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## **Research on Agro Biodiversity in Jenin Governorate “Field Interviews and Creation of Inventory of Agro Food Products”**



**Submitted to  
Rural Women Development Society**

**By Naser Qadous**

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## تقرير البحث في

### التنوع الحيوي الزراعي والتراث الغذائي في محافظة جنين

#### ملخص تنفيذي

تم إجراء هذا البحث في الربع الأخير من عام 2020 لصالح جمعية تنمية المرأة الريفية (RWDS). يأتي هذا البحث في سياق مشروع "الشبكات المستدامة لابتكار الأغذية الزراعية الرائدة في البحر الأبيض المتوسط – MedSNAIL". ويهدف إلى تحديد المنتجات (المواد الخام والمنتجات المصنعة والتقنيات والوصفات التقليدية) في منطقة جنين وتقييم إمكاناتها في الحفاظ على التراث الثقافي والبيئي، وتطوير ديناميات إقليمية حميدة من وجهة نظر اجتماعية وثقافية وبيئية واقتصادية.

اعتمد البحث منهجية مخصصة معتمدة من قبل مؤسسة SLOW FOOD الدولية، وهو نهج تشاركي نوعي. وشملت مراجعة الأدبيات والإحصاءات المتوفرة حول الزراعة في محافظة جنين، ومن ثم مقابلة أشخاص مطلعين من المجتمعات المحلية وخبراء وموظفين رسميين في المنظمات الحكومية وغير الحكومية لجمع المعلومات حول التراث الغذائي والزراعي ووضع خرائط للمنتجات في منطقة جنين.

تم إعداد قائمة تشمل 77 منتجاً ومحصولاً حققت المعايير المتفق عليها والمبينة في هذا التقرير. وتبين القائمة الاسم العلمي، والاسم العربي، وتوزيع المنتج في منطقة جنين حسب مناطق الإنتاج والمساحات. وقد تم توثيق الأصناف المحلية الرئيسية في المنطقة. بالإضافة إلى المنتجات المعروفة أكثر في منطقة جنين والتجمعات الفلسطينية المماثلة.

يبدأ التقرير بوصف التراث الزراعي والغذائي في محافظة جنين. والتطورات في الزراعة خلال العقود القليلة الماضية ومناقشة الأسباب الكامنة وراء التغيير في أنماط الزراعة من منظور كبار السن مع التحقق والمراجعة باستخدام جميع المراجع المتاحة.

وثق هذا البحث عدداً كبيراً من أسماء الأصناف المحلية للقمح والمحاصيل الأخرى التي لم تكن معروفة إلا في ذاكرة الناس المحليين. حيث لم يتم العثور على هذه الأسماء للأصناف المحلية في أي مرجع. وقد تم تسليط الضوء على أكثر الأصناف/المحاصيل المهددة بالانقراض في قائمة المنتجات ولإعطاء أمثلة، هناك سبعة أصناف القمح البلدية المتأصلة والتي تزرع على نطاق صغير لدى عدد قليل من المزارعين، وهناك صنف من الشعير يسمى الشعير النبوي يزرع على نطاق ضيق جداً.

يشمل التقرير ورقة بيان خاصة لكل مجموعة من المنتجات الرئيسية. وتم وصف التراث الغذائي المتعلق بهذه المجموعة من المنتجات/المحاصيل. وتشمل النتائج قائمة الحبوب وخاصة القمح. وغالباً ما تستخدم منتجات القمح في الطهي واعداد الطعام. البقوليات فهي أيضاً شائعة مع تنوع أكثر من الحبوب خاصة العدس والحمص، أن المساحات المزروعة بهذه المحاصيل تتناقص باستمرار ويزداد الاعتماد على المنتجات المستوردة، نظراً لرخص سعرها مقابل المنتج البلدي، حتى أن العدس يكاد يختفي كمحصول إلا في بعض القرى. كما وتنتشر أشجار الفاكهة بشكل كبير في جنين ويعتبر الزيتون أكثر المحاصيل انتشاراً. تعتبر جنين من المناطق الرائدة في إنتاج الخضروات المتنوعة خاصة البندورة، وهناك ثلاثة أصناف محلية من البندورة تأخذ في الغالب أسماء القرى وهي (عنزة وبيت أولا وصنف ثالث معروف بالبندورة المرماندية) وتزرع على نطاق ضيق. كما أن النباتات الورقية تعتبر ذات قيمة اقتصادية وغذائية عالية وهي منتشرة في جنين. يقوم بعض الأهالي في منطقة جنين بجمع بعض النباتات البرية والفطر ليستعملوها في غذاءهم، ومن الفطر يتم جمع صنفين أساسيين (هي الكلخ وخشم العجل، ومن الناس من يجمع الفطر لاستعماله الخاص وهذا تقليد في جنين في موسم الشتاء، والبعض الآخر يجمعه ويبيعه على نطاق اقتصادي كبير.

على الرغم من أن العديد من الأصناف المحلية التي قد تساعد في الحفاظ على التراث الزراعي والغذائي معرضة للخطر، إلا أن هناك مناصرون وشركاء مهتمون يمكنهم -وهم على استعداد- للعمل معاً وبطريقة تكاملية للحفاظ على هذه المنتجات. هذه الجهود هي الضمان للمساعدة في الحفاظ على التراث الغذائي والمساعدة في تعزيز فن الطهو البيئي والاستهلاك الغذائي المسؤول.

وفي نهاية التقرير، هناك توصيات وبعض الأفكار للمساعدة في التخطيط للحفاظ على التراث الغذائي والمساعدة في تحسين الأمن الغذائي من خلال مبادئ الغذاء البطيء.

## Executive Summary

This research was conducted last quarter of 2020 for Rural Women Development Society (RWDS). It comes in the context of the project “Sustainable Networks for Agro-food Innovation Leading in the Mediterranean – MedSNAIL”. The objective of the research is to map products (raw materials, processed products, traditional techniques, and recipes) in the Jenin area (North of West Bank), and to assess their potential in the conservation of the cultural and environmental heritage, and the development of virtuous territorial dynamics from a socio-cultural, environmental, and economic standpoint.

The research adopted a customized SLOW FOOD Organization mapping methodology, which is a qualitative participatory approach. Knowledgeable people from the local communities, experts, and official workers in governmental and non-governmental organizations were interviewed to collect information about food and agricultural heritage and map products in Jenin area.

An inventory list of 77 products was prepared, products are those most common, fulfilling the agreed criteria. The matrix shows the scientific name, Arabic name, and distribution of the product in the Jenin area. Main local varieties native to the area were documented. As well as products, that are more known to the Jenin area and Palestinian similar communities.

The report starts with describing agriculture and agricultural heritage in the Jenin governorate. The dynamics of farming through the last few decades and discussing reasons behind the change in farming patterns from the perspectives of old people with verification and cross-checking using all available references.

This research documented a large number of names of local varieties of wheat and other crops that were only known in the memories of local people. Some names of local varieties were not found in any reference, but rather in the memory of old people as a tacit knowledge. The most endangered varieties/crops were highlighted in the inventory. To give examples there are seven local wheat lines grown on small scale, one barely line called Nabawi.

