacological studies; to discuss the correlation between chemical compositions and pharmacological activities. Twenty years ago, a comparative ethnobotanical, phytochemical and pharmacological study was conducted by our laboratory. The relevance of this presentation is to demonstrate how from using ethnobotanical, phytochemical studies in combination with the pharmacological screening we can develop new products with higher added value. After inventory, the traditional knowledge and examined historical interactions, we present the correlation between chemical compositions and pharmacological activities of many extracts and compounds. Regional information system has also been briefly developed. It that includes: scientific plant name and authority, vernacular names, chemical data, distribution, habitat, description, conservation status, indigenous knowledge including references to literature sources of the potential utilization as medicines, social uses, food, food additives, animal food, bee plants, invertebrate foods, poisons, environmental uses, gene sources, fuels, etc. The research work in progress there concern the study of 136 indigenous plant species, 148 extracts, 96 essential oils and 30 identified products. The plants which have been selected and studied constitute the most obvious choice to develop effective new drugs. This can be illustrated by the results of the study on phytochemical and bioassays investigations (in vitro and in vivo test systems), provide the reader with insight into what is currently possible in the study of bioactive plant materials. These results indicate that a large number of secondary metabolic compounds provide protection against bacterial, veridical, fungicidal, parasitical, insecticidal, mosquito larvae, dermatophyte, for plants diseases and can be used in treatments for cancer. They exhibit a number of protective functions for human. The conclusion can thus be drawn that the new bioactive products found can improve human and animal health in the pharmaceutical, medical, cosmetic, agricultural and food industries, because the drug plants are readily available, less expensive, safe and effective and rarely have side effects. So, our program is one of the leading multi-disciplinary approaches to bioprospect to find these new bioactive natural products.

Biography

Mohammed Hmamouchi has obtained PhD in Phytochemistry (1986, Laval University in Canada). After his graduation, he gets research and teaching positions in the faculty of medicine and pharmacy in Rabat. In 1999, he has published his first main book; it is the fruit of several years of research and reflection, on Medicinal and Aromatic Plants in Morocco. In 2004, he was appointed by Moroccan government to develop and implement national policies on Medicinal and Aromatic Plants. He oversaw build and equipment. He leads, as a Director, of a First National Institute on Medicinal and Aromatic Plants (African and Arab). In 2011, he became President of the Arab Federation of Medicinal and Aromatic Plants. He was also the focal point of different international conventions and agreements, and coordinator of national and international MAP networks (Tempus: European Union Projects). He managed several research projects, contracts and cooperation agreement. He assisted business creation, cooperatives for the production of MAP and product development opportunities. He has worked with many international institutions and companies in over 30 countries. He is a member of several professional bodies and has received many grants and awards. In 2013 he became Advisor to the Minister of Higher Teacher Education, Scientific Research. He is continuing to do research, to be invited to give plenary lectures at the Congress (Guest Speakers) and also to make expertise.

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