horticulturae

MDPI

Review

Traditional Foods as a Way to Preserve the Genetic Diversity of the Grapevine (*Vitis vinifera*) in Tunisia

Olfa Saddoud Debbabi [1,2,*,†], Mounira Ben Slimane [3,†], Rym Bouhlal Ben Hadj Alouane [3], Cinzia Montemurro [4], Hager Snoussi [3] and Monica Marilena Miazzi [4,*]

1 Banque Nationale de Gènes, Boulevard du Leader Yesser Arafet, Charguia 1, Tunis 1080, Tunisia
2 Institut de l'Olivier, Laboratoire Production Oléicole Intégrée, LR16 IO 03, Université de Sfax, Sfax 3029, Tunisia
3 Institut National de la Recherche Agronomique de Tunisie (INRAT), Laboratoire d'Horticulture, Université de Carthage, Carthage 1054, Tunisia; mounira.bsh@gmail.com (M.B.S.); ryma0a@yahoo.fr (R.B.B.H.A.); hagersnoussi@gmail.com (H.S.)
4 Department of Soil, Plant and Food Sciences (DISPA), University of Bari, Via Amendola 165/A, 70126 Bari, Italy; cinzia.montemurro@uniba.it
* Correspondence: olfa.lf@gmail.com (O.S.D.); monicamarilena.miazzi@uniba.it (M.M.M.)
† These authors contributed equally to this work.

Abstract: Tunisia has a long tradition of viticulture, and the grapevine is used for a variety of traditional foods. The country has many plant-based dishes, which may have different compositions and names depending on the region of origin. Unfortunately, over the years, traditional preparations are no longer as popular as they used to be, due to both changing lifestyles and the introduction of new crops and foods. For example, the use of grapevine in traditional dishes has declined as traditions have been lost and habits have changed in favor of new, ready-to-eat foods. The close link between grapevine, culture and territory requires an appropriate evaluation and characterization of traditional foods in order to enhance and extend their use, ensure their sustainability and preserve the varieties used to produce them. This review analyzes the use of local grapevine varieties in different traditional dishes as a means to preserve an invaluable natural and cultural resource and heritage.

Keywords: grapevine; raisin; genetic diversity; traditional foods; Tunisia

check for updates

Citation: Saddoud Debbabi, O.; Ben Slimane, M.; Ben Hadj Alouane, R.B.; Montemurro, C.; Snoussi, H.; Miazzi, M.M. Traditional Foods as a Way to Preserve the Genetic Diversity of the Grapevine (*Vitis vinifera*) in Tunisia. *Horticulturae* **2024**, *10*, 423. https://doi.org/10.3390/horticulturae10040423

Academic Editor: Jérôme Grimplet

Received: 12 March 2024
Revised: 18 April 2024
Accepted: 19 April 2024
Published: 22 April 2024

Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https://creativecommons.org/licenses/by/4.0/).

1. Introduction

The species *V. vinifera* originated 65 million years ago in Eurasia and includes the cultivated subsp. *vinifera* (or *sativa*) and the wild progenitor subsp. *sylvestris*, from which it was domesticated 6000–8000 years ago in the Near East [1,2]. Both forms still exist today in Eurasia and North Africa, with around 6000 to 10,000 varieties being cultivated worldwide. The great diversity of varieties is due to different genetic contributions of local *sylvestris* populations, as well as to multilocal selection and domestication of *sylvestris* genotypes for various traits such as fruit yield and quality, vigor, and disease resistance [3–6]. The grapevine is one of the most economically important and widespread fruit crops in the world, with an annual production of about 75 million tons, half of which is used for wine production, one-third is consumed fresh, and the rest is dried and processed into grapevine juice or must [7]. In Tunisia, viticulture is very old, and its first historical evidence dates back to 6000 BC [8]. Today, viticulture covers 9300 hectares and produces 31,000 tons of grapes from more than 100 varieties with great genetic diversity [9,10]. Consumers today recognize the importance of preserving biodiversity, honoring their roots and identity by preserving local knowledge and enhancing typical products [11]. Unlike other species, such as citrus fruits, which have a long shelf life [12], the perishability of grapes and their short harvest time have contributed to their use in many traditional foods to extend their shelf life while giving them special sensory and health properties [13,14]. The grapevine is, indeed, very rich in vitamins, minerals, lipids and fiber as well as phenolic compounds,

flavonoids, anthocyanins, stilbenes and lipids, which have positive effects on human health. Nevertheless, the use of the grapevine in a variety of traditional foods is declining as traditions have been lost and habits have changed in favor of introduced crops [15], as well as due to the laborious and time-consuming processing [16]. Several indigenous genotypes are highly valued for their organoleptic properties and commercial potential and are still cultivated from the humid areas of the Kroumirie-Mogods mountains to the arid region of Rjim maâtoug, in the south-west of the country [17]. However, their substitution by newly bred varieties has led to a rapid decline in the number of local genotypes that are well adapted to the local bioclimatic and edaphic conditions [18].

Adequately recognizing and valuing traditional foods and expanding their use is a wise approach to ensuring their sustainability and preserving the varieties used for their preparation [19]. However, specific regulations need to be developed to ensure the authenticity and safety of these traditional foods. The European Union has created a three-tier system to promote and protect regional foods, which includes the designations "Protected Designation of Origin" (PDO), "Protected Geographical Indication" (PGI), and "Traditional Specialty Guaranteed" (TSG), and numerous procedures have been put in place to ensure the conformity of the labeling with the products [20]. This system has been implemented in Tunisia through the introduction of the AOC (Controlled Appellation of Origin) and IP (Indication of Provenance) labels, which contribute to the preservation and valorization of the different crop varieties and the food products made from them and promote the sustainable development of the region of origin [21]. In the northern regions of Tunisia, there are now seven AOCs for wines: Grand cru de Mornag, Mornag, Thibar, Coteaux d'Utique, Tebourba, Sidi Salem and Kélibia, which are in great demand and enjoy a high reputation (http://www.aoc-ip.tn/index.php/liste-des-aoc-ip/item/52-vins-de-tunisie, accessed on 15 January 2024) [22]. Nowadays, people are aware of the health benefits of traditional cuisine, and although many of the traditional dishes are still prepared for special occasions and festivals, some of them are being abandoned because they are expensive and require a lot of time and expertise to prepare [23]. The Food and Agriculture Organization of the United Nations (FAO) emphasizes the importance of recognizing the role of traditional food systems in preserving crop biodiversity [24]. In this review, the use of grapes in Tunisian culinary traditions is examined in the context of the specific characteristics of autochthonous grapevine varieties to emphasize the role of traditional knowledge in the conservation of an invaluable natural and cultural heritage.

