BOOK OF PROCEEDINGS

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PREFACE

Dear Colleagues,

In your hands are the *Proceedings* of the 7th International Scientific Agricultural Symposium "AGROSYM 2016", which I hope you will find useful in your research, education and professional activities and endeavors.

AGROSYM 2016 themes cover all branches of agriculture and are divided into seven sessions: 1) Plant production, 2) Plant protection and food safety, 3) Organic agriculture, 4) Environmental protection and natural resources management, 5) Animal husbandry, 6) Rural development and agro-economy, and 7) Forestry and agroforestry.

Keynote papers dealt with organic agriculture from different perspectives as well as international cooperation in agricultural and rural development, climate change and forestry. Organic farming is a holistic production management system of agricultural, food and other products, combining good agricultural practices, a high degree of biodiversity, conservation of natural resources, and application of high standards of animal welfare.

Food production, food security and production of raw materials for other industries determine multiple environmental, economic and social roles of agriculture (including crop production, animal husbandry, forestry and fisheries) in all countries, both developed and developing ones, as well as its multi-functionality; including its contribution to rural development. This is clearly highlighted in the numerous contributions included in these *Proceedings* alongside the challenges that agriculture sector is facing and the negative impacts of industrial agriculture on the environment.

I do believe that the research results reported here will be significant in the dissemination of knowledge to the wider audience about the importance of agriculture as a strategic sector in many countries.

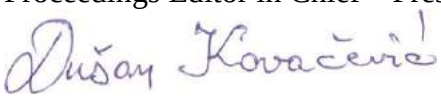
AGROSYM 2016 made an important contribution to the agriculture theory, knowledge and practice in different areas. During the four-day symposium on October 6-9, 2016, over 1100 contributions were presented (either as oral or poster presentations) to more than 1000 participants representing 78 countries.

The *Proceedings* comprise an edited selection of the papers submitted to the symposium. Each paper included in the *Proceedings* was positively reviewed by referees.

AGROSYM 2016 was made possible through the commitment and contributions of a wide range of partners and sponsors. Many thanks to all authors, reviewers, session moderators and colleagues for their help in editing these *Proceedings*. Special thanks go to all co-organizers for their unselfish collaboration and comprehensive support.

East Sarajevo, 05 October 2016

Prof. Dušan Kovačević, Faculty of Agriculture, University of Belgrade
Proceedings Editor in Chief – President of the Scientific committee of AGROSYM 2016



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Introduction to SWG GIZ project 2970

1. PLANT PRODUCTION

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MEDİCİNAL AND AROMATİC PLANT POTENTİAL OF RİZE/TURKEY

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Abstract

Rize has a different and special flora because of its geographical position, climate, and topography. The natural plants of Rize have a very big usage potential and value in some sort of industrial branches. In particular, the different activity traits of natural plant oils and extracts have formed the basis of many applications, including raw and processed food preservation, pharmaceuticals, alternative medicine and natural therapies. Rize is located in the northeast Anatolia to the east of coastline of Eastern Black Sea between 40^{o} 22' and 41 ^{o} 28' meridians east and 40 ^{o} 20' and 41 ^{o} 20' parallels of latitude north. Rize is surrounded by District of Trabzon in the west, İspir District of Erzurum in the south, Yusufeli District and Arhavi District of Artvin in the east and Black Sea in the north. It covers an area of 3,920 km2 except lakes. It has a mountainous and rugged terrain. Rize region is highly rich in terms of forested land and plant species diversity. This study gives brief information about medicinal and aromatic plant species in Rize. Our statement is that plants, which are grown naturally in our province represent a potential source of abundance, should be utilized for medical and economic purposes, and also researched for more potential uses in medicine and pharmacy.

Keywords: *medicinal and aromatic plants, Rize*

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Introduction

Turkey is one of the countries with richest plant diversity in the Mediterranean (Davis 1965-1986; Davis *et al*., 1988; Guner *et al*., 2001). A number of human races and tribes have settled here during different periods bringing in different cultures and customs. As a result of this we
come across a great accumulation of knowledge of traditional medicine in the country. A recent survey of traditional and folk medicine in Turkey has revealed that most of these plants are still in use by the local inhabitants (Yesilada and Sezik, 2003).

Turkey is located in three biogeographical regions: Anatolian, Mediterranean, the Black Sea region, and their transition zones. Its climatic and geographical features change within short intervals of space due to the country's position – a bridge between two continents. Thanks to its location, Turkey's biological diversity can be compared to that of a small continent: the country's territory consists of forests, mountains, steppe, wetlands, coastal and marine ecosystems and different forms and combinations of these systems. This extraordinary ecosystem and habitat diversity has produced considerable species diversity (Kahraman *et al*., 2011; Kahraman *et al*., 2012). Regarding biodiversity the Black Sea region belongs to one of the richest regions of Turkey. Totally 2239 species are present in the East Black Sea region, 514 of them are endemic and the endemism ratio is ca. 23 %. More than half of the plants distributed at the East Black Sea region are present in the Rize province. 70 % of the plants are of medicinal and aromatic value.

