

# From Mediterranean coasts to Tatra Mountains and beyond: Plant chromosome number variation

November 27 2012

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The three target European countries (Italy, Slovakia and Poland) of the study.  
Credit: L. Peruzzi et al.

Chromosome number is the most basic feature concerning the genome of a species, and it is known for about one third of higher plant species. In particular, for plants of Italy, Slovakia, and Poland, online chromosome number databases have been developed: 'Chrobase.it – Chromosome numbers for the Italian flora', 'Karyological database of ferns and flowering plants of Slovakia' and 'Chromosome number database – PLANTS', respectively. The three datasets account for about 35%, 60% and 40% of the whole floras, respectively.

"We used these datasets to compare chromosome number variation among plants of the three countries, with the aim to verify whether the patterns of chromosome number variation parallel the differences in latitudinal ranges" said Dr Peruzzi, leading author of the article, published in the open access journal *Comparative Cytogenetics*.

A concept that the occurrence of multiple [genome](#) copies ([polyploidy](#)) in plants tend to increase with latitude had already been formed in the second half of twentieth century, but pioneer works in this field had not significant statistical coverage, due to the absence of large, readily accessible datasets.

In the study, significant differences among the three countries were evidenced, confirming that mean chromosome number increases with increasing latitude. Mean chromosome number was used as an objective proxy of polyploidy.

In perspective, it would be interesting to verify whether the same chromosome number evolution dynamics occurs in the Austral hemisphere as well. Unfortunately, as far as we are aware, large chromosome number databases of these territories with significant latitudinal variations are not available, at the moment.

**More information:** Peruzzi L, Góralski G, Joachimiak AJ, Bedini G

(2012) Does actually mean chromosome number increase with latitude in vascular plants? An answer from the comparison of Italian, Slovak and Polish floras. *Comparative Cytogenetics* 66(4): 371–377. [doi: 10.3897/CompCytogen.v6i4.3955](https://doi.org/10.3897/CompCytogen.v6i4.3955)

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Citation: From Mediterranean coasts to Tatra Mountains and beyond: Plant chromosome number variation (2012, November 27) retrieved 24 April 2024 from <https://phys.org/news/2012-11-mediterranean-coasts-tatra-mountains-chromosome.html>

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