

PP13. ARTEMISIA AUSTRICA JACQ. ESSENTIAL OIL COMPONENT COMPOSITION, BIOLOGICAL ACTIVITY

D.K. NURKADYROV^{1*}, G.M. MUKHAMETZHANOVA¹, S.M. ADEKENOV¹ 

¹JSC "International Research and Production Holding "Phytochemistry"100009, Republic of Kazakhstan, Karaganda

*Corresponding Author. E-mail: info@phyto.kz

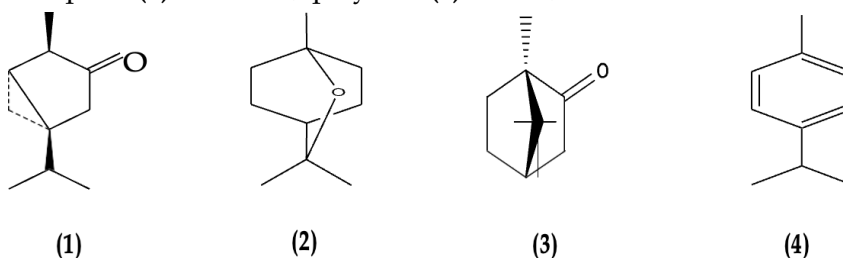
Artemisia austriaca Jacq., a plant characteristic of the steppe part of the Kazakh melkosopchnik, has a significant operational reserve.

We have studied for the first time the component composition of *Artemisia austriaca* Jacq. essential oil, isolated by microwave extraction methods, as well as traditional hydrodistillation.

Essential oils extracted from the aboveground part (buds, flower baskets, leaves) *Artemisia austriaca*, collected during the budding phase in the Abai district of the Karaganda region, are mobile dark green and light green liquids with a characteristic odor. The yield of essential oils obtained by hydrodistillation and microwave extraction was 0.39% and 0.31%, respectively (calculated on air-dry raw materials).

According to chromatography-mass spectrometry, 50 components were detected in the essential oil isolated by microwave extraction from the aboveground part of *Artemisia austriaca* 47 of them were identified, the main components are: α - thujon **(1)** - 16.11%, camphor **(3)** - 14.35%, 1,8-cineole **(2)** - 13.34%, p-cymol **(4)** - 5.43%.

Chromatography-mass spectrometry of an essential oil sample obtained by hydrodistillation from the aboveground part of *Artemisia austriaca* Jacq. revealed 54 components, 51 of them were identified, the main components of the essential oil are: 1,8-cineole **(2)** - 16.20%, α -thujon **(1)** - 15.77%, camphor **(3)** - 10.91%, p-cymol **(4)**-7.02%;



Thus, according to chromatography-mass spectrometry data for essential oils isolated from the aboveground part of *Artemisia austriaca* by methods of microwave extraction and hydrodistillation, the quantitative content is characteristic of α -thujone **(1)** (15.77-16.11%), 1,8-cineole **(2)** (13.3-16.2%), camphor **(3)** (10.91-14.35%). Comparative analysis of the composition of essential oils of *Artemisia austriaca* Jacq. and related species *Artemisia frigida* Willd. and *Artemisia sericea* Wb.ex Stechm. showed that their main component is 1,8-cineol **(2)**. Based on the results of biological screening, it was determined that samples of essential oils from the aboveground part of *Artemisia austriaca* Jacq., isolated by hydrodistillation and microwave extraction, have antimicrobial activity and cytotoxicity.