State Higher Educational Establishment
Uzhhorod National University

COMPOSITIONS OF ESSENTIAL OILS WITH WIDE RANGE OF ANTIMICROBIAL ACTIVITY

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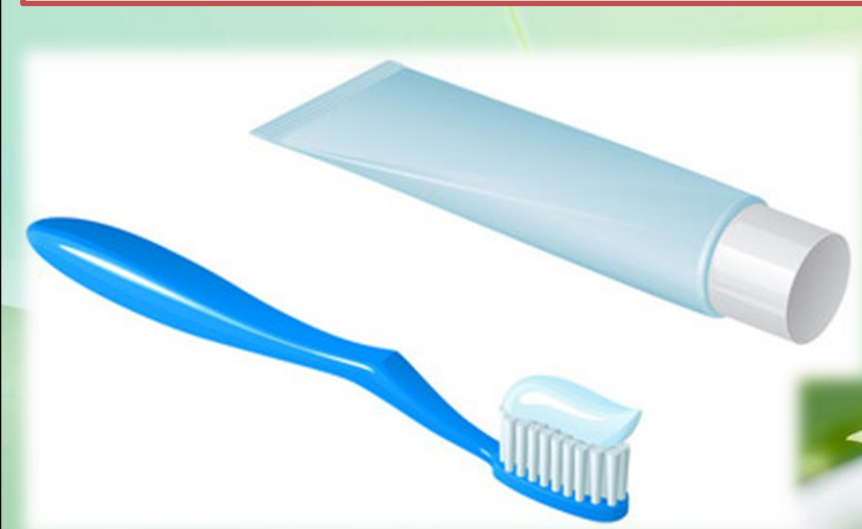
- We developed 2 compositions of essential oils with wide range of antimicrobial activity.

Essential oils composition can be used:

1. As a separate product (in aromatherapy)
2. As a constituent part of hygienic and medicated products:

- gel
- ointment
- toothpaste
- rinse



Customer segments

1. *Customers*

- mom`s
- “eco-friendly” people
- Spa service
- Yoga instructors

2. Personal care companies

Table 1. Antibacterial activity of essential oils and their compositions as to the typical isolates of opportunistic infectants, mm, (M±m)

Essential oils	Staphylococcus aureus ATCC 25923	Staphylococcus aureus (clinical)	Enterococcus faecalis ATCC 29212	Streptococcus pyogenes ATCC 19615	Streptococcus pneumoniae (clinical)	Escherichia coli ATCC 25922	Escherichia coli (clinical)
Rossmarinus officinalis L.	8,33 ± 0,33	-	7,83 ± 0,44	8,33 ± 0,33	8,00 ± 0,33	8,50 ± 0,29	8,00 ± 0,10
Hyssopus officinalis L	17,00 ± 0,20	20,00 ± 0,10	8,33 ± 0,33	11,00 ± 0,57	11,00 ± 0,33	14,00 ± 0,56	10,66 ± 0,88
Menta piperita L.	12,00 ± 0,10	10,00 ± 0,15	9,66 ± 0,17	10,33 ± 0,33	10,00 ± 0,33	8,33 ± 0,33	9,00 ± 0,58
Composition 1: Hyssopus officinalis + Rossmarinus officinalis L. 1:1	14,16 ± 0,17	19,83 ± 0,44	16,83 ± 0,44	10,50 ± 0,29	10,33 ± 0,33	13,83 ± 0,44	12,33 ± 0,33
Composition 2: Menta piperita L. + Hyssopus officinalis L.1:1	20,00 ± 0,58	18,00 ± 0,58	10,00 ± 0,29	11,83 ± 0,44	10,00 ± 0,58	10,16 ± 0,60	11,66 ± 0,88

Table 2. **Antimycotic activity of essential oils and their compositions as to the typical and clinical isolates of fungi of the *Candida* type, mm, (M±m)**

Essential oils	Candida albicans ATCC 885-653	Candida albicans	Candida tropicalis	Candida krusei
Rossmarinus officinalis L.	12,33±0,33	13,00±0,50	9,00±0,30	10,00±0,40
Hyssopus officinalis L	11,50±0,20	12,00±0,80	10,00±0,20	15,00±0,65
Menta piperita L.	15,00±0,57	10,00±0,25	10,00±0,30	12,00±0,45
Composition 1: Hyssopus officinalis + Rossmarinus officinalis L. 1:1	15,00±0,58	18,33±0,33	14,50±0,29	12,83±0,60
Composition 2: Menta piperita L. + Hyssopus officinalis L. 1:1	17,80±0,33	16,33±0,33	15,00±0,58	14,00±0,33

Essential oils were produced at «Calendula» enterprise, Nova Lubovna, Slovakia being ordered by Uzhhorod national university.

Calendula

Essential oils in 1:1 correlation

1.Hyssopus officinalis L.+ Rossmarinus officinalis L.

2. Menta piperita L. + Hyssopus officinalis L.

Key activities:

- Carrying out of tests
- Production of an experimental batch in large amount

Key resources:

- Human
- Financial

Key partners:

- Colleges from university
- “Calendula” enterprise
- Medical institutions

Cost structure:

1) Equipment
2) Fixed cost (laboratory, salary for persons)
3) “plants”-resource
4) Variable costs

Thank you for Attention!