

Local knowledge of medicinal plants and wild food plants among Tatars and Romanians in Dobruja (South-East Romania)

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Abstract Ethnobiological studies in South-Eastern Europe are gaining the interest of scholars and stakeholders, given that they are increasingly considered crucial for the evaluation and valorisation of local bio-cultural heritage. An ethnobotanical survey focusing on local wild food and wild and non-wild medicinal plant uses was conducted in six villages of Dobruja, Eastern Romania, among 44 elderly participants belonging to Tatar and Romanian communities. We recorded and identified 77 plant taxa, corresponding to 93 plant (use) reports. Only approximately half of the plants and one-third of the plant reports were common to both Tatars and Romanians. This demonstrates that the ethnobotanies of the two communities have remained somewhat different, despite the common history that these communities have shared over many centuries within the same social and environmental space. This finding can be explained by their different religious affiliations (Romanians are Orthodox, while Tatars are Muslims), which has limited intermarriages

and relevant exchanges of knowledge, practices, and beliefs related to plants. In particular, nettle (*Urtica dioica*) is quite commonly used for food by Romanians, but is ignored by Tatars. Our study may be of interest to rural development programs aimed at fostering community-based management strategies of natural resources, as well as ecological and gastronomic tourism.

Keywords Ethnobotany · Dobruja · Romania · Tatars · Romanians

Introduction

While traditional knowledge regarding plants is rapidly decreasing in many regions of the world, several studies have instead recently demonstrated that rural areas in South-Eastern Europe still host an impressive reservoir of folk botanical and ecological knowledge (Dogan et al. 2008; Jarić et al. 2007; Kołodziejska-Degórska 2012; Łuczaj et al. 2013; Luczaj et al. 2013; Menković et al. 2011; Mustafa et al. 2012a, b; Nedelcheva 2013; Nedelcheva and Dogan 2011; Nedelcheva et al. 2011; Péntek and Szabó 1985; Pieroni 2008, 2010; Pieroni and Giusti 2008; Pieroni et al. 2003, 2012, 2013, 2014a, b; Redžić 2006, 2007, 2010; Redžić et al. 2010; Rexhepi et al. 2013; Šarić-Kundalić et al. 2010, 2011; Savikin et al. 2013; Zlatković et al. 2014). This body of knowledge is observed with particular interest by

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many stakeholders nowadays, since it is considered crucial for truly sustainable rural development projects in those areas.

Moreover, cross-cultural ethnobotanical studies are important for the assessment of cultural components, which effect plant used by human societies, and how this complex interplay changes over time. Thus far only a few ethnobiological studies in Eastern Europe have addressed this issue (Pieroni and Giusti 2008; Pieroni et al. 2011, 2014a, b; Pieroni and Quave 2005; Rexhepi et al. 2013).

Diasporic communities represent particularly interesting arenas for conducting these studies, given that investigations of this kind may allow spatial comparisons, as well as, sometimes, also diachronic analysis (before and after migration) (Ceuterick et al. 2008 2011; de Medeiros et al. 2012; Ellena et al. 2012; Pieroni and Gray 2008; Pieroni et al. 2008; Pochettino et al. 2012; van Andel and Westers 2010; Vandebroek and Balick 2012; Vandebroek et al. 2010; Yöney et al. 2010).

On the other hand, the region of Dobruja in Eastern Romania has represented one of the most multi-cultural areas of Europe during the last two centuries, due to its complex historical trajectories. According to the 2011 Romanian Census (INS 2011), South-East Romania, and especially the city of Costanta and its surroundings, still hosts approximately 23,000 Turks, who first started to arrive in this area in the seventh century (De Jong 1986), and 20,000 Tatars, who arrived in the fourteenth century during the Golden Horde invasion (Nogay Tatars), while additional Tatars (from Crimea) came and settled in Dobruja primarily at the end of the sixteenth century and in the middle of the nineteenth century (De Jong 1986).

Furthermore, Dobruja is inhabited by a few thousand descendants of the Aromanians and, to less extent, Megleno-Romanians, who migrated from Greece, Macedonia, Bulgaria, and Albania in the third decade of the twentieth century (Micle 2013; Bardu 2007), while the community of Dobrujan Germans, who lived in the area between approximately 1840 and 1940, has been considered effectively extinct since World War II (Petri 1956). In the Northern part of Dobruja there are still also diasporic communities of Russian Lipovans and Italians (Venetians and Friulans) (INS 2011; Pieroni et al. 2012).

In Romania, very few ethnobotanical and ethnobotanical field studies have been conducted during the past three decades (Babai and Molnár 2013; Dénes et al. 2012; Drăgulescu 1995, 2006, 2013; Molnár 2012; Papp et al. 2011, 2013, 2014; Péntek and Szabó 1985; Pieroni et al. 2012; Tiță et al. 2009).

Given its complex mosaic of ethnic groups and languages and the Romanian context, Dobruja may represent a unique arena for cross-cultural ethnobiological surveys. We therefore decided to conduct a comparative study between Tatars and Romanians living in Dobruja (South-East Romania).

The aim of this study was to document local wild food and wild and cultivated medicinal plant knowledge among the Tatars and Romanians and to compare these ethnobotanies in order to try to assess how cultural adaptation processes, which the Tatar minority experienced over the last few centuries, may have affected their plant folklore.

