

# Condition of Collections of *Juglans* and *Carya* (Juglandaceae) in the N. V. Tsitsin Main Botanical Garden RAS

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This article is devoted to assessing of the condition of plants from two genera in the Juglandaceae family A. Rich. Ex Kunth.: *Juglans* L. and *Carya* Nutt. For at least 10 years, these plants undergo introductory testing in the mid-zone of Russia, in the arboretum and on the territory of the department of natural flora in The Main Botanical Garden of the Russian Academy of Sciences (Moscow).

The *Juglans* collection in the arboretum is represented by 5 species, 2 subspecies and 1 interspecific hybrid (106 specimens aged 26 to 81 years). The collection of the flora department includes 4 species and 1 subspecies of the genus *Juglans* (140 specimens, age from 23 to 32 years) and 4 species of the genus *Carya* (37 specimens, age 26 to 39 years).

We conducted the detailed survey of each plant, evaluated its morphometric parameters and sanitary-phytopathological condition. After comparison with age, data were obtained on the nuts and hickory hardness their

diseases and pests in the mid-zone of Russia. We recommended the most promising for growing taxa and proposed agrotechnical measures on the plant care.

The detailed data on the degree of damage to nuts and hickory by phytopathogens, phytophages and the species composition of pests is revealed. There were found 12 species of fungal diseases, 3 types of bacterial diseases, 4 species of phytophagous on *Juglans* plants. Diseases and pests under these conditions did not damage plants of *Carya*.

The study compared the state of plants at two collections, as well as between genera and individual species, which made it possible to identify the most stable taxa. As shown by the obtained data, in both collections the trees of *J. regia* are most weakened. In good condition, the exposition of the flora department includes *J. nigra*, *J. ailanthifolia* ssp. *cordiformis*, *C. cordiformis*, *C. laciniosa*, and individual specimens of *C. ovata*, *J. mandshurica*; in the arboretum – *J. nigra* and *J. ailanthifolia*. It was established that the plants of the flora department exposition have been in a better condition than in the arboretum. This is probably due to more suitable growing conditions, individual characteristics and a smaller age of plants.

Among the recommended actions, the most important is the forehanded cutting of trees in thickened plantings and plant activities.