

**HAY THERAPY (*FENUM*) IN PHYTOBALNEOTHERAPY WITH ALLOWANCE
OF DIVERSITY OF GRASSLAND COMMUNITY IN POLAND**

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ABSTRACT: Recently, health resorts in Poland are overcoming considerable changes. There is a new role for Polish health resorts, mainly connected with physio-prevention, and the treatment offer needs to be broadened with new, standardized forms of therapy. One of the examples would be phytobalneotherapeutic treatment with hay (*fenum*) as a supplements of baths, compresses and wrappings. So far, only general medical properties of hay have been taken into consideration without dividing them into syntaxonomical units. However, depending on the participation of medical species which are characteristic for lower units such as alliance, hay posses specific medical qualities, which have not been studied yet. In Poland, grassland communities are habitat for more than 19 species which are characteristic for grasslands (including genus *Alchemilla*), medical plants, which can be used in balneotherapy and in health resort treatment, which belong to 7 alliances. In *Molinion caeruleae* alliance from order *Molinietales* and *Cynosurion* alliance from order *Arrhenatheretalia elatioris* there are the most species. Hay which belongs to the special Polish grassland alliances is appropriate for the balneotherapy and spa resort treatment. Knowledge of these grasslands is helpful in the usage of its' hay in the prevention as well as in a therapy of many diseases. Aim of this work was to determine prescriptions for the hay therapy which are practised in phytobalneology, due to the syntaxonomical differentiation in grassland communities in Poland.

KEY WORDS: hay therapy, *fenum*, phytobalneotherapy, grassland community, Poland

Introduction

Recently, health resorts in Poland are overcoming considerable changes. Traditional forms of healing, which are based on pathogenesis, are supplemented by other holistic methods based on a salutogenesis, for example: Sebastian Kneipp's method (Lindström and Kriksson 2006). In Poland, this system is more and more important when it comes to preventive actions. Especially in prevention of civilization diseases great possibilities of this method have been discovered (Trzewikowska 2003a). There is a new role for Polish health resorts, mainly connected with physio-prevention, and the treatment offer need to be broadened with new, standardized forms of therapy (Trzewikowska 2003b; Spałek and Trzewikowska 2007). One of the examples would be phytobalneotherapeutic treatment with hay (*fenum*) (Brinkhaus et al. 2009) as a supplements of baths, compresses and wrappings. Despite common usage this kind of methods in health resorts, there are not a lot of academic publications describing this subject.

In Europe, grasslands belong to the *Molinio-Arrhenatheretea* class. Mainly, among this class are half-natural and anthropogenic turf communities of grasslands and pasture (Oberdorfer 1994; Pott 1995; Schubert et al. 1995; Ellenberg 1996; Matuszkiewicz 2007). Grassland communities are widespread among the whole Euro-Siberian region, on the lowlands, on the highlands and on the mountain nappes. In many regions of Poland they belong to the group of most important structures of vegetation which define physiognomy of a landscape (Ellenberg 1996; Matuszkiewicz 2007). Despite a great economical importance and undeniable cognitive-educational values, hay groups are still insufficiently examined when it comes to their importance in phytotherapy and in balneology. So far, only general medical properties of hay have been taken into consideration without dividing them into syntaxonomical units. However, depending on the participation of medical species which are characteristic for lower units such as compounds, hay possesses specific medical qualities, which have not been studied yet.

In Poland, grasslands communities belong to two orders: *Molinetalia caeruleae*, with five alliances and *Arrhenatheretalia* with three alliances (Matuszkiewicz 2007). In order *Molinetalia caeruleae* we classify moist mesothropic and eutropic harvestable grasslands as well as riverside herbs which are permanently or periodically moist and common among lowlands and on a highland layer (Ellenberg 1996; Matuszkiewicz 2007). Order *Arrhenatheretalia* represents lowland and mountainous grasslands on a not very moist mineral grounds without swampy features (Ellenberg 1996; Matuszkiewicz 2007).

Aim of this work is to determine prescriptions for the hay therapy which are practised in phytobalneology, due to the syntaxonomical differentiation in grassland communities in Poland and to prompt further clinical researches, including issues of a hay therapy usage, due to the grassland community from which they come.

