RESEARCH ARTICLE

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Medicinal plants on the territory of the Municipality of Dospat

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ABSTRACT
The study presents data on the species diversity of medicinal plants on the territory of the Municipality of Dospat (Western Rhodopes). 332 species were described, grouped in 75 families. The *Asteraceae, Lamiaceae* and *Rosaceae* families were represented by the largest species diversity, perennial herbaceous plants being predominant. There were 72 medicinal plant species of conservation significance, including endemic, rare and protected species**.**

Key words: Municipality of Dospat, Western Rhodopes, medicinal plants, conservation status.

Introduction

According to geological, tectonic and morphographic features, the Rhodope Mountains are divided into two parts - the Western and the Eastern. The Western Rhodopes cover an area of 8732.1 km^2 and are the highest part of the mountains. Their average altitude is 1098 m, with more than half of the area (51.9%) being of 1000 m to 1600 m altitude. They have a medium mountainous landscape with a deeply indented, dense and deeply cut river network. The largest rivers in the Rhodopes rise from the Western part: the Vacha river, the Chepinska river, the Chepelare river, the Arda river, the Dospat river, the Stara Reka river, etc., flowing in deep gorges (Petrov, 1997).

According to the floristic regional division of the country (Jordanov, 1966), the Rhodopes are divided into 3 sub-regions: Western, Central and Eastern.

The Municipality of Dospat falls within the floristic region of the Rhodope mountains and it is a part of the Protected area BG0001030 "Rhodope mountains - Western part" under the Habitats Directive. In 1998 about 96% of the protected area was designated as a Natura 2000 Corine biotope site, because of its European importance for the conservation of rare and endangered habitats, plants and animals.

However, detailed and systematized data on the floristic richness are not available (including medicinal plants). In this regard, the aim of the present study was to explore the species diversity of medicinal plants on the territory of the Municipality of Dospat.

Materials and Methods

The studied territory is situated on an area of 282.7 km^2 in the floristic sub-region of the Western Rhodopes (Figure 1). The relief is typically mountainous and possesses the characteristic geomorphological features of the Western Rhodopes – high altitude, high mountainous ridges and deeply-cut valleys. The terrain is highly rough, which is

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determined by the dense hydrographic network (Brambarov, 2001). The various relief, the specific microclimatic conditions, the significant variation of the altitude (560-1653 m) are the preconditions for the rich floristic diversity**.**

Figure 1. *Map of Dospat Municipality*

The species composition of the medicinal plants was studied during the vegetation seasons of 2013 and 2015. Species identification was carried out at the Department of Botany of the University of Plovdiv “Paisii Hilendareski”, according to Delipavlov & Cheshmedzhiev (2003). Floristic analysis involved the devising of a systematic list of species, taking into account their affiliation to botanical families.

The conservation status of the described medicinal plants was determined according to: Red Data Book of the Republic of Bulgaria. Vol. 1. Plants and Fungi (Peev, 2015), Red List of Bulgarian vascular plants(Petrova&Vladimirov, 2009), Conspectus of the Bulgarian Vascular Flora (Assyov & Petrova, 2006, 2012), Balkan endemics in the Bulgarian flora(Petrova&Vladimirov, 2010), Atlas of Bulgarian endemic plants(Petrova, 2006), Biological Diversity Act. (2002), Medicinal plants Act. (2000) and the IUCN Red List of Threatened Species, Version 2016-3.

Results and Discussion

The medicinal plants found in the territory of Dospat Municipality were 332 plant species. Their distribution according to phylum is as follows: Equisetophyta- 4 species; Polypodiophyta- 5 species; Pinophyta- 3 species and Magnoliophyta- 320 species (Table 1). As it can be seen from Table 1, the medicinal plants found belong to 75 families. The families with the largest species diversity are presented in Figure 2 in descending order as follows: *Asteraceae*- 40 species; *Lamiaceae*- 35 species; *Rosaceae*- 31 species; *Apiaceae*-19 species; *Fabaceae*- 19 species; *Scrophulariaceae*- 15 species; *Caryophillaceae*- 11 species; *Brassicaceae*- 10 species; *Boraginaceae*- 9species; *Ranunculaceae*- 7 species. Three families (*Geraniaceae*, *Polygonacaea* and *Rubiaceae*) were represented by 6 species, three families –by 5 species, six families –by 4 species, seven families –by 3 species and twelve families – by 2 species. The largest number of families, i.e. 34 families were represented by only one species, such as the families *Aquifoliaceae, Chenopodiaceae, Grossulariaceae, Cuscutaceae, Cyperaceae, Juglandaceae, Lythraceae, Menyanthaceae, Oxalidaceae, Parnassiaceae, Polypodiaceae, Valerianaceae*, etc.