Datasheets describing the main products are included in this report. In each sheet, the food heritage related to this group of products/crops was described. Cereals, particularly wheat are very common in Jenin. Products of wheat are most frequently used in gastronomy. Legumes are also common with more diversity than cereals. Lintels and chickpeas are dominating, though areas cultivated with such crops are continuously decreasing and reliance on imported products increase, even Lintels are disappearing as a crop except in some communities. Fruit trees are very common in Jenin with olives as the most widespread crop. Jenin is considered one of the leading areas in the production of a variety of vegetables. Most common is tomato, there are three local tomato varieties (Annza, Beit Oula and Maramandeyah) grown on small scale. Leafy plants are of high value economically and nutritionally it is also widespread in Jenin. People in the Jenin area collect some wild plants and mushrooms (most common local varieties are Kalakh and Khashem Ejel “cow nose”. People use collect Mushrooms from the wild and use it in their own food, others collect and sell on a large economic scale.

Though many local varieties that might help in conserving the agriculture and food heritage are endangered, there are champions and interested partners who can, and are willing to come together and act in a complementary way to conserve such products. Such efforts are the guarantee to help reach a virtuous nationalization of food heritage and help promote eco gastronomy and responsible food consumption.

At the end of the report, there are recommendations and some ideas to help plan for forward-looking to conserve the food heritage and help in improving the food security through the slow food principles.

**Key Words:**

*Jenin, RWDS, MedSNAIL , Slow Food, biodiversity, food heritage, agriculture heritage, culinary, local varieties, local cultivars, Baladi, , endogenous, traditional recipes.*

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## Introduction:

Rural Women’s Development Society (RWDS) is a Palestinian non-governmental organization working in the occupied West Bank and Gaza Strip. Founded in 1987. RWDS has a strong and respected grassroots presence in rural communities with 3000+ women members in a network of 58 women’s clubs. RWDS is currently an implementing partner of the project “Sustainable Networks for Agro-food Innovation Leading in the Mediterranean – MedSNAIL”. The project is lead by FAMP - Andalusian Federation of Cities and Provinces - Spain and involve another five Organizations from different countries. Slow food Foundation –Italy, ESDU - American University of Beirut – Lebanon, University of Sfax – Tunisia, Gozo Regional Committee – Malta, and NAMAA – Jordan.

The MEDSNAIL project rediscovers and recognizes the importance of the cultural identity that food expresses, and aims to promote an idea of “virtuous globalization”. Gastronomy, recognized as part of the local heritage, becomes the driving force for sustainability, development and the promotion of economies, which are adapted to the communities and to the production sites.

This research was conducted during October- December 2020 to map the agricultural crops/ products related to food heritage, and how and who are of food interest in Jenin area. It utilized preliminary desk research conducted earlier by RWDS team.

## Research methodology:

The research was conducted following the Medsnail mapping methodology, which is a qualitative participatory approach. Primary data was collected through semi-structured interviews and group discussions. Secondary data was collected from any potential source of information found in the literature about the agricultural heritage and farming activities in Jenin.

## Objectives of the Consultancy Service:

This research was designed to map products (raw materials, processed products, traditional techniques, and recipes) present in the Jenin area. Namely, the research objectives area:

- 1- Identify products, and crops, (territory mapping), in other words, prepare an inventory of products potential to be fulfilling the project objectives (criteria)
- 2- Assess the potential of commodities in terms of conservation of the cultural and environmental heritage
- 3- Assess their potential in terms of the development of virtuous territorial dynamics from a socio-cultural, environmental, and economic standpoint

## Research steps

- 1- **Desk Review:** to reach a brief description of the agricultural heritage of Jenin a desk review was conducted at the beginning. The start was the context analysis conducted earlier by RWDS. Jenin's context relevant to the research scope was analyzed through existing reports and references, however, the literature did not have but few studies specific to Jenin.
- 2- **Fieldwork tools** were prepared and discussed with RWDS, see **annex1**. Criteria for selecting crops and processed products were mutually agreed upon. Such criteria were reflected in the guidelines for leading discussions with key informants. The discussion was focused on answering all needed information about agricultural commodities and the heritage of agriculture in Jenin

### Criteria for selection of the Products/ crops

- 1- Interesting food-wise not feed not flowers
- 2- With special organoleptic quality parameters that area special to local people like appearance, color, and consistency
- 3- Native to Jenin (proved to be existing for years), not easy to judge if a crop is indigenous to Jenin itself but rather to Palestine.
- 4- In the memory of Local people (youth and elder people
- 5- People know how to deal with the product and use it
- 6- It has a national value
- 7- Growing, processing, and handling of the product is environmentally sustainable, conserve soil fertility,
- 8- Social sustainability: inherited along generations, practiced by a wide range of farmers, not elites

- 3- **Stakeholder mapping:** The starting point for the fieldwork was the mapping of stakeholders and potential informants. The list included 43 interviewed people representing producers, consumers, experts or people who are knowledgeable of the food and agricultural heritage in the Jenin area (**annex3**). In coordination with RWDS, an entry group was identified which is the agricultural directorate, old cooperatives, heritage conservation organizations in Jenin and other areas, and some key persons. Then the “rolling snowball” principle was followed where interviewed people were asked to lead the team to identify more knowledgeable people.



Research Team interviewing Om Emad Saleh 80 years from Burqueen town

- 4- **Fieldwork:** in-depth discussion through direct encounters with identified key informants formed the main source of primary data. However, in a few cases, virtual interviews were used as some people were not available during the day time. The discussion objective was preparing the inventory of commodities, answering questions around mapping criteria, and understanding the food heritage of the Jenin area. The guiding questions are shown in (**annex 2**), the main questions were:
- Commodities: What are the most common commodities, which are of food importance and with identities strongly linked to your specific community and to the Jenin area as a whole/ something that is unique?
  - Commodity information: For each of those commodities: where is this commodity more common? How is it used/ consumed? For crops what products can be produced/ processed from the crop? What is different in Jenin than other areas of the same product if present in other areas? What recipes? How is it prepared? What different local names exist? Is this product seasonal? Why?
  - Product Data Sheet: At the first stage, a description of the groups of crops is presented in the report, however, the common names, scientific names, Arabic names are mentioned in the inventory matrix (**annex 1**). Local or native cultivars were mentioned, but the new trade names of cultivars were not mentioned. The matrix also explains the main cultivation area and the total area of different crops. The processed products, there is a section on recipes and traditional dishes that are deep in the gastronomy heritage. The focus was on recipes using locally produced ingredients.

- 5- **Observations** The research team tried to take photos of products, but as the season is transitional (fall) not spring not summer, it was hard to find most of the products. For recipes, most are rarely produced and need a special arrangement for women to prepare based on special order. However, some major products (recipes) can be prepared with prior coordination with old women.