Methods

Grasslands communities was studied with the methods of the Zurich-Montpellier School of Phytosociology (Braun-Blanquet 1964). The phytosociological nomenclature and the syntaxonomical appendix are based on Oberdorfer (1994) and Matuszkiewicz (2007). The species names of vascular plants are given according to Mirek et al. (2002). Healing properties of herbs were given for Strzelecka and Kowalski (2000).

Hay medical properties of a particular alliances

Order *Molinietalia caeruleae* (table 1)

Grasslands from a *Filipendulion ulmariae* alliance – partially natural communities of herbs composed of high perennial dicotyledon plants, which are along watercourses. In a primal plant cover of Central Europe, probably it used to be a group of edge forests and watersides, what is more probably they were a starting point for a floristic reservoir for anthropogenic grassland groups from order *Molinietalia caeruleae* (Ellenberg 1996; Matuszkiewicz 2007). In grassland complexes they have spread among moist places not mowed or not mowed regularly. Among dominative species characteristic for these community, medical properties posses: *Filipendula ulmaria*, *Lythrum salicaria*, *Valeriana officinalis*.

Grasslands from *Molinion caeruleae* alliance – once mowed and not fertilized moist changeable grasslands on mineral grounds, currently they are disappearing and are not common in Europe. This alliance has developed in a climate of a specific development, where main aim was not to gain hay but a forest bed. This type of grasslands were mowed yearly or sometimes every second year, usually quite late-in September or at the beginning of an October. This kind of exploitation, which has been used for years, has lead to the beginning of grasslands with a characteristic seasonal rhythm and composition, in which apart from dominating *Molinion caeruleae*, important role play magnificent, often colorful blooming perennial plants (Ellenberg 1996; Matuszkiewicz 2007). Grasslands which for a very long time are left without mowing, often transform into herbs in a alliance with *Filipendulion ulmariae*, from which historically they have emerged. Grasslands which are utilized in a more intensive way, transform into alliance with *Calthion palustris*. In Poland, these types of grasslands are common among the whole territory, however usually on small areas and rarely in a classical form (Matuszkiewicz 2007). Among dominative species characteristic for these alliance, medical properties posses: *Betonica officinalis*, *Linum catharticum*, *Pimpinella saxifraga*, *Potentilla erecta*.

Grasslands from *Calthion palustris* alliance – which are strongly fertilized, twice and many times mowed moist grasslands and humid grasslands, traditionally used as a forage base (Ellenberg 1996; Matuszkiewicz 2007). However, further intensification of production, especially usage of a huge amount of mineral fertilizers, sowing with high productive mixtures of grasses and papilionaceus vegetative as well as introducing a multiple mowing system in short time intervals, leads into deep changes in these kinds of grasslands. Those grasslands have been developing in a different than current usage conditions. Among dominative species characteristic for these alliance, medical properties posses: *Caltha palustris*, *Cirsium oleraceum* i *Polygonum bistorta*.

Grasslands from *Alopecurion pratensis* alliance – grasslands which are intensively cultivated and highly fertilized (Ellenberg 1996; Matuszkiewicz 2007). When it comes to habitation they can be placed among humid grasslands (*Molinietalia caeruleae*), and fresh, not very humid (*Arrhenatheretalia*). To this group belong grasslands which are popular and economically the most important in Poland (Matuszkiewicz 2007). Among dominative species characteristic for these alliance, medical properties posses: *Glechoma hederacea*, *Symphytum officinale*.

Order *Arrhenatheretalia* (table 2)

Grasslands from *Arrhenatherion elatioris* alliance – many times mowed, highly productive grasslands when it comes to floristic values are common in Poland rarely on lowlands and on a lower mountain parts (Matuszkiewicz 2007). Among dominative species characteristic for these alliance, medical properties posses: *Alchemilla* sp., *Anthylis vulneraria*, *Pastinaca sativa*.

Grasslands from *Polygono-Trisetion* alliance – fertile, mowed grasslands which are popular in a mountain nappes in participation with mountain and subalpine species (Ellenberg 1996; Matuszkiewicz 2007). In Poland they belong to the grasslands which are rarely common. Among dominative species characteristic for these alliance, medical properties posses: *Alchemilla* sp., *Primula elatior*.