2. History and Symbolism of the Grapevine

The vine is an important cultivated plant in many Euro-Mediterranean cultures [25–27], associated with deities and sacred rituals, and frequently depicted on artefacts of ancient cultures (e.g., Egyptian, Greek, Roman) [28]. The tree, fruit and leaves are repeatedly mentioned in the holy books as symbols of life [29], wealth, fertility and prosperity, and the vine is one of the nineteen medicinal plants mentioned in the Holy Qu'ran [30].

In Tunisia, the vine was introduced by the Phoenicians and subsequently spread throughout the country, especially in the eastern coastal regions [31]. Its cultivation was attested in 310 BC near Carthage by the Sicilian Diodorus, and the importance of the viticultural heritage in Africa is emphasized in Magon's precepts [32]. Viticulture is particularly widespread in the northern and eastern coastal regions of Tunisia where was never abandoned, despite periods of declining production. It experienced an upswing during the colonial period in the 19th century [33], but it was only after the outbreak of phylloxera in Europe that a wine industry developed in Tunisia as a producer of red wines with a high alcohol content, which were used by the French to blend their wines [34]. The increasing use of a few main varieties, such as Carignan, Cinsaut, Alicante, Mourvèdre, Aramon and Grenache signaled the beginning of the loss of the old varieties traditionally cultivated before the 1880s, such as Fayoumi, Chaouch and Khalili [35].

3. The Diversity of Grapevine Genetic Resources in Tunisia

The only endemic taxon of *Vitaceae* in Europe and the Maghreb regions is the wild grapevine, which is considered the ancestor of the cultivated form [36]. The two subspecies can be distinguished by morphological traits [37], and the wild vines are dioecious, whereas most cultivated grapevines are predominantly hermaphroditic and self-pollinating [38]. Tunisia is considered a center of grapevine diversification, as evidenced by the great genetic diversity of both cultivated and wild subspecies and spontaneous hybrids [39,40]. Northern Tunisia preserves numerous populations of wild grapevine in forest, mountain and lowland ecosystems [41]. These small and fragmented populations, such as those in Djebba, Ouchtata, Ghar el Melh, Tebaynia, Balta, etc., are considered hotspots with high biodiversity but are poorly studied and threatened with extinction [42].

Different types of molecular markers are routinely used for grapevine genotyping, in particular nuclear and chloroplastic microsatellite markers (SSRs) [43,44] and Single Nucleotide Polymorphisms (SNPs) [45,46]. They have been used to characterize autochthonous Tunisian varieties [47,48], and have shown that Tunisian grapevine germplasm has a high genetic diversity [49]. This is probably due to the hybridization of imported cultivars with local wild populations and to somatic mutations resulting from massive vegetative propagation [50]. Table 1 lists the most important autochthonous Tunisian varieties.

Table 1. The main autochthonous varieties of grapevines cultivated in Tunisia (National Institute of Agronomic Research of Tunisia, INRAT, http://www.inrat.agrinet.tn/index.php/fr/, accessed on 4 February 2024).

Variety	Origin	Variety	Origin
Muscat de Raf Raf	Raf Raf	Chetoui	Nafta
M'guargueb Akhal	Raf Raf	Arbi Abiadh	Nafta
Bidh EL H'mem	Raf Raf	Guelb Sardouk	Nafta
Chaaraoui	Raf Raf	Khalt Abiadh	Nafta
Farrani	Raf Raf	Saouadi	Nafta
Tebourbi	Raf Raf	Khamri	Nafta
Marsaoui	Raf Raf	Arbi Akhal	Sbiba
Rozaki	Raf Raf	Asli	Sfax—Kerkennah
Beldi	Raf Raf	Mehdoui	Sfax—Kerkennah
Hammemi	Raf Raf	Dalia	Sfax—Kerkennah
Boukhasla	Raf Raf	Jerbi	Sfax—Kerkennah
Essifi	Raf Raf	Souabey Eldjia	Sfax—Kerkennah
Kohli	Raf Raf	El Kohli	Mahdia
Farranah	Raf Raf	Beldi	Mahdia
El Abiadh	Zaghouan	Arbi Akhal	Mahdia
R'kihi	Bargou	Limaoua	Gabès
Bazzoul El Bagra	Bargou	Khalt Bou Chemma	Gabès
Khadhri	Bargou	Bazzoul El Kalba El Bidha	Gabès
Djebbi	Djebba	Medina	Gabès
Garaï	Djebba	Chaouch	Jerba
Bahbahi	Djebba	Tounsi	Jerba
Testouri	Djebba	Arricha	Jerba
Neb J'mel	Djebba	Saguasli	Jerba
Neb J'mel	Balta	Meski Abiadh	Tozeur
Arbi Abiadh	Tozeur	El Kefi	Le Kef
Razzegui	Mahdia		

4. The Nutritional Benefits of the Grapevine

Grapevine is one of the fruits with the highest average carbohydrate content (15%) but has a low glycemic index and is an excellent source of manganese and potassium, as well as of vitamins B6, B1, and C [51]. It also contains important bioactive compounds such as flavonoids, polyphenols, anthocyanins and stilbene derivatives (resveratrol), which have various therapeutic effects, such as antioxidant, anticarcinogenic, antimicrobial, antiviral, anti-ageing, anti-inflammatory, antidiabetic, cardioprotective, hepatoprotective, and neuroprotective effects [52]. Sultanas have been studied for their antioxidant properties [53] and their content of polyphenols, reduction of postprandial insulin response, lowering of cholesterol levels, protection against cardiovascular diseases, as well as their preventive effect on colon cancer, etc. [54]. The various nutritional and nutraceutical properties of grapes make them functional foods. The skin is rich in tannins and non-flavonoid stilbenes (resveratrol), and the pulp contains non-flavonoid hydroxycinnamic acids [55]. Oilseeds have been shown to have antioxidant and anti-inflammatory effects as they contain mainly flavan-3-ols and many non-flavonoids, which are present in the skin and in the pulp, whose total phenolic content is ten times higher than in the skin [56]. Some components of grape seed oil, such as fatty acids (linoleic acid), vitamin E and phytosterols as well as hydrophilic phenols are promising not only as nutrients but also as therapeutic compounds [57].

