RESEARCH PAPER

Autochthonous grapevine varieties as an important component for the development of rural tourism

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Abstract
Every traditional wine-growing region in the world, especially in the EU, estimates its indigenous/autochthonous grapevine varieties. When a variety is indigenous/ autochthonous, the wine made from it is indigenous too. Autochthonous grapevine varieties and wines have qualities we would like to share to the others: originality, unrepeatability, exceptionality, and, sometimes, uniqueness. Albania and Kosovo are two Mediterranean countries with a very special location for the origin and development of viticulture. French historian Henri Enjalbert considered Albania as the last European refuge of the vine after the Ice Age. According to the classification of the EU winegrowing regions, Albania and Kosovo belong to the region C, with four sub-regions, such as the coastal plains (Western lowlands) up to 300 m a.s.l, the central hilly region (301-600 m a.s.l), the Eastern sub-mountainous region (601-850 m a.s.l), and mountainous region (highlands) (851-1100 m a.s.l). The favourable geographic location, climate, terrain and soil, as well as the ancient tradition of vineyard cultivation in Albania and Kosovo, has contributed to the creation, adaptation, sustainability, preservation and spread of a large number of autochthonous ecotypes and varieties. These ecotypes and varieties/cultivars are distinguished for resistance, environmental adaptability and high productivity at the belonging regions. The most common autochthonous ecotypes and varieties of Albania are "Shesh i Bardhë", "Shesh i Zi", "Cëruja", "Valteri", "Kallmet", "Manakuq", "Vranac", "Vlosh", "Pulës", "Debina e Bardhë", "Debina e Zezë", "Serina e Bardhë", "Serina e Zezë", etc., which belong to different wine growing regions of the country. The most common traditionally used autochthonous varieties of Kosovo are "Prokupac" and "Smedereva". The products deriving from the autochthonous grapevine varieties, such as wine, brandy, *raki,* etc., and their by-products are highly demanded by the market and are a promising tool for the development of the "*homemade*" rural (agro) tourism. The special taste, flavour, nutritional values, denomination and typicality of those products considerably vary on the climate and soil characteristics, as well as in the tradition of specific region. Under the framework of "100+ villages" Project, the autochthonous grapevine varieties are one important component on the local rural tourism in Albania.

Key words: *agro-tourism, climate, product, region, rural, wine.*

Introduction

Grapevine is a plant that grows in the northern hemisphere, in the latitude of 35º-45º (Sotiri *et al.,* 1973), where the optimal growth and development occurs at 25-30^{o}C. At 35-40^{o}C, the vine needs periodical irrigations, while over 40^{o}C, the vegetative development slows down and a slight burn of the sprouts and grape skin begins. During the winter dormancy, when the temperatures fall below -15 to -18^{o}C the branches, sprouts and buds are being damaged (Dragusha & Susaj, 2018).

Regionalization of vineyards in Albania and Kosovo

Albania and Kosovo are two Mediterranean countries with a very special location for the origin and development of viticulture, because of the very favorable climate and soil conditions for the growth and the development of viticulture. Albania claims on of the Europe's longest histories of vine growing. French historian Henri Enjalbert considered Albania, the Ionian Islands of Greece, and southern Dalmatia in what is now Bosnia and Herzegovina may well have been the last European refuge of the vine after the Ice Age. (Robinson, 2009; Susaj and Susaj, 2015; Kullaj *et al.,* 2014). The main role in the creation and spread of clones, ecotypes, cultivars and vineyards are climate factors, particularly temperature. The temperature regime in Albania and Kosovo favors the growth and development of vineyards and a large number of cultivated, introduced and autochthonous cultivars. According to the classification of the EU winegrowing regions and location of *Vitis sylvestris*, Albania and Kosovo belong to the region C, with four sub-regions (Susaj *et al.,* 2014, Çakalli *et al.,* 2007; Susaj *et al.,* 2005; WVS, 2018), such as:

