

The innovative potential of *Mentha* species in Morocco: An assessment based on patent analysis

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INTRODUCTION & AIM

- The plant biodiversity of Morocco is remarkable, which has allowed the development of a tradition of using aromatic and medicinal plants for food and preserving health.
- Among the plants frequently used are the species of the genus *Mentha*, belonging to the large family of *Lamiaceae* that usually bears its name (Mint family).
- In this work, we have identified, through a bibliographic search, the species of the genus *Mentha* commonly used in Morocco.
- Using patent analysis, we identify the areas of technological innovation conducive to exploiting species of the genus *Mentha* from Morocco.

METHOD

- Major Moroccan species of the genus *Mentha* was identified:

Mentha species	Common name	Moroccan vernacular
<i>M. longifolia</i> L.	Longleaf mint	Tahindest – Nemdar Habaq el bahr
<i>M. pulegium</i> L.	Penny mint	Fliyyo
<i>M. gattefossei</i> Maire	Persian Mint	Fliyyo dyal jbel
<i>M. spicata</i> L. (include <i>M. viridis</i> L.)	Spearmint	Na'na'
<i>M. suaveolens</i> Ehr.	Round-leaved mint	Marseta Na' na' lemsewwaf
<i>M. rotundifolia</i> Huds. = <i>M. longifolia</i> × <i>M. suaveolens</i>		

- Through specialized databases (The Lens and Google Patents), we analyzed the patent documents (granted patents and applications) for each species, with a particular focus on the number of patent documents published, patent families.
- The classification codes attributed to the documents, allowed to deduce the relevant technological fields for the use of the studied plant species.

RESULTS & DISCUSSION

- The genus *Mentha* is cited in the title, abstract or claims of approximately 3400 applications or granted patents. 94% of these documents have been published since the year 2000.

