

# The reaction of *Ginkgo biloba* L. to adverse conditions of the urban environment

Reakcja *Ginkgo biloba* L. na niekorzystne warunki środowiska miejskiego

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Department of Plant Ecology in PAS Botanical Garden – Center for Biological Diversity Conservation in Powsin has been conducted studies about state of urban trees in Warsaw for many years (since 1973). Particular attention was paid especially to the issues of growth and development of street trees, under unfavourable conditions of urban agglomerations. The results of the study suggested that a specific response to the salinity of the soil may be one of the reasons for the reduced sensitivity of certain species. Literature data and preliminary tests have shown that *Ginkgo biloba* L., in comparison to other tree species, exhibited much lower sensitivity, expressed as a good state of health and lower mortality. That species is characterized by accumulation of significant amounts of chlorine in a high salinity conditions, with no visible damage to the leaves. No cases of dieback of trees, even in the most unfavourable positions in the city were observed.

The aim of this study was to explain the relatively high resistance to adverse conditions of *Ginkgo biloba* to the urban environment, especially – soil salinity and pollution.

The studies included trees from the planting of street in the city center and the control area (PAS Botanical Gardens in Powsin). The state of health of trees was assessed in July and September, the running phases of development leaves and the chemical composition of leaves (basic biogenic elements and polluting).

Studied trees were grown well even in the worst sites of the urban environment. The fact that the heavy metal content in the leaves of trees from the planting of street does not have a negative impact on the growth and development of *Ginkgo biloba* is seen as very important. There were noted deficient levels of basic biogenic elements in the leaves, which may be another reason for the good state of health of the trees.

Unfortunately, the scope of the research did not allow to identify the specific causes of this fact. The results should be treated only as a registration of change and inspiration for further research. Despite its advantages *Ginkgo biloba* is represented currently in a small percentage of plantings in Warsaw and other Polish cities, which should be changed in our opinion.