5. Traditional Tunisian Foods Based on the Grapevine

Within the Arab region known as the Berber world, the Maghreb is a geographical area that includes Tunisia, Algeria, Morocco, Libya and Mauritania. The cuisine is more Mediterranean than Arabic and is prepared using various methods such as fermentation, salting, drying and curing. Olive oil and couscous are the pillars of their diet [58]. Tunisian cuisine is a mixture of Mediterranean and Berber flavors and has its roots in the Romans, Vandals, Byzantines, Arabs, Spaniards, Turks, Italians (Sicilians), French and the indigenous Punic-Berber peoples. Traditional foods in Tunisia consist mainly of cereals, olive oil and dried fruits such as grapes, figs [59] and apricots [60]. Sultanas are used in the preparation of many typical and regional dishes for special religious or family occasions, festivals and ceremonies, as well as events such as the birth of a child, or the Aid after Ramadan (the Muslim holy month) (Table 2, Figure 1).

Table 2. Examples of traditional Tunisian dishes in which local grapes are used [61].

Traditional Dish Name	Origin	Description
Douida	Nabeul region (north-east)	Dish prepared on the Achoura, the religious feast that commemorates the day God saved Moses from Pharaoh. It is a somewhat very fine turmeric-based spaghetti prepared with chicken and served with boiled eggs, chickpeas, sweets, sultanas, peeled almonds and dates.
Marka Hlouwa	Whole country	Prepared for several ceremonies, it consists of mutton pieces seasoned with pepper, salt and saffron and cooked with olive oil and water. Almonds, chestnuts, dried apricots, dried plums and raisins are then added.
Mrouzia	Nabeul, Testour and Tunis	Prepared during Aid el Kabir and other religious festivals, it is made with lamb, dried plums and apricots, salt, honey, vinegar, starch, an infusion of saffron and orange flowers water and raisins. Honey and fat keep the food for a long time.
Terbib	Kerkennah Islands	Drink based on carob, fennel, dried figs, sultanas and water. It is a very nutritious drink used to recover woman after the childbirth.
Couscous with lamb	Whole country	This is a special couscous prepared for weddings or other important occasions. Raisins are added to the couscous sauce prepared with olive oil, seasoned lamb, onions, concentrated tomatoes, salt, and chickpeas, and decorated with meat, raisins and chickpeas.

Table 2. *Cont.*

Traditional Dish Name	Origin	Description
Masfouf	North Tunisia and Sahel	It is couscous prepared during Ramadan, with sultanas or fresh grapes. It is soaked with orange blossom water and decorated with nuts.
Maâkoud	Djerba	Prepared on the Achoura, it is a type of salted and sweetened cream made from beef boiled with ground black sultanas, onions, cinnamon, salt, paprika and sugar. Starch and rose water are also added.
Zommita	Islands of Kerkennah and Djerba.	Zommita is prepared during the grape harvest, with barley, fenugreek and spices. It can be kept in powder form all year round and used for breakfast, mixed with water, olive oil and fresh grapes of local varieties.
Charmoula	Aid el Fitr in the Sfax region	Sauce made from olive oil, onions and sultanas, which is eaten with salted fish. The sweet and spicy mixture creates a strong thirst that induces rapid rehydration after Ramadan.
Laklouka	Sfax and the Kerkennah islands	It is a traditional sweet generally prepared in winter with dried raisins boiled in water, filtered, filtrated and boiled again. The juice obtained is mixed with flour, Bsissa (prepared from barley, chickpeas, cumin, fennel, pomegranate peel, coriander and sesame seeds) and boiled olive oil. The dessert is then decorated with almond.
Ftayer be Zbib	Sousse region on the 14th day of Ramadan	A type of donut made from semolina, dry yeast, salt and sultanas, to which a filtered infusion of fennel and aniseed is added. After baking, the 10 cm diameter donuts are deep-fried in olive oil over a low heat and sprinkled with sultanas and sugar or honey.
Borzgane	Béjà and Le Kef in the north-western	It is prepared on 14th May to celebrate the Berber month of Mayou, which marks the end of spring and the beginning of summer. It is a type of couscous with lamb cooked with rosemary, sultanas, butter, milk, olive oil, dates, dried raisins and nuts. The pieces of lamb are coated with salt, pepper and cinnamon and stewed in a pan filled with water and rosemary. The dish is decorated with dried raisins, almonds, nuts, hazelnuts and pistachios.
Rechta Njara Hloua ou Rfissa	Bizerte (North Est)	It is prepared during the month of Ramadan and consists of semolina, butter, sugar, geranium water, raisins, nuts and dates.

In Tunisia, several traditional dishes are prepared with dried grapes obtained from the cultivation of minor local varieties. These varieties are often grown in marginal, low-yielding and drought-prone areas and represent small populations that are at high risk of extinction due to the introduction of high-yielding foreign varieties [62]. They are well adapted and acclimatized to harsh soil and climate conditions such as drought, calcareous soils, high temperatures, and salt water, allowing them to survive through the years [62,63].

Among others, significant are the grapevine varieties Meski from Raf Raf, Asli from Kerkennah and Razzegui from Mahdia [64] (Figure 2).

In north-east Tunisia, the dominant variety is "Meski Raf Raf," also known as Muscat (Figure 3), as it is cultivated on more than 90% of the vineyard area [62], where traditional knowledge of cultivation techniques (propagation, pruning, soil cultivation) and grapevine drying and processing has been preserved. "Meski Raf Raf" is a white grapevine variety characterized by a very high sugar and phenolic content, which makes it, therefore, very popular for refining and garnishing various traditional dishes [64]. In the region, the variety is the basis for two very popular traditional dishes: the "Mrouzia," a lamb dish prepared for the religious feast of Aid el Kabir, and the "Rechta Njara Hloua," a very nutritious dish of semolina and dried fruits, typical of the Biserte region and used in the month of Ramadan (Table 2).

Figure 1. Traditional Tunisian dishes prepared with raisin: (**A**) Douida; (**B**) Borzgane; (**C**) Charmoula; (**D**) Laklouka; (**E**) Rechta Njara Hloua; (**F**) Ftayer be Zbib; (**G**) Marka Hlouwa; (**H**) Couscous with lamb.

In southern Tunisia, the Kerkennah Islands (formerly Cyrannis) are considered a conservatory for the indigenous *V. vinifera* L. In the fifth century, Herodotus described Kerkennah as covered with vineyards and olive groves, and according to Minangouin [65], it was ideal for growing vines. On the island, eighteen kilometers from the mainland, the inhabitants have managed to preserve their unique identity as well as the plant genetic resources, despite the adverse conditions and difficult soils [66]. The most important grape

varieties are "Asli" and "Tounsi," but the Kerkennian culinary heritage is particularly linked to the "Asli" grapevine variety (Figure 4).