### Sources of Information:

- 1- Secondary data: all possible literature locally and internationally was searched for relevant information about agricultural heritage and biodiversity in Jenin. Where possible refereed sources were used. However, information from websites was also sought and utilized. Statistics were obtained from the Palestinian Central Bureau of Statistics and data of the Ministry of Agriculture
- 2- Primary data: a list of questions to guide the discussions in the field was prepared and agreed with RWDS. The list of informants included the Ministry of Agriculture/ Jenin, Agricultural Research Center, agricultural cooperatives, women groups, individual experts, and old people mainly women. However, the heritage organizations were contacted but found to be not working in agriculture.

### Agricultural Biodiversity in Palestine:

Palestine enjoys climatic and topographic diversity giving a special biodiversity of such a small area. While the southern part of Jordan valley is 400 m below sea level some mountains are 850 to 1020 m above sea level. The sub-costal area has semi-tropical weather which enables farmers to grow a variety of crops. Mountains are relatively cold in winter giving the typical conditions for fruit trees to grow. Jordan Valley is very hot in summer and warm in winter, therefore off-season crops are common in Palestine. Historically Jericho is the oldest city in the world. First farming of human being started in the region. Flora Palaestina<sup>[1]</sup> indicated that there are 2500 plant species endogenous to Palestine. Animals have less endogeneity than plants, due to continuous movement from one place to another. While numbers of wildlife species in Palestine are estimated, their monitoring and evaluation is sketchy due to their continuous movement and the changes in their population (Abbadi, 1988; Andrews, 1995).

Jenin with Tulkarm and Qalqilia are known as irrigated agricultural areas and Jenin represents some of the most important agricultural land in the West Bank, as soil quality is better and rainfall is higher than more southern locations. The Tulkarem and Jenin districts make up the largest forested areas in the West Bank, making up more than 235,000 of the total 260,000 dunums of forest in West Bank. Because the sub-districts are relatively less populated than the rest of the West Bank and receive relatively more rainfall, they tend to be more suited for forests.<sup>[1]</sup>

## Jenin Area Overview:



### Agriculture in Jenin:

Jenin is one of the most important agricultural lands in the West Bank. The topography brings the land suitable for agriculture to represent 36% of the total area, which is the highest percentage among governorates. The water resources are relatively better than most other areas in WB. There are 63 ground water wells in Jenin area, majority are privately owned, while only 5-6 are owned by municipalities<sup>[2]</sup>. There are 42 springs with a total discharge of 225,000 CM per year which is not significant on the district level. The area of arable land is 208,352 dunums<sup>[3]</sup>. Jenin has well known four main fertile plains. Farmers depend on rain-fed winter and summer crops. Irrigated farming is either practiced in open field or greenhouses. Historically, (40 years ago) Jenin used to be known for its watermelons where thousands of dunums were grown. But now the area is counted in tens of dunums. Farmers used to export watermelons to Jordan and Gulf countries. “ We used to have more than a thousand dunums of delicious local variety (Jadouai) watermelons, every day big trucks used to carry loads of watermelons to Jordan, Maythaloun used to be known in Jordan as the village of water melon, but last summer there were no more than 10 dunums” said Feryal, a farmer and active women from Maythaloun. This was also indicated by an 85 years old Um Imad Saleh from Burqeen; “I used to fill in trucks of watermelon and send to my husband who used to sell in Beirut before the occupation”. Mohammad Abo Naji from Arrabeh recalls when fifty years ago they used to export Arrabeh watermelon, to Syria and Jordan. In addition to inability to compete with the prices of Israeli watermelon, the epidemics of soil-borne diseases contributed to disappearance of melons. Farmers tried to bring back the watermelons to Jenin, they succeeded in the production but again the high production costs and dumping of markets with Israeli products made it impossible to compete.

Watermelon is not the only crop that disappeared. Lentils are rarely grown on an economic scale. The native variety of lentils can be only found in Zababdeh village with one farmer. Citrus groves also disappeared except in less than 100 dunums. Barely is no more grown. Cumin is very limited though used extensively. Other crops increased like gangrene plums, strawberries, baby cucumber, pickling cucumber varieties and greenhouse grown crops. The most stable crop in terms of distribution is wheat and its products, mainly for freekeh production purposes.

## Agricultural heritage in Jenin:

Agriculture is deep in the heritage of Palestine in general and Jenin area in particular, as it enjoys the largest percentage area of fertile cultivated land. The life of farmers used to be linked to seasons planting/ seeding season, plowing season, cereals harvesting season, olive picking season. The Arabic sayings in agriculture are common and inherited. Usually such sayings include agricultural knowledge and guidance for farmers on how, what and when to grow, some sayings shows the nutritional and medicinal importance of products others encourage farming to take care of plants, and showing when to start practices.

Local cultivars known as “Baladi” in Arabic, are available for many crops. Some are endangered; this is why a gene bank and seed bank were established in Jenin (The National Agricultural Research Center). Despite the introduction of productive hybrid varieties of many crops still farmers grow the local vars. Anzza farmers still grow native “Baladi” tomato variety given the name of the village “Anza tomatoes<sup>[1]</sup>. Abdallah Omari from the National Research Center (NARC) indicated that they are looking for such varieties that have almost disappeared. This variety is drought resistant, have high percentage of solid material making it suitable for drying and making tomato paste. NARC plays a role in protecting the native varieties of wheat and promoting its cultivation so areas increase. Some varieties were threatened, NARC conserved such vars and brought it back. Every year wheat seeds are distributed to farmers to grow; at the harvest season they return back new seeds for the bank.

### **Native Wheat lines:**

- 1- *Hetiya Yellow, called Debyeh in the south, it is the best for Coscos “Maftoul”*
- 2- *Hetiya white: best for flour, and Freekeh*
- 3- *Kahla: good for freekeh*
- 4- *Nab Eljamal: best for straw hand works*
- 5- *Kahtat*
- 6- *Nawrasi*
- 7- *Nab ElJamal*

*Barely Native line is called “Nabawi” adjective from Prophet in arabic. This is very similar to wheat usually used as food and for barely soak drink. This variety is found in Yaseed village/ Nablus only.*

White dry bean variety is only found and cultivated in Arrabeh. It can be cooked directly without prior overnight soaking like any other variety, with special taste. The cost of one kilogram is \$10 which is 5-7 times the cost of imported dry beans.

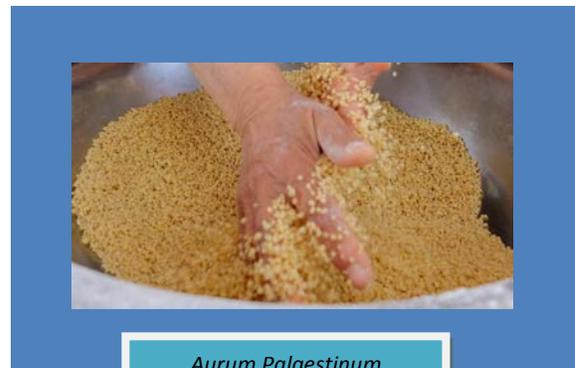
<sup>[1]</sup> <http://www.fao.org/fileadmin/templates/agphome/documents/PGR/SoW1/east/PALESTIN.pdf>

### Some Special Practices (Tacit knowledge):

- Freekeh flour if mixed with regular wheat flour to make maftoul (couscous) would give special favourable taste.
- Freekeh Can be made from barley, it has special nutritional value and taste. *Only one farmer grows it, he produces one ton for Kanaan company for fair-trade, the later exports it.*
- Making grouts (Burgul) from wheat is of best quality when prepared right after harvesting
- Farmers used to fill in their stock of lentils in pottery jars and keep on the rooftops through summer months. According to farmers, this practice improves the quality of the lentils in terms of color, it becomes more yellowish, it ripens faster during cooking and taste becomes much better.
- Some women believe that drying tomatoes is a process that adds more energy to sun-dried tomatoes so it becomes of higher nutritional value.