Grasslands from *Cynosurion* alliance – poor grasslands when it comes to floristic values and pastures common in Poland on a lowlands and on a lower mountain levels (Matuszkiewicz 2007). Usually, they create a low, intensively used grass. Among dominative species characteristic for these alliance, medical properties posses: *Bellis perennis*, *Colchicum autumnale*, *Euphrasia rostkoviana*, *Trifolium repens*.

Discussion

In Poland, grassland communities are habitat for more than 19 species which are characteristic for grasslands (including genus *Alchemilla*), medical plants, which can be used in balneotherapy and in health resort treatment, which belong to 7 alliances. In *Molinion caeruleae* alliance from order *Molinietalia* and *Cynosurion* alliance from order *Arrhenatheretalia elatioris* (fig. 1) there are the most species. Hay which belongs to the special Polish grassland alliances is appropriate for the balneotherapy and spa resort treatment. Knowledge of these grasslands is helpful in the usage of its' hay in the prevention as well as in a therapy of many diseases.

Hay which belongs to the *Filipendulion ulmariae* alliance can be used in a treatment of: back pains due to overburdening, arthrosis, neuralgia, tendency for colds and infections, hyperactivity, states of anxiety, insomnia vegetative neurosis and general exhaustion. Hay which belongs to the *Molinion caeruleae* alliance can be used in a treatment: skin infection, hard healing wounds and ulcerations, inflammations, skin splitting and desquamation, eczema, asthma, hard healing wounds and ulcers, and hypodermic hemorrhages. Hay which belongs to the *Calthion palustris* alliance can be used in a treatment of: hard healing wounds and ulcerations, soft tissue rheumatis, hemorrhoids and feet dyshidrosis. Hay which belongs to the *Alopecurion pratensis* alliance, which is the most common in Poland, should be used in a treatment of: abrasions, slight burns, skin wounds, hypodermic hemorrhages, hard healing wounds and ulcerations shanks, skin inflammation, rheumatism, psoriasis, leukodermia, alopecia areata, atopic cutaneous lesion and hair care. Hay which belongs to the *Arrhenatherion elatioris* alliance should be used in a treatment of: abrasions, slight burns, skin wounds, hypodermic hemorrhages, hard healing wounds and ulcerations shanks, skin innflammation, psoriasis, leukodermia, alopecia areata, atopic cutaneous lesion, rheumatism, hair care. Hay from the *Polygono-Trisetion* alliance should be used in a treatment of: abrasions, slight burns, skin wounds, bruises, hypodermic hemorrhages, airways diseases and inflammations, chronic bronchitis and colds. Hay which belongs to the *Cynosurion* alliance should be used in a treatment of: upper airways diseases, cutaneous lesion, eczema, innflammation of conjunctiva, skin

and mucosa, urinary incontinence, upper airways inflammation, wounds after insect bites, anal itching.

Table 1. Indications to hay therapy (*fenum*) in phytotherapy with allowance of diversity of grassland community from *Molinietalia caeruleae* order.

Alliance	Species	Effects	Indication
<i>Filipendulion ulmariae</i>	<i>Filipendula ulmaria</i>	sudorific, antiphlogistic and analgetic, astringent and antibacterial	back pains due to overburdening, arthrosis, neuralgia, tendency for colds and infections
	<i>Valeriana officinalis</i>	sedative, diastolic smooth muscles	hyperactivity, states of anxiety, insomnia vegetative neurosis general exhaustion
<i>Molinion caeruleae</i>	<i>Betonica officinalis</i>	astringent, antiphlogistic antihemorrhagic, antiasthmatic	asthma, hard healing wounds and ulcers, hypodermic hemorrhages,
	<i>Linum catharticum</i>	antiphlogistic, softening and regenerative in skin diseases	inflammations, skin splitting and desquamation, eczema
	<i>Pimpinella saxifraga</i>	diastolic for bronchial fibrosis, antiasthmatic	subacute and chronic airways diseases, bronchial asthma
	<i>Potentilla erecta</i>	astringent, suppressing virus development, antiphlogistic, suppressing slight bleedings	skin infection, hard healing wounds and ulcerations
<i>Calthion palustris</i>	<i>Caltha palustris</i>	astringent, antiphlogistic, bactericidal	hard healing wounds and ulcerations
	<i>Cirsium oleraceum</i>	antirheumatic, antiphlogistic, astringent,	soft tissue rheumatism
	<i>Polygonum bistorta</i>	astringent antiphlogistic	hemorrhoids, feet dyshidrosis
<i>Alopecurion pratensis</i>	<i>Glechoma hederacea</i>	antiphlogistic regenerative for skin and mucous	hemorrhoids, anal eczema, anal cleft
	<i>Symphytum officinale</i>	stimulating tissue regeneration	hard healing wounds and ulcerations bedsores