Figure 2. Map of Tunisia with areas preserving local grapevine varieties used as dried raisins in traditional foods: (**A**) "Meski" variety native from Raf Raf; (**B**) Razzegui variety native from Mahdia. (**C**) Asli variety native from Kerkennah.

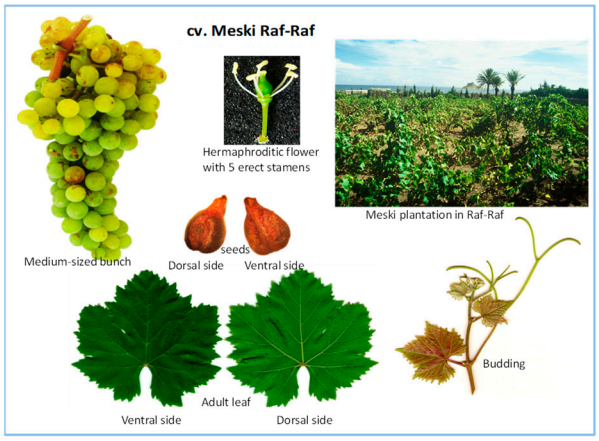

Figure 3. Morphological description of the cultivated variety of Meski Raf Raf.

The "Asli" variety, already mentioned by Pliny the Great, is an autochthonous grapevine variety that is still cultivated in small vineyards. Given the persistent drought, calcareous soil and sea spray that prevail on the Kerkennah Islands, the vines are grown exclusively as self-rooting plants without irrigation; thus, they have specific adaptive traits to these severe abiotic constraints [18,64,67]. The variety produces fruit of exceptional quality in the typical climate of the archipelago. The berries reach a very high Brix degree (13°30),

and the free aroma is very strong and complex due to the high concentration of volatile compounds, especially the non-terpenyls [35]. The variety is characterized by fine fruits, a sweet taste and early ripeness, which makes it ideal for the production of raisins, which are highly appreciated for the preparation of many local dishes, such as jelly and jam [64]. The variety is used for the preparation of "Terbib", a highly nutritious drink used for women's recovery after childbirth, and "Zommita", a mixture of barley, fenugreek, and spices that is kept as a powder and used for breakfast (Table 2). Another typical product prepared with this variety is "Laklouka", a dessert made of grapevine juice with barley, chickpeas, cumin, fennel, pomegranate peel, coriander and sesame seeds (Table 2).

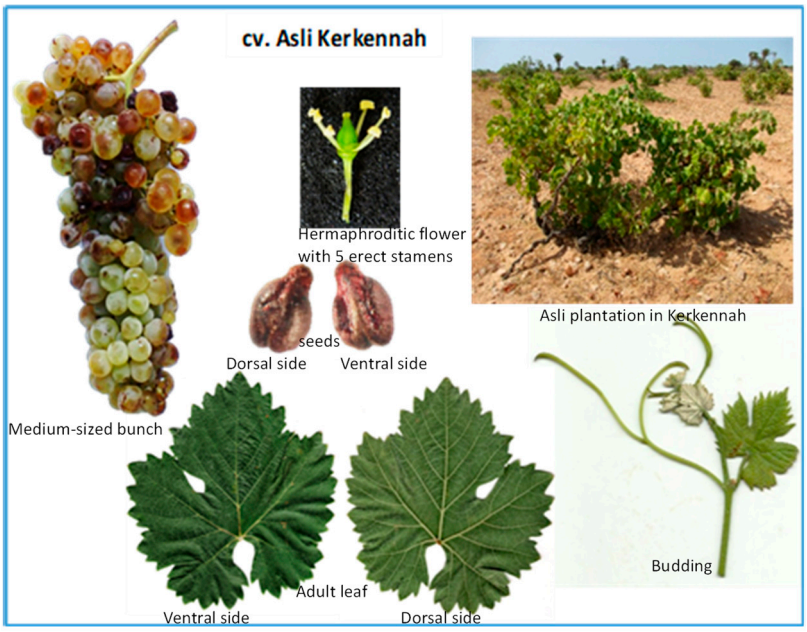

Figure 4. Morphological description of the cultivated variety of Asli Kerkennah.

The island of Kerkennah is also known for various types of wine, but especially for Asli wine, which is still a marginal production intended for family consumption and is mainly consumed by sailors in winter. The grapes are harvested when they are very ripe, washed and placed in a large, typical clay jar (khabia), which is hermetically sealed with plastic and leather, until the must is filtered and fermented into wine [64] (Figure 5). Vinegar is also made from the residue of Asli wine production by adding rainwater and storing it in the shade for 20 days before it is filtered and stored in tightly sealed jars.

Figure 5. The "khabia" for the conservation of the Asli wine on the Kerkennah Islands.

In south-eastern Tunisia, the island of Djerba is a center for the preservation of indigenous grape varieties. In particular, the autochthonous variety "Tounsi Djerba" (Figure 6A)

has been preserved on the island. The variety differs from the homonymous "Tounsi" typical of the Kerkennan Islands (Figure 6B) [64], both phenotypically, at leaf, flower, and bunch level [64], and genetically. According to Zoghlami et al. [47], the variety "Tounsi Djerba" is genetically more related to the variety Asli and the red, highly aromatic variety "Khamri", which is typical of northern Tunisia, where it is used for the production of a high-quality traditional wine and for table grapes. On the island, the variety is traditionally used by the local Jewish community of El Hara to produce a typical wine according to specific and ancient techniques that are still practiced today [64,68]. The variety is also used for the preparation of "maâkoud", a type of sweetened/savory sauce made from beef cooked in grapevine juice and thickened with starch, prepared for the Anchoura festival, which celebrates the liberation of Moseh from the Faraoh (Table 2).