Food Heritage: The Palestinian gastronomy and the old cuisine are rich in heritage. Women are usually responsible for cooking. Traditional recipes depend on the available raw material through seasons and what farmers used to grow. When to prepare such cooks is linked to harvesting season, or to social and religious events in other cases or linked to weather conditions. To give some of the many examples: in the past and during the olive harvest season, which used to last October to December, women used to prepare "Fetoot". It is a baked dough made of a mix of wheat flour, olive oil mixed with Anise seeds, sesame, black

Karawy, and yeast. It is nutritious, gives energy, with long shelf life (2 weeks before taste changes or it spoils), there was no cooling at that time. The family use this Fetoot as their ready-made energetic snacks. They all the time were in a hurry trying to finish before the rain. Another example when a mother delivers a baby there is a rich menu for the puerperal and women who visit her for assistance in housekeeping or congratulations. In many Jenin villages and few other villages in Tulkarm, just on borders of Jenin, a special soup made of a wild plant called Jea'deh in Arabic or in English **Blume schott** (*Eminium spiculatum*) and eggs, the recipe is called "Ja'ajeel Jaadeh". Looking into references about the nutritional value of *E.*



*Aurum Palaestinum*

*spiculatum* a medical reference shows that it has an anticoagulant effect<sup>1</sup> which means it helps puerperal recover from delivery, of course, people did not know this when they started using it. Local women said, “This dish helps in milk production and mother recovery”. This plant has also antibacterial effects<sup>2</sup> worth mentioning, in other areas of West Bank more common similar plant called “Loof” *Arum palaestinum* is known as a wild plant, and it is used intensively during early winter but not for same purpose, it has anti-cancer effects<sup>3</sup>



Hand-made Maftool

*In the event when a child teeth first appear the family used to prepare a dish called «Sleeqah» in Arabic, which is boiled wheat whole grains. When it is still hot Sugar or honey are either added. The child family distribute plates to neighbors and relatives who in turn send back the plate full of baladi eggs, a good source of Calcium necessary for teeth growth.*

The majority of traditional old recipes are considered vegetarian and healthy, as meat in the past was not available or accessible, it was too expensive for people, and is still too expensive for poor and low to middle-income households. The basic raw material of the majority of recipes comes from wheat grains. Arab saying about wheat and olive oil importance are too many like “Wheat and olive oil are two lions at home” القمح والزيت سيعين في البيت, which means who have wheat and oil will not starve. Wheat is processed into grouts, flour, semolina, and green roasted wheat called “freekeh”. It can be also soaked, boiled, and eaten directly, or even cooked after grinding without prior soaking. In the past when nuts were not available, villagers used to roast wheat grains and eat it, this is called “Qaleya”. Roasted wheat is also ground and added to the most popular Za’atar mix.

Pulses were also common and important in food security. Lentils are the most common legume then dry broad bean, dry peas, and dry beans. In the past when rice was not common people used to cook whole grain lentils or ground lentils alone or mix it with bulgur, Freekeh or dough, it can

Jaa’dah (*Eminium spiculatum*) is a member of the family Araceae. It’s a cormous perennial herb with mediate dissected leaves, appearing together with the flowers. The spathe is very large up to 15 cm long, with an open, inside purple mottled tube ending in an inside blockish purple warty limb (1). The plant is fairly common in the Mediterranean coastal region (2) It is native to Palestine. Many plants in this family are poisonous raw and if eaten raw, this toxin gives you a sensation as if hundreds of tiny needles are sticking into the mouth tongue etc. However, it is easily

<sup>1</sup> M. I. Al-Farwachi, et. Al. 2013. ANTICOAGULANT EFFECTS OF EMINIUM SPICULATUM AQUEOUS LEAF EXTRACT IN RABBITS. College of Veterinary Medicine University of Mosul, Mosul, Iraq

<sup>2</sup> Fatima Afifi. 2010.

Jordan. <https://www.tandfonline.com/doi/abs/10.1080/14786419.2011.565558?src=recsys&journalCode=gnpl20>

<sup>3</sup> <https://www.naturalmedicinejournal.com/journal/2019-02/arum-palaestinum-food-medicine>

be also mixed with fresh or dry vegetables (like tomato paste, squash, pumpkin, dry Molokheya. Olive oil and onions tended to be crosscutting in almost every recipe, it is added with cooking or added on plates. There are also Arabic sayings showing the importance of pulses like “if you missed the mutton use pulses” ان غاب عنك الضاني عليك بالقطاني or “Eat lentils you become faster than the mare” كل عدس تقوت الفرس.

People used to collect a variety of wild plants and use them in their cuisine. Though the collection decreased these days but still it is practiced, even some of the wild plants became cultivated crops like Mallow (*Malva*), Dandelion (*Cichorium*) and Summer purslane (*Purtulaca*). The mushroom collection is very common in most of Jenin's communities during winter.



Blume Schott (Jaadeh الجعدة)

## Changes in agriculture in Jenin:

The change applies to many crops that dropped to become grown in small areas as shown in table (2), next page, which compares areas of main crops in 2010 and 2019. Other crops increased or have been newly introduced to Jenin. To give examples Sesame used to be a rewarding crop but areas dropped by 88% in 10 years' time, same case applies for Anise, chickpeas, and almonds. While crops like cantaloupe, strawberries, fennel, potatoes, grapes, plums, and cherries are increasing in areas.

Talking to old people about the agricultural heritage and changes in the farming pattern indicates how crop distribution, varieties, practices, and consequently the gastronomy have been changed in the last 40- 50 years. People used to produce their own needs of essential commodities like wheat, barley, lentils, chickpeas, broad bean, sesame, onions, vegetables, olive oil, and many other crops. All were produced from local native varieties.

The **root causes behind such changes** as described by interviewed people are:

- 1- Competition from the Israeli production as Israeli agriculture relies more on irrigation and technology which means lower production costs, this historically applies mainly to watermelon cantaloupe, and citrus
- 2- The high production costs compared to the import market, In many countries like Egypt, Turkey, and Europe the costs are much lower than locally-produced crops. Therefore, prices of such crops dropped down reducing profit margins of local produce. This is why the cultivation of crops like lentils, cumin, Anise, and sesame dropped drastically in the last 10 years. Imported goods replaced such products. “Dalal Elayat from Jalameh said “ In the past We used to do a lot (referring to economic and social activities) after the sesame harvest, it was possible to help a son in marriage or build a house just from sesame crop, but now it hard to sell the low quantities we produce as factories and people tend to buy cheaper imported sesame”

- 3- The shift towards greenhouse farming, where high-value high productivity crops are cultivated. This expansion of greenhouses was possible with the drilling of groundwater wells in different areas.
- 4- The introduction of new hybrid non-local/ native varieties of different crops with low or no tolerance or resistance of diseases. This ended with the outbreak of serious pests and diseases like the soil-borne diseases of watermelon.