Moreover, we wanted to analyse the eventual occurrence of locally used plants or food items as possible cultural markers—i.e. culturally salient plants exclusively quoted and used by one of the investigated communities.

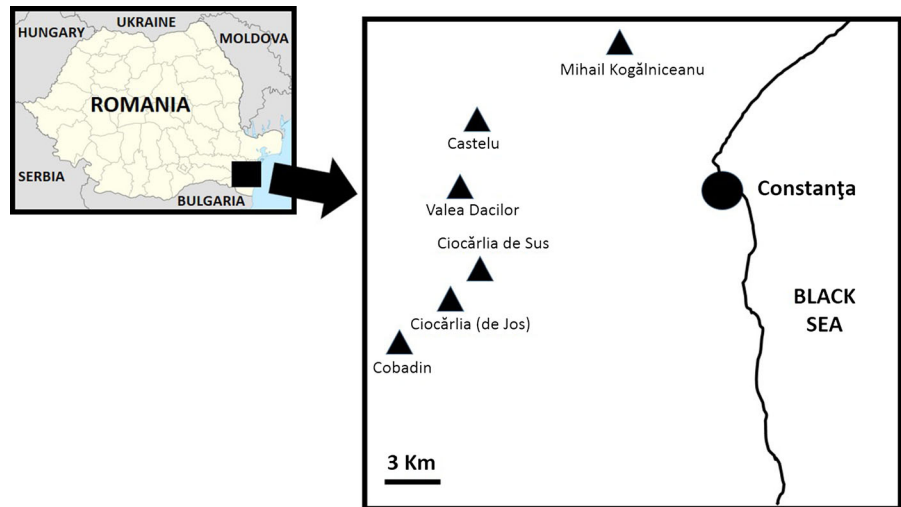
Methods

Dobruja is a historical and geographic area, which occupies the northeastern part of the Balkan Peninsula. As part of the most western appendix of the Pontic-Caspian steppe, the environment of Dobruja is characterized by hot, dry summers and very harsh and cold winters. Today the main economic activity of this territory is agriculture and the landscape is dominated by grassland mainly cultivated with sunflowers and maize.

The territory of Dobruja comprises Northern Dobruja, which is part of Romania, and Southern Dobruja, which belongs to Bulgaria.

The current study was conducted in six villages of Northern Dobruja (Fig. 1): Cobadin, which according to the 2011 Romanian Census (INS 2011), consists of 8,773 inhabitants, of which 427 are Tatars; Ciocărlia de Jos and Ciocărlia de Sus (located in the same municipality of Ciocărlia, and which together comprise 3,220 inhabitants, including 360 Tatars); Valea Dacilor, a village of a few hundred inhabitants, which was considered for many decades the centre of Tatar

Fig. 1 The study area and villages



culture in the area and nowadays is included in the municipality of Medgidia (39,780 inhabitants, of which 3,211 are Tatars); Castelu (4,856 inhabitants, including 164 Tatars); and Mihail Kogălniceanu (9,978 inhabitants, of which 323 are Tatars).

The study included 44 key informants, of which 23 were Tatars (six individuals declared themselves Nogay Tatars and 11 Crimean Tatars) and 21 Romanians. The former group included one elderly Turkish woman, while the latter group included two Aromanians and two “romanised” Dobruja Germans. The age of the informants ranged between 38 and 87 years, and more than two-thirds of the informants were women between 60 and 75 years old.

The Tatar informants were bilingual in Romanian and Crimean Tatar (which belongs to the Turkic language group) and interviews were therefore conducted in both Romanian (for the Romanian informants) and Turkish.

Details regarding local names, ecology, part(s) uses, transformations/processes and local medicinal and food uses of all wild food and wild and non-wild medicinal plants mentioned by the informants were also requested.

Taxonomic identification was conducted by the authors and plant nomenclature follows *Flora Europaea* (Tutin et al. 1964–1980), the Angiosperm Phylogeny Group III system (Stevens 2012) and The Plant List database (TPL 2013). Voucher specimens of the most uncommon taxa were collected in the field and subsequently deposited in the Herbarium

of the Botany Department at the University of Sofia, Bulgaria.

Results and discussion

Table 1 presents the detailed plant uses and remedies, which were described by the informants during the field study.

77 plant taxa were recorded, as well as 193 medicinal and wild food plant reports. Cultivated and semi-domesticated plants are the predominant species on the list.

Most of the plants reported by the informants are grown in private yards and gardens or in the areas surrounding their homes, and were personally collected by them. Along the sidewalks in front of their houses locals often plant fruit trees and sometimes construct small gardens for food, medicinal, and ornamental purposes. The vicinity of the investigated villages is characterized by agricultural plots of maize and sunflower, which does not provide a wide diversity of species. Another small group of species is collected from more distant hilly areas, mainly by shepherds or during the collection of wood used as fuel in the winter. Also, a few of the recorded plants are derived from teas bought at drug stores or pharmacies.

In total, 83 local folk names were recorded: 29 of them were mentioned only by Tatars and another 42 only by Romanians, while nine plants with the same folk name were documented in both communities.