- the 1st *Vitis* Area includes the coastal lowland area and hills plains (Western lowlands) up to 300 m a.s.l (Delvinë, Sarandë, Vlorë, Fier, Lushnjë, Peqin, Kavajë, Durrës, Krujë, Kurbin, Lezhë, Shkodër, and Koplik).
- the 2nd *Vitis* Area includes the central hilly region (301-600 m a.s.l) (Mirditë, Mat, Tiranë, Elbasan, Berat, Kuçovë, Gramsh, Mallakastër, Tepelenë, Përmet, and Gjirokastër). In this *Vitis* Area is cultivated the main part of the vineyards and are spread the highest number of autochthonous / introduced varieties and cultivars of Albania.
- the 3rd *Vitis* Area includes the Eastern sub-mountainous region (601-850 m a.s.l) (Tropojë, Pukë, Has, Kukës, Dibër, Bulqizë, Librazhd, Pogradec, Skrapar, Devoll, Korçë, and Kolonjë).
- the 4th *Vitis* Area includes the mountainous region (highlands) (851-1100-1200 m a.s.l). The development of viticulture in this area is devoted to the specific character of climate, soil exposure and the tradition of cultivation of the native autochthonous varieties and cultivars (Dragusha and Susaj, 2018; Sotiri *et al.,* 1973).

According to the principles of the International Organization of Vine and Wine (OIV), the Elaborate on Regionalization of Viticulture of Kosovo and the Law on Regionalization of Viticulture and the Cadaster of Vineyards, Kosovo belong to the so-called "Viticulture Region of Kosovo", the only vineyard region there. This region includes two sub-regions of the vineyard cultivation: the northern *Vitis* area, which includes the vineyards of Istog and Peja, and the southern *Vitis* area, which includes the vineyards of Gjakova, Rahovec, Prizren, Suhareka and Malisheva (Morina and Kuqi, 2014).

The favourable geographic location, climate, terrain and soil, as well as the ancient tradition of vineyard cultivation in Albania and Kosovo, has contributed to the creation, adaptation, sustainability, preservation and dissemination of a large number of autochthonous ecotypes and varieties, as well as *Vitis sylvestris.*

Every traditional wine-growing region in the EU that values its reputation has its indigenous grapevine varieties – plants to which we ascribe indigenousness. In addition, when a variety is indigenous, the wine made from it is indigenous too. These grape varieties and wines have qualities we would like to have ourselves: they are original, unrepeatable, exceptional, and sometimes even unique. In this connection, two terms are widely used in both French and English, autochthone/

autochthon and indigène/indigenous (Brejc, 2011). There are around 6000 recorded grape varieties in the world, but at least many others remain still unrecorded.

Jones (2015) report that in viticulture and wine production, climate is arguably the most critical aspect in grape ripening to achieve optimum characteristics to produce a given wine style. To understand the climate's role in growing wine grapes and wine production we must consider: the weather and climate structure of the region, the climate's suitability to different wine grape cultivars, the climate's seasonally and long-term variability, the influence of climate change on the structure, suitability, and variability of climate in the region. Portugal exports modern red and white wines, mainly from indigenous grape varieties. Some of these varieties have a Spanish origin. Their character has been altered by the change in cultivation location and practice (PorteVinHO, 2018). Wong (2017) report that the Sicily's native/indigenous grape varieties are gaining a new lease on life as delicious, light, dry wines, because they are likely the very origin of Italy's wine culture.

Albania is a very reach country with a considerable number of autochthonous plant varieties, such as arable and fodder crops, fruits and vegetables, grapevine and olive trees (MoE, 2015). Of special importance are ≈30 autochthonous wheat populations, several corn autochthonous populations ("Reçi", "Dukati", "Sulova", etc.), several autochthonous table and wine grapevine varieties ("Sheshi i Zi", "Sheshi i Bardhë", "Kallmet", "Cëruja", etc.) (Susaj *et al.,* 2003; Çakalli *et al.,* 2003, Fiku, 2007), olive trees ("Kokërrmadhi i Beratit", "Kalinjot", etc.), figs ("Roshnik", "Shëngjinas", etc.), alfalfa (Dibra ecotype), onions of Miras and Drisht, etc. Their value is related not only to their use in the programs for genetic improvement of plants, but as well as in their direct use for cultivation purposes (MoE, 2015).