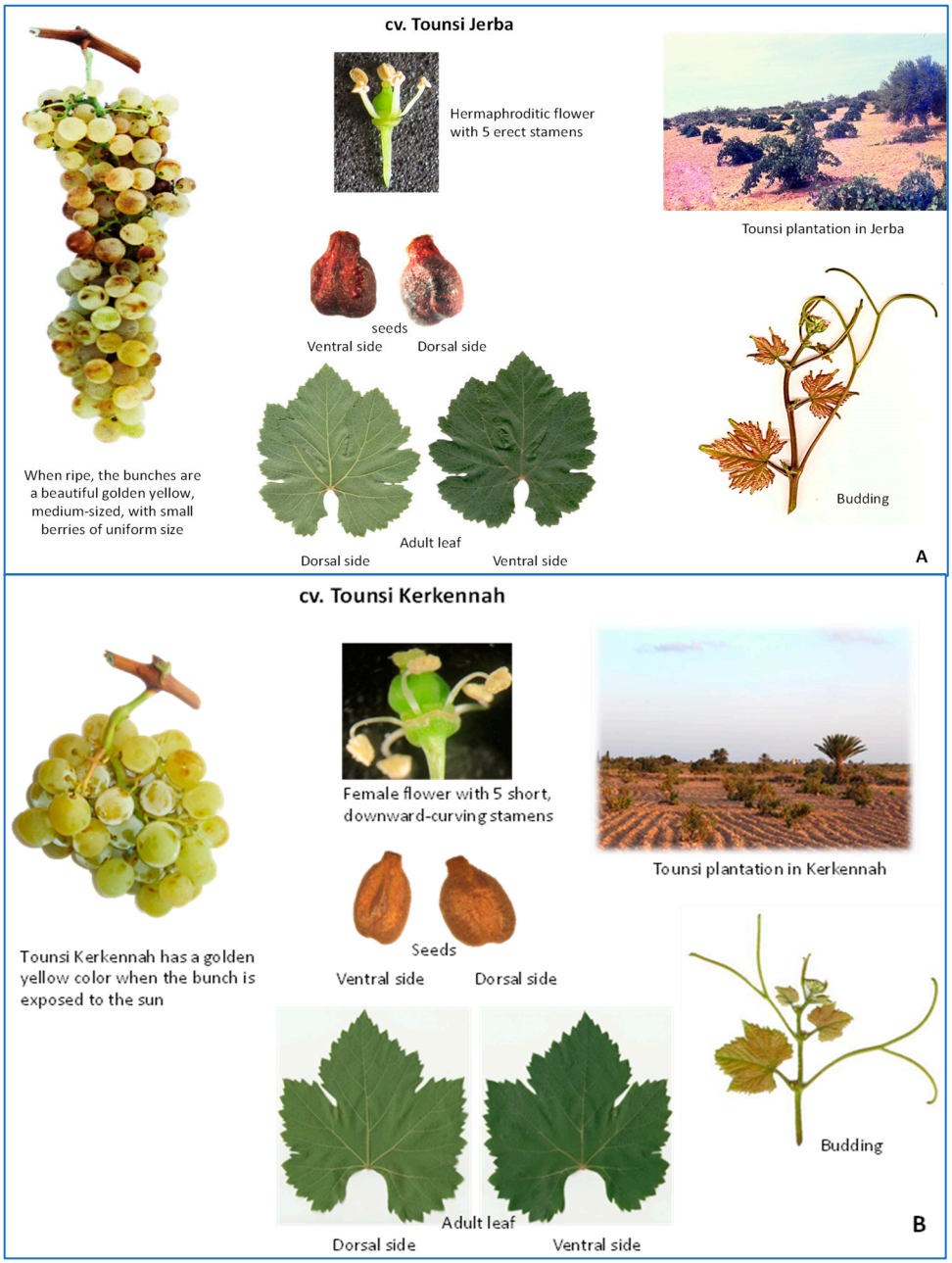

Figure 6. Morphological description of the Tounsi cultivated varieties: (**A**) cv. Tounsi Jerba, (**B**) cv. Tounsi Kerkennah.

6. Conclusions

Traditional varieties represent valuable genetic reserves for crop improvement, e.g., for adaptation to biotic and abiotic stress factors, but they often consist of small populations that are at high risk of extinction due to the introduction of high-yielding commercial foreign varieties [69]. Growing consumer interest in typical, ecological and socially sustainable foods that move away from mass-production could be the key to ensuring the survival of these genetic resources through economic compensation. In Tunisia, many traditional foods and culinary traditions based on the use of indigenous grapevine varieties have been preserved. Their promotion and utilization could represent an ecological practice for the conservation of biodiversity. INRAT and NGBT, in collaboration with local farmers, have implemented numerous participatory on-farm conservation programs to restore and rehabilitate indigenous grapevine varieties such as Asli in Kerkennah and Meski in Raf Raf in their original environment [62]. These varieties have already been evaluated, and the procedure for obtaining a "Protected Designation of Origin (PDO)" is underway. Extending these initiatives to other varieties and crops would be desirable and would be an effective contribution to maintaining and promoting ecologically sound and more sustainable production systems, improving the resilience of agriculture and supporting healthier ecosystems in Tunisia.

Author Contributions: Conceptualization, O.S.D. and M.M.M.; investigation, O.S.D., M.B.S., R.B.B.H.A., H.S. and M.M.M.; formal analysis, O.S.D. and M.M.M.; data curation, O.S.D., M.B.S., R.B.B.H.A., H.S. and M.M.M.; writing—original draft preparation, O.S.D., M.B.S., R.B.B.H.A., H.S., C.M. and M.M.M.; writing—review and editing, O.S.D., M.M.M., C.M., M.B.S., H.S. and R.B.B.H.A. All authors have read and agreed to the published version of the manuscript.

Funding: This research was carried out within the Agritech National Research Center and received funding from the European Union Next-Generation EU (PIANO NAZIONALE DI RIPRESA E RESILIENZA (PNRR)—MISSIONE 4 COMPONENTE 2, INVESTIMENTO 1.4—D.D. 1032 17/06/2022, CN00000022). This manuscript reflects only the authors' views and opinions; neither the European Union nor the European Commission can be considered responsible for them.

Data Availability Statement: All data are available in the paper. Further information can be provided by corresponding author upon request.

Conflicts of Interest: The authors declare that they have no competing financial interests or personal relationships that could influence the work in this article.

