

ALBANIA REPRESENTS ONE OF THE EUROPEAN COUNTRIES WITH A VERY RICH FLORA

Prepared by A. Ibraliu
Agricultural University of Tirana, Albania

Albanian flora comprises about 3250 species, which is about 30 % of the entire European flora. Out of those, 30 species are endemic and about 180 sub-endemic in Albania. This diversity is attributable to favorable climatic conditions, ranging from coastal subtropical climate towards inland continental climate. The geographical position of Albania in the Mediterranean region and in the Balkan Peninsula results in many different types of landscapes.

Albania is a country of rich natural genetic diversity of MAPs and represents one of the European countries with a very rich flora. This diversity is attributable to favourable climatic conditions, ranging from coastal subtropical towards inland continental climates; its geographical position in the Mediterranean region and in the Balkan Peninsula resulted in many different types of landscape. Albanian Flora includes about 3,250 plant species or about 30 % of European Flora, and from them there 40 are endemic and about 180 sub-endemic species.

More than 300 species are identified as MAPs in the Albanian flora; 182 of them are more common, most of which are exported. MAPs play an important role in everyday life in this region; many people are consuming phyto-medicines, herbal teas etc., and still play an important role in the ethno-medical concepts of the Albanians. Moreover, MAPs are widely used by individuals for cooking. The industrial use of MAPs is extremely small and limited to the packaging of some herbal tea and to the small scale extraction of essential oils. They are distinguished not only for its great diversity of strains and sorts, but also for the high content of essential oils content. These plants have been used in traditional culture of Albania in folk medical practices since ancient times and much before the treatises of Paracelsus and Giambattista Porta of eighteenth century.

Table 1. List of MAP Species Regarded Endangered in Albania
(the information is sourced from Red List of Wild Flora and Fauna)

1. <i>Aesculus hippocastanum</i> L.	21. <i>Orchis coriophora</i> L.
2. <i>Allium ursinum</i> L.	22. <i>Orchis laxiflora</i> Lam.
3. <i>Anacamptis pyramidalis</i> (L.) Rich.	23. <i>Orchis mascula</i> L.
4. <i>Arctostaphylos uva-ursi</i> (L.) Spreng.	24. <i>Orchis militaris</i> L.
5. <i>Atropa bella-donna</i> L.	25. <i>Orchis morio</i> L.
6. <i>Colchicum autumnale</i> L.	26. <i>Orchis pallens</i> L.
7. <i>Convallaria majalis</i> L.	27. <i>Orchis papilionacea</i> L.
8. <i>Dictamnus albus</i> L.	28. <i>Orchis provincialis</i> Balbis.
9. <i>Dryas octopetala</i> L.	29. <i>Orchis purpurea</i> Hudson.
10. <i>Ephedra distachya</i> L.	30. <i>Orchis simia</i> Lam.
11. <i>Eryngium maritimum</i> L.	31. <i>Orchis tridentata</i> Scop.
12. <i>Galanthus nivalis</i> L.	32. <i>Osmunda regalis</i> L.
13. <i>Gentiana lutea</i> L.	33. <i>Paeonia peregrine</i> Mill.
14. <i>Glaucium flavum</i> Crantz.	34. <i>Phyllitis scolopendrium</i> (L.) Newm.
15. <i>Hypericum androsaemum</i> L.	35. <i>Rhus coriaria</i> L.
16. <i>Ilex aquifolium</i> L.	36. <i>Ruta graveolens</i> L.
17. <i>Juniperus oxycedrus</i> L.	37. <i>Salvia officinalis</i> L.
18. <i>Juniperus communis</i> L.	38. <i>Sideritis raeseri</i> Boiss & Heldr
19. <i>Menyanthes trifoliata</i> L.	39. <i>Taxus baccata</i> L.
20. <i>Nymphaea alba</i> L.	40. <i>Tilia argentea</i> L.

Albania is well known for high quality sage (*Salvia officinalis* L.) and is main producer worldwide and currently sage dominates the medicinal crops of Albania.