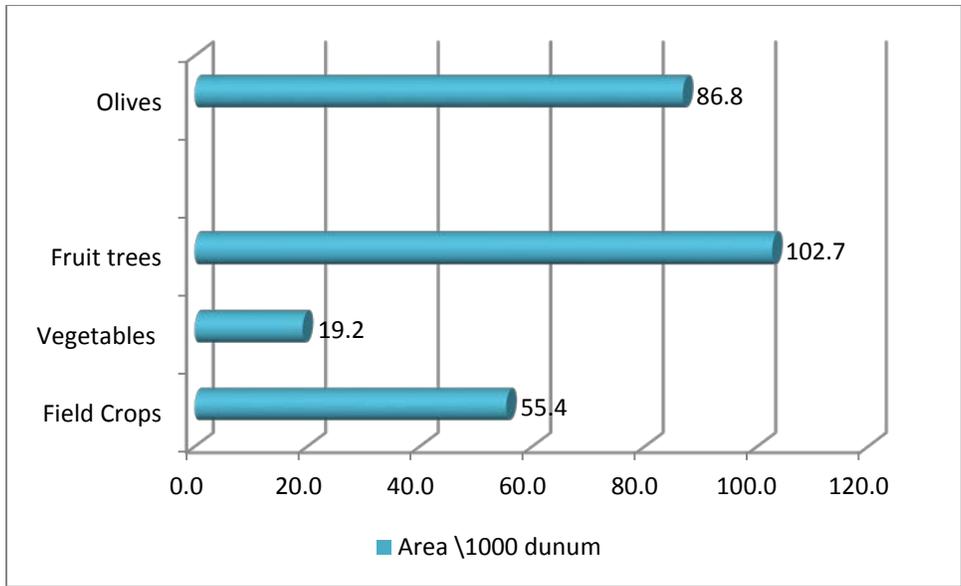
The introduction of greenhouses in the early eighties and the higher profitability of protected farming helped farmers change the agricultural pattern a greenhouse of tomatoes produces more than 5-10 dunums of open field crops. “We shifted to plastic houses in Deir ABo Daeef, before, we used to grow wide areas of rain-fed onions, but now we have water and greenhouses so we shifted to tomatoes,” said Samar Rawajbeh from Deir abo Daeef.

Every crop has its specific reasons for increasing or vanishing for example strawberry cultivation requires high investment, NGO funded projects supported few farmers to introduce strawberries. Origanum “Zaatar” increased in areas as a well-known food processing company contracted farmers to grow for this company. Grapes increased as its profit margin is relatively high (35%).

#### **Distribution of Crops:**

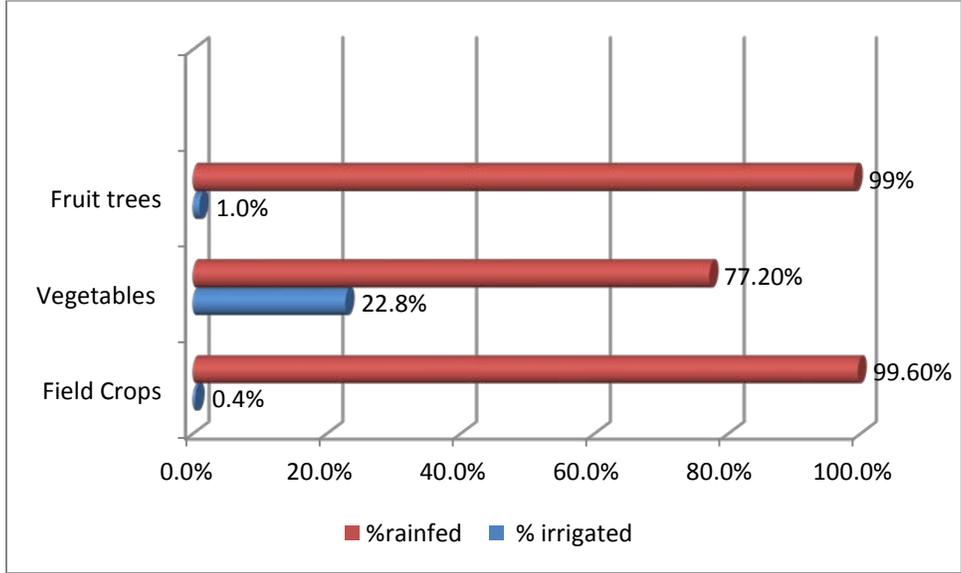
There are common crops among different localities in Jenin. However, the specialty of communities in certain crops is clear also. To give examples Jalameh is known for the green pumpkin (bottle gourd), Beer Basha grows the majority of areas of Okra and Faqoos (snake cucumber), Kafr Dan grows Molokheya and open field cucumber as well as baby cucumber in greenhouses which started to expand in the last 6 years, mainly used for pickling. Chickpea is well known in Deir Ghazaleh and Deir Abo Daeef. The majority of greenhouse tomatoes (1,700 dunums) are grown in Deir Abo Daeef. Industrial potatoes started to spread in Marj Ben Amer in the last 7-8 years. Other than olives, fruit trees’ areas are relatively limited. Wide areas of almond orchards were uprooted due to a lack of facilities in postharvest which was reflected in the ability to store almond fruits. As Kafr Raa’l village enjoys a high elevation greengage *Prunus domestica* spread in the area over approximately 900 dunums. Grapes vineyards are spreading every year especially in Qabatia and nearby villages. Traditionally grapes grow in the southern West Bank.

<b>Table (1): Characteristics of plant and livestock holdings in Jenin</b>	
Number of the plant production holdings	10,512
Number of the animal Production holdings	1,521
Number of the mixed holdings	2,629
Average plant holdings area in dunums	13.9
Average animal holding size (animal)	0.59



**Figure (1): Areas of cultivated crops in Jenin directorate.**

Source: PCBS, 2010 agricultural census. Fruit trees include olives



**Figure (2): Distribution of Areas according to irrigation/ rain-fed**

Source: PCBS, 2010 agricultural census

**Table (2): Comparative statistics of selected crops in 2019 compared to 2010**

#	Crop	Area 2010	Area 2019	%change
<b>Field crops</b>				
1-	Wheat	27,858	60,000	115%
2-	Dry onions	1639	4,000	144%
3-	Sesame	3,708	450	-88%
4-	Anis	1,935	450	-77%
5-	Origanum	347	300	-14%
6-	Chickpeas	3,966	1800	-55%
<b>Vegetables</b>				
7-	Garlic	40	240	500%
8-	Watermelon <sup>4</sup>	43	250	481%
9-	Cantalope	68	1200	1665%
10-	Potatoes	479	2,700	464%
11-	Tomatoes	2,058	3,100	51%
12-	Paprika	218	75	-66%
13-	Hot pepper	300	360	20%
14-	Fennel	156	560	259%
15-	Strawberries	6.5	40	515%
<b>Fruit trees</b>				
16-	Olives	86,800	125,000	44%
17-	Almonds	3,705	1,430	-61%
18-	Grapes	464	2,500	439%
19-	Sour Cherry	277	900	225%
20-	Plums	39	120	208%
21-	Figs	162	135	-17%

