

Editorial



Characterization and valorisation of Plants: Virtues and development prospects

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This special issue aims to bring together knowledge related to research in the broad scientific field of plants. The aspects of medicinal and aromatic plants (MAPs) and plants in general covered include the study of the biological and chemical activities of extracts rich in phytochemicals, essential oils and secondary metabolites by *in vitro* and *in vivo* tests, ethnobotanical and ethnopharmacological studies, biodiversity, plants morphological and physiological characterizations. MAPs are defined as all raw organic materials (trees, shrubs and herbs) whose active elements of their respective organs (fruits, flowers, leaves, roots, stems, buds, bulbs) are likely to be used. The range of plants applications is vast, since it affects the medical sector (pharmaceutical industry, allopathy, phytotherapy, homeopathy, aromatherapy), that of cosmetics and perfumes, chemistry (detergents, dyes, varnishes, fireworks, etc.) and the agro-food sector (minimally processed products such as infusion plants, spices and dry herbs, etc.).

Ethnobotanical research estimates there are approximately 50 000 to 70 000 plant species used in traditional and modern herbal medicine around the world (Schippmann et al., 2006). The total amount of MAPs used by the pharmaceutical, cosmetic, chemical and food industries is very difficult to estimate. Globally, more than 35 000 are used by the pharmaceutical, chemical or cosmetic industries according to professionals. There is growing interest by scientists and the World Health Organization in medicinal plants in many countries, especially in developing countries where access to modern health care is limited. This action involves evaluating their efficacy and harmlessness, and ensuring the safety and standardization of their use. Plants in general arouse a growing interest of the largest research centres at the international level and are increasingly sought after by the agro-forestry and pharmaceutical industries at the international, regional and national levels and therefore offer real opportunities for socio-economic development of countries.

Algeria, due to its geographical location, benefits from a very diverse climate and flora. The plants grow in abundance in the coastal, mountainous and also Saharan regions, many of which are renowned for their agro-forestry importance, medicinal virtue and used in traditional medicine in health care (human and animal) and for culinary and cosmetic purposes. These plants are potential

natural remedies that can be used as a curative and preventive therapeutic means, but this practice remains limited to patients and herbalists who still have this empirical know-how. The richness of the Algerian flora is therefore indisputable. It contains a large number of species classified according to their degree of rarity: 289 fairly rare species, 647 rare species, 640 very rare species, 35 extremely rare species and 168 endemic species (FAO, 2012). This situation requires a detailed inventory, a morphobiometric, biochemical and genetic characterization for an efficient management of this potential. The MAPs most in demand from herbalists in Algeria are most often spontaneous (wild) in nature, which makes their quantification difficult. The actors involved in the plants sector are very numerous and diversified and they attached to several departments (agriculture, forestry, research, industry, commerce, finance, etc.).

Algeria has nearly 2 689 herbalists registered with the National Trade Register Center (CNRC), with "trader" status. These professionals are very active in this sector, they seek to source and supply their customers. At the interface between collection and distribution, herbalists have a central function in the organization of medicinal plants on the Algerian domestic market. The informal is very present. In most cases, the plants sold are not subject to quality controls. Some of them can be dangerous even if they are naturally extracted; they can represent a real danger for the patient, as they may contain toxic components unknown to the seller and to the patient. Out of naivety, ignorance or commercial calculation, herbal sellers claim to have helped cure some patients of their diseases classified as incurable, including diseases such as cancer and neurological diseases (Ilbert et al., 2016).

Author's contributions

All authors contributed equally

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