Table 1 Wild food plant and medicinal plant uses recorded in the study area

Taxon, family, and voucher specimen code (if available)	Recorded local name(s)	English name	Status	Plant part(s) used	Recorded preparation [treated pathology(-ies)/ medicinal/food use(s)]	Tatars	Romanians
<i>Achillea millefolium</i> L. Asteraceae	Coadă șoricelului ^{TA}	Yarrow	W	FL	Tea (respiratory ailments)	+	
<i>Allium cepa</i> L. Amaryllidaceae	Ceapă ^{TA}	Onion	C	BU	Tea (only external parts of the bulb, tunic), sometimes with walnut shell (cough) Tea (with the external parts of the bulb) (liver complaints) Heated and externally applied (wounds, acne, headaches)	+++ + +	+++ +
<i>Allium sativum</i> L. Amaryllidaceae	Sarmsaq ^{TA} Usturoi ^{RO}	Garlic	C	BU	Consumed (hypertension; “immune-stimulant”) Crushed, macerated in milk one night (worms)	+++ +	+
<i>Anethum graveolens</i> L. Apiaceae	Măra ^{RO}	Dill	C	AP	Consumed raw (hypertension) Seasoning food and pickled/lacto-fermented vegetables (cucumbers, water melons, cabbage, green tomatoes, sweet peppers, red beets, carrots, cauliflower, kohlrabi, Jerusalem artichoke); liquid portion of the pickles is drunk (stomach-ache)	+	+
<i>Aloe vera</i> (L.) Burm. f. Xanthorrhoeaceae	Aloe ^{TA}	Aloe	C	GE	Externally applied (wounds)	+	
<i>Apium graveolens</i> L. Apiaceae	Țelină ^{RO}	Celery	C	AP	Seasoning food and pickled/lacto-fermented vegetables; liquid portion of the pickles is drunk (stomach-ache)		+
<i>Amaranthus retroflexus</i> L. Amaranthaceae	Știr ^{RO}	Amaranth	W	LE	Ingredient of home-made soups Pie filling (<i>peța</i>)		+ +~
<i>Armoracia rusticana</i> P. Gaertn., B. Mey. et Scherb. Brassicaceae	Hrean ^{RO}	Horseradish	W/SD	RO	Seasoning food and pickled/lacto-fermented vegetables; liquid portion of the pickles is drunk (stomach-ache) <i>Sarmale</i> (leaves rolled around a filling of minced meat and rice)	+	+
<i>Artemisia absinthium</i> L. Asteraceae	Pelin ^{RO}	Wormwood	W	AP	Tea or decoction (digestive, liver diseases) Tea, in external washes (vaginal infections, skin anti-mycotic, wound disinfectant)		+ +++
<i>Atriplex hortensis</i> L. Amaranthaceae	Labada Loboda	Orache	SD	LE	Ingredient of home-made soups Pie filling (<i>peța</i>)	++	++ +~

Table 1 continued

Taxon, family, and voucher specimen code (if available)	Recorded local name(s)	English name	Status	Plant part(s) used	Recorded preparation [treated pathology(-ies)/ medicinal/food use(s)]	Tatars	Romanians
<i>Beta vulgaris</i> L. var. <i>conditiva</i> Alef.	Sfeclă ^{TA}	Red beet	C	RO	Root juice drunk, sometimes with carrot and apple juice (cancer)	+	
Amaranthaceae							
<i>Brassica oleracea</i> L. var. <i>capitata</i> L.	Varză ^{RO}	Cabbage	C	LE	Fresh leaves directly applied (rheumatism, bruises)	+	+
Brassicaceae							
<i>Calendula officinalis</i> L.	Gălbenele ^{RO}	Pot marigold	C	FL	Tea (digestive, respiratory ailments)	+	+
Asteraceae	Nergizçiçek ^{TA}				External applications with oil or lard (skin inflammations, gynaecological complaints)		++
<i>Camellia sinensis</i> (L.) Kuntze	Çay ^{TA}	Black tea		LE	Dried, fermented—one spoon of tea, ingested (diarrhoea)	+	
Theaceae							
<i>Capsicum annuum</i> L.	Biber ^{TA}	Hot pepper	C	FR	Macerated in brandy, in external massage (arthritis, chilblain)	+	
Solanaceae							
<i>Carum carvi</i> L.	Kumelâ}	Caraway	W	FR	Tea (sore throat, cough, digestive)}		+
Apiaceae							
<i>Chelidonium majus</i> L.	Rostopasca ^{RO}	Celandine	W	AP	Externally applied (haemorrhoids, skin diseases, panacea)		++
Papaveraceae							
<i>Cichorium intybus</i> L.	Cicoare ^{RO}	Chicory	W	AP	Tea (stomach-ache, digestive)	+	
Asteraceae							
<i>Coffea</i> spp.	Kahve ^{TA}	Coffee		RO	Decoction (stomach-ache)		+
Rubiaceae							
<i>Crataegus monogyna</i> Jacq.	Păducel ^{RO}	Hawthorn	W	AP	Roasted, powdered, consumed raw (diarrhoea)	+	
Rosaceae							
<i>Cucurbita maxima</i> Duchesne	Dovleac ^{RO}	Squash	C	SE	Ingested raw (worms)		+
Cucurbitaceae							
<i>Cucurbita pepo</i> L.	Dovleac	Pumpkin	C	SE	Ingested raw (worms)	+	
Cucurbitaceae							
<i>Cucumis melo</i> L.	Pepene	Watermelon	C	SE	Ingested raw (worms)	+	
Cucurbitaceae							
<i>Cucumis sativus</i> L.	Castravete	Cucumber	C	FR	Sliced, externally applied to the forehead (head-ache)	+	
Cucurbitaceae							