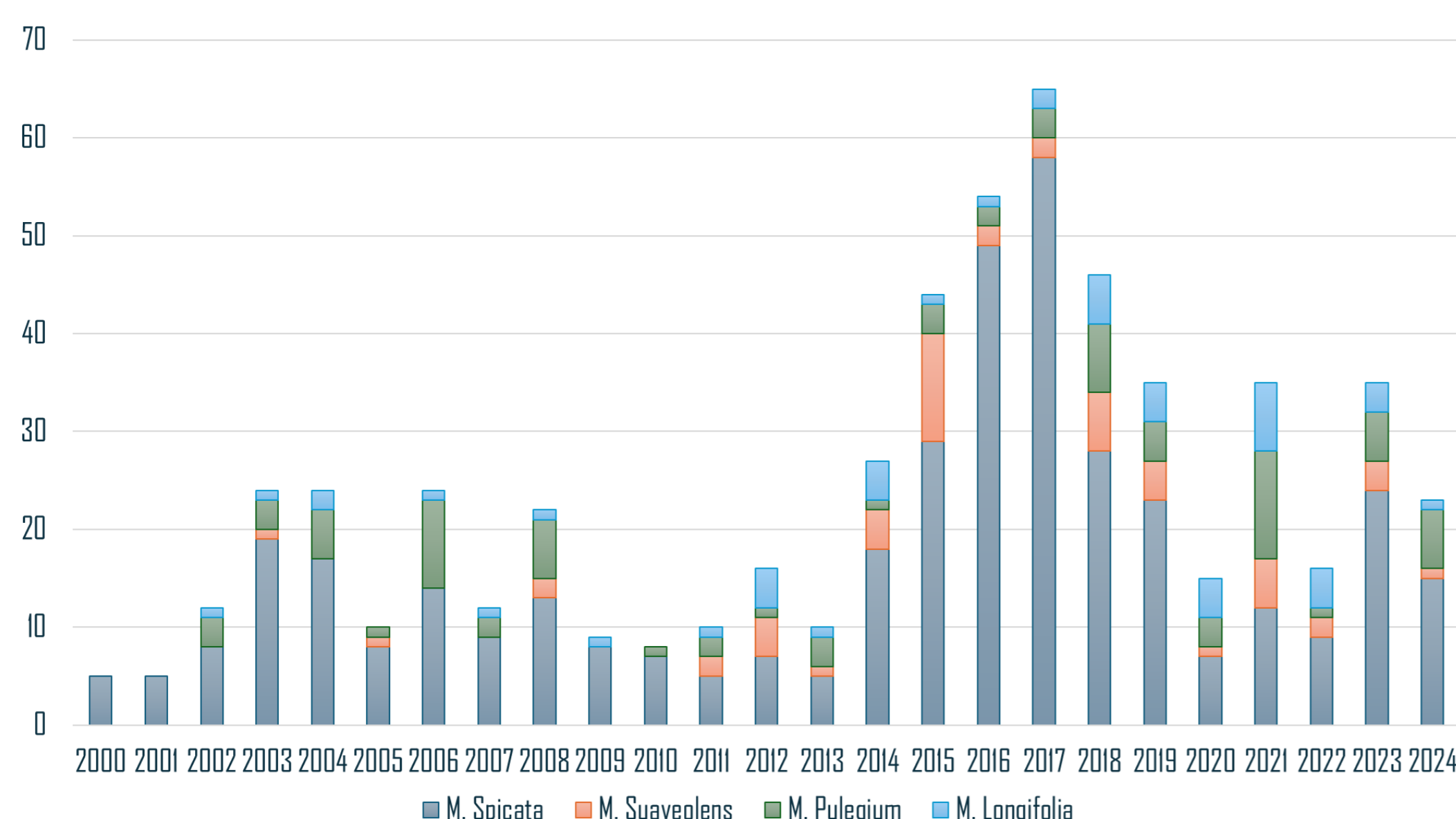


Figure 1. The evolution of the number of patent documents published since the year 2000 concerning the main Moroccan *Mentha* species.

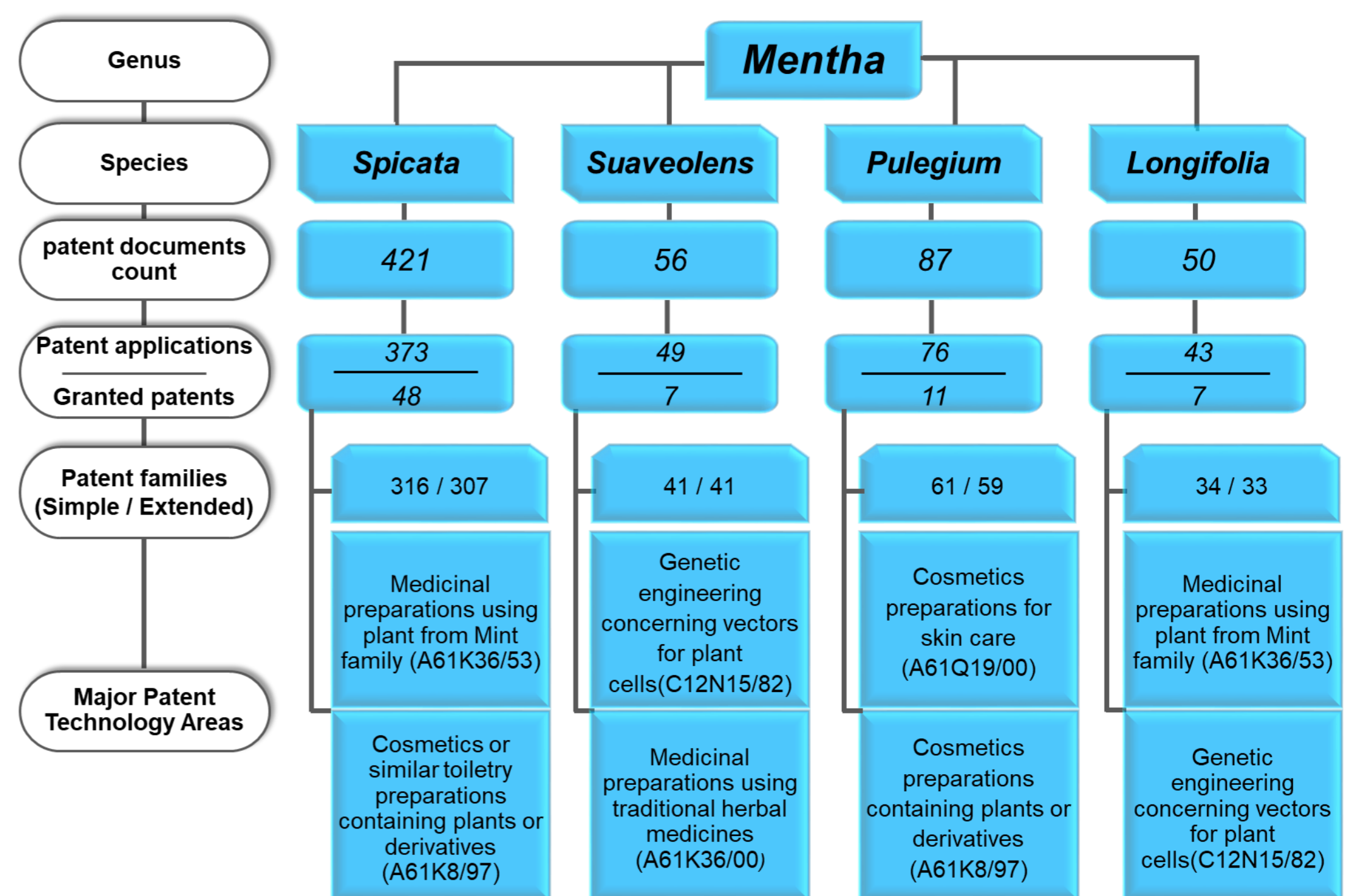


Figure 2. Summary of extracted data from patent documents concerning the major Moroccan *Mentha* species