## Why traditional recipes are rarely produced these days or disappeared?

Interviewed people were asked about reasons behind disappearing or minimal occasional seeing of the traditional cooks on our tables these days. The most frequent and spontaneous answer was “Nobody likes it, they need fast food”. However, all agreed on the following reasons:

- Economic changes: people nowadays have cash and higher purchasing power to buy from supermarkets offering varieties of goods, while in the past most people used to produce most of their own needs of cereals, legumes fruits, and vegetables and knew how to preserve it even with the absence of electricity and cooling. They used to go outdoor to the wild and collect edible and medicinal herbs.

<sup>4</sup> 30-40 years ago used to be more than 50,000 dunums

- Young generations tend to ready-made food and fast foods. They do not prefer old recipes and cooks. Some of the traditional dishes need days to make ready for use, while people these days need things that finish in an hour, for example, ready-made mixes of cakes.
- Shift in the agricultural patterns
- The lack of ingredients like wild herbs due to the spreading of built-up areas. For example, Jaadeh which is very popular in Jenin is not easy to find these days therefore the cost of one dry kg is \$100-150. The apartheid wall made wide areas where wild plants used to be collected
- The changes in lifestyle, globalization, and the information and communication technology revolution. This increased the list of food options and opened the alternatives in the Palestinian kitchen. and the
- The new generations do not know how to prepare these dishes or even do not know it. Not all dishes are documented or involved in the gastronomy books.

## Description of Commodities (fresh produces and processed food):

### Profile Sheet – Wheat

Wheat (*Triticum aestivum* L.) is the main cereal produced in Jenin. The wide areas of plain land in the Jenin governorate make it the leading production area. While cultivated areas of most cereals and legumes reduced or even disappeared, wheat is still grown in approximately 60,000 dunums. There are 7 native lines of wheat and 4 introduced grown in the Jenin area all are durum wheat lines. The most common are the introduced lines due to higher productivity. Wheat in 99% of fields is rain-fed as a winter crop. The local production in Palestine is far from covering national demand. It is imported to cover the need for bread. Wheat is mainly used for producing flour. In its turn, flour is used for producing couscous “Maftoul” in addition to its regular use for bread, snacks, and sweets... Freekeh as it is known in Arabic is roasted green wheat grains, which is very common in Palestine and the region. Most of the Freekeh is produced in Jenin, actually 20% of Jenin grown wheat goes to Freekeh. It is a seasonal business on a commercial scale for 30 teams specialized in processing Freekeh. They use specialized locally made ovens and special threshing machines. However, many families prepare their own Freekeh using simple tools. Freekeh exists in almost every shop. It can be used as an ingredient in a large number of recipes, could be considered as a substitute for rice.

Wheat grains are also used to produce grouts “Burgul” used in sweets, salads, cooking, and Semolina, which is also used in sweets. From these primary products, a huge number of dishes and recipes are prepared.

Cereals continue to be a fundamental part of the everyday diet of Palestinians like people in the region. Bread is consumed in almost every meal of Palestinians. They are a primary source of carbohydrates; some also provide significant amounts of protein and micronutrients. However, wheat products' composition means that they do not always

provide a balanced diet and cannot be considered complete foods. People appreciate the fiber content of the whole grain wheat; this is why local bakeries always give higher prices for bread made of whole-grain wheat flour.

Women play a crucial role in processing, but not cultivating wheat as cultivation depends mainly on machinery. However. They are responsible for preparing Freekeh, couscous, and grouts.

## Profile Sheet – Legumes

Jenin used to be the main producer of legumes like lentils, chickpeas, and feed crops like vetch. But the areas reduced due to lower prices of imports. However, fresh-consumed legumes like green beans, broad beans, cowpeas (*Vigna*), and peas are planted on an economic scale. Green pods are cooked fresh as vegetables, while chickpeas are grown for fresh raw consumption at the pre hardening stage, it is called «Hamleh», which is very common in Palestine. Green chickpeas pods and seeds are eaten green or roasted and eaten like nuts. Chickpeas for dry use are also available, but areas are limited. The highest percentage of dry chickpeas and broad beans are imported.

Legumes are vital crops in the ecosystem as it fixes nitrogen through its symbiotic relations with *Rhizobium* bacteria, minimizing the need to add nitrogen fertilizers. Legumes are important in crop rotation to conserve soil fertility.

Legumes are rich in protein low in fat and cholesterol-free. Traditionally dry legumes with long shelf life formed with wheat the strategic food security stock for Palestinian families.

The list of recipes including legumes is almost endless. The prices of dry legumes are relatively stable and relatively low; this is why it forms a sustainable food source for poor as well as better-off people. Chickpeas particularly are used in preparing « Humus » and falafel, dry broad bean is used for «Modamas». The three recipes are traditional dishes found in popular and fancy restaurants all the time, not only in Palestine but also in the whole region. In Jenin a visitor will find one of the best tastes of Humus, «Foul Modamas» and Falafel.

Lentils soup is very popular and recommended for anemia and for fostering immunity against winter colds and influenza. Mujadara, cooked from whole lentil grains with rice and onions is also a very popular vegetarian recipe.

There are no woody legumes known in Palestine in general not only Jenin, except some *Acacia* grown as wild trees. Guar (*Cyamopsis tetragonoloba*) has been introduced in the last 3 years on an experimental level, but to be used as animal feed.

Peas and broad beans are winter crops grown in the open field, pods are sold green when seeds are full-grown or dried to get seeds. Recently new varieties of peas were introduced to greenhouses. Snap/ green bean is grown mainly in greenhouses. Pods are cooked with fresh tomatoes or tomato paste. Dry white bean seeds are usually imported, there is one local

variety that is only existing in one locality Arrabeh characterized by thin seeds, it is very tasty and does not need soaking before cooking.

A native variety of cowpea or *Vigna* is a summer crop grown in the open field. The plant is bushy with determinate growth it is characterized by the dark green thin pods free of fibers, around 20 cm in length. New varieties were introduced 10 years ago that better fit greenhouse production as it is a climbing plant with longer (30-50 cm) yellowish-green pods. *Vigna* is not widespread like green beans.

## Profile Sheet - Fruit Trees

Fruit trees are of paramount importance as a source of vitamins, energy, antioxidants and oils. Grapes leaves are even cooked as vegetables. Traditionally the leading fruit tree is olives and to much less extent almonds, in the last 10 years grapes started to spread in Jenin mainly in Qabatia and nearby villages. In some villages away from the plain land around Jenin city sour cherry, plums, apricots and figs are noticed mainly in Karf Raei town North West of Jenin. Low chill variety of Apple (Anna) can be found in limited areas in Jenin city, same for Guava which is not a common crop in Jenin area.