Table 1 continued

Taxon, family, and voucher specimen code (if available)	Recorded local name(s)	English name	Status	Plant part(s) used	Recorded preparation [treated pathology(-ies)/ medicinal/food use(s)]	Tatars	Romanians
<i>Cydonia oblonga</i> L. Rosaceae	Ayva ^{TA} Gutuie ^{RO}	Quince	SD	FR	Fermented and distilled, in external applications (wounds, arthritis, head-ache) Lacto-fermented/pickled	+	+
<i>Daucus carota</i> L. Apiaceae	Morkov	Carrot	C	RO	Dried and consumed boiled in water (<i>os/haf</i>) Root juice drunk, sometimes with red beet and apple juice (cancer)	+++ +	+
<i>Dianthus caryophyllus</i> L. (?) Caryophyllaceae	Pariserkrut}	Carnation	C	FL	Body washes (good smell)}		+}
<i>Echballium elaterium</i> (L.) A. Rich. Cucurbitaceae	Patlak ^{TA}	Squirting cucumber	W	LE	Applied (dried) to the skin (acne)	+	
<i>Equisetum arvense</i> L. Equisetaceae	Coadă calulul ^{RO}	Horsetail	W	AP	Tea (diuretic, cold)		+~
<i>Fragaria vesca</i> L. Rosaceae	Çilek ^{TA}	Strawberry	W/C	FR	Jam (in spoon for treating constipation)	+	
<i>Helianthus annuus</i> L. Asteraceae	Floarea soarelui ^{RO}	Sunflower	C	SE	Oil from seeds, hot, instilled in the ear (ear pains) Ingested (colic in babies)	+	+
<i>Helianthum tuberosum</i> L. Asteraceae	Yer elmasi ^{TA}	Jerusalem artichoke	C	RO	Ground and consumed raw ("cancer")	+	
<i>Hordeum vulgare</i> L. Poaceae	Arpa ^{TA}	Barley	C	FR	Tea (worms)	+	
<i>Hypericum perforatum</i> L. Hypericaceae	Sunatoare	St. John's Wort	W	FT	Tea (digestive, stomach-ache, sedative, panacea, hypertension, cough)	+++	+++
<i>Juglans regia</i> L. Juglandaceae	Nuc ^{RO}	Walnut	SD	LE, FPR	Tea, sometimes with onions (cough) Tea (diabetes)	+++ +	+++ ++
<i>Levisticum officinale</i> W. D. J. Koch Apiaceae	Leustean ^{RO}	Lovage	C	LE	Decoction, in external washes (hair dyeing, to increase brightness of the hair, skin inflammations) Syrup (sore throats) Consumed ("healthy, since containing iodine"), sweets Put in hot water used in washes (body washing, good aroma) Seasoning food and pickled/lacto-fermented vegetables; liquid portion of the pickles is drunk (stomach-ache)	++ + +++ +++ +++ +	++ + +++ +++ +++ +

Table 1 continued

Taxon, family, and voucher specimen code (if available)	Recorded local name(s)	English name	Status	Plant part(s) used	Recorded preparation [treated pathology(-ies)/ medicinal/food use(s)]	Tatars	Romanians
<i>Lilium candidum</i> L. Liliaceae		White lily	C	FL	Macerated in brandy, body massage (rheumatisms)		+
<i>Malus domestica</i> Borkh. Rosaceae	Măr ^{RO}	Apple tree	SD	FR	Fermented and distilled, in external applications (wounds, arthritis, head-ache)		+
<i>Malva sylvestris</i> L. Malvaceae		Mallow	W	LE	Filling for pic/ <i>burek</i>	+	+
<i>Matricaria chamomilla</i> L. Asteraceae	Muşeţel ^{RO}	Chamomile	W	FT	Tea (stomach-ache, digestive, constipation, cough) Direct external applications, or in tea or in oleolite (head-aches, suppurative, skin and eye disinfectant, hair strengthening)	+++ +++	++
<i>Mentha x piperita</i> L. and <i>Mentha spicata</i> L. Lamiaceae	Karananë ^{TA} Izma ^{TA} Mentă ^{RO}	Mint	W/SD/C	LE	Tea (stomach-ache, cold, panacea)	++	+++
<i>Morus alba</i> L. Moraceae		Mulberry tree	SD	LE	Tea (diabetes)	+	
<i>Nicotiana tabacum</i> L. Solanaceae	Tütün ^{TA}	Tobacco	C	LE	Dried, externally applied (cicatrizing of wounds)	+	
<i>Oryza sativa</i> L. Poaceae	Orez ^{RO}	Rice		FR	Ingested raw (diarrhoea)		+
<i>Pelargonium zonale</i> (L.) L'Hér. ex Aiton Geraniaceae		Horse-shoe pelargonium	C	LP	Directly applied to the anus (constipation in babies)		+
<i>Papaver rhoeas</i> L. Papaveraceae	Gelincik ^{TA}	Wild poppy	W	LE + FL	Cold (fermented?) macerated (cough, for strengthening in adolescence)	+	
<i>Petroselinum crispum</i> (Mill.) Fuss Apiaceae	Pătrunjel ^{RO}	Parsley	C	LE AP	Filling for <i>börek</i> Seasoning food and pickled/lacto-fermented vegetables; liquid portion of the pickles is drunk (stomach-ache)	+	+
<i>Phaseolus vulgaris</i> L. Fabaceae	Fasole ^{RO}	Bean	C	FR	Tea (diabetes)		+
<i>Piper nigrum</i> L. Piperaceae		Pepper		FR	Seasoning boiled cereals (<i>ashure</i>), consumed as ritual food Macerated, in external massage (chilblain)	+	+