The medicinal plants of conservation importance were 21.68% (72 plant species) (Table 1, Figure 3). Among them 9 species were endemics, and two of them were the Bulgarian endemics: *Seseli rhodopaeum* and *Sempervivum erythraeum*. The Balkan endemic medicinal plant species from the territory of Dospat Municipality were seven: *Angelica pančičii*, *Heracleum verticillatum*, *Achillea clypeolata*, *Achillea grandifolia*, *Campanula lanata*, *Haberlea rhodopensis* and *Lathraea rhodopaea*.

Table 1.*Taxonomic composition and conservation status of the medicinal plants found on the territory of Dospat Municipality*

Familia	Species	E	RB	RL	BDA	IUCN
Aceraceae	*Acer campestre* L.					
Aceraceae	*Acer platanoides* L.					
Alliaceae	*Allium scorodoprasum* L.					
Apiaceae	*Aethusa cynapium* L.					
Apiaceae	*Angelica pančičii* Vandas	*		VU		
Apiaceae	*Angelica sylvestris* L.					LC
Apiaceae	*Anthriscus cerefolium (L.)* Hoffm.					
Apiaceae	*Bifora radians* Bieb.					
Apiaceae	*Bupleurum rotundifolium* L.					
Apiaceae	*Carum carvi* L.					
Apiaceae	*Chaerophyllum temulentum* L.					
Apiaceae	*Conium maculatum* L.					
Apiaceae	*Eryngium campestre* L.					
Apiaceae	*Heracleum sibiricum* L.					

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Familia	Species	E	RB	RL	BDA	IUCN
Apiaceae	*Heracleum verticillatum* Pancic	*				
Apiaceae	*Laser trilobum (L.)* Borkh					
Apiaceae	*Laserpitium siler* L.			LC		
Apiaceae	*Oenanthe aquatica (L.)* Poiret					LC
Apiaceae	*Sanicula europaea* L.					
Apiaceae	*Seseli rhodopaeum* Velen.	**		NT		
Apiaceae	*Seseli rigidum* Waldst.&Kit.					
Apiaceae	*Tordylium maximum* L.					
Aquifoliaceae	*Ilex aquifolium* L.		EN	EN	+	
Araceae	*Arum maculatum* L.					
Aristolochiaceae	*Asarum europaeum* L.					
Aspidaceae	*Dryopteris filix-mas (L.)* Schott					
Aspleniaceae	*Asplenium trichomanes* L.					
Asteraceae	*Achillea clypeolata* Sibth.&Sm.	*				
Asteraceae	*Achillea grandifolia* Friv.	*				
Asteraceae	*Achillea millefolium* L.					LC
Asteraceae	*Achillea nobilis* L. ssp. neilreichii *(A. Kerner)*					
Asteraceae	*Anthemis cotula* L.					
Asteraceae	*Anthemis tinctoria* L.					
Asteraceae	*Arctium lappa* L.					
Asteraceae	*Artemisia absinthium* L.					
Asteraceae	*Artemisia annua* L.					
Asteraceae	*Artemisia campestris* L.					
Asteraceae	*Artemisia vulgaris* L.					
Asteraceae	*Bidens tripartita* L.					LC
Asteraceae	*Carduus acanthoides* L.					
Asteraceae	*Carlina acanthifolia All.*					
Asteraceae	*Centaurea cyanus* L.					
Asteraceae	*Centaurea rocheliana (Heuffel)* Dostal					
Asteraceae	*Chamomilla recutita (L.)* Rauschert					
Asteraceae	*Cichorium intybus* L.					
Asteraceae	*Echinops sphaerocephalus* L.					
Asteraceae	*Filago vulgaris* Lam.					
Asteraceae	*Hieracium pilosella* L.					
Asteraceae	*Hypochaeris maculata* L.					
Asteraceae	*Hypochaeris radicata* L.					
Asteraceae	*Inula helenium* L.					
Asteraceae	*Lactuca serriola* L.					
Asteraceae	*Leucanthemum vulgare* Lam.					
Asteraceae	*Matricaria trichophilla* Boiss.					
Asteraceae	*Onopordum acanthium* L.					
Asteraceae	*Petasites hybridus (L.)* P. Gaertner, B. M. &					
Asteraceae	*Pulicaria dysenterica (L.)* Bernh.					
Asteraceae	*Scorzonera hispanica* L.					
Asteraceae	*Senecio nemorensis* L.					

