

## MORPHOLOGICAL AND MOLECULAR CHARACTERIZATION OF THE NEWLY DISCOVERED *NICOTIANA WUTTKEI* CLARKSON & SYMON

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*Nicotiana wuttkei*, *Nicotiana* genus, ISSR, SEM

The genus *Nicotiana*, with 76 naturally occurred species, classified in 14 sections and 3 subgenera, is the sixth largest in the family Solanaceae. Species of *Nicotiana* occur largely in the Americas (75%) and Australia (25%). Exceptions include *N.fragrans*, which is restricted to island of South Pacific Ocean, and *N.africana* which is found in Africa. In 1991 Clarkson & Symon described for the first time a new *Nicotiana* species, named *Nicotiana wuttkei* Clarkson & Symon. According to this authors it should be included in the section *Suaveolentes* for its morphological characteristics.

At present there is little and disagreeing information about morphology and cytology of this species. Furthermore its sistematic position is not yet clearly defined.

A study was performed in order to assess, at morphological and molecular level, the relationships among the newly discovered *Nicotiana wuttkei* and other *Nicotiana* species, belonging to the section *Suaveolentes*.

*Nicotiana* species were grown in pots in greenhouse. During the vegetative cycle morphobiometrical data were collected, in particularly as regards the flower parameters. Moreover observations were carried out on seed and pollen morphology, respectively by Microscopy and Scanning Electron Microscopy. Cytological investigations were also performed on root tip of *N.wuttkei* to determine the chromosome number. Further, ISSR (inter simple sequences repeats) analysis was used to reveal the genetic polymorphism among the *Nicotiana* species examined.

Cytological studies on *N.wuttkei* revealed a chromosome number of  $2n = 32$ , as *N. exigua*, *N. maritima*, *N. suaveolens* and *N. velutina*. From morphological observations the flower of *N.wuttkei* is similar to *N. exigua*, while the seed, as well as the pollen, resembles *N. velutina*. As concern genetic relationship, revealed by ISSR analysis, *N. wuttkei* resulted grouped together with three of the four 32 chromosome members of the examined *Suaveolentes*.