

## The Variety of Melliferous Sources of Perm Northern Territory Area and Adjacent Territories.

E. S. Drebezgina, R. G. Khismatullin, E. A. Elovikova, E. N. Zubova, Y. A. Lyapunov.

### The research and certificate centre “Federal” Ltd.

38, Energetikov Street, Perm, Russia

Tel. + 7 342 227 65 57

### Tentorium Ltd.

39, Energetikov Street, Perm, Russia

Tel. +7 342 2260 262

e-mail: yarl@tentorium.ru

There are 152 samples of honey that have been produced on the northern habitation board of *Apis mellifera mellifera*. There was a research of the taiga forest territory along the 500 km area on the boarder of “Dfc” and “Dfb” zones in the Köppen climate classification scheme, lasting through the Komi Republic, the Perm region and the Sverdlovskiy region (59°30’–62°10’ N, 49°40’–60°30’ E). Cold (the average temperature ( $T^{av}$ ) of the year (-0,8)–(+0,8) °C, only three months with  $T^{av}$  above 10 °C) and contrasting ( $T^{av}$  of January (-19,5)–(-14,8) °C,  $T^{av}$  of June 15,4–17,3 °C) climate is similar to the climate of Canada territories 200 (Ontario) – 600 (Alberta) km north from the USA boarder. There is practically no crop production.

The occurrence frequency of pollen grain ( $P$ ) was detected by «Harmonized methods of melissopalynology» (W. Von Der Ohe et al., 2004). 72 kinds of melliferous plants pollen were discovered. In one sample there are from 7 to 29, on average 17 kinds of pollen. Pollen *Umbelliferae*, *Salix* and *Filipendula ulmaria* occurs more than in 95% of samples, *Trifolium repens*, *T.hybridum*, *T.pratense*, *Melilotus*, *Centaurea jacea*, *Taraxacum* и *Rubus idaeus* – more than in 60%. The characteristic feature is a considerate number of spring meliferous plants and the absence of cultivated plants.

For the recalculation of  $P$  index in nectar share of the appropriate plants in honey content R-ratios were used (R.Soyer, 1988). More than 5% of the common harvest are gathered from *Chamaenerion angustifolium* (12,6%), *Umbelliferae* (11,3%), *T.repens* (9,9%), *R.idaeus* (8,5%), *Salix* (8,0%), *C.jacea* (7,9%).

They, and also *T.hybridum*, *Melilotus*, *Vicia-Lathyrus*-type, *Lupinus*, *Senecio vulgaris*, *Knautia arvensis*, *Mentha-Oryganum*-type, *Tilia cordata*, *Veronica*, *Rosa canina*, *Galium* (on the whole 17 palynotypes) occur in honey samples more than in 33% quantity.

The particularities of the studied zone: rough climate, the absence of crop production, the variety and specific combinations of wild melliferous plants form a unique variety of tastes and aromas of northern honey and give the opportunity of its geographical identification.

Honeys with nectar equivalent of white clover и Alsike clover, raspberry, brownray knapweed, willow not less than 33% were referred to corresponding sorts. For willow herb the threshold value was considered 45%. Other sorts of honey were referred to the sorts «Forest» or «Meadow», of the sum of all nectar equivalents of corresponding plants dominated in 1,5 times. Other sorts were referred to the sort «Forest Edge».

The main melliferous plants \* of explored territories

<b>Woodland</b>		
<b>Rosaceae:</b> - Meadowsweet ( <i>Filipendula ulmaria</i> ) - Raspberry ( <i>Rubus idaeus</i> ) - Dog rose ( <i>Rosa canina</i> ) - European rowan ( <i>Sorbus aucuparia</i> )	- Vacciniaceous plants - Apiaceous plants - Willow herb ( <i>Epilobium angustifolium</i> ) - Willow ( <i>Salix spp.</i> ) - Small-leaved lime ( <i>Tilia cordata</i> )	
<b>Meadow</b>		
<b>Fabaceae:</b> - Alsike clover ( <i>Trifolium hybridum</i> ) - Lupine ( <i>Lupinus spp.</i> ) - Red clover ( <i>Trifolium pratense</i> ) - Sweet clover ( <i>Melilotus albus</i> + <i>M. officinalis</i> ) - Vetch ( <i>Vicia</i> ) type - White clover ( <i>Trifolium repens</i> )	<b>Compositae:</b> - Blue cornflower ( <i>Centaurea cyanus</i> ) - Brownray knapweed ( <i>Centaurea jacea</i> ) - Creeping thistle ( <i>Cirsium arvense</i> ) - Dandelion ( <i>Taraxacum</i> ) type - Downy burdock ( <i>Arctium tomentosum</i> ) - Field scabious ( <i>Knautia arvensis</i> ) - Greater knapweed ( <i>Centaurea scabiosa</i> ) - <i>Centaurea pseudophrygia</i>	- Apiaceous plants - Carnation family ( <i>Caryophyllaceae</i> ) - Mint-type - Speedwell ( <i>Veronica sp.</i> ) - Bedstraw ( <i>Galium sp.</i> ) - Motherwort ( <i>Leonurus villosus</i> )

\* the average nectar equivalent at least on one of the territories is more than 1 %