References

1. This, P.; Lacombe, T.; Thomas, M.R. Historical origins and genetic diversity of wine grapes. *Trends Genet.* **2006**, *22*, 511–519. [CrossRef] [PubMed]
2. Terral, J.F.; Tabard, E.; Bouby, L.; Ivorra, S.; Pastor, T.; Figueiral, I.; This, P. Evolution and history of grapevine (*Vitis vinifera*) under domestication: New morphometric perspectives to understand seed domestication syndrome and reveal origins of grown in Serbia. *Ann. Bot.* **2010**, *105*, 443–455. [CrossRef] [PubMed]
3. Galet, P. *Dictionnaire Encyclopédique des Cépages*; Hachette Pratique Editeur; Libre et Solidaire: Paris, France, 2000.
4. Riaz, S.; De Lorenzis, G.; Velasco, D.; Koehmstedt, A.; Maghradze, D.; Bobokashvili, Z.; Musayev, M.; Zdunic, G.; Laucou, V.; Walker, M.A.; et al. Genetic diversity analysis of cultivated and wild grapevine (*Vitis vinifera* L.) accessions around the Mediterranean basin and Central Asia. *BMC Plant Biol.* **2018**, *18*, 137. [CrossRef] [PubMed]
5. Grassi, F.; Arroyo-Garcia, R. Origins and Domestication of the Grape. *Front. Plant Sci.* **2020**, *11*, 1176. [CrossRef] [PubMed]
6. Rodriguez-Izquierdo, A.; Carrasco, D.; Anand, L.; Magnani, R.; Catarecha, P.; Arroyo-García, R.; Rodriguez Lopez, C.M. Epigenetic differences between wild and cultivated grapevines highlight the contribution of DNA methylation during crop domestication. *bioRxiv* **2023**. [CrossRef]
7. FAO-OIV. Table and Dried Grapes. 2016. Available online: https://www.fao.org/3/i7042e/i7042e.pdf (accessed on 20 January 2024).
8. Zohary, D.; Hopf, M. *Domestication of Plants in the Old World. The Origin and Spread of Cultivated Plants in West Asia, Europe and the Nile Valley*, 3rd ed.; Oxford University Press: Oxford, UK, 2000.
9. Lamine, M.; Zemni, H.; Ziadi, S.; Chabaane, A.; Melki, I.; Mejri, S.; Zoghlami, N. multivariate analysis and clustering reveal high morphological diversity in Tunisian autochthonous grapes (*Vitis vinifera*): Insights into characterization, conservation and commercialization. *J. Int. Sci. Vigne Vin.* **2014**, *48*, 111–122. [CrossRef]

10. Abbate, L.; Ben Hadj Alouane, R.B.; Askri, F.; Ben Mohamed, H.; Bouamama, B.; Carimi, F.; Carra, A.; Catalano, C.; Chebil, S.; Cusumano, V.; et al. *Carte Génétique des Principales Vignes Autochtones Siciliennes et Tunisiennes*; Arti Grafiche Campo s.r.l.: Sicily, Italy, 2016; p. 58.
11. Barbieri, R.L.; Costa Gomes, J.C.; Alercia, A.; Padulosi, S. Agricultural Biodiversity in Southern Brazil: Integrating Efforts for Conservation and Use of Neglected and Underutilized Species. *Sustainability* **2014**, *6*, 741–757. [CrossRef]
12. Snoussi, H. Lemons and limes Phylogeny; Diversity and Uses. *Ann. de L'INRAT* **2022**, *95*, 132.
13. Tamer, C.E.; Ömeroğlu, P.Y.; Çopur, Ö.U. Functional and Traditional Nonalcoholic Beverages in Turkey. In *Non-Alcoholic Beverages*; Grumezescu, A.M., Holban, A.M., Eds.; Woodhead Publishing: Cambridge, UK, 2019; pp. 483–521. [CrossRef]
14. Aktop, S.; Şanlıbaba, P.; Güçer, Y. Grape-based traditional foods produced in Turkey. *Ital. J. Food Sci.* **2023**, *35*, 55–74. [CrossRef]
15. Tomlins, K.I.; Manful, J.T.; Larwer, P.; Hammond, L. Urban consumer preferences and sensory evaluation of locally produced and imported rice in West Africa. *Food Qual. Prefer.* **2005**, *16*, 79–89. [CrossRef]
16. Sims, R. Food, place and authenticity: Local food and the sustainable tourism experience. *J. Sustain. Tour.* **2009**, *17*, 321–336. [CrossRef]
17. Zoghlami, N.; Mliki, A.; Ghorbel, A. Occurrence and discrimination of spontaneous grapes native to Tunisia by RAPD markers. *Acta Hort.* **2003**, *603*, 157–165. [CrossRef]
18. Ben Salem-Fnayou, A.; Hanana, M.; Fathalli, N.; Souid, I.; Zemni, H.; Bessis, R.; Ghorbel, A. Adaptative Anatomical characteristics of grapevine leaf in the south of Tunisia. *J. Int. des Sci. de la Vigne et du Vin.* **2005**, *39*, 11–18. [CrossRef]
19. Miazzi, M.M.; D'Agostino, N.; di Rienzo, V.; Venerito, P.; Savino, V.N.; Fucilli, V.; Ruffa, P.; Roseti, V.; Pirolo, C.; La Notte, P.; et al. Marginal grapevine germplasm from Apulia (Southern Italy) represents an unexplored source of genetic diversity. *Agronomy* **2020**, *10*, 563. [CrossRef]