Table 1 continued

Taxon, family, and voucher specimen code (if available)	Recorded local name(s)	English name	Status	Plant part(s) used	Recorded preparation [treated pathology(-ies)/ medicinal/food use(s)]	Tatars	Romanians
<i>Plantago major</i> L. Plantaginaceae	Plantagina ^{RO}	Broadleaf plantain	W	LE	Topical applications (wounds, acne, tooth-ache)	++	+
<i>Prunus armeniaca</i> L. Rosaceae	Caîsa ^{RO}	Apricot	C	FR	Fermented and distilled, in external applications (wounds, arthritis, head-ache)	+	+
<i>Prunus avium</i> (L.) L. Rosaceae	Cireş ^{RO}	Cherry tree	SD	FPE	Dried and consumed boiled in water (<i>oshaf</i>), with sugar Tea (diuretic)	+++	+
<i>Prunus cerasifera</i> Ehrh. Rosaceae	Erik ^{TA} Corcoduş ^{RO}	Cherry-plums	SD	FR	Fermented and distilled, in external applications (wounds, arthritis, head-ache)	+	+
<i>Prunus cerasus</i> L. Rosaceae	Vişine ^{RO}	Sour cherry	SD	FR	Dried and consumed boiled in water (<i>koshap</i>), compote Compote (constipation)	+++	+
<i>Prunus domestica</i> L. Rosaceae	Karaerik ^{TA} Prună ^{RO}	Plum	SD	FR	Consumed (“healthy” for the elderly) Ingredient (souring agent) of home-made soups Tea (diuretic, cold) Macerates in home-made (fruit) distillate (<i>vişnata</i>), as a beverage or in compote Seasoning pickled lacto-fermented vegetables and <i>sarmale</i> (cooked together)	+	+++
<i>Prunus persica</i> (L.) Batsch Rosaceae	Piersic ^{RO}	Peach tree	C	FR	Dried and consumed boiled in water (constipation); consumed within sweet <i>sarmale</i> prepared at Christmas	+++	+++
<i>Pyrus communis</i> L. Rosaceae	Pară ^{RO}	Pear tree	C	FR	Fermented and distilled, in external applications (wounds, arthritis, head-ache)	+	+
<i>Raphanus sativus</i> L. Brassicaceae	Turup ^{TA}	Radish	C	RO	Fermented in vinegar, in external applications (chilblains) Ingredient of home-made soups Fermented and distilled, in external applications (wounds, arthritis, head-ache) Compote (constipation)	+	+
					Fermented and distilled, in external applications (wounds, arthritis, head-ache)	+	+
					Animal fodder (carminative) Juice drunk with sugar (cough)	+	+

Table 1 continued

Taxon, family, and voucher specimen code (if available)	Recorded local name(s)	English name	Status	Plant part(s) used	Recorded preparation [treated pathology(-ies)/ medicinal/food use(s)]	Tatars	Romanians
<i>Robinia pseudoacacia</i> L. Fabaceae	Salkim ^{TA} Salcâm ^{RO}	Black locust	W	FL AP	Tea, in external washes (gynaecological complaints) Tea (cough)	+	+++ +
<i>Rosa canina</i> L. Rosaceae	Trendafil ^{RO}	Dog rose	W	FR	Consumed (diarrhoea) Tea (diarrhoea) Tea (respiratory ailments)		+ + +
<i>Rosa</i> spp. Rosaceae	Gül ^{TA} Roz ^{RO}	Rose	C	PE	Tea (stomach-ache) Jams (bechic) Macerated, in external washes (body washes, good smell)	+	+ + +
<i>Rumex patientia</i> L. and other <i>Rumex</i> spp. Polygonaceae	Atkulak ^{TA} Ștevie ^{RO}	Dock	W	LE	Soups, <i>sarmale</i> , as a cooked vegetable Pie filling (<i>peța</i>) Topical applications (mouth inflammations)	+++ +	+++ +~
<i>Salix</i> spp. Salicaceae	Salcie ^{RO}	Willow	W	BA	Decoction (anti-helmintic)		+
<i>Salvia officinalis</i> L. Lamiaceae	Salvie ^{RO}	Sage	C	LE	Tea (cough)		+
<i>Sambucus nigra</i> L. Adoxaceae	Soc ^{RO}	Elder	W	FL	Tea (strengthening, sometimes adding <i>Mentha</i> leaves)		++
<i>Satureja</i> spp. Lamiaceae	Çimbru ^{TA}	Savory	C	FR AP	Jam Tea (anti-hypertensive)	+	++
<i>Secale cereale</i> L. Poaceae	Secară ^{RO}	Rye	C	FR	Tea (anti-helmintic)		+
<i>Solanum tuberosum</i> L. Solanaceae	Cartof ^{RO}	Potato	C	RO	Fresh tuber juice, ingested (diarrhoea) Ground and in external compress with fruit distillate (cough)	+	+
<i>Taraxacum officinale</i> (L.) Weber ex F. H. Wigg. s.l. Asteraceae	Păpădie	Dandelion	W	FL	Tea (liver diseases, digestive, stomach-aches, diuretic) Tea (cough) Tea, in external washes (skin disinfection, relaxing, hair dyeing, body strengthening, bruises)	+	+++ ++ ++