http://www.jbb.uni-plovdiv.bg
DOI: 10.69085/jbb20171059

Familia	Species	E	RB	RL	BDA	IUCN
Asteraceae	*Senecio viscosus* L.					
Asteraceae	*Silybum marianum (L.)* Gaertner					
Asteraceae	*Solidago virgaurea* L.					
Asteraceae	*Tanacetum vulgare* L.					
Asteraceae	*Taraxacum officinale* Weber					
Asteraceae	*Telekia speciosa (Schreber)* Baumg.					
Asteraceae	*Tragopogon pratensis* L.					
Asteraceae	*Tussilago farfara* L.					
Athyriaceae	*Athyrium filix-femina (L.)* Roth					
Betulaceae	*Alnus glutinosa (L.)* Gaertner					LC
Betulaceae	*Betula pendula* Roth					LC
Boraginaceae	*Anchusa officinalis* L.					
Boraginaceae	*Buglossoides arvensis (L.)* I. M. Johnston					
Boraginaceae	*Buglossoides purpurocaerulea (L.)*					
Boraginaceae	*Cynoglossum officinale* L.					
Boraginaceae	*Echium vulgare* L.					
Boraginaceae	*Lithospermum officinale* L.					
Boraginaceae	*Pulmonaria officinalis* L.					LC
Boraginaceae	*Symphytum officinale* L.					
Boraginaceae	*Verbena officinalis* L.					
Brassicaceae	*Barbarea vulgaris R.*Br.					LC
Brassicaceae	*Brassica nigra (L.)* Koch					
Brassicaceae	*Capsela bursa-pastoris (L.)* Medicus					
Brassicaceae	*Cardamine pratensis* L.					
Brassicaceae	*Descurainia sophia (L.)* WebbexPrantl					
Brassicaceae	*Nasturtium officinale* R. Br.					LC
Brassicaceae	*Raphanus raphanistrum* L.					
Brassicaceae	*Sisymbrium loeselii* L.					
Brassicaceae	*Sisymbrium officinale (L.)* Scop.					
Brassicaceae	*Thlaspi arvense* L.					
Campanulaceae	*Campanula persicifolia* L.					
Campanulaceae	*Campanula lanata* Friv.	*	VU	VU	+	DD
Campanulaceae	*Jasione montana* L.					
Caprifoliaceae	*Sambucus ebulus* L.					
Caprifoliaceae	*Sambucus nigra* L.					
Caryophyllaceae	*Agrostemma githago* L.					
Caryophyllaceae	*Herniaria glabra* L.					
Caryophyllaceae	*Herniaria incana* Lam.					
Caryophyllaceae	*Lychnis coronaria (L.)* Desr.					
Caryophyllaceae	*Lychnis flos-cuculi* L.					
Caryophyllaceae	*Saponaria officinalis* L.					
Caryophyllaceae	*Scleranthus annuus* L.					
Caryophyllaceae	*Spergularia rubra (L.)* J.& C.Presl					
Caryophyllaceae	*Stellaria media (L.)* Vill					
Caryophyllaceae	*Stellaria graminea* L.					

http://www.jbb.uni-plovdiv.bg
DOI: 10.69085/jbb20171059

Familia	Species	E	RB	RL	BDA	IUCN
Caryophyllaceae	*Viscaria vulgaris* Rohling					
Chenopodiaceae	*Chenopodium album* L.					
Convolvulaceae	*Convolvulus arvensis* L.					
Cornaceae	*Cornus mas* L.					
Corylaceae	*Carpinus betulus* L.					LC
Corylaceae	*Corylus avellana* L.					LC
Crassulaceae	*Sedum* album L.					
Crassulaceae	*Sedum acre* L.					
Crassulaceae	*Sempervivum erythraeum* Velen	**		LC		
Crassulaceae	*Sempervivum marmoreum* Griseb.					LC
Cucurbitaceae	*Bryonia alba* L.					
Cupressaceae	*Juniperus communis* L.					LC
Cuscutaceae	*Cuscuta europaea* L.					
Cyperaceae	*Eriophorum angustifolium*					LC
Dioscoreaceae	*Tamus communis* L.					
Dipsacaceae	*Scabiosa ochroleuca* L.					
Dipsacaceae	*Succisa pratensis* Moench					
Droseraceae	*Drosera rotundifolia* L.			VU	+	LC
Equisetaceae	*Equisetum arvense* L.					LC
Equisetaceae	*Equisetum palustre* L.					LC
Equisetaceae	*Equisetum sylvaticum* L.					
Equisetaceae	*Equisetum telmateia* Ehrh.					LC
Ericaceae	*Arctostaphylos uva-ursi (L.)* Sprengel			VU		
Ericaceae	*Vaccinium myrtillus* L.					
Ericaceae	*Vaccinium uliginosum* L.					
Ericaceae	*Vaccinium vitis-idaea* L.					LC
Euphorbiaceae	*Euphorbia amygdaloides* L.					
Euphorbiaceae	*Euphorbia cyparissias* L.					
Euphorbiaceae	*Euphorbia helioscopia* L.					
Euphorbiaceae	*Euphorbia myrsinites* L.					
Fabaceae	*Chamaespartium sagittale (L.)* P. Gibbs					
Fabaceae	*Coronilla varia* L.					
Fabaceae	*Galega officinalis* L.					
Fabaceae	*Genista ovata* Waldst.&Kit.					
Fabaceae	*Genista tinctoria* L.					
Fabaceae	*Lathyrus pratensis* L.					
Fabaceae	*Lotus corniculatus* L.					
Fabaceae	*Melilotus alba Medicus*					
Fabaceae	*Melilotus officinalis (L.)* Pallas					
Fabaceae	*Ononis spinosa* L.					
Fabaceae	*Robinia pseudoacacia* L.					LC
Fabaceae	*Trifolium alpestre* L.					
Fabaceae	*Trifolium arvense* L.					
Fabaceae	*Trifolium pannonicum* Jacq.					
Fabaceae	*Trifolium pratense* L.					LC