According to the international understanding of selection of varieties, the term "autochthonous / indigenous varieties" usually refers to those varieties that have arisen only in a particular area and have existed there from time immemorial, their genome originates from the local environment, and where grape and wine are being produced and vines are being cultivated. Most often, these varieties cannot be found on the international market. Who on Earth has ever heard of Zelèn (Slovenia), Bonardo (Italy), Mondeus (France) or Feteasco (Romania), for example? Although in the past those were rather overshadowed by the world-famous varieties, smaller winemakers are now trying to revive them and put them on the world wine map (Brejc, 2011). If you look through the wine section in the supermarket, you will be surprised to note that finding more than say two dozen different varieties is no easy task. "International" varieties, such as Chardonnay, Cabernet, Merlot, Sauvignon Blanc and Pinot Grey dominate the European market, coming from different countries (California, Chile, Australia, New Zealand, South Africa, and Argentina), since 1970s.

Albanian Government has drafted a project for the economic development of rural areas, taking into consideration especially rural tourism. The main objective of "The Integrated Program for Rural Development – 100 Villages Program" is: "*The economic development through the diversification of economic activities, such as the improvement of tourism potential in rural areas, agro tourism and rural tourism, investments in improvement of commercial services, investments in the production of traditional rural products ...* " (MBZhR, 2018). Some of the rural products are the fresh grape, wine, *raki* and other by-products coming from the indigenous grapevine varieties.

Materials and methods

The study was carried out during the period 2005-2018 in different *Vitis* Areas of Albania and Kosovo. There were identified and assessed different autochthonous grape varieties/ecotypes for the expression of their ampelographic and ampelometric features directly in the field, as well as in the lab for the oenological features (Susaj *et al.,* 2012; Susaj *et al.,* 2013/a; Susaj *et al.,* 2013/b; Susaj *et al.,* 2005), as well as the comparison with different publications from Agricultural Technology Transfer Center of Vlora (Fiku, 2007), Gene Bank Albania (Çakalli *et al.,* 2007). The obtained data were recorded, analyzed, compared and formatted in the tables. For each cultivar, there were evaluated and analyzed the main features.

In Albania, the total area of vineyards in 2017 was 10695 ha (INSTAT, 2018) from which 64.04% was with red wine grape cultivars, 18.4% with white wine grape cultivars and 17.6% was with fresh grape cultivars. In Kosovo, the total planted area in 2017 was 3642 ha from which 46.1% was with red wine grape cultivars, 25.8% with white wine grape cultivars and 28.2% was with fresh grape cultivars (Table 1).

Table 1. Number, production and yield of grape (pergolas and vineyards) 2011-2017

№	Description	Years						
1	Pergolas	2011	2012	2013	2014	2015	2016	2017
	Total (000 trees)	5,743	5,859	5,974	6,075	6,109	6,197	6,173
	In production (000 trees)	5,208	5,380	5,494	5,599	5,655	5,775	5,828
	Yield (kg/tree)	16	15,2	15,4	15.0	14.6	14.0	13.8
	Production (tons)	83328	81776	84607.6	83985	82563	80850	80426.4
2	Vineyards							
	Total (ha)	10,073	10,136	10,178	10,383	10,438	10,533	**10,695**
	In production (ha)	9,077	9,348	9,579	9,625	9,891	10,011	10,057
	Yield (kv/ha)	123.4	123.1	124.5	124.5	123.8	124.3	121.8
	Production (tons)	112010.2	115073.9	119258.6	119831.3	122450.6	124436.7	122494.3
	Total grape production (000 ton)	195.338	196.850	203.866	203.816	205.014	205.287	202.921

Table 2. Cultivated area and varietal structure of vineyards of Albania and Kosovo

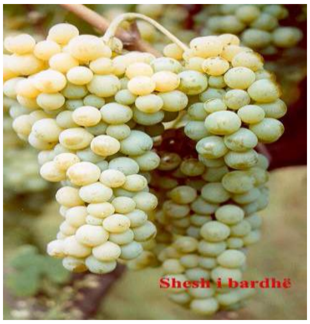
	Albania		Kosovo	
Destination	Area (ha)	%	Area (ha)	%
Red wine grape cultivars	6850	64.04	1680	46.1
White wine grape cultivars	1968	18.4	940	25.8
Fresh grape cultivars	1877	17.6	1022	28.1
Total	10695	100	3642	100