Table 1 continued

Taxon, family, and voucher specimen code (if available)	Recorded local name(s)	English name	Status	Plant part(s) used	Recorded preparation [treated pathology(-ies)/ medicinal/food use(s)]	Tatars	Romanians
<i>Thymus</i> spp. Lamiaceae	Cimbrisor ^{RO}	Thyme	W/C	AP	Tea or decoction, sometimes adding pericarp of walnut fruits and onions (cough)		+
<i>Tilia cordata</i> Mill. and <i>Tilia tomentosa</i> Moench Malvaceae (AMN033/13)	Ihlamur ^{TA} Tei ^{RO}	Lime tree	SD	FL	Tea (sedative, stomach-ache, anti-hypertensive, cough, against tiredness—prolonged use considered good for women, but not for men, who would lose their virility)	+++ +	+++ +++
<i>Urtica dioica</i> L. Urticaceae	Urzica ^{RO} Isrgan ^{TA}	Stinging nettle	W	LE LE	Tea (cardiotonic) <i>Sarmale</i> Cooked, soups (“healthy foods”); pie filling (<i>meta</i>)-; boiled with corn flour and garlic as a traditional food during the Christian period of Lent	++ ++	+++ +++ ++
<i>Vitis vinifera</i> L. Vitaceae	Yüzüm ^{TA}	Grapevine	SD/C	AP FR LE	Tea (diuretic, blood cleansing, stomach-ache) Decoction, in external washes (hair dyeing and strengthening) Rubbed externally (rheumatism, joint pain)	+	+
				FR	Tea (stomach-ache, rheumatism)	+	+~
				LE	<i>Sarmale</i> External applications (wounds)	+	+~
				SA	Topical application (eye inflammations)	+++	+
				FR	Dried and consumed boiled in water (<i>os/taf</i>)	+++	
				UF	Macerates and distillates (wounds)		+~
					Ingredient (souring agent) of home-made soups or salads		+
<i>Xanthium spinosum</i> L. (?) Asteraceae	Holera ^{RO}	Spiny cocclebur	W	AP	Tea (diarrhoea)		+
<i>Zea mays</i> L. Poaceae	Malai ^{TA}	Corn	C	ST FR	Tea (diuretic) Boiled and consumed, as a ritual food, when baby gets the first tooth Roasted corn flour, mixed with water and fermented to obtain <i>boza</i> (beverage drunk to prevent dehydration esp. in the summer and/or during the Ramadan period)	+	++
					Animal fodder (galactagogue)		+

Table 1 continued

Taxon, family, and voucher specimen code (if available)	Recorded local name(s)	English name	Status	Plant part(s) used	Recorded preparation [treated pathology(-ies)/ medicinal/food use(s)]	Tatars	Romanians
Diverse tree species							
C cultivated, SD semi-domesticated, W wild, AP aerial parts, BR branches, BU bulb, FL flowers, FPR fruit pericarp, FPE fruit peduncles, FR fruit, GE leaf gel, LE leaves, PE petals, RO root, SA sap, ST stigma, UF unripe fruit, WO wood							
(?): Identification hypothesized via the folk name and plant description only							
+: Reported by less than 10 % of the informants; ++: reported by more than 10 % but less than 20 % of the informants; +++: reported by more than 20 % of the informants. -: reported by Aromanians (Romanian speakers originally from Greece, Macedonia, Bulgaria, and Albania, who relocated in Dobruja during the first half of twentieth century). }: reported by German-Romanians (last survivors of the Dobruja-Germans)							
RO: Folk name(s) recorded among Romanians; ^{TA} : folk name(s) recorded among Tatars							

Wild food plants

Only seven wild folk taxa used for food were recorded: *Rumex*, *Malva sylvestris*, *Papaver rhoeas*, *Sambucus nigra*, *Urtica dioica*, *Amaranthus retroflexus* and *Armoracia rusticana*.

Whole aerial parts, namely the leaves, of these taxa are used as cooked vegetables or as a filling for home-made pies. All informants recognized the food use of *Rumex* and *Malva* spp.; both plants are located around the settlements and sometimes in the corner of yards, and thus they are easily accessible.

In our field study *U. dioica* was clearly identified as a distinctive element in the diet of Romanians. Nettle, which is recognized as a healthy food, is especially used during the fasting period of Orthodox Lent. All informants of Tatar origin denied a food use of nettle in their households and consistently reported that this species is exclusive to Romanian cuisine.

A similar distinctive relationship was observed for *A. retroflexus*, which was only mentioned by two Aromanians; in this case, the species is not recognized by Tatars as a food plant or even as an economic plant, while it was rarely mentioned as a fodder plant by Romanians living in the study area.

Moreover, the food use of *P. rhoeas* leaves was reported only by Tatars, although not frequently, while the use of wild fruits seems to not be widespread, with the fruits of *S. nigra* as the only exception.