Plant diversity in Rize

Floristic studies carried out in Rize revealed that 2239 species diversity and 222 endemic plant taxons are presnet in this province (Anşin, 1980). Regarding species diversity Rize is one of the

richest provinces inTurkey. İn an TUBİTAK founded project 1430 different plant species and 110 endemic plant species were detected in Rize. 15 of this species were new records for the Turkish flora, 4 were new records were new for the world fauna (Güner *et al*., 1987). Therefore this region displays rich biological diversity.

Medicinal and Aromatic Plants in Rize

Because Turkey is located in a region of three crossing floristic regions it displays a rich plant diversity. One of this locations is the Rize province at the East Black Sea region. There are citations that about medicinal and aromatic plants are present in this region but the correct number is still unknown (Gül, 2014). Birinci (2008) stated that 117 plants are used for medicinal and aromatic purposes. Yaldız et al. (2010) pointed out that farmers in Rize have knowledge only about the production of lime tree, black sesame, chili pepper, cumin, cinnamon, hibiscus, mint, pepper, green tea and ginger; the study revealed that the same farmers had no knowledge about other medicinal and aromatic plants.

Studies investigating the province rize grouped the present plant species. Akbulut (2013) seperated the species according tp their ethnobotanical features: plants fopr medicinal uses, plants used as food, plants used in animal healig and fodder, plants used as spice and tea, plants used for firing nad plnats used for different purposes. Further, Yaldız (2010) grouped traded and natural plants in Rize as natural tea used plants, plants saled for its flowers, plants used as spice, plants used for food, gum and resin obtained plants, plants used in animal healing, plants used as insectisides, plants for paint production and plants used for medicine raw material abroad.

Table 1 illustrates plant species in Rize used for medicinal purposes.

Tabel 1. Plants used for medicinal purposes

Plant name	**Used for**	**Plant name**	**Used for**
Achillea millefolium subsp. *millefolium*	Breath clearing, wounds, haemorrhoid	*Castanea sativa* Mill.	Rough, dropping blood pressure
Alchemilla crinita Buser	Tranquilizer, wound healing,	*Centaurium erythraea* Koth. subsp. *turcicum*	Haemorrhoid
Alnus glutinosa (l.) Gaertn subsp. *barbata* (C.A. Mey.) Yalt	Haemorrhoid, wound cleaning, tummy ache, astringent	*Chelidonium majus* L.	Eczama, acne
Anthemis cotula L.	Gynaecological diseases	*Circium arvense* (L.) Scop. subsp. *vestitum* (Wimmer&Grab.) Petrak	Diabetes
Anthemis tinctoria L. var. pallida DC.	Gynaecological diseases, Difficulty in breathing	*Convolvulus arvensis* L.	Arthralgia
Anthemis vulgaris	Appetising, antifebrile	*Coryllus avellana* subps. *avellana*	Cough
Atropa bella-donna		*Crataegus monnogyna* Jacq. subsp. *monnogyna*	Roborant
Asplenium trichomanes L.	Tummy ache, haemorrhoid	*Cyclamen coum* Miller	Sinusitis
Ballota nigra	Sleeplesness, cough	D*actylorhiza urvilleana* (Steudel) Baumann & Künkele	Roborant
Bellis perennis L.	Cold, diuretic	*Datura stramonium*	Difficulty in breathing, painkiller
Calluna vulgaris (L.) Hull	Cold, cough	*Digitalis ferruginea* L. subsp. *schischkinii* (Ivan) Werner	Urologic problems
Camellia sinensis	Cancer, diarrhea precluison	*Dioscorea communis* (L.) Caddick& Wilkin	Body pain
Carduus acanthoides subps. *sintenisii* Kazmi in Mitt.	Antifebrile, increase in urine	*Diospyros lotus* L.	Gastritis, prevention of diarrhea

Developed using Akbulut (2013), Güner et al. (1987) and Yaldız (2010)

Tabel 1. Plants used for medicinal purposes (continued)

Plant name	**Used for**	**Plant name**	**Used for**
Dryopteris filix-mas (L.) Schott	Tummy ache	*Polygonum persicaria* L.	Haemorrhoid, mouthwash of gingival bleeding
Equisetum arvense L.	Blood purification, urological problems, quinsy	*Rhododendron caucasicum* Pall.	Difficulty in brathing, cancer
Euphorbia L.	Wound, wart	*Rhododendron ponticum* L. *subsp. ponticum*	Headache, eczema
Fagus orientalis Lipsky.	Tummy ache, dropping worms	Rosa canina L.	Diabetes, cold
Ficus carica L. subsp. *carica*	Wart, tootache, chilblain	*Rubinia pseudoacacia* L.	Tranquilizer, stoppage,
Frangula alnus Miller. subsp. *alnus*	Haemorrhoid	*Rubus idaeus* L.	Cancer, eczema
Hedera helix L:	Tummy ache	*Rumex acetosella* L.	İgestive disorders, gingivitis, tummy ache, sinusitis
Helichrysum plicatum DC. subsp. *plicatum*	Dropping kidney sand	*Salvia glutinosa* L.	Wound, burnt
Helleborus orientalis L.	Dropping worms	*Sambucus ebulus* L.	Haemorrhoid, rheumatic pain
Hypericum perforatum L.	Regulating blood pressure, tranquilizer, haemorrhoid	*Sambucus nigra* L.	Haemorrhoid
Hypericum xylosteifolium (Spach) Robson	burnt	*Sanicula europaea* L.	Difficulty in breathing, tummy ache in babys
Juglans regia L.	Diabetes, reducing cholesterol, asthma	*Sedum spurium* M. Bieb.	callosity
Lamium pupureum L. var. *purpureum*	Balancing cholesterol, roborant	*Smilax excelsa* L.	Renewal of brain cells
Laurocerasusofficinalis Roem.	Diabetes, ulcer, kidney diseases, cough	*Solidago virgaurea* L. subsp. *virgaurea*	Body immaflation
Laurus nobilis L.	Reducing cholesterol, flu, cold, tootache, rheumatism	*Stachys arvensis*	Haemorrhoid
Lycopodium clavatum L.	Body irritants	*Stachys macrantha* (C. Koch.) Stearn.	Relief od stomache
Malva sylvestris	Breathing difficulty, antifebrile	*Symphytum asperum* Lepech.	cough
Mentha aquatica L.	Nauseation, gastritis, bad breath	*Panacetum partenium* (L.) Schultz Bip.	Body immaflation
Morus nigra L.	Cancer, reducing blood sugarici	*Taraxacum officinale*	costiveness
Nasturtium officinale R. Br.	Haemorrhoid, prostat diseases, tummy ache	*Thymus pseudopulegioides* Klokov Des.-Shost	Cold, stomache diseases
Origanum vulgare L. subsp. *viride*	Cold	*Tilia rubra* DC. subsp. *caucasica* (Rups.) V. Eng	Diaphoretic, cough, asthma
Oxalis corniculata	costiveness	*Trachystemon orientalis*	İntestine disorders
Picea orientalis (L.) Link	İnflammated wounds	*Tussilago farfara*	Cough, expectorant
Phylitis scolopendrium (L.) Newn.	Haemorrhoid, tummy ache, arteriosclerosis, burnt	*Verbascum thapsus*	cold
Physalis alkekengii L.	Blood pressure, diabetes	*Viscum album*L.	Heart diseases, Haemorrhoid
Phytolocacca americana L.	Painkiller	*Urtica dioica* L.	Cancer,haemorrhoid, rheumatic pain

Developed using Akbulut (2013), Güner et al. (1987) and Yaldız (2010)

İn Table 1 not only herbaceous medicinal plants are listed, also shrubs and trees are present. As can be seen from the Table different plants fromdifferent specieshave widely use in the treatment of different diseases and other aims.
İn Table 2 we can see the plants used as natural tea and spice in the Rize province. Of course, we have to mention black tea (*Camellia sinensis* L.) which is of big economic value fort he local farmers. Plants usage as tea and spice known by local people are listed in this table.

Tabel 2. Plants used as tea and spice

Plant name	**Used for**	**Plant name**	**Used for**
Achillea millefolium	Tea	*Mespilus germanica*	Fruit stew
Angelica sylvestris	Tea	*Origanum vulgare* L.subsp. *viride*	Spice
Buxus sempervirens	Tea	*Physalis alkekengi*	Tea
Calamintha grandiflora	Spice, tea	*Plantago major*	Tea
Camellia sinensis	Tea	*Plantago lanseolata*	Tea
Castanea sativa	Tea	*Primula vulgaris* Huds.	Tea
Daphne glomerata	Spice	*Rhus coriaria*	Spice
Fragaria vesca	Syrup	*Rosa canina*	Tea
Fragaria viridis	Syrup	*Rubus idaeus*	Tea
Galium aperine	Tea	*Salvia glutinosa*	Tea
Hippophae rhamnoides	Tea	*Tanacetum parthenium*	Spice
Humulus lupulus	Tea	*Thymus pseudopulegioides*	Tea, spice
Hypericum perforatum	Tea	*Tilia rubra* subsp. *caucasica*	Tea
Laurocerasus officinalis	Tea	Urtica dioica	Tea
Matricaria camomilla	Tea	Vaccinium myrtillus	Tea
Mentha aquatica	Spice	Vaccinium vitisidea	Tea
Mentha longifolia	Tea, spice	Verbadcum thapsus	Tea
Mentah piperita	Tea, spice		

Developed using Akbulut (2013), Güner et al. (1987) and Yaldız (2010)

Of course the number of medicinal and aromatic palnst are not restricted with the listed plant species. More research is necessary to cover all potential plants in a whole survey. Furthermore chemical analysis is needed to determine the compounds in investigated species
İn areas where agricultural land are limited is it necessary to detect medicinal and aromatic plants for employment increase. The nexty step has to be the introduction of plants with high economical value to local farmers, to develop an sustainable plant collection strategy and the education of farmers regarding medicinal and aromatic plants.
İf these steps are handled accurately and with correct marketing strategies based on market demand local farmers will get higher economical income and many socail benefits.

Conclusion

Almost all people living in rural areas are engaged in agriculture which plays a key role in rural development. For this reason, arrangements in crop planning and marketing and sales are extremely important. While making arrangements, the regional priorities and the climatic data should be considered and alternative agricultural crops must be recommended. Additionally, agricultural production and quality should be ameliorated and the living standards of people living in rural areas should be improved by using new agricultural production techniques (Samet and Cikilli, 2015).
Medicinal and aromatic plants are of big importance for additive plant production Rize. Rize contains very rich natural resources. Therefore detailed ethno pharmacological and botanical

research is necessary to find out the other herb families and species of economic value beside determined ones.

Many endemic and endangered species are still collecting and selling by local people. These activities could bring some profits to the local people but also dangers many endemic species and prevents the sustainability (Toksoyet al., 2008).

Current political and economical practices could not obstruct the incorrect usage of the natural resources. Some suggestions from determined results are given below, to provide the sustainability and manageability of the natural herb resources (Toksoy, 2010).

i. The herb collecting from the nature, (used domestically or for exportation) must be regularly and sustainable. Institutional and educational studies must be increased.

ii. Production and marketing activities have to be coordinated with the global markets and needs

iii. Blacksea region has very rich natural herb resources, but the people don't have enough information about these resources. This deficiency must be eliminated with right methods, like education activities.

iv. The need of scientific researches is very high. It is highly recommendable to making botanical and pharmacological researches.

References

Davis PH. (1965-1985) Flora of Turkeyand teh East Aegean Islands. Vol 1-9EdinburghPress Edinburgh.

Davis PH., Mill RR., Tan K. (1988). Floa of Turkey and the East Aegean Islands. Vol10. Edinburgh UNivesity Press, Edinburgh.

Gül V. (2014). A General View to Medicinal and Aromatic Plants Belonging to Rize Province. Review Article. Iğdır University, İnstitue of Scince and Technology 4 (4): 97-107.

Güner, A., Vural M., Sorgun K. (1987). Vegetation of the Flora of Rize and Pollen Analysis of Local HOneys. TUBİTAK, Projerct No. TBAG-650.

Güner A., OzhatayN., Ekim T. (2001). Flora of Turkeyand the East AegeanISlands, Volume11, Edinburgh University Press, Edinburgh.

Kahraman A., Doğan M., Celep F. (2011). Salvia siirtica sp. nov. (Lamiaceae) from Turkey. Nord J Bot 29: 397–401.

Kahraman A., Bagherpour S., Karabacak E., Doğan M., Doğan H.M., Uysal İ., Celep F. (2012). Reassessment of conservation status of Salvia L. (Lamiaceae) in Turkey II. Turk J Bot 36: 103–124.

Samet H., Cikili Y. (2015). Importance of medicinal and aromatic plants as an alternative crop in the rural development of Turkey. The Journal of Rural and Community Development, 10(4), 75-84.

Toksoy D., Bayramoglu M., Hacisalihoglu S. (2010). Usage and the economic potential of the medicinal plants in Eastern Black Sea Region of Turkey. Journal of Environmental Biology September 31(5) 623-628.

Yaldız, G., Yüksek, T., Şekeroğlu N. (2010). İmportance of Medicinal na Aromatic Plants in Development of Forest and Coastal Villages of Rize Province. III. National Forestry Congress. 1176-1186.

Yesilada E., Sezik E. (2003). A survey on the traditional medicine in Turkey: semi-quantitative evaluation of the results. In: Singh, V.K., Govil, J.N., Hashmi, S., Singh, G. (Eds.), Recent Progress in Medicinal Plants, vol. 7: Ethnomedicine and Pharmacognosy II. Studium Press LLC, Houston, TX, USA; pp. 389–412.