In the Albanian vineyards (Albania and Kosovo), for red wine, the most important international cultivars are "Merlot", "Cabernet Sauvignon", "Primitivo", "Tempranillo", "Barbera", "Syrah", "Montepulciano, "Sangiovese", "Mavrud", "Moldavia", "Pino i Zi", etc, while from the autochthonous regional cultivars are "Shesh i Zi", "Kallmet", "Vlosh", "Debinë e Zezë", "Vranac", "Serin i Zi", and some other local ecotypes named "Gjalish", "Manakuq", "Valteri", etc. For white wine, the most important international cultivars are "Chardonnay", "Riesling", "Muscat", "Trebbiano", "Muller Thurgau", "Smedereva" etc., and some local cultivars "Shesh i bardhë", "Pulës i Bardhë", "Cëruja", as well as some local ecotypes ("Brasten i bardhë", "Kallmet i Bardhë", "Ujcek", etc.) Cultivars for fresh grape are "Italia", "Matilda", "Victoria", "Kardinal", "Alfons Lavale", "Black Magic", "Muskat Hamburg", "Michele Palieri", etc, as well as some local ecotypes [Tajgë e kuqe, Tajgë e bardhë, and Dimërak) (Koronica & Susaj, 2016; Çakalli *et al.,* 2007; Susaj *et al.,* 2005).

Results and discussion

"Indigenous varieties thrive in their native region, as well as producing local, distinctive wines" (Jancis Robinson, FT, 07 Sep. 2018). Several autochthonous Albanian cultivars have been selected, preserved and disseminated through centuries in the vineyards and pergolas all over the country. Recent reports show that there is a strong relationship between grapevine cultivars, climate factors, soil composition and microbial terroir (Table 3).

Table 3. Characterization of the main autochthonous varieties

№	Appearance of the bunch	Main characters
1		**Sheshi i Zi (Black Shesh) (Sin. – NA)** "Sheshi i Zi" is an autochthonous grapevine cultivar, which is selected, preserved and cultivated for centuries by the vine-growers of Sheshi, Peza and Ndroq villages, in the central part of Albania. It is the most common cultivar in the Albania's vineyards. "Sheshi i Zi" can be ripen and harvested by the middle of September and contains 19-22% TSS (total sugar) and 6-7 g/L tartric acid. It has a cylindrical, compressed, long bunch, weighing of 350-400 g, with spherical, blue to black berries, weighing of 3-4 g (Susaj & Susaj, 2016).
		Destination of grape production: red wine, brandy and table grape. Characteristics of the wine: a red ruby colour with violet hints, with a flavour of forest fruits, unripe plum and apple fruits, with a nice bouquet. Wine has a pleasant sourness and contains a little bit of tannin, which causes a slight twist of mucus.
2		**Sheshi i Bardhë (White Shesh) (Sin. – NA)** "Sheshi i Bardhë" is an autochthonous grapevine cultivar, which is selected, preserved and cultivated for centuries by the vine-growers of Sheshi and Ndroq villages, in the central part of Albania. It is the most common in the vineyards of the first and the second *Vitis* areas vineyards. "Sheshi i Bardhë" can be ripen and harvested by the end of September (12-14 days after Sheshi i Zi) and the grapes contain 19-20% TSS (total sugar) and 6-7 g/L tartric acid. Sheshi i Bardhë cultivar has a drained bunch, weighing of 250-300 g, with spherical, green to yellow berries, weighing of 2-3 g. From Sheshi i Bardhë grapevine cultivar is produced a straw-colored, stable wine, with green reflections.
3		**Kallmet** (Sin.: Gjashtore, Skadarka, Zadrimore, Tocai nero di Scutari, Branicevka) (Susaj *et al.,* 2013/a; Fiku, 2007, Sotiri *et al.,* 1973). "Kallmet" is a cultivar originated from Zadrima, Shkodër. It is selected, preserved and disseminated, mainly, at the hilly areas of the region Mirdita-Lezha-Shkodër-Malësi e Madhe. Harvesting period: 10-15 September, when the grape contains up to 20-21% TSS (total sugar) and 4.5-5 g/L tartric acid. Because of its functional female flower, "Kallmet" should be associated with Merlot and "Sheshi i Zi", serving as good pollinators, as well as confident, soon will be on the new world wine map (WVS, 2018).
		optimal cultural practices, to get high yield of grape and qualitative by-products (wine) (Susaj *et al.,* 2013/a; Susaj *et al.,* 2013/b). Bunch is 250-300 g, with spherical, a little aromatic, reddish–purple berries, 2-3 g, covered with light violet breeze. From "Kallmet" is being produced a harmonic red dry wine named the same, "Kallmet", with elegant red color with typical "Kallmet" flavor, with a caramel taste at the end. At the nose strikes the scent of cherry and a light scent of vanilla coming from the Albanian oak used during the aging process. The wine "Kallmet" is a special wine for