http://www.jbb.uni-plovdiv.bg
DOI: 10.69085/jbb20171059

Familia	Species	E	RB	RL	BDA	IUCN
Fabaceae	*Trifolium repens* L.					
Fabaceae	*Vicia cracca* L.					
Fabaceae	*Vicia grandiflora* Scop.					LC
Fabaceae	*Vicia* sativa L.					
Fagaceae	*Castanea sativa* Mill		EN	EN		
Fagaceae	*Fagus sylvatica* L.					
Fagaceae	*Quercus frainetto* Ten.					
Fumariaceae	*Corydalis solida (L.)* Clairv.					
Fumariaceae	*Fumaria officinalis* L.					
Gentianaceae	*Centaurium erythraea* Rafin					LC
Gentianaceae	*Gentiana asclepiadea* L.					
Gentianaceae	*Gentiana pneumonanthe* L.					
Geraniaceae	*Geranium macrorrhizum* L.					
Geraniaceae	*Geranium pyrenaicum* Burm.f.					
Geraniaceae	*Geranium robertianum* L.					
Geraniaceae	*Geranium sanguineum* L.					
Geraniaceae	*Geranium sylvaticum* L.					
Geraniaceae	*Erodium cicutarium (L.)* L'Her					
Gesneriaceae	*Haberlea rhodopensis* Friv.	*		LC	+	LC
Globulariaceae	*Globularia aphyllanthes* Crantz					
Grossulariaceae	*Ribes nigrum* L.		CR	CR	+	
Hypericaceae	*Hypericum cerastoides (Spach)* N.K.B.					
Hypericaceae	*Hypericum perforatum* L.					
Hypolepidaceae	*Pteridium aquilinum (L.)* Kuhn					
Iridaceae	*Crocus chrysanthus* Herbert					
Iridaceae	*Crocus pallasii* Goldb					
Iridaceae	*Gladiolus communis* L.					
Juglandaceae	*Juglans regia* L.					NT
Juncaceae	*Juncus inflexus* L.					LC
Lamiaceae	*Acinos arvensis* Dandy					
Lamiaceae	*Acinos suaveolens (Sibth &Sm)* G. Donf.					
Lamiaceae	*Ajuga reptans* L.					
Lamiaceae	*Ballota nigra* L.					
Lamiaceae	*Betonica officinalis* L.					
Lamiaceae	*Calamintha officinalis* L.					
Lamiaceae	*Clinopodium vulgare* L.					
Lamiaceae	*Galeopsis ladanum* L.					
Lamiaceae	*Galeopsis speciosa* Miller					
Lamiaceae	*Galeopsis tetrahit* L.					
Lamiaceae	*Glechoma hederacea* L.					
Lamiaceae	*Lamium maculatum* L.					
Lamiaceae	*Lamium purpureum* L.					
Lamiaceae	*Leonurus cardiaca* L.					
Lamiaceae	*Lycopus europaeus* L.					LC
Lamiaceae	*Marrubium vulgare* L.					

