

Insights of the genome evolution in the *Nicotiana* genus

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Motivation and Aim: *Nicotiana* genus includes ~90 naturally occurring species divided in 13 sections. The diversification between the *Nicotiana* genus, containing common tobacco (*Nicotiana tabacum*), and the *Solanum* genus, which includes tomato (*Solanum lycopersicum*) and potato (*Solanum tuberosum*), is estimated to occur 24 million years ago. Although majority of *Nicotiana* species originate in South America, the *Suaveolentes* section constitutes the largest subsection in the *Nicotiana* genus with 39 species distributed in Africa (1 species), Pacific Islands (3 species) and Australia (35 species).

Methods and Algorithms: We sequenced and analyzed the genomes of numerous *Nicotiana* species using the Illumina and Oxford Nanopore sequencing technology with at least a sequencing coverage of 20X representing different chromosome number and different biogeographic regions.

Results: In this work the latest state of the *Nicotiana* genomics is presented and the insights to their genome evolution are discussed.