20. Sabetta, W.; Miazzi, M.M.; Di Rienzo, V.; Fanelli, V.; Pasqualone, A.; Montemurro, C. Development and application of protocols to certify the authenticity and traceability of Apulian typical products in olive sector. *Riv. Ital. Sost. Grasse* **2016**, *94*, 37–43.
21. Lotfi, B.M. Expérience Tunisienne Dans le Domaine des Indications Géographiques. Séminaire National sur les Indicateurs Géographiques. Projet des Indicateurs Géographiques des Produits Agricoles IG-PA, Tunis 3 Octobre 2018. Available online: http://www.aoc-ip.tn/images/events/03oct2018/pdf/2-experience-tunisienne-ig.pdf#zoom=100 (accessed on 20 December 2023).
22. Ministère de l'Agriculture, des Ressources Hydrauliques et de la Pêche. 2014–2024 by IRESA.TN. Available online: www.aoc-ip.tn (accessed on 15 January 2024).
23. Owen, J.M. "Food Choice, Symbolism, and Identity: Bread-and-Butter Issues for Folkloristics and Nutrition Studies. *J. Am. Folk.* **2007**, *120*, 129–177.
24. FAO. 2021. Available online: https://www.fao.org/documents/card/en?details=cb4474en (accessed on 15 January 2024).
25. McGovern, P.E. *Ancient Wine: The Search for the Origins of Viniculture*; Princeton University Press: Princeton, NJ, USA, 2003. [CrossRef]
26. Savo, V.; Kumbaric, A.; Caneva, G. Grapevine (*Vitis vinifera* L.) Symbolism in the Ancient Euro-Mediterranean Cultures. *Econ. Bot.* **2016**, *70*, 190–197. [CrossRef]
27. Sargolzaei, M.; Rustioni, L.; Cola, G.; Ricciardi, V.; Bianco, P.A.; Maghradze, D.; Failla, O.; Quaglino, F.; Toffolatti, S.L.; De Lorenzis, G. Georgian Grapevine Cultivars: Ancient Biodiversity for Future Viticulture. *Front. Plant Sci.* **2021**, *12*, 630122. [CrossRef]
28. Kumbaric, A.; Caneva, G. Updated floristic biodiversity of Roman iconography. *Rend. Lincei* **2014**, *25*, 181–193. [CrossRef]
29. Chwalkowski, F. *Symbols in Arts, Religion and Culture: The Soul of Nature*; Cambridge Scholars Publishing: Newcastle upon Tyne, UK, 2016.
30. Urbi, Z.; Sanower, H.; Hossain, K.M.H.; Rahman, K.M.; Zayed, T.M. Grape: A Medicinal Fruit Species in the Holy Qur'an and its Ethnomedicinal Importance. *World Appl. Sci. J.* **2014**, *30*, 253–265.
31. Harbi Ben Slimane, M. *Ampélographie des Vignes Autochtones Cultivées et Spontanées en Tunisie*; INRAT/IPGRI CWANA: Ariana, Tunisia, 2001; p. 130, ISBN 92-9043-502-X.
32. Précheur-Canonge, T. La vie Rurale en Afrique Romaine d'après les Mosaïques. In *L'antiquité Classique, Tome 32, fasc. 1*; Presses Universitaires de France: Paris, France, 1963; pp. 374–375. Available online: www.persee.fr/doc/antiq_0770-2817_1963_num_32_1_1371_t1_0374_0000_1 (accessed on 15 January 2024).
33. Znaien, N. Le vin et la viticulture en Tunisie coloniale (1881–1956): Entre synapse et apartheid. *Fr. Cult. Stud.* **2015**, *26*, 140–151. [CrossRef]
34. M'aawia, M.; Barbery, J. Note Relative à la Carte des Extensions de la Tunisie Viticole. Direction Des Sols. Ministère de l'Agriculture. République Tunisienne. 1987. E-S 293, 1–27. Available online: https://horizon.documentation.ird.fr/exl-doc/pleins_textes/pleins_textes_7/tunisie/pour_fdi/010032890 (accessed on 2 November 2023).
35. Souid, I.; Zemni, H.; Sánchez Palomo, E.; Pérez-Coello, M.S.; Ghorbel, A. Aroma potential of three autochthonous grapevine varieties from Tunisia. *J. Int. des Sci. de la Vigne et du Vin.* **2008**, *42*, 231–239. [CrossRef]
36. Heywood, V.; Zohary, D. A catalogue of wild relatives of cultivated plants native to Europe. *Flora Mediterr.* **1991**, *5*, 375–415.
37. Arroyo García, R.A.; Revilla, E. The Current Status of Wild Grapevine Populations (*Vitis vinifera* ssp. *sylvestris*) in the Mediterranean Basin. In *The Mediterranean Genetic Code-Grapevine and Olive*; Poljuha, D., Sladonja, B., Eds.; InTech Publisher: Rijeka, Croatia, 2013; pp. 51–72.
38. Harst, M.; Cobanov, B.A.; Hausmann, L.; Eibach, R.; Toepfer, R. Evaluation of pollen dispersal and cross pollination using transgenic grapevine plants. *Environ. Biosaf. Res.* **2009**, *8*, 87–99. [CrossRef] [PubMed]