Grape comes next after wheat as a source of raw material for food processing. Leaves are one of more than 15 products used/ processed in Palestine. However, this processing is not common in Jenin like the case in south, as in Jenin farmers only grow table varieties. Grape leaves are economic and good source of income for farmers. Each dunum can produce 100-200 kilograms of leaves and still give good fruit produce, of course, the fruit production is affected by the severe picking of leaves. Grape leaves work is mainly women tasks from picking to storage and cooking as it needs special focus and patience. When cooking, grape leaves are stuffed with rice and tomatoes, some add meat. This is a very popular dish in the Palestinian cuisine. Women groups and cooperatives like the one in Annza sell stored grape leaves and get a good income, as well there are women growing grapes on a small scale for the purpose of selling leaves.

No wild- collected fruits are common in Jenin except Carob (*Ceratonia siliqua*.) Carob dry pods are hard, sweet with high fiber and sugar content, no fats, high calcium and low sodium. Ground pods are soaked and boiled to get fresh Carob Juice, which is very popular during the Muslim fasting month 'Ramadan' and along the hot summer. The soak can be concentrated and turned into special taste carob molasses. In the past and rarely these days women used to prepare a special sweet from carob called "Khabeesah", which is a kind of pudding, usually prepared in cold winter. Main ingredients are starch extracted from slightly grinded wheat grains in a long process and the carob juice concentrate extracted from pods. The leftover of wheat is used to prepare special bread high in fibers eaten with honey. This Khabeesah can

be also prepared from carob molasses and readymade starch, but it would not have the same taste and nutritional value.

**Citrus:** Was Common in Jenin 30-40 years ago, but the competition of Israeli products forced farmers to uproot their groves, this is the case of most farmers in Palestine, farmers turned their groves into greenhouses which were more rewarding.

**Pecan:** Is found in only one well-organized orchard (4 dunums) in Beer Elbasha area, while every village has scattered trees mixed with other crops, after introduction of use of reclaimed wastewater new small plots of land were grown to Pecan. It is consumed fresh as nuts or after roasting, it can be also used as an ingredient for sweets. Relatively it is expensive.

**Cactus (*Opuntia ficus-indica*):** Grows as wild plant in private land, it covers wide areas, farmers collect ripe fruits through July to September and sell it, and prices are fair. Faqoa'a village situated east of Jenin close to the eastern slopes and overlooking the Jordan Valley, with a warm weather is the best for cactus. Farmers used to grow cactus as hedges to protect their fields as its sharp spines make it hard for wild animals to get through. In the past farmers used to export cactus to Jordan. The fruit is a popular in the region, it is only consumed fresh, rarely turned into Jam. This year a woolly scale insect called cochineal scale (*Dactylopius opuntiae*) attacked cactus as a serious primary pest. Ministry of agriculture arranged a general insecticide spray campaign to control the insect. Cactus is endangered if this insect is not managed.

**Stone fruits:** Most of stone fruit varieties grow in high lands as it requires chilling during winter. Jenin is relatively warm. Therefore, stone fruits other than almonds are limited in area. In Kafr Rai **Greengage (*Prunus domestica*):** covers approximately 900 dunums. In the year 2006 and as the town is considered the main producer, the first Greengage festival was conducted to help farmers market their produce or greengage and other rural products.

**Almond:** Is more spread despite the decreased areas. Green soft almond is very popular most of the almonds in the West Bank market comes from Jenin and Tubas. It is harvested March-April. While dry almonds can be harvested July.

**Apricots:** grown at lower scale. It is native tree grown at home garden and small orchards scale in Kafr Raai, Mesleyeh, Jedadydeh, Jabbaa', Seileh and Fondoqomeyeh. Recently some farmers started to grow more apricots as prices are rewarding. It is consumed fresh.

### Profile Sheet -vegetables:

Palestine is self-sufficient in almost all common vegetables. **Tomato** is the most common, it is used in many ways, fresh or as tomato paste. Sun-dried tomatoes are still produced by

women and some women's groups; it is used as spices with many recipes, and with some special pickle mixes. There are native varieties of tomatoes in Jenin area named after the village of Anzza Jenin, it has corrugated fruit with high solid content and good taste, it better fits drying, however, even greenhouse tomatoes can be dried at the end of the season when plants are subject to drought.

*Local tomatoes varieties if promoted and can help women produce more sun dried tomatoes of best quality.*

Jenin is a major producer of potatoes both table and industrial varieties. Cucumber is widespread in greenhouses, Pickling varieties are either open field grown in early spring and sold to Israeli pickling factories, or baby cucumber varieties were recently introduced to Jenin area six years ago, mainly to Kafra Dan. It is also used for fresh consumption. This year 2020 Kafra Dan agricultural cooperative started to operate the first modern pickling factory in Jenin. The other popular and common vegetable is Eggplant. The menu including eggplant is too long. A special native variety called "Batteri" is used for pickling and preparing a special type of pickles called "Maqdous." Most women cooperatives and women groups produces Maqdous on an economic scale.

Other very common vegetables are also squash, pepper, and green beans. While green pumpkin and pumpkin are less common. Broad bean is cooked as a green leguminous vegetable.

These crops are grown the whole year round, thanks to greenhouses. There are some other summer grown vegetables like Mollokheya, okra and the Snake cucumber/ Armenian Cucumber (Faqous) *Cucumis melo var. Flexuosus*, the later is not very common in the world but in The Levant, therefore varieties are still native local. Seeds are produced and kept by farmers from one season to another. It is consumed fresh not cooked in the Jenin area, It can be also pickled like cucumber.

The use of various vegetables in Palestinian cuisine is very common. Traditional recipes as well as new recipes are prepared. Traditional food is very simple, most are vegetarian and healthy. Of the many examples available is the wheat grounded grains "Smeedeh," cooked in water with onions and olive oil and the tomato paste added later. Rice could also replace grouts. "Faqoa'eya" is Squash cut into small pieces fried in olive oil for few minutes with onions then yogurt mixed with water and salt is added, cooked meat of any kind is optional. Mint is added in the last minute of cooking. It is eaten with bread or rice. "Deshreh" is a simple dish of grilled squash mashed with yogurt and garlic, olive oil is also added. It is eaten with bread, could be used as a side dish or appetizer as well. In Deir Ghazaleh village, particularly a dish called "El-Muthalatheh" is prepared from bulgur, tomatoes paste, and Eggplant. Eaten cold or hot, after adding some olive oil.

Molokhia as a summer crop used to be preserved as dried leaves; currently it is either frozen or dried. Dry molokhia is an ingredient of a special traditional recipe called Beesarah which is more common during cold winter. It is prepared from the dry ground broad bean which is soaked overnight and cooked when ripe, dry ground leaves of Molokhia are added. The mix when ready is poured into plates on the top olive oil is added. It is eaten with onions and olive pickles. This is a nutritious dish with high protein mineral and vitamins offered at a very low cost, usually traditional ingredients come from household own production.