http://www.jbb.uni-plovdiv.bg
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Lamiaceae	*Melittis melissophyllum* L.					
Lamiaceae	*Mentha aquatica* L.					LC
Lamiaceae	*Mentha longifolia (L.)* Hudson					LC
Lamiaceae	*Mentha pulegium* L.					LC
Lamiaceae	*Mentha spicata* L.					LC
Lamiaceae	*Nepeta cataria* L.					
Lamiaceae	*Origanum vulgare* L.					
Lamiaceae	*Prunella vulgaris* L.					LC
Lamiaceae	*Salvia glutinosa* L.					
Lamiaceae	*Salvia pratensis* L.					
Lamiaceae	*Salvia verticillata* L.					
Lamiaceae	*Scutellaria galericulata* L.					LC
Lamiaceae	*Stachys germanica* L.					
Lamiaceae	*Stachys sylvatica* L.					
Lamiaceae	*Teucrium chamaedrys* L.					
Lamiaceae	*Thymus longicaulisC*. Presl					
Lamiaceae	*Thymus sibthorpii* Benth.					
Lamiaceae	*Thymus pannonicus* All					
Lamiaceae	*Thymus pulegioides* L.					
Liliaceae	*Colchicum autumnale* L.					LC
Liliaceae	*Lilium martagon* L.					
Liliaceae	Scila bifolia L.					
Liliaceae	*Veratrum album* L.ssp.lobelianum *(Bernh.)*					
Linaceae	*Linum catharticum* L.					
Lythraceae	*Lythrum salicaria* L.					LC
Malvaceae	*Malva neglecta* Wallr.					
Malvaceae	*Malva pusilla* Sm.					
Malvaceae	*Malva sylvestris* L.					
Menyanthaceae	*Menyanthes trifoliata* L.		EN	EN	+	LC
Monotropaceae	*Monotropa hypopitys* L.					
Onagraceae	*Epilobium parviflorum* Schreber					LC
Orchidaceae	*Orchis coriophora* L.					
Orchidaceae	*Orchis morio* L. ssp. picta Loisel. Arcangeli					
Orobanchaceae	*Orobanche minor* Sm.					
Oxalidaceae	*Oxalis acetosella* L.					
Papaveraceae	*Chelidonium majus* L.					
Papaveraceae	*Papaver rhoeas* L.					
Parnassiaceae	*Parnassia palustris* L.					LC
Pinaceae	*Picea abies (L.)* Karsten					LC
Pinaceae	*Pinus sylvestris* L.					LC
Plantaginaceae	*Plantago major* L.					LC
Plantaginaceae	*Plantago subulata* L.					
Plantaginaceae	*Plantago lanceolata* L.					
Plantaginaceae	*Plantago scabra* Moench					
Plantaginaceae	*Plantago media* L.					

http://www.jbb.uni-plovdiv.bg
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Familia	Species	E	RB	RL	BDA	IUCN
Poaceae	*Briza media* L.					
Poaceae	*Cynodon dactylon (L.)* Pers.					
Polygalaceae	*Polygala major* Jacq					
Polygalaceae	*Polygala vulgaris* L.					
Polygonaceae	*Bistorta major* S.F.Gray					
Polygonaceae	*Persicaria hydropiper (L.)* Opiz					LC
Polygonaceae	*Persicaria maculata (Rafin)* S. F. Gray					
Polygonaceae	*Polygonum aviculare* L.					
Polygonaceae	*Rumex acetosa* L.					
Polygonaceae	*Rumex alpinusL.*					
Polypodiaceae	*Polypodium vulgare* L.					
Primulaceae	*Anagallis arvensis* L.					
Primulaceae	*Lysimachia nummularia* L.					LC
Primulaceae	*Primula elatior (L.)* Hill					
Primulaceae	*Primula veris* L.					
Pyrolaceae	*Orthilia secunda (L.)* House					
Pyrolaceae	*Pyrola chlorantha* Swartz					
Pyrolaceae	*Pyrola rotundifolia* L.			DD		
Ranunculaceae	*Caltha palustris* L.					LC
Ranunculaceae	*Clematis vitalba* L.					
Ranunculaceae	*Ficaria verna* Hudson					
Ranunculaceae	*Helleborus odorus* Waldst&Kit.					
Ranunculaceae	*Isopyrum thalictroides* L.					
Ranunculaceae	*Ranunculus repens* L.					
Ranunculaceae	*Ranunculus sceleratus* L.					LC
Rosaceae	*Agrimonia eupatoria* L.					
Rosaceae	*Agrimonia procera* Wallr.					
Rosaceae	*Alchemilla glabra* Neygenf					
Rosaceae	*Alchemilla glaucescens* Wallr.					
Rosaceae	*Alchemilla monticola* Opiz					
Rosaceae	*Alchemilla reniformis* Buser					
Rosaceae	*Crataegus monogyna* Jacq.					
Rosaceae	*Filipendula ulmaria (L.)* Maxim.					LC
Rosaceae	*Filipendula vulgaris* Moench					
Rosaceae	*Fragaria vesca* L.					
Rosaceae	*Geum coccineum* Sibbth.&Sm.					
Rosaceae	*Geum montanum* L.					
Rosaceae	*Geum rivale* L.					LC
Rosaceae	*Geum urbanum* L.					
Rosaceae	*Malus sylvestris* Miller					DD
Rosaceae	*Potentilla argentea* L.					
Rosaceae	*Potentilla erecta (L.)* Rauschel					
Rosaceae	*Potentilla inclinata* Vill.					
Rosaceae	*Potentilla neglecta* Baumg.					
Rosaceae	*Potentilla palustris (L.)* Scop.			VU	+	