The contribution of wild food plants to the typical and ritual local cuisine of the communities is very weak. In traditional Tatar preparations, such as *sherbet*, *oshaf* and *ashure*, all of the ingredients are represented by non-wild plants, mostly fruits and cereals.

Tatar informants reported cultivated plant-based ritual food customs related to the emergence of the first tooth in children; on this special occasion, parents offer invited guests *dish misir*, which is boiled corn grains with sugar. This ceremony is also crucial in Turkish culture, where a similar dish called “diş buğdayı” or “diş hedigi” is prepared, although the main ingredient is wheat (Rahman et al. 2013; Saritas 2011); among Crimean Tatars of Bulgaria boiled maize is served in many rituals instead (Antonov 2004).

Romanians use the unripe fruit of grapes, plums and cherry plums as ingredients (souring agent) for home-made soups.

Healthy/medicinal food

Many informants reported a variety of foods with a healing effect; in particular, lacto-fermented vegetables (*muraturi* in Romanian) were perceived as indispensable. In *muraturi* the main ingredients are primarily cultivated vegetables or fruits (sometimes also unripe watermelons and melons), which are fermented in a salty brine with the addition of specific seasoning elements, such as dill, branches of sour cherry tree, and quinces. The liquid portion of *muraturi*, which is salty and sour, is considered healthy and often drunk to alleviate stomach-ache.

However, the majority of the healthy foods included in Table 1 were reported by Tatars: this included raw seeds, root juices, raw garlic and onion, boiled cereals, jams, oils and fruit macerates and distillates. Among Tatars we also recorded a special drink made from toasted corn flour and water, which is used during Ramadan in order to reduce hunger during the daylight hours.

The main refreshment drink for Tatars is coffee (brewed as Turkish coffee), which is additionally recognized as a medicine in case of diarrhoea—this report is common also in Turkey (Dogan and Ugulu 2013); moreover, both communities perceive some home-made herbal teas not only as medicinal remedies but also as healthy refreshments.

Medicinal plants

Table 1 reports all the medicinal plants reported by the study participants.

The ratio of wild to cultivated medicinal plants was different between the two communities: approximately 3:1 among Tatars and 2:1 among Romanians (Fig. 2).

Both groups, however, reported a similar number of semi-domesticated medicinal species.

Informants also responded differently to questions related to the use of specific plants for treating various ailments. The initial Tatar response tended to be: “the solution to these problem(s) is to visit a doctor”, whereas Romanians consistently mentioned the use of herbal teas, for example those made from *Hypericum perforatum*, *Matricaria chamomilla*, *Taraxacum officinale*, *Tilia* spp., *Mentha* spp. and *Robinia pseudoacacia*. *Hypericum* and *Mentha* spp. are often perceived as panaceas among Romanians.

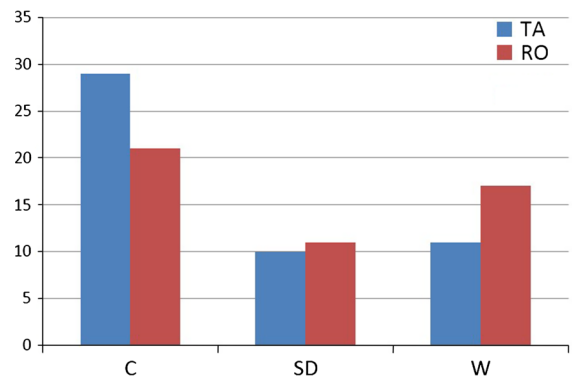


Fig. 2 Wild (W), semi-domesticated (SD), and cultivated medicinal plants reported by Tatars (TA) and Romanians (RO)



Fig. 3 Tatar woman with gathered flowering lime tree (*Tilia tomentosa*) branches

Lime tree is recognized by both communities as a versatile plant for herbal teas (Fig. 3); however, some informants mentioned its possible negative effects. In particular, the prolonged use of this tea, which is considered good for women, causes the loss of virility in men.

Although established medicinal plants used by the two communities are different, the most common diseases and ailments for which they were employed are the same: the greatest number of plants is associated with the treatment of colds, followed by those for stomach complaints, skin inflammations, high blood pressure, and rheumatism.

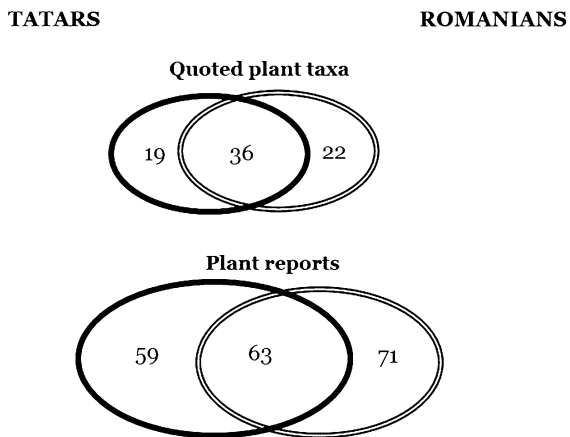


Fig. 4 Overlap between the overall plant taxa and reports mentioned by the two communities

Table 2 Most frequently reported preparations and remedies among Romanians and Tatars

Romanians	Tatars
Chamomile tea	Black locust flower tea (external use)
<i>Dock leaf sarmale</i>	<i>Dock leaf sarmale</i>
Dandelion tea	Onion tea
<i>Lime tree flower tea</i>	<i>Lime tree flower tea</i>
Nettle soup	Mint tea
<i>St. John's Wort tea</i>	<i>St. John's Wort tea</i>
<i>Walnut tea</i>	<i>Walnut tea</i>
Wormwood tea (external use)	Grape vine sap (external use)

The top remedies shared by the two communities are reported in italics

The most frequently quoted medicinal plants (*H. perforatum*, *M. chamomilla*, and *T. officinale*) are known by all informants by their Romanian names, which suggests either an important role of modern phytotherapeutical media in spreading their use among Tatars or a cultural adaptation of this community to mainstream Romanian customs with regard to the most commonly used herbal teas.

Cross-cultural comparison

Cross-cultural ethnobotanical analysis within a given environment has shown that divergences and commonalities between communities depend upon a complex interplay of historical, cultural, and social

processes (Pieroni et al. 2011; Pieroni and Quave 2005).

Although a link between the use of certain ecological niches and ethnic boundaries has been demonstrated in mountainous environments (Barth 1956), the same cannot be said for ethnic groups living in plain environments, such as the steppe of Dobruja.

Approximately the half of the plants and one-third of the plant reports are common to both Romanians and Tatars. Figure 4 illustrates the overlap between the taxa and plant reports quoted by the two communities.

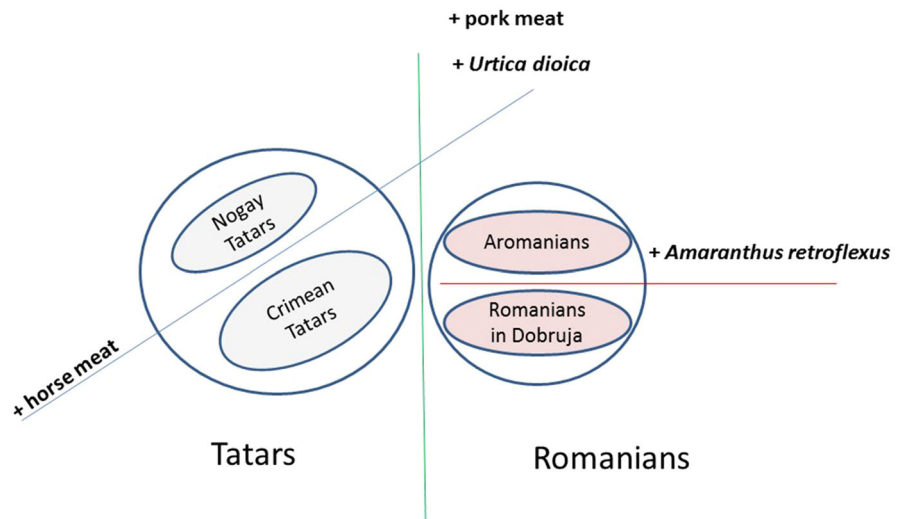
This finding demonstrates that the ethnobotanies of the two communities have remained distinct, despite their common history within the same social and environmental spaces during the last several centuries. The divergences between the ethnobotanies considered in the current study can be explained by diverse domestic practices and customs. Although Dobruja has represented a complex mosaic of many cultures and identities during the last two centuries or more, Tatar and Romanian communities have lived mainly apart, due to their religious differences, with little or no intermarriage. We believe that the transmission of plant knowledge, particularly regarding food plants and home-made medicinal remedies, still primarily takes place from mothers to daughters and thus the absence of intermarriages may explain the divergences between Tatar and Romanian plant uses.

Among the most frequently reported preparations and remedies, only approximately half were shared by the two communities (Table 2).

In terms of food customs, we could observe that the Tatar cuisine seem to be dominated by meat and a very limited use of wild food plants, while Romanians appear to consume a large amount of wild nettles (*U. dioica*).

Despite the limited sample of informants, in the study area we could suggest also the occurrence of other, food-based, cultural markers: the consumption of *A. retroflexus* by Aromanians (consistently denied by Romanians living in the study area, while we know that this use is spread among Romanians living in the Moldavian region of the country), pork meat among Romanians (not consumed by Tatars for religious reasons) and horse meat among Nogay

Fig. 5 Bio-cultural food markers found among the studied groups



Tatars (ignored not only by Romanians but also by Crimean Tatars) (Fig. 5).

Interestingly, in other Turkic-speaking areas, and notably in Turkey, *U. dioica* and *U. urens* are widely used as food (Dogan 2012; Dogan et al. 2004).

In summary, the main differences in the ethnobotanies of the two communities can be traced to the following three divergences:

- Tatars tend to use a relatively small number of wild plants, especially for medicinal purposes;
- Romanian ethnobotany tends to include more medicinal plants;
- Tatars tends to perceive more food preparations as “healthy”.

Conclusions

Plant resources continue to play an important, albeit diminished, role in the holistic domestic provision of dietary and medical care among Tatars and Romanians living in Dobruja.

The fact that only half of the reported plant uses were common to both communities confirms that, despite their historically shared environmental and social space, religious divergence has had a negative impact on the possible hybridization of domestic uses of plants.

Given that our findings express the local bio-cultural heritage, these data could provide important

insight into endogenous (community-based) initiatives of rural development, including ecological and gastronomic tourism, sustainable gathering and small-scale trade of local plant resources.

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