### Profile Sheet – Leafy green vegetables

Like any Palestinian community, the daily food of people frequently includes salads, usually made of vegetable fruits like tomatoes, cucumber, leaves of green plants like parsley, rocket, lettuce, and mint. These leaves are rich in minerals like iron and vitamins in addition to the aroma which makes special taste and flavor. Green onion leaves are eaten fresh especially with lentil recipes.

Spinach and green origanum leaves are consumed mainly in winter and spring. It is prepared like Pizza, packed with the brewed dough after mixing it with olive oil salty pastries. This is something in the food heritage of Palestinians. In the past the underground oven “Taboun” was familiar in almost every house in rural areas and produces the best pastries, nowadays people use Gas and wood ovens or can get pastries ready from bakeries. It is common in almost every village that home kitchens do catering to others. It is an increasingly small scale business for women. The main customer orders are: green origanum “Zaatar” and spinach. There is a high demand for this type of pastry.

From the wild people collect Marrow (Malva) and use it in different traditional dishes the most simple is cooking it with dry onions and olive oil. Other people cook it with small balls of dough made larger than couscous. Similar to Marrow, people collect Swiss chard (*Beta vulgaris*) and cook it the same like Malva and it could be also used just like spinach baked in bread.

Cabbage and cauliflower are crucifer plants grown in different areas in Palestine particularly Jenin. Cabbage leaves are stuffed with rice and meat, it is used as salad also, while cauliflower can be pickled, fried, cooked in many traditional recipes. “Maqlobeh” is the most famous one in Palestine and the region. Cabbage can be pickled. Crucifers are rich in vitamin C, fibers, folate, potassium, magnesium, vitamins A and K, and more.

*In Jalameh in particular a recipe called “Kernaseh” is cooked from rice cabbage and yogurt.*

The best Lettuce (*Lactuca sativa*) can be found in Jenin. If you start driving on Nablus road, just before you get out of the city center, on your right after the circle, a traditional cart specialized in street selling of lettuce will give you a large delicious head of lettuce. This cart has existed for ages the same place. Lettuce is consumed directly or with salads. The nutritional content of lettuce varies across varieties; almost all contain a significant amount of vitamin A, along with small amounts of vitamin C and iron. It is rich with vitamin K, which helps strengthen bones. Water makes up over 95% of raw lettuce. As a result, eating lettuce hydrates the body.

Rocket (*Eruca sativa*) is common all over the year. It consumed aside of many dishes, used in salad. It is a rich source of folate and vitamin K. Rocket is also a good source of vitamin A, vitamin C, and dietary minerals calcium, magnesium, and manganese.

### Profile Sheet/ Wild Plants and Mushrooms:

Wild Plants are common in Jenin. The collection of edible plants from the wild is decreasing with time. Reasons behind this decrease are the separation wall and Israeli occupation restriction in addition to less tendency of new generations to go out in the wild. However, still there are plants that are traditionally collected every year, especially the leafy plants. One tree that is considered wild and fruits (pods of which are collected is the Carob described earlier with fruit trees. Examples of the many wild collected plants are; **Malva, Cyclamen Leaves, Borage** (*Borago officinalis*), **Blume Schott** (*Eminium spiculatum*), **Chicory** (*Dandelion*), **Mustard, Sorrel** (*Rumex acetosa*), and many others. Green leaves are rich in iron, minerals, and vitamins. Some plants have medicinal value. Most of the plants grow during winter and spring. Favorable dishes are prepared from each plant.

The distribution of wild plants is linked to topography and temperature. While wild mushrooms (a fungus not plant) different varieties are more common in plains around Jenin and forests in the eastern area of Jenin. Malva is collected from different places including fields and orchards, some farmers even grow it as a regular crop. Cyclamen leaves are more common in hills and mountains; Blume is widespread but not intensive. Cyclamen is cooked similar to grape leaves, it is stuffed with rice and meat, "*Cyclamen used to be our winter grape leaves before we started to store grape leaves, we still like it and go for it during winter.*" Said Salam Abo Baker from Ya'abad.

**The nutritional value:** green leafy plants are extremely necessary as part of the food pyramid. It is considered rich in fibers which are very important for the health of the digestive system. Leafy plants have vitamins particularly A and K, some are rich in potassium manganese, and iron. Folic acid is also found in most leafy plants. The fat content is very low in plant leaves. Because of their high content of antioxidants, green leafy vegetables may be one of the best cancer-preventing foods. Dark green leafy vegetables contain plant pigments

lutein and zeaxanthin that may help to prevent strokes, heart disease, and breast and lung cancer. Vegetables that contain the most amount of lutein and zeaxanthin include spinach.

**The economic value:** the collected plants added to their fun in the collection and practicing a hobby for collectors it has an economic value, as it is free of charge food when consumed and can offer an income when sold.

Cyclamen is collected and sold in some markets. Malva is also collected and sold in the market as a leafy vegetable. Jea'adah dry leaves are sold **in the market at a cost of \$100.**

Mushrooms are collected for their own consumption, but some people rely on it for an income some types can be sold at a cost of \$15 per kilogram. One can collect 5 kilograms per day during the season.



The mushroom collection is very common in the Jenin area it starts with the first heavy rains and continues through winter. There are two main varieties the **Cow nose** **خشم العجل** with white color best quality and highest price, and **Kalakh**, a large-cap mushroom with Brown color lower quality lower prices. It is only in Jenin that wild mushroom is sent to the wholesale market.

## Profile Sheet Processed products;

The main raw material for processed products is wheat as a major ingredient in its different formulas. Lentils (ground or whole grains), tomatoes (fresh, paste, or dry fruits), eggplants, cucumber some collected herbs are used fresh or dry. The proceeded products are furtherly used as ingredients in the different traditional recipes.

### **Wheat based products:**

**Ground wheat** grains called "Smeedeh" **سميدة** was traditionally used instead of rice. Women used to grind wheat using the manual stone grinder **طاحونة**. One common recipe is cooking Smeedeh with onions, olive oil water then adding tomato paste.

**Wheat grouts: "Burgul"** grains are soaked overnight, boiled, left to dry then ground coarse or fine according to recipe. Fine-grinded Burgul is becomes semolina which most used product after flour.

**Wheat flour:** whole grain wheat flour is used in many recipes, mainly in preparing the most common couscous “Maftool”. Flour likewise is used to prepare dough in which it is used in a long list of traditional recipes.

Grilled green wheat “**Freekeh**”: explained earlier in Wheat section.

Wheat starch: ground wheat grains are soaked in water, filtered then dried to concentrate or extract starch that is used in preparing sweets.

**Maftoul** is very similar to Couscous known in North Africa: It is the most common product after Freekeh. It goes deep in the Palestinian food heritage. Women cooperatives and groups produce tons of Maftoul for local market and export. It is either preserved dry or in deep freeze. Though it is found in most supermarkets, still many women prefer to make it at home. Maftouls is made from bulgur and durum wheat flour. Both are mixