



## Genus *Hydrangea*: diversity of pigments and phenolic compounds

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Résumé en anglais

The most important collection of *Hydrangea* in Europe is located in Angers (France). It consists of over 700 germplasm accessions distributed in 13 species. Originating from Asia and America, they were introduced in Europe in the 18th century for their ornamental interest but medicinal properties may also be found in this genus since extracts from *H. macrophylla* are already described as exhibiting anti-diabetic [1], lipid lowering and anti-oxidative [2], anti-allergic [3] and antimalarial activities [4]. Management of the collection requires botanical, genetic and biochemical studies allowing good, reliable characterization of species, subspecies and varieties. In this context, the biochemical characterization of the inflorescences was undertaken to evaluate the intra and interspecific diversities of pigments and other phenolic compounds. Inflorescences are generally white, except for three species: *H. macrophylla*, *H. involucrata* and *H. aspera* which exhibit rose or blue flowers. Among them only *H. macrophylla* was previously studied for sepal color variation [5]. In this study, 80 accessions were analyzed by means of HPLC/DAD, LC-MS/MS and NMR experiments: 46 *H. macrophylla*, 13 *H. aspera*, 6 *H. involucrata*, 5 *H. paniculata*, 3 *H. quercifolia*, 2 *H. arborescens*, 2 *H. anomala*, 2 *H. heteromala*, 1 *H. scandens*, 1 *H. seemannii* and 1 *H. integrifolia*. About 50 phenolic derivatives - essentially phenolic acids and flavonols (quercetin and kaempferol) - and 20 anthocyanins could be identified. The contents of pigments and other phenolic compounds appeared as very diverse both qualitatively and quantitatively and some compounds could be identified as chemospecific. On this basis, a statistical study using Principal Component Analysis allowed a clear distinction between both species and subspecies. Besides, different biological evaluations of crude extracts and secondary metabolites isolated from *Hydrangea* sp will also be discussed.

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### **Liens**

- [1] [http://okina.univ-angers.fr/publications?f\[author\]=147](http://okina.univ-angers.fr/publications?f[author]=147)
- [2] <http://okina.univ-angers.fr/david.guilet/publications>
- [3] [http://okina.univ-angers.fr/publications?f\[author\]=148](http://okina.univ-angers.fr/publications?f[author]=148)
- [4] [http://okina.univ-angers.fr/publications?f\[author\]=149](http://okina.univ-angers.fr/publications?f[author]=149)
- [5] <http://okina.univ-angers.fr/p.richomme/publications>
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