# An Innovative Research about Reynoutria japonica (Houtt.): Distribution, Biochemical Analysis and Therapeutic Perspectives

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Reynoutria japonica (Houtt.) is an invasive species widespred in Europe. The aim of this research is to review the information about RJ and to identify metabolites such as phenols and flavonoids which are mentioned in the scientific literature and can be used therapeutically. RJ phenological phases and biochemical analysis of essential oils, phenols and flavonoids were investigated. None of RJ's seeds taken from the soil developed during the in vitro germination. On the other hand, the seeds collected from the plant germinated in two types of soil, showing a preference for the acid soil, where they developed a higher stem, more leaves and a bigger root. The biochemical analysis revealed that phenols concentrations were: 35.50 ± 1.69 µg AGE/mg (N=8) in roots, 35.49 ± 1.64 µg AGE/mg (N=8) in flowers, 23.88 ± 0.94 µg AGE/mg (N=8) in leaves and 2.18 ± 0.34 µg AGE/mg (N=8) in stems. Flavonoids concentrations were: 38.78 ± 1.38 µg/mg (N=10) in roots and 38.75 ± 1.36 µg/mg (N=10) in leaves. Phenols were in lower concentrations (approx. 7 times less) and flavonoids were in higher concentrations (approx. 1,2 times more) compared with the results obtained by the considered Asian research. The essential oils were found only in the roots and the GC-MS had to be sensitive because of the oils' low concentration and many impurities were detected. This problem prevented the identification of particulare substances in the essential oils. On top of that, the lack of scientific publications prevented the comparison of the results.

**Awards Won:**