foreign tourists and guests whose are looking for something unique. The wine brings passion, quality and originality from a region, which we are.

4

Cëruja (Sin.: Grezda e Bardhë)

"Cëruja" is an autochthonous grapevine cultivar selected and preserved by the inhabitants who lived from centuries in the valleys of Mat, Fan and Drini Rivers, up to the Valbona River (Susaj *et al.,* 2005). Ripening and harvest occur starting from the beginning of September (up to 500 m a.s.l) until early October (up to 700 m a.s.l). Berries contain 17-23% TSS (total sugar) and 5-7 g/L tartric acid. It with spherical grapes (≈2 gr), covered with a thin skin, with a greenish-bronze breeze. From "Cëruja" autochthonous cultivar can be produced a special champagne, but, actually, there is being produced *raki* and a special white tanninic, full-body wine, with a very good taste and a forests fruit flavor (Susaj *et al.,* 2005; Fiku, 2007).

5

Pulës i Bardhë (Sin. Verdhëza, Landari)

"Pulës i Bardhë" is an autochthonous grapevine cultivar selected, preserved and disseminated at the hilly region from Berati to Skrapar, Përmet, Tepelenë, etc. It can be ripen and harvested at the middle of September and grapes contain 20-22% TSS (total sugar) and 5.5-6 g/L tartric acid. Bunch is moderately compressed, weighing of ≈300 g, with spherical berries, ≈ 3 g. Destination of the grape: white table wine, brandy (cognac) and fresh grape. From "Pulës i Bardhë" is produced an uniform yellow straw colour with light green hints, with a flowers flavour, the typical aroma of "Pulës i Bardhë". It is a dry wine with a very good body and bouquet. It causes a slight irritation on your throat, leaving a long taste sensation behind. The wine "Pulës i Bardhë" is produced by several wineries (Nurellari, Çobo, etc).

6

Manakuqi (Sin.: Ferracaku, Keci, Pllovdina)

"Manakuq" is an autochthonous red-rosé wine grapevine cultivar selected, preserved and disseminated in the vineyards and pergolas of the Balkan Peninsula countries, especially on the triangle Albania-Montenegro-Kosovo, known as "Manakuq" in Albania, "Keci" in Kosovo or "Pllovdina" in Podgorica (Susaj *et al.,* 2013). It can be ripen and harvested at the middle of September. "Manakuq" has a compressed, cylindrical-conical bunch, weighing of ≈200 g, with uniform red-skin round berries, about 2 g, with a very thin reddish skin. From "Manakuq" is produced a special red-rosé wine, with a light flowers flavor.

7

"Debina e Bardhë" ***(Sin. – Debina e Leskovikut)***

"Debina e Bardhë" is an autochthonous grapevine cultivar selected, preserved and disseminated in the vineyards of the southeastern regions of Albania, like Leskovik, Devoll, Përmet, Tepelenë, etc. It can be ripen and harvested at the second half of September. "Debina e Bardhë" has a compressed bunch, ≈ 250 g, with rounded berries of 2-3 g, and a green-bronze skin color. At the harvest, berries contain 17-19% TSS (total sugar) and 6-7 g/L tartric acid. Grape is very sensitive and does not support the delay in harvest, as well as the distant transportation. From "Debina e

Bardhë" is produced a dry white wine (straw-yellow color) with a light flower flavor and a very good taste and quality (Fiku, 2007).