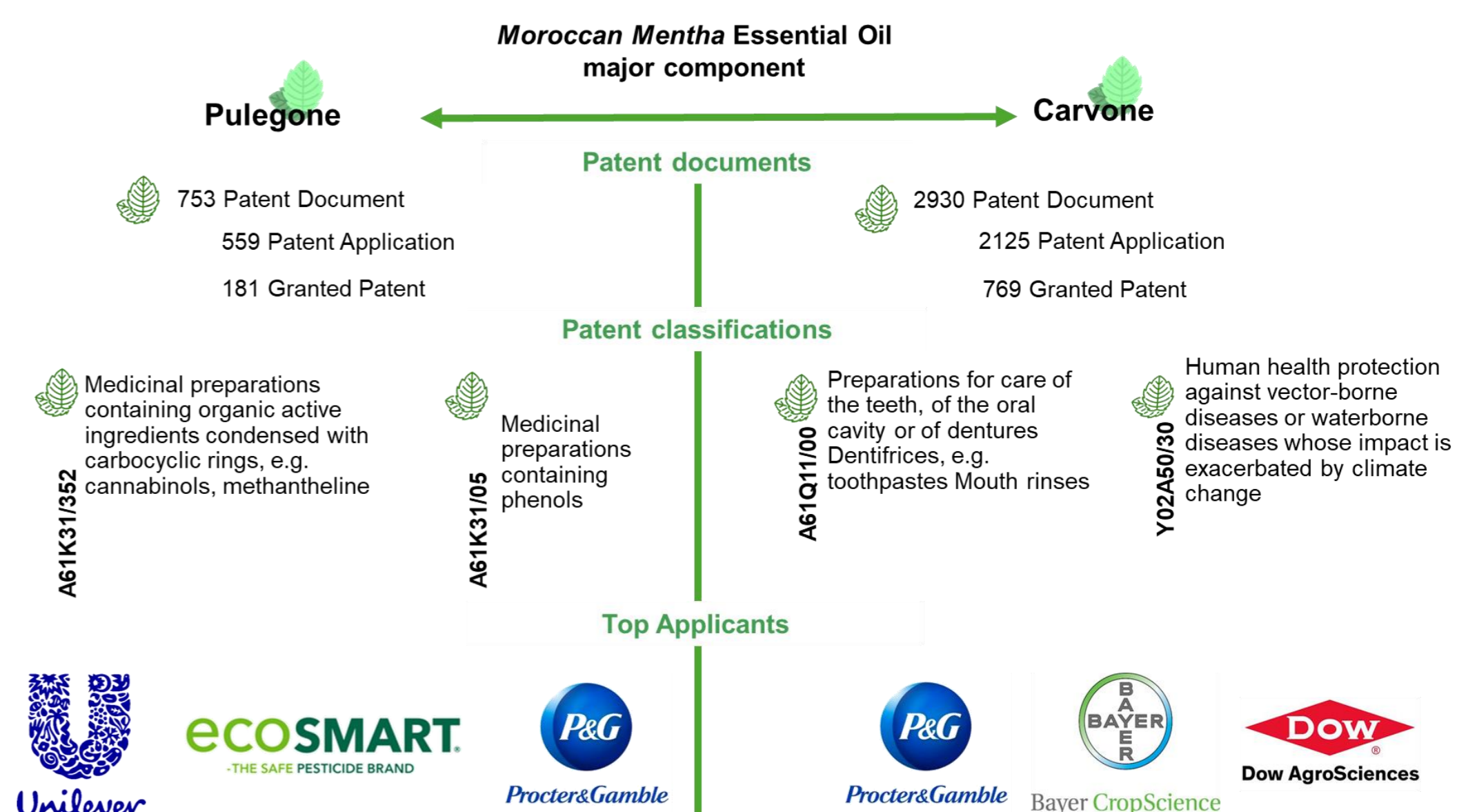


Figure 3. Summary of extracted data from patent documents concerning the pulegone and the carvone, the major components of the Moroccan *Mentha* essential oils

CONCLUSION

- The species *M. spicata* (A wide geographical distribution worldwide) is the most patented (69%), while only three patent applications concern *M. gattefossei* (Endemic to Morocco).
- The international patent classification data show that Moroccan mint species and their main compounds are particularly useful for cosmetic or medicinal innovations.
- This information will help map the landscape for future innovations on Moroccan mint species.

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