Table 2. Indications to hay therapy (*fenum*) in phytobalneotherapy with allowance of diversity of grassland community from *Arrhenatheretalia* order.

Alliance	Species	Effects	Indication
<i>Arrhenatherion elatioris</i>	<i>Alchemilla</i> sp.	suppressing bleeding from blood vessels, antiphlogistic, regenerative for skin	abrasions, slight burns, skin wounds, hypodermic hemorrhages
	<i>Anthylis vulneraria</i>	advance healing of wounds, antiphlogistic	hard healing wounds and ulcerations shanks, skin inflammation, rheumatism
	<i>Pastinaca sativa</i>	photosensitizing, antiseborrheic, influence on melanogenesis processes	psoriasis, leukoderma, alopecia areata, atopic cutaneous lesion, hair care
<i>Polygono-Trisetion</i>	<i>Alchemilla</i> sp.	suppressing bleedings from small blood vessels antiphlogistic, regenerative for skin	abrasions, slight burns, skin wounds, bruises, hypodermic hemorrhages
	<i>Primula elatior</i>	expectorant	airways diseases and inflammations, chronic bronchitis, colds
<i>Cynosurion</i>	<i>Bellis perennis</i>	expectorant, antiphlogistic astringent	upper airways diseases, cutaneous lesion, eczema
	<i>Colchicum autumnale</i>	adjunctive metabolism, anti-tumescence	e.g. gout
	<i>Euphrasia rostkoviana</i>	antiphlogistic, bactericidal	inflammation of conjunctiva, skin and mucosa
	<i>Trifolium repens</i>	antiphlogistic, soothing inflammation and itching	urinary incontinence, upper airways inflammation, wounds after insect bites, anal itching

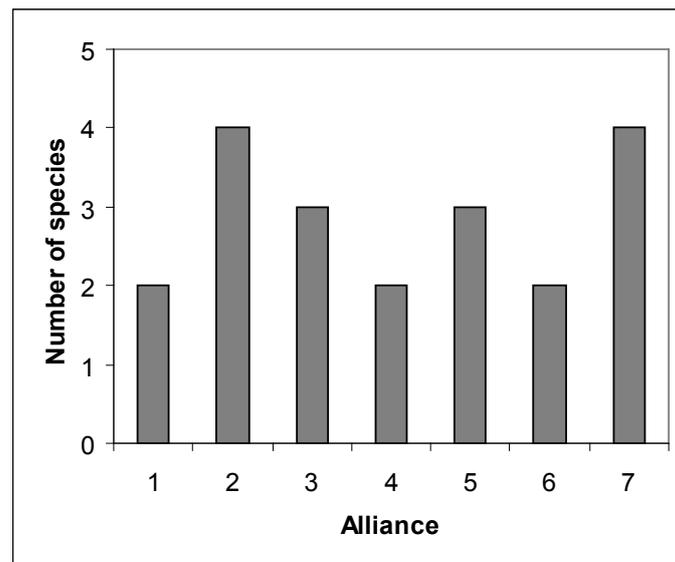


Fig. 1. Contribution of characteristic for grassland communities species of treatment plants in particular communities of grassland alliances in Poland: 1 - *Filipendulion ulmariae*, 2 - *Molinion caeruleae*, 3 - *Calthion palustris*, 4 - *Alopecurion pratensis*, 5 - *Arrhenatherion elatioris*, 6 - *Polygono-Trisetion*, 7 - *Cynosurion*.

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