



ANTIOXIDANT ACTIVITY OF FENOLIC SUBSTANCES IN BETULAE FOLIUM

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Abstract

The aim of this study was to investigate antioxidant activity of extracts of the drug *Betulae folium* and of buds and leaves of birch collected during the ontogenesis. Also it was appointed content of flavonoids by the method HPLC (High Performance Liquid Chromatography) and it was observed changes during the ontogenesis.

The maximal content of caffeic acid in buds was similar like in leaves. The presence of chlorogenic acid was registreted in leaves which were collected in june. High content of the hyperoside was in buds before they have got blossom. and in the young leaves. The next lower maximum was in young leaves, which were collected at the end of may. This value was compareable with the content in dry leaves and also in drug of *Betulae folium*, which was bought in the pharmacy. The presence of kvercitrin was reminded in buds before blossoming, the similar value was in young leaves, afterthat came a huge decrease of this value. The significant content-increase of kvercitrin was reminded in dried leaves. There are significant differences between the fresh and the dried leaves of the same collection.

Otherwise the antioxidant acticity of *betulae* was also tested in this work by using the steady radical, called DPPH. Buds and leaves can reduce the free radicals DPPH. To compare the activity we can use the value IC_{50} . Antiradical aktivity of exctracts is decreasing during ontogenesis, maxima value we can find in buds, the minimal in adult leaves, which were collected from may to june. The antioxidant aktivity increase by the older leaves again. Dried leaves, also the bought drug have even aktivity, by the extratcs of fully grown buds the aktivity is a little bit higher.

We can't make any one.-way conclusion of the relation between the value of the fenolic sunstances and the reached antioxidant activity, because we were objecting only a small serie of substences, including caffeic acid, chlorogenic acid and flavonoids, as kvercitrin and hyperoside.

The small volume of phenolic substances in the buds, otherway the high activity, shows that the effect on the antioxidant activity is more caused by many other substances.
