A review of chromosome numbers of Moroccan *Asteraceae*

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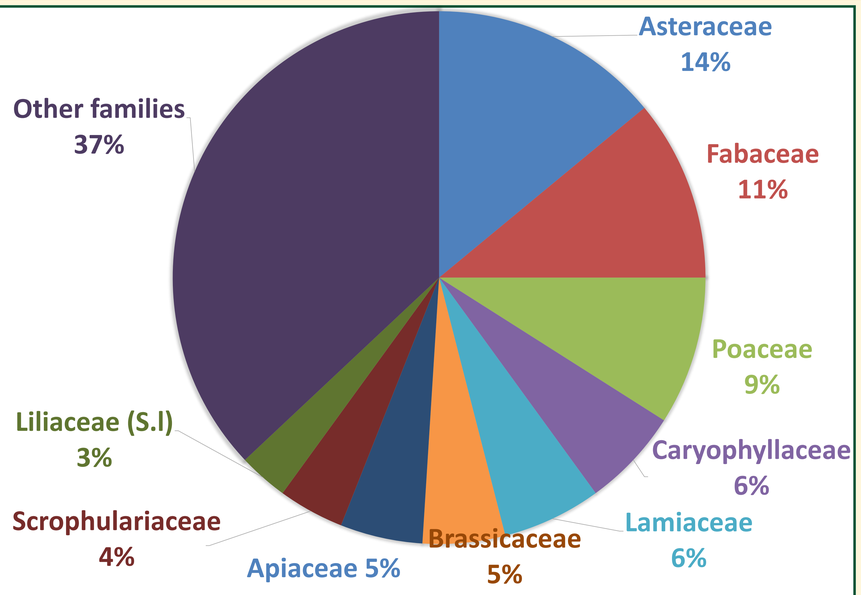
Introduction

In Moroccan vascular flora, the *Asteraceae* family ranks first in terms of specific wealth, with 550 species and 126 subspecies belonging to around 128 genera. *Centaurea* is the richest genus with 51 species. Moreover, according to the rate of endemics, this family is ranked third with 24% right after *Lamiaceae* and *Plumbaginaceae* with respectively 40 % and 28%.

Karyological studies on Moroccan Asteraceae have started with Quezel and Reese in 1957 (separately), the last one was made in 2019 by Gounssa et al. This immense knowledge that has been established needs to be organized in order to be a widely accessible tool and assist researchers in this field.



The proportion of the 9 important families in terms of specific richness - Ibn Tattou & Fennane

Material & methods

We inspected the chromosome number of Moroccan *Asteraceae* published in former studies since 1957 to the recent one. Every address was verified and converted to coordinates (latitude / longitude).

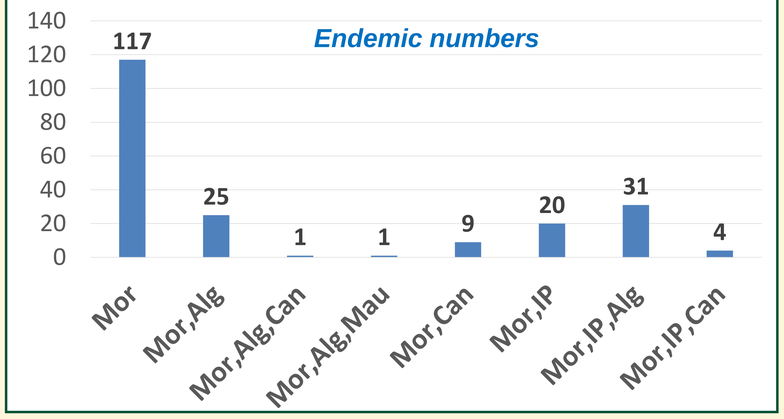
In the literature many taxonomic names were revised, therefore we updated them to the recent and accepted ones, by using Moroccan flora (Volume 3) and online botany databases: IPNI, The plant list and Tela botanica.

Recent names, Synonyms, Addresses and Geographic coordinates, allowed us to establish the database of georeferenced chromosome numbers of Moroccan *Asteraceae*.

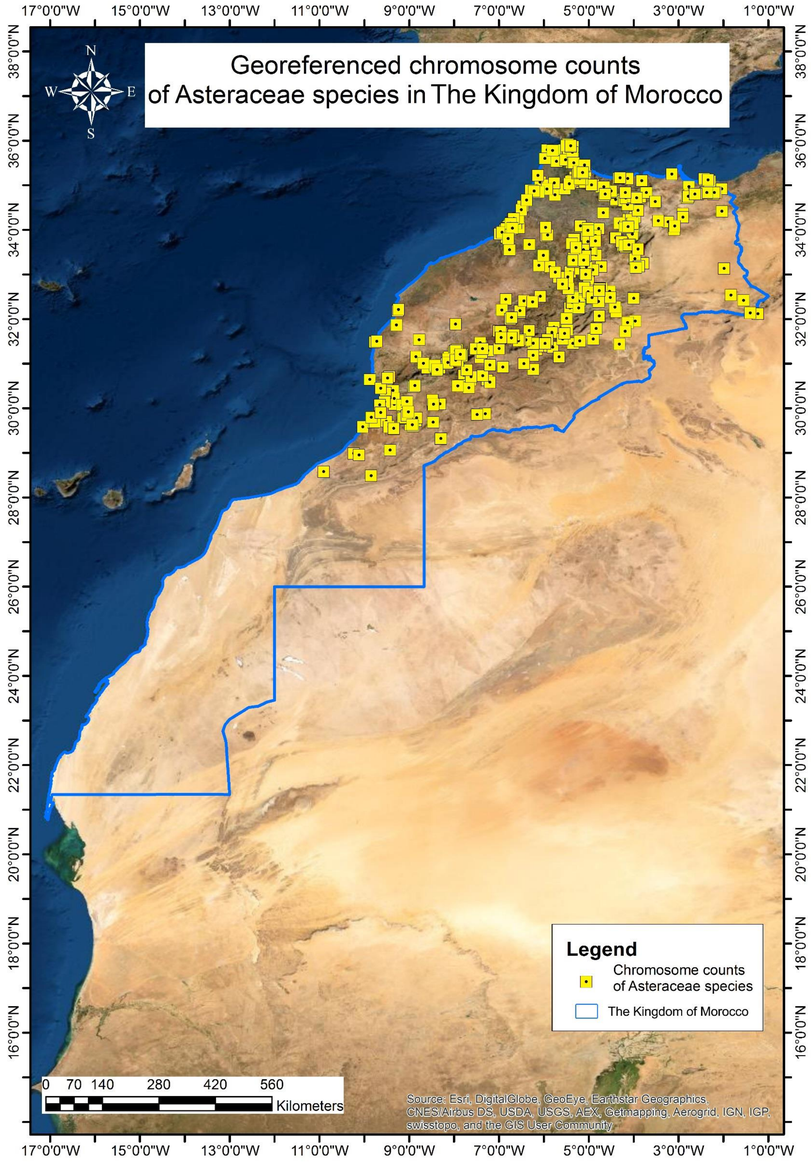
Results

As a result, we listed the chromosome number of 267 species with their voucher specimen references, localities and GPS coordinates.

We found 40 taxons are strictly endemic to Morocco, 8 taxons are endemic to Morocco and the Iberian Peninsula, 11 taxons are endemic to Morocco and Algeria, 8 taxons are endemic to Morocco, The Iberian Peninsula and Algeria, 2 taxons are endemic to Morocco and The Canary islands, 1 taxon is endemic to Morocco, The Iberian peninsula and The Canary islands and 1 taxon is endemic to Morocco, Algeria and Mauritania.



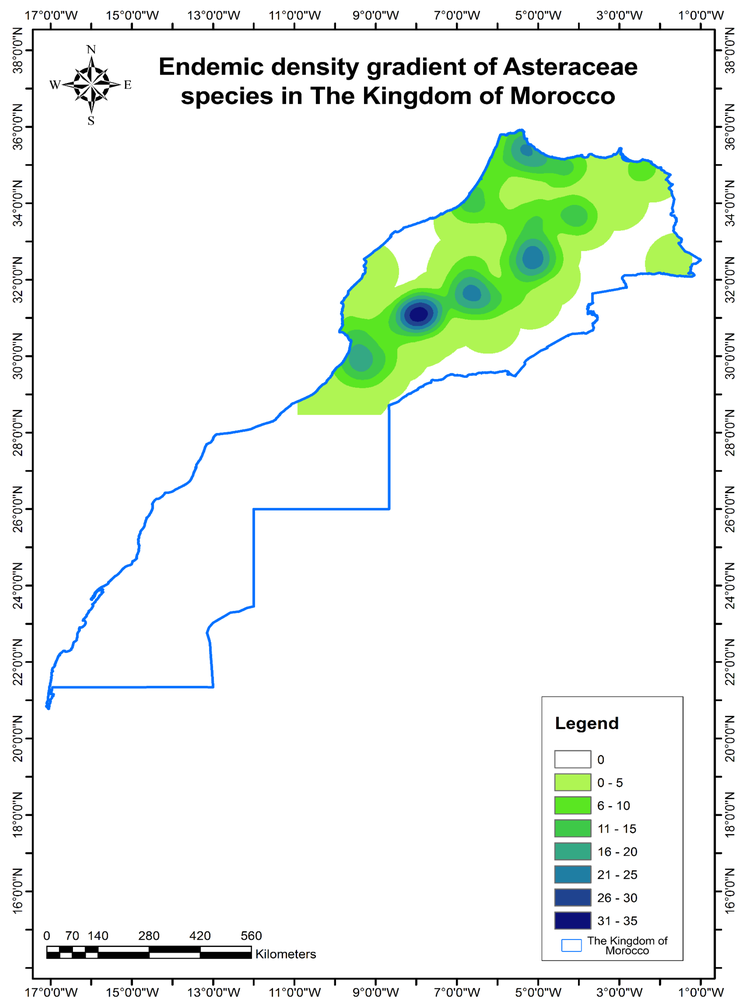
Results



Georeferenced chromosome counts of Moroccan Asteraceae species

The results of the database analysis have shown that the majority of the species are diploid, with the chromosome number of 2 *n* = 18

Results



Endemic density gradient

In term of Endemic *Asteraceae* species, 4 important geographic zones can be identified which are: the Anti-Atlas, the high-Atlas, the middle-Atlas and northern Morocco.

These regions are characterized by semi-arid and sub-humid bioclimates

This finding confirm the occurrence of endemics in Moroccan flora in these two bioclimatic zones

Conclusion

Chromosome number and ploidy level are valuable tool to study plants evolution. In this study we are working on the characterization of the *Asteraceae* family through the chromosome counts and ploidy level.

References

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