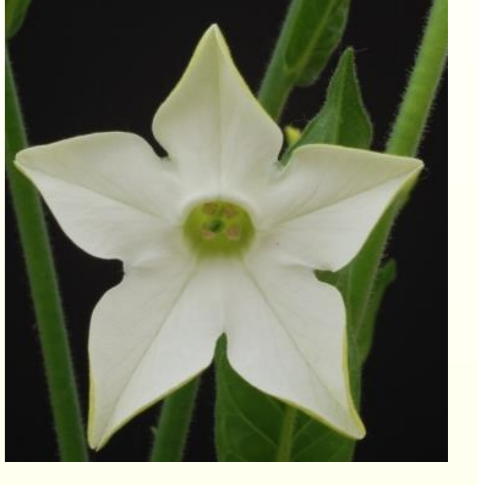




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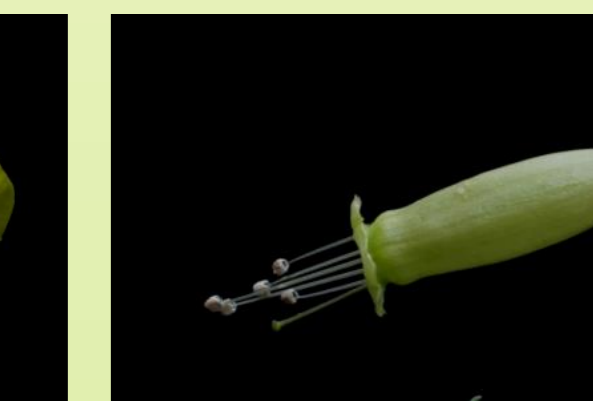
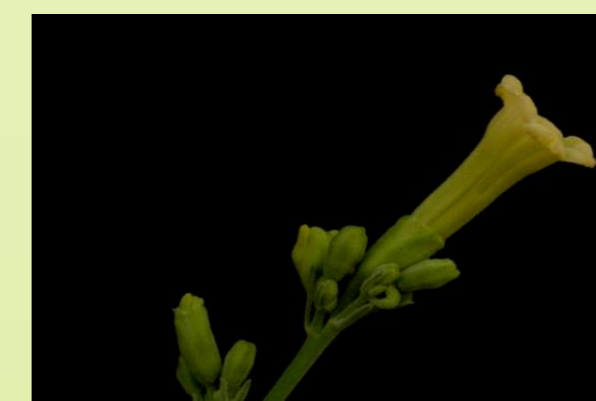
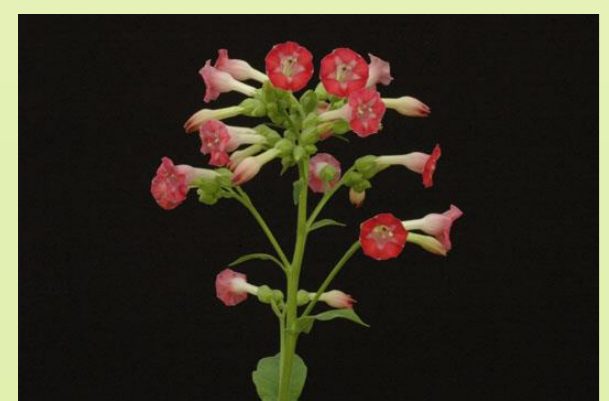


### Genus *Nicotiana*:

- ❖ Belongs to the family *Solanaceae*.
- ❖ Includes more than 70 naturally occurring species.
- ❖ Estimated to be 75-100 million years old.
- ❖ The name is linked to the French diplomat Jean Nicot who, in the 16th century, brought tobacco seeds from Portugal to France.
- ❖ The natural occurrence of wild tobacco species is limited to South America and North America, Australia and the Pacific Islands, and one species was found in Africa.

### History of *Nicotiana* research:

- ❖ *Nicotiana* studies were originated by Linneus who in 1753 for the first time described four species: *N. glutinosa*, *N. tabacum*, *N. rustica* and *N. paniculata*.
- ❖ Detailed studies were conducted by Kostoff (1943).
- ❖ A huge contribution to *Nicotiana* research, including the development of the *Nicotiana* classification that has been in force for more than 50 years, was made by Goodspeed (1954). His research was based mainly on morphology and cytology.
- ❖ In the recent years molecular methods have been applied to determine phylogenetic relationship by Knapp et al. (2004).



### *Nicotiana* species:

- ❖ They are characterized by a great diversity in terms of genetic and morphological traits.
- ❖ There are both self-pollinating and cross-pollinating species.
- ❖ Most of them bloom when the day is getting longer while the others wait until the days begin to shorten.
- ❖ They are annual or perennial.
- ❖ Most of them are small herbaceous plants but some species may grow into bushes or trees.
- ❖ *Nicotiana* species show a great variety in terms of leaf shape, inflorescence type, and flower shape and color.
- ❖ Within *Nicotiana* species the number of chromosomes ranges from 18 to 64.
- ❖ An important feature of wild relatives of tobacco is their resistance to diseases and pests which makes them valuable source of genetic variation used in tobacco breeding programs (Doroszewska et al. 2009).

### The collection of *Nicotiana* species at the Institute of Soil Science and Plant Cultivation State Research Institute in Puławy :

- ❖ It was started by Professor Lucjan Kaznowski in the 1920's.
- ❖ For more than 20 years the work on the *Nicotiana* collection has been coordinated by the National Centre for Plant Genetic Resources based at the Institute of Plant Breeding and Acclimatization at Radzików.
- ❖ Seeds of wild species have been obtained from:
  - The Tobacco Institute in Bergerac, France;
  - The All-Union Institute of Tobacco and Makhorka in Krasnodar, former USSR;
  - The USDA Agricultural Research Center in Beltsville, USA;
  - Other research establishment in different countries.
- ❖ It includes 65 wild species of tobacco as well as their botanical and tetraploid forms.
- ❖ It is maintained under greenhouse conditions.
- ❖ Currently it is one of the largest collection of *Nicotiana* species in the world.

#### References:

1. Kostoff D.: The cytogenetics of *Nicotiana*. State Printing House. Sofia, 1943.
2. Goodspeed T. H.: The genus *Nicotiana*. Chron. Botan., 1954, 16, 1-536.
3. Knapp S., Chase M. W., Clarkson J. J.: Nomenclatural changes and a new sectional classification in *Nicotiana* (*Solanaceae*). Taxon, 2004, 53 (1): 73-82.
4. Doroszewska T., Depta A., Czubacka A.: Album gatunków z rodzaju *Nicotiana* / Album of *Nicotiana* species. 2009, Institute of Soil Science and Plant Cultivation - State Research Institute, Puławy