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Polygonaceae	*Bistorta major* S.F.Gray					
Polygonaceae	*Persicaria hydropiper (L.)* Opiz					LC
Polygonaceae	*Persicaria maculata (Rafin*) S. F. Gray					
Polygonaceae	*Polygonum aviculare* L.					
Polygonaceae	*Rumex acetosa* L.					
Polygonaceae	*Rumex alpinus* L.					
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Pyrolaceae	*Pyrola rotundifolia* L.			DD		
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Ranunculaceae	*Clematis vitalba* L.					
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Rosaceae	*Crataegus monogyna* Jacq.					
Rosaceae	Filipendula *ulmaria (L.)* Maxim.					LC
Rosaceae	*Filipendula vulgaris* Moench					
Rosaceae	*Fragaria vesca* L.					
Rosaceae	*Geum coccineum* Sibbth.&Sm.					
Rosaceae	*Geum montanum* L.					
Rosaceae	*Geum rivale* L.					LC
Rosaceae	*Geum urbanum* L.					
Rosaceae	*Malus sylvestris* Miller					DD
Rosaceae	*Potentilla argentea* L.					
Rosaceae	*Potentilla erecta (L.)* Rauschel					
Rosaceae	*Potentilla inclinata* Vill.					
Rosaceae	*Potentilla neglecta* Baumg.					
Rosaceae	*Potentilla palustris (L.)* Scop.			VU	+	

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DOI: 10.69085/jbb20171059

Familia	Species	E	RB	RL	BDA	IUCN
Rosaceae	*Potentilla reptans* L.					
Rosaceae	*Prunus spinosa* L.					LC
Rosaceae	*Rosa canina* L.					
Rosaceae	*Rosa corymbifera* Borkh					
Rosaceae	*Rosa gallica* L.					
Rosaceae	*Rubus caesius* L.					
Rosaceae	*Rubus idaeus* L.					
Rosaceae	*Rubus saxatilis* L.					
Rosaceae	*Sanguisorba minor* Scop.					
Rosaceae	*Sanguisorba officinalis* L.					LC
Rosaceae	*Sorbus aucuparia* L.					
Rubiaceae	*Cruciata laevipes* Opiz					
Rubiaceae	*Galium aparine* L.					
Rubiaceae	*Galium lucidum All.*					
Rubiaceae	*Galium odoratum (L.)* Scop.					
Rubiaceae	*Galium verum* L.					
Rubiaceae	*Rubia tinctorum* L.					
Salicaceae	*Populus alba* L.					
Salicaceae	*Populus tremula* L.					
Salicaceae	*Salix alba* L.					LC
Salicaceae	*Salix caprea* L.					
Salicaceae	*Salix purpurea* L.					
Scrophulariaceae	*Euphrasia rostkoviana* Hayne					
Scrophulariaceae	*Gratiola officinalis* L.					LC
Scrophulariaceae	*Lathraea rhodopaea* Dingler	*		NT	+	
Scrophulariaceae	*Lathraea squamaria* L.					
Scrophulariaceae	*Linaria vulgaris* Miller					
Scrophulariaceae	*Rhinanthus minor* L.					
Scrophulariaceae	*Scrophularia canina* L.					
Rubiaceae	*Galium verum* L.					
Scrophulariaceae	*Verbascum densiflorum* Bertol.					
Scrophulariaceae	*Verbascum phlomoides* L.					
Scrophulariaceae	*Veronica anagallis-aquatica* L.					LC
Scrophulariaceae	*Veronica arvensis* L.					
Scrophulariaceae	*Veronica beccabunga* L.					LC
Scrophulariaceae	*Veronicachamaedrys* L.					
Scrophulariaceae	*Veronica officinalis* L.					
Scrophulariaceae	*Veronica prostrata* L.					
Solanaceae	*Atropa belladona* L.			VU		
Solanaceae	*Hyoscyamus niger* L.					
Solanaceae	*Datura stramonium* L.					
Solanaceae	*Solanum dulcamara* L.					
Solanaceae	*Solanum nigrum* L.					
Typhaceae	*Typha latifolia* L.					LC
Urticaceae	*Urtica dioica* L.					LC

http://www.jbb.uni-plovdiv.bg
DOI: 10.69085/jbb20171059

Familia	Species	E	RB	RL	BDA	IUCN
Valerianaceae	*Valeriana officinalis* L.					
Violaceae	*Viola hirta* L.					
Violaceae	*Viola odorata* L.					
Violaceae	*Viola tricolor* L.					

There were 5 protected species, included in the Red Book of the Republic of Bulgaria, Volume 1. Plants and fungi (2015) in the following categories: Vulnerable (VU) - *Campanula lanata*, Endangered (EN) - *Ilex aquifolium*, *Castanea sativa* and *Menyanthes trifoliata*, and Critically Endangered(CR) - *Ribes nigrum.*

There were 16 species that are included in the Red List of Bulgarian vascular plants (2009): *Pyrola rotundifolia* (in the category Data Defficient- DD); *Laserpitium siler*, *Sempervivum erythraeum* and *Haberlea rhodopensis* are (in the category Least Concern - LC); *Seseli rhodopaeum* and *Lathraea rhodopaea (*Near Threatened -NT); six species in the category Vulnerable -VU)- *Angelica pančičii*, *Campanula lanata*, *Drosera rotundifolia*, *Arctostaphylos uva-ursi*, *Potentilla palustris* and *Atropa belladona*; the species *Ilex aquifolium*, *Castanea sativa* and *Menyanthes trifoliata* are Endangered (EN), and the species *Ribes nigrum* is Critically Endangered(CR).

In the Biological Diversity Act (2002) 8 species are included. They all are included in Annex 3 of the same Act and they are announced protected on the territory of the whole country (Table 1).

In the Red List of Threatened Plants of the International Union for Conservation of Nature -IUCN (2015) 57 of the medicinal plant species described in the studied area are included. From them 54 go in the category of Least Concern (LC), *Malus sylvestris* and *Campanula lanata* – in Data Deficient (DD), and the species *Juglans regia* is in Near Threatened (NT) category.

The described medicinal plants were found mainly in grassland and pasture habitats, however, there is a risk the environmental condition to get worse due to the fact that pastures and grasslands are underused.

Some of medicinal plants of conservation importance are presented in Figure 4.

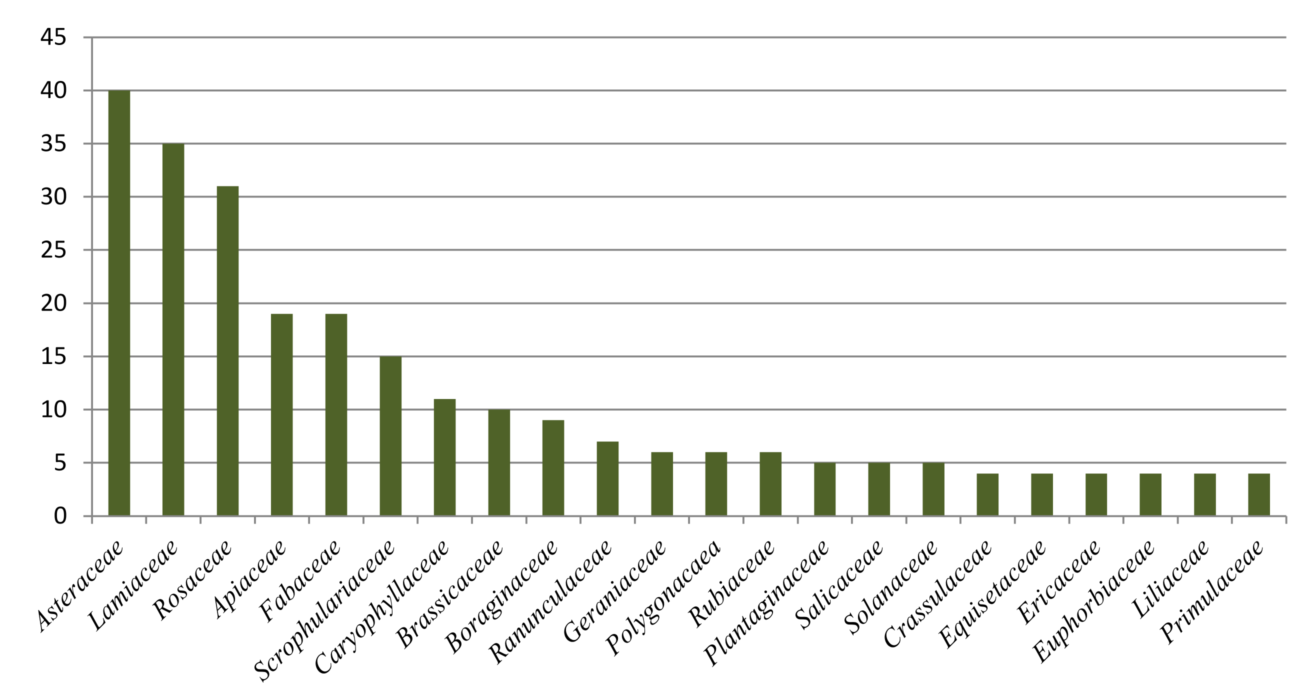

Figure 2. *Number of the identified medicinal plant species grouped in families.*

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DOI: 10.69085/jbb20171059

RESEARCH ARTICLE

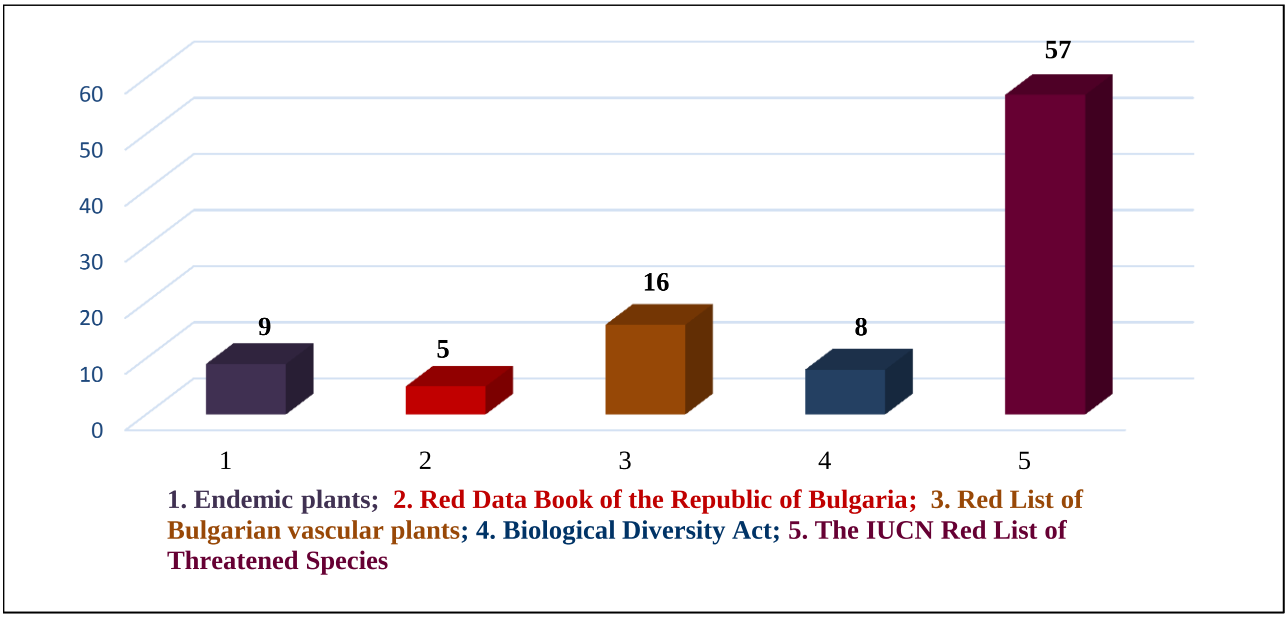

Figure 3. *Medicinal plants of conservation importance*

Figure 4. *Pictures of some medicinal plants of conservation importance*

Legend:1-*Ribes nigrum* : Red List (**CR**), Red Book (**CR**), BDA; 2-*Parnassia palustris*: IUCN-**LC**; 3-*Geum rivale*: IUCN-**LC**; 4-*Seseli rhodopaeum*: Bulgarian endemic, Red List-**NT**; 5-*Campanula lanata*: Balkan endemic, Red Book **(VU)**, Red List (**VU**), BDA, IUCN (**DD**); 6-*Achillea grandifolia*: Balkan endemic.

http://www.jbb.uni-plovdiv.bg
DOI: 10.69085/jbb20171059

Conclusion

The floristic analysis showed that the region of Dospat Municipality is rich with medicinal plants. There were 332 species found which accounts for more than 42% of the medicinal plant species listed in the Medicinal Plants Act for Bulgaria. They belong to 75 families, primarily to the *Magnoliophyta* division. The families with the largest species diversity were represented *by Asteraceae*, *Lamiaceae* and *Rosaceae*. The medicinal plants of conservation importance represent 21.68% of all the species described. The data obtained can be very useful for the further assessment of the conservation potential as well as for sustainable use of medicinal plant resources from this territory, by strictly following the legal regulations.

Disclosure statement

The authors have declared that no competing interests exist.

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