Smaller surfaces are also cultivated with rosemary (*Rosmarinus officinalis* L.), oregano (*Origanum vulgare* L.), lemon balm (*Melissa officinalis* L.), Mountain tea (*Sideritis raeseri* Boiss.et Heldr.), chamomile (*Chamomilla recutita* (L.) Rauschert), clover (*Trifolium pratense* L.), peppermint (*Mentha x piperita* L.), lavender (*Lavandula angustifolia* Miller), basil (*Ocimum basilicum* L.), Gentian (*Gentiana lutea* L.), etc.

Medicinal and Aromatic Plants have a major contribution to the growth of agricultural products value in all regions of Albania. MAPs collection and – more recently – their cultivation is an important activity and source of revenue for a large number of rural families particularly in mountainous areas, although it is usually a part time activity.

Albanian statistics from the recent year's show that both the quantity and value of MAP exported are constantly increasing and it is expected that this development will continue in the future. This growth is particularly attributed to the increased cultivation of sage, helycrisum and lavender.

Despite the high economic importance of MAP in Albania, the sector is underdeveloped and exhibits various inherent shortcomings in all stages of the production chain.

MAPs collection and – more recently – their cultivation is an important activity and source of revenue for a large number of rural families particularly in mountainous areas, although it is usually a part time activity. Estimates of people involved in the sector according to previous studies range between 75,000 and 100,000 making MAPs the most important forestry sub-sector in terms of involvement of members of mountainous areas communities. Although wild and cultivated MAPs production/collection is diffused throughout Albania, it is more concentrated in the northern Albania. Revenues from MAPs collection is estimated to account for 17% of the northern Albania households' income; while cultivation of MAPs has become the main source of income for thousands of households especially in Malësi e Madhe, Shkodra District. Most farmers are involved in some degree with harvesting and collection. Income from harvesting for families involved in MAPs and other forest related activities in this district may in some cases go up to 60% of their income. More recent data support that income from MAPs harvesting and cultivation in Northern Albania (Malësia e Madhe, Kukës and Dibër) amounts between 30 and 40% of total household income (FAO, 2013). It becomes obvious that MAPs sector represents a major income source for mountainous and disadvantaged areas.

MAPs have been one of the most important export sectors in Albania and the most important agricultural export sector, especially in terms of international trade (USDA 2015). Exports consist mainly of raw plants – only a small share of are processed into essential oils while there has been no production of detergents, cosmetics or industrial medicines based on these in Albania. More than 95% of total MAPs collected are exported. Albania is an international player ranked as the 24th world MAP exporter in 2011. It is important to highlight that annual growth of MAPs world imports between 2008-2012 averaged 8% (International Trade Centre: ITC 2013). Trade statistics show that Albania is important suppliers of raw material or half finished products for many EU and US industries in different fields, such as e.g. in food and beverage industry, healthcare, cosmetics and perfumes, additives etc.. Almost 75% of sage imported by USA in 2013 is of Albanian origin. Exports of MAPs account for 18% of agricultural exports and 1.1% of total exports.

Currently, collection from the wild is the main source of MAP in Albania. Many of the medicinal plants, including the endemic species, are harvested unsustainably from their natural habitat. Consequently, some species are becoming rare or are even threatened with extinction. The loss of experienced collectors by rural exodus and missing organizational structures are resulting in poor collection quality, overharvesting and finally in resource degradation. Consequently, field cultivation of MAP has been promoted in Albania. However, the accompanying import of seed material from foreign countries led to the dispersal of genotypes with adverse phytochemical properties, threatening domestic species and impeding product quality. The lack of genetic diversity studies hampers urgently needed breeding efforts, impeding improvements in field cultivation performance. Therefore, genetic improvements regarding the active compounds are required to address the needs of the MAP industry and to protect the inherently high quality of species that are indigenous to Albania.

Albanian Gen Bank is responsible Institution for ex-situ conservation of PGR and also for Albanian MAP populations. Currently 403 accessions of different MAP species are included, whereof 13 species are traditionally collected from the wild.