The importance of essential oils in the galenical preparations

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In the recent years, essential oils have begun to gain in importance. They have become a part of the trend of a modern lifestyle based on nature. The human psyche is automatically inclined to prefer drugs that have more pleasant sensory properties compared to conventional drugs. Therefore, essential oils are an ideal candidate for the first adjuvant therapy of diseases, but in less complicated indications they can also be used as *Remedium cardinale*. It cannot be said that essential oils are an absolute novelty—their effects, although not in the form in which they are known to us today, were already known to our ancestors in ancient civilizations. Although they have been widely used and used for medical purposes, their comprehensive complex use can only be selectively mediated today. One such civilization were the Egyptians. Already 4500 years BCE described the therapeutic effects of essential oils in the papyri (the best known is Ebers papyrus), from which we learn that they were used as perfumes, medicines, as part of religious ceremonies and associated with resins for the embalming process. The most commonly used essential oils were from plants as *Commiphora* sp., *Cedrus* sp., *Juniperus* sp., *Coriandrum* sp. and *Origanum* sp.

From a therapeutic point of view, essential oils have been becoming more and more important and useful, especially in the 19th and 20th centuries, when chemical analysis developed rapidly and the chemical composition of essential oils and the context between their structure and effects began to be studied. French chemist and beautician René-Maurice Gattefossé (1881–1950) was the first who used the term aromatherapy—treatment by essential oils that affects human health both physically and mentally.

Essential oils (lat. *Aetherolea*, *Etherolea* or *Olea Aetherea*) are polycomponent mixtures of various nitrogen-free organic substances. From the perspective of consistency they are mainly liquid (rarely solid), transparent, oily substances, in

some cases may have a yellow, green or blue colour. Their specific sensoric property is mostly a pleasant smell. Essential oils are synthesized by plants from primary metabolites to form isoprene units, which gradually condense in the presence of specific enzymes. Their importance for plants is mostly protective—they protect plants from microbial, fungal or animal pathogens.

It is relevant to mention that the reliable use of the effects of essential oils is preceded by their quality. The quality is mainly influenced by three factors: the growing conditions of the mother plant (temperature, temperature, soil, etc.), the storage of the mother plant during transport and the production process of isolating the essential oil from the mother plant. Traditional isolation techniques include steam distillation, pressing or enfleurage (extraction of essential oil from flowers with fat). Supercritical extraction with carbon dioxide is a modern and currently a widely promoted method. Each plant is characterized by a different isolation technique to ensure maximum yield and quality of essential oil.

Today, essential oils are part of basic important pharmacopoeias (eg European Pharmacopoeia) and are used, in addition to mass-produced drugs, also in the pharmacy individual preparation of drug products. According to the literature, essential oils are mainly used as *Remedium corrigens*, but practice shows that they can be used as an effective drug in various indications. Their spasmolytic, diuretic, antiviral, carminative, anxiolytic, antibacterial, epithelial and other effects are most frequent. The chemical composition of the essential oil determines its efficacy and therapeutic group. Dosage forms are mostly in ointments, creams, pastes, gels for external use or solutions, tinctures for internal use. It is stated that essential oils can cause allergic and phototoxic reactions, so their use is limited.

Mint essential oil (*Menthae piperitae aetheroleum*) is used in the preparation of drugs as a topical antiphlogistic, derivatives, antiseptic, antipruginose, mild local anesthetic, internal as an antispasmodic and carminative.

Eucalyptus oil (*Eucalypti aetheroleum*) is used as part of medicines used to treat rheumatism, colds, bronchitis or nasal preparations. Separately it is used for inhalations.

Bitter-fennel fruit oil (*Foeniculi amari fructus aetheroleum*) is used to facilitate coughing up mucus and to reduce cold pressure in the form of oral solutions, syrups or inhalation.

Clove oil (*Caryophylli floris aetheroleum*) is used for mild inflammation of the mouth in case of pharynx to relieve toothache. It is widely used in dentistry as a component of dental preparations (pastes, gels, solutions) because of analgesic effect.

Lavender oil (*Lavandulae aetheroleum*) is used to alleviate the weak effects of mental stress and to induce sleep. It is mainly applied by inhalation. Topically in the form of gels and creams, it is used to heal wounds and burns.

Rosemary oil (*Rosmarini aetheroleum*) is used internally in the form of drops for dyspepsia and mild stomach-intestinal problems. Externally, they are used in the form of ointments, gels and liniment to relieve mild muscle and joint pain.

In addition to the essential oils themselves, components isolated from them are equally important in the preparation of drugs.

Camphor (*Camphora*) is obtained from the wood of the tree *Cinnamomum camphora* L. (*Lauraceae*). It is used externally in the form of solutions, creams and ointments. It has antipruginous, cooling, local anesthetic, antiseptic, hyperemic and derivatizing effects.

Menthol (*Mentholum*) is obtained from the essential oil of the plant *Mentha* × *piperita L.* (Lamiaceae). It has a refrigerant, anti-inflammatory, anti-itchy, local anesthetic, weakly hyperemicizing and derivatizing effect. In particular, ointments, gels and solutions are prepared from it. It is also used as part of throat pain lozenges.

Thymol (*Thymolum*) is obtained from essential oil of Thymus vulgaris L. (Lamiaceae). It has antiseptic, antibacterial and antimycotic effect. Its antiseptic effect is 20 times more effective than phenol, but the advantage is that it does not irritate and corrode the skin.

Historical apothecary recipes

Unguentum emolliens (*Pharmacopoea Hungarica*, 1909)

Rp.	
Cerae albae	20,0
Cetacei	40,0
Olei Sesami	160,0
Olei Rosae	gtt I (unam)
M. f. ung.	

Adspersiorus Chamomilleae

Rp.

Ext. chamomillae fluid	29,0
Olei chamomillae	gtt. V (quinque)
Bolus albae	15,0
Talci	57,0

M. f. plv.

Linimentum saponato-camphoratum (PhBs III)

Rp.

Saponis medicinalis		5,0
Spiritus 95%		80,0
Aquae		7,0
Camphorae		2,0
Olei lavandulae		
Olei rosmarini	aa	0,5
Sol. ammoniae		5,0

M. f. linim.

Kräuter-Haaröl (Diet.)—Herbal hair oil

Rp.

Balsami peruviani		5,0
Olei Bergamottae		3,0
Olei Rosmarini		
Olei Chamomillae		
Olei Serpylli		
Olei Absinthii	aa	gtt. V (quinque)
Cumarini		0,05
Chlorophylli		2,0
Olei Olivae		
Olei Ricini	aa	500,0

M. f. sol.

Currently used magistral formulations

Eucalypti etherolei cremor derivans RDP

Rp.
Eucalypti etherolei 2,5
Levomentholi
Camphorae racem. aa 5,0
Cremoris neoaquasorb ad 100,0
M. f. crm.

Camphorae emulsio cum levomentholo RDP

Rp.
Camphorae racem. 3.0
Levomentholi
Carmellosi natrici. aa 1.0
Polysorbati 80 3.0
Paraffini liquidi 17.2
Aquae purif. ad 100.
M. f. crm.

Globuli oromucosales cum benzocaino

Rp.
† Benzocaini 1.0
Anisi aetherolei
Foeniculi aetherolei.
Menthae pip. aetherol. aa gtt. V (quinque)
Glucosii 5.0
Sacchari 17.0
Acidi citrici 3,0
Aquae purificatae 65,0
Ethanoli 96% 2,0
Gelatinae 12,0
M. f. glob. oromusocal.

Aqua carminativa rubra ČL 1997

Rp.		
Aurantii amari etherolei		
Carvi etherolei		
Caryophylli etherolei		
Cinnamomi etherolei		
Foeniculi etheroleum		
Macidis etherolei		
Mentae piperitae etherolei	aa	0,1
Citronellae etherolei		
Coriandri etherolei	aa	0,5
Citri etherolei		1,0
Ethanolum 96% (V/V)		126,2
Sirupus simplicis		266,0
Ponceau 4R		0,26
Nigrum RN		0,02
Aquae purificatae ad		1333,0
Talci 7,0		

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