8

"Serina e bardhë" (Sin. – Rrush i Voskopit)
"Serina e bardhë" is selected, preserved and disseminated in the vineyards of the south and southeastern regions of Albania, like Voskop of Korça, Leskovik, Përmet, Tepelenë, etc. It can be ripen and harvested at the end of September and berries contain 19-21% TSS (total sugar) and 7-9% g/L tartric acid. The main destination of the product is production of white wine and *raki*. The wine of "Serina e bardhë" has a straw-yellow color, with a flower flavor, specific of "Serin".

9

Prokupa *(Sin.: Prokupac, Zarqin, Kameniçarka)*
"Prokupa" is disseminated in Kosovo, Serbi, Maqedonia, Albania, Bulgaria, Romania, etc, but the history and name is related to the old Albanian town, Prokupje (Koronica & Susaj, 2016). In 1975, in the Kosovo's vineyards, the cultivar "Prokupa" ocupied 2575 ha.
In Rahovec, it ripes and is harvested at the end of September. "Prokupa" cultivar is used for the red wine production of the same name, a little taninic. It has a red intensive color, with a forest fruit flavor (Morina & Kuqi, 2014).

10

Smedereva *(Sin –Brasten, Belina, Çilibarka, Dimnjat, etj)*
is selected, preserved and disseminated in the vineyards of Illyrian Peninsula, Kosovo, Serbia, Vojvodina, Maqedonia, Bosnia and Hercegovina, in the southern Dalmatia, as well as in Bulgaria (Koronica & Susaj, 2016). In 1983, in the vineyards of Kosovo it occupied an area of 570 ha, with an average yield of about 12 tons/ha. It ripes and is harvested at the end of September, when berries contain ≈18% TSS (total sugars) and 7.5 /L tartric acid. The product is used for fresh grape, white (harmonic, fresh, light yellow) wine production, as well as for raki, cognac and must production.

The viticulture industry has been selectively growing vine cultivars with different traits (grape size, shape, color, flavor, yield of fruit, and so forth) for millennia, and small variations in soil composition, water management, climate, and the aspect of vineyards have long been associated with shifts in these traits. As such, many different clonal varieties of vines exist, even within given grape varieties, such as Merlot, Pinot Noir, and Chardonnay. The commensal microbial flora that co-exists with the plant may be one of the key factors that influence these traits (Gilbert *et al*., 2014). This century the wine world has been transformed from one dependent on a handful of "international" (mainly French) grape varieties such as Cabernet Sauvignon and Chardonnay into one that seems increasingly fascinated by alternatives to them - the more local and obscure the better. All over the world, vine growers are increasingly interested in regaining their viticultural heritage by recovering long-forgotten varieties that may not have been replanted after the late 19th century scourge of phylloxera.
Garofalo *et al.* (2015) report that autochthonous varieties poses their yeast/bacterium combinations which can be used for vinifications as starter culture for other varieties, while Bokulich *et al.* (2014)

clearly demonstrated that microbial biogeography of wine grapes is affected by cultivar, vintage, and climate, proposing a new dimension of "microbial terroir" for wine grapes. Wine grapes present a unique biogeography model, wherein microbial biodiversity patterns across viticultural zones are an inherent component of the quality, consumer acceptance, and economic appreciation of a culturally important food product. On their journey from the vineyard to the wine bottle, grapes are transformed to wine. Through microbial activity, with indisputable consequences for wine quality parameters. Wine grapes harbor a wide range of microbes originating from the surrounding environment, many of which are recognized for their role in grapevine health and wine quality (Bokulich *et al.,* 2014).

"Indigenous varieties thrive in their native region, as well as producing local, distinctive wines" (Jancis Robinson, FT, 07 Sep. 2018). Several autochthonous Albanian cultivars have been selected, preserved and disseminated through centuries in the vineyards and pergolas all over the country. Recent reports show that there is a strong relationship between grapevine cultivars, climate factors, soil composition and microbial terroir.

Conclusions

Albania and Kosovo are two Mediterranean countries with a very special location for the origin and development of viticulture. The favourable geographic location, climate, terrain and soil, as well as the ancient tradition of vineyard cultivation in Albania and Kosovo, has contributed to the creation, adaptation, sustainability, preservation and dissemination of a large number of autochthonous ecotypes and varieties. These ecotypes and varieties/cultivars are distinguished for resistance, environmental adaptability and high productivity at the belonging regions. The products deriving from the autochthonous grapevine varieties, such as wine, brandy, *raki,* etc., and their by-products are highly demanded by the market and are a promising tool for the development of the "*homemade*" rural (agro) tourism. The special taste, flavour, nutritional values, denomination and typicality of those products considerably vary on the climate and soil characteristics, as well as in the tradition of specific region. Under the framework of "100+ villages" Project, the autochthonous grapevine varieties are one important component on the local rural tourism in Albania.

Indigenous varieties thrive in their native region, as well as producing local, distinctive wines. Albanian autochthonous grapevine varieties and wines have qualities we would like to share to the others: originality, unrepeatability, exceptionality, and, sometimes, uniqueness. The products deriving from the autochthonous grapevine varieties, such as wine, brandy, *raki,* etc., and their by-products are highly demanded by the market and are a promising tool for the development of the "*homemade*" rural (agro) tourism. The special taste, flavour, nutritional values, denomination and typicality of those products considerably vary on the climate and soil characteristics, as well as in the tradition of specific region. Under the framework of "100+ villages" Project, the autochthonous grapevine varieties are one important component on the local rural tourism in Albania. Indigenous varieties thrive in their native region, as well as producing local, distinctive wines and by-products.

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RESEARCH PAPER

Reheni *(Armoracia rusticana)* and wheat of Qabesë (*Trigonella foenum-graecum)* two undervaluated local varieties

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Abstract
Devoll area, in Albania, there was a great diversity of traditional crops, local varieties and semi-domesticated species. Many species have a great potential in terms of contributing to local food needs, but some of them are neglected and underutilized. While some semi-cultivated species continue to be preserved by socio-cultural factors and local usage, many of them have little or no attention. Lacks of knowledge and research needs are great for most of the plants semi-cultivated species. Actually there is an increasing interest of some neglected crop species, reflecting the growing trend to identify and cultivate of new crops for markets and culinary uses.
In this paper we provide information on two cultures: horseradish (*Armoracia rusticana*) and fenugreek (*Trigonella foenum-graecum*), which are used by population of some of Devoll's villages in traditional ways for generations. These species have significant nutritional and medicinal values, and also presents a great opportunity for use as cultivated plants. Promoting their values and usage in traditional foods and culture can contribute to maintain the agricultural biodiversity, traditional knowledge, improving nutritional status and health of local and regional population and to reaffirming their identity. The purpose of this paper is to promote the conservation and use of horseradish and fenugreek, the two neglected plants, focusing on phytochemical composition, therapeutic properties, medical effect and their use, coupled with some ethnobotanical data collected by authors during an ethnobotany survey, to increase the presence of their use in the future.
Keywords: *biodiversity, horseradish, fenugreek, traditional knowledge*.

Introduction

Traditional farmers have conserved, domesticated and improved a huge number of crop species. The many less well-known agricultural species, including farmers' varieties /landraces and semi-cultivated species are still used by farmers and local communities to meet local demands for food and enrich their diets and agricultural biodiversity, thus contributing to their livelihood. These local or traditional crops are largely conserved on-farm, thanks to the work of farmers who maintain crop genetic diversity along with traditional knowledge, often on small patches of land and in home gardens (Padulosi et al., 2013). While these crops continue to be maintained by socio-cultural preferences and use practices, most of them remain inadequately characterized and neglected by research and conservation (Schmidt et al., 2008; Dansi et al., 2012). Lack of attention has meant that their potential value is underestimated and underexploited (Dansi et al., 2012), although are still being used in those areas where they are well adapted and local ecological knowledge are maintained.

Underutilized, undervalued, neglected, lost or minor, forgotten, orphan, promising or traditional plant species are terms often used