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### MEETING ABSTRACT

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##### **Analysis of chemical composition and traditional medicinal use in Latvia of bird cherry flowers *Padus avium***

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**Background:** Over 1,900 beliefs containing information about medicinal plant usage in Latvian-populated territory were found in folklore materials. In total, 216 genera belonging to 81 families were mentioned [1]. Nowadays, many medicinal properties of plants have been discovered from experience accumulated from a long history of their use. Modern technologies allow analyzing the identity and pharmacological effects of substances found in plants more precisely [2]. More studies should be done in order to validate certain plant usage in traditional medicine.

**Objectives:** The aim of this study was to collect data about medicinal plants in Latvian folk beliefs and analyze chemical composition of fresh and dried flowers of bird cherry *Padus avium* Mill. [*P. racemosa* (Lam.) Gilib.].

**Methods:** Among the top ten plants mentioned in folk beliefs, bird cherry was selected for detailed analysis. The flowers of *P. avium* in a fully flowering stage were harvested from two collection sites, Small Jugla and Alūksne (Latvia). A part of the collected material was used fresh and the other one was first dried at room temperature. Diethyl ether was used as an extractant. Chemical composition of the flower extracts was investigated by gas chromatography–mass spectrometry (GC-MS) and liquid chromatography–mass spectrometry (LC-MS) methods.

**Results:** The most frequently used *P. avium* parts according to folk beliefs were bark, fruits, flowers and leaves. In Latvian traditional medicine they have been used as teas, tinctures (both externally and internally) and as fresh material for topical application to treat headache, toothache, pain in ears, neck and stomach, diarrhoea, cough, erysipelas, bruises, swelling. About 100 compounds were found in *P. avium* flowers by GC-MS analysis. Twenty two compounds are present in more than 1% relative concentration in flower extracts of *P. avium*. More than 10 phenolic components (flavonoids) and their glycosides were found by LC-MS analysis.

**Conclusions:** There was no significant difference of chemical composition between fresh and dried flowers. A large number of compounds were identified in bird cherry flowers, and some of them are known to possess anti-inflammatory, antidiarrheal and skin whitening effects.

**Keywords:** *Padus avium* – bird cherry – extraction – GC-MS – LC-MS

#### References

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