39. Snoussi, H.; Ben Slimane Harbi, M.; Ruiz-Garcia, L.; Martinez-Zapater, J.M.; Arroyo-Garcia, R. Genetic relationship among cultivated and wild grapevine accessions from Tunisia. *Genome* **2004**, *47*, 1211–1219. [CrossRef] [PubMed]
40. Di Vecchi, M.; Lucou, V.; Bruno, G.; Lacombe, T.; Gerber, S.; Bourse, T.; Boselli, M.; This, P. Low level of pollen mediated gene flow from cultivated to wild grapevine: Consequences for the evolution of the endangered subspecies *Vitis vinifera* L. ssp *silvestris*. *J. Hered.* **2009**, *100*, 66–75. [CrossRef]
41. Zoghlami, N.; Riahi, L.; Laucou, V.; Mliki, A.; Ghorbel, A.; This, P. Genetic structure of endangered wild grapevine *Vitis vinifera* ssp. *sylvestris* populations from Tunisia: Implications for conservation and management. *For. Ecol. Manag.* **2013**, *310*, 896–902.
42. Zaki, Z.; Kchouk, M.L.; Douik, K.A.; Ben Salem, A.; Ghorbel, A. Electronic imagery: A new method for grapevine identification. *Acta. Hort.* **1997**, *441*, 317–324. [CrossRef]
43. Fournier-Level, A.; Lacombe, T.; Le Cunff, L.; Boursiquot, J.M.; This, P. Evolution of the VvMYBA gene family; the major determinant of berry colour in cultivated grapevine (*Vitis vinifera* L.). *Heredity* **2010**, *104*, 351–362. [CrossRef]
44. Miazzi, M.M.; D'Agostino, N.; Gadaleta, S.; Di Rienzo, V.; Fanelli, V.; Sabetta, W.; Montemurro, C.; Taranto, F. Genotyping-by-sequencing-derived single-nucleotide polymorphism catalog from a grapevine (*Vitis vinifera* L.) germplasm collection that includes the most representative Apulian autochthonous cultivars. *Acta Hortic.* **2019**, *1248*, 69–76. [CrossRef]
45. Villano, C.; Procino, S.; Blaiotta, G.; Carputo, D.; D'Agostino, N.; Di Serio, E.; Fanelli, V.; La Notte, P.; Miazzi, M.M.; Montemurro, C.; et al. Genetic diversity and signature of divergence in the genome of grapevine clones of Southern Italy varieties. *Front. Plant Sci.* **2023**, *14*, 1201287. [CrossRef] [PubMed]
46. Laucou, V.; Launay, A.; Bacilieri, R.; Lacombe, T.; Adam-Blondon, A.-F.; Bérard, A.; Chauveau, A.; de Andrés, M.T.; Hausmann, L.; Ibáñez, J.; et al. Extended diversity analysis of cultivated grapevine *Vitis vinifera* with 10K genome-wide SNPs. *PLoS ONE* **2018**, *13*, e0192540. [CrossRef] [PubMed] [PubMed Central]
47. Zoghlami, N.; Riahi, L.; Laucou, V.; Lacombe, T.; Mliki, A.; Ghorbel, A.; This, P. Origin and genetic diversity of Tunisian grapes as revealed by microsatellite markers. *Sci. Hort.* **2009**, *120*, 478–486. [CrossRef]
48. Riahi, L.; Zoghlami, N.; Laucou, V.; Mliki, A.; Ghorbel, A.; This, P. Use of chloroplast microsatellite markers as a tool to elucidate polymorphism; classification and origin of Tunisian grapevines. *Sci. Hort.* **2011**, *130*, 781–786. [CrossRef]
49. Riahi, L.; Laucou, V.; Le Cunff, L.; Zoghlami, N.; Boursiquot, J.M.; Lacombe, T.; El-Heit, K.; Mliki, A.; This, P. Highly polymorphic nSSR markers: A useful tool to assess origin of North African cultivars and to provide additional proofs of secondary grapevine domestication events. *Sci. Hort.* **2012**, *141*, 53–60. [CrossRef]
50. Riahi, L.; Zoghlami, N.; Fournier-Level, A.; Dereeper, A.; Le Cunff, L.; Laucou, V.; Mliki, A.; Ghorbel, A.; This, P. Characterization of single nucleotide polymorphism in Tunisian grapevine genome and their potential for population genetics and evolutionary studies. *Genet. Resour. Crop. Evol.* **2013**, *60*, 1139–1151. [CrossRef]
51. Martin, E.M.; Grao-Cruces, E.; Millan-Linares, M.C.; Montserrat-de la Paz, S. Grape (*Vitis vinifera* L.) Seed Oil: A Functional Food from the Winemaking Industry. *Foods* **2020**, *9*, 1360. [CrossRef]
52. Saadaouia, N.; Weslatia, A.; Barkaouib, T.; Khemiric, I.; Gadachaa, W.; Soulia, A.; Moknid, M.; Harbi, M.; Ben-Attiaa, M. Gastroprotective effect of leaf extract of two varieties grapevine (*Vitis vinifera* L.) native wild and cultivar grown in North of Tunisia against the oxidative stress induced by ethanol in rats. *Biomarks* **2020**, *25*, 48–61. [CrossRef] [PubMed]
53. Rababah, T.M.; Al-u'datt, M.; Almajwal, A.; Brewer, S.; Feng, H.; Al-Mahasneh, M.; Ereifej, K.; Yang, W. Evaluation of the nutraceutical; physiochemical and sensory properties of raisin jam. *J. Food Sci.* **2012**, *77*, C609–C613. [CrossRef]
54. Williamson, G.; Carughi, A. Polyphenol content and health benefits of raisins. *Nutr. Res.* **2010**, *30*, 511–519. [CrossRef]
55. Kountouri, A.M.; Gioxari, A.; Karvela, E.; Kaliora, A.C.; Karvelas, M.; Karathanos, V.T. Chemopreventive properties of raisins originating from Greece in colon cancer cells. *Food Funct.* **2013**, *4*, 366–372. [CrossRef] [PubMed]
56. Tang, G.Y.; Zhao, C.N.; Liu, Q.; Feng, X.L.; Xu, X.Y.; Cao, S.Y.; Meng, X.; Li, S.; Gan, R.Y.; Li, H.B. Potential of Grape Wastes as a Natural Source of Bioactive Compounds. *Molecules* **2018**, *23*, 2598. [CrossRef] [PubMed]
57. Shinagawa, F.B.; Santana, F.C.; Mancini-Filho, J. Effect of cold pressed grape seed oil on rats biochemical markers and inflammatory profile. *Rev. Nutr.* **2015**, *28*, 65–76. [CrossRef]
58. Al-Khusaibi, M.; Al-Habsi, N.; Rahman, M.S. (Eds.) *Traditional Foods: History, Preparation, Processing and Safety*; Springer: New York, NY, USA, 2019.
59. Kouki, M. *La Cuisine tunisienne d' "Ommok Sannafa"*; Al Asria: Tunis, Tunisia, 1983; 504p.
60. Kaâk, Z. *La Sofra Cuisine Tunisienne Traditionnelle*; Cérès Editions: Tunis, Tunisia, 1899; 319p.
61. Vehel, J. *La Véritable Cuisine Tunisienne*; MediaCom: Tunis, Tunisie, 2008; 94p.
62. Snoussi, T.; Jedidi, E.; Ben Slimane Harbi, M. Le Razzégui: Caractérisation ampélographique, cytogénétique et moléculaire d'un cépage tunisien autochtone. *J. New Sci. Agric. Biotech.* **2015**, *16*, 574–582.
63. Bouamama, B.; Jardak, R.; Ben Salem, A.; Ghorbel, A.; Mliki, A. Preservation of endangered Tunisian grapevine cultivars using embryogenic cultures. *Electron. J. Biotechnol.* **2009**, *12*, 2. [CrossRef]
64. Ben Slimane Harbi, M.; Chabbouh, N.; Snoussi, H.; Bessis, R.; El Gazzah, M. Étude du germoplasme de vignes autochtones de Tunisie. Précisions sur l'origine du millerandage du «Razzégui». *Bull. OIV* **2004**, *77*, 487–501.
65. Minangoin, M. *Etude sur les Cépages Tunisiens. Rapport de Prospection*; Ministère de l'Agriculture de Tunisie: Tunis, Tunisie, 1905; 40p.
66. Saddoud Debbabi, O.; Khanfir, E.; Dridi, M.A.; Mars, M. Ethnobotanical and on farm genetic surveys of fig (*Ficus carica* L.) genetic resources in Kerkennah islands. Inter. *J. Hort. Sci. Tech.* **2021**, *8*, 153–163.

67. Hanana, M.; Hamrouni, L.; Ben-Hamed, K.; Ghorbel, A.; Chedly, A. Comportement et stratégies d'adaptation de vignes franches de pied sous stress salin. *J. New Sci.* **2014**, *3*, 29–44.
68. Qabla, G. The Jewish Community of Djerba: Secrets of Sustainability. In *Confluences Méditerranée*; Spring: Berlin/Heidelberg, Germany, 1994; p. 10.
69. Debbabi, O.S.; Miazzi, M.M.; Elloumi, O.; Jendoui, F.; Mangini, G.; Famiani, F.; Taranto, F.; Montemurro, C.; Msallem, M. Recovery, assessment, and molecular characterization of minor olive genotypes in Tunisia. *Plants* **2020**, *9*, 382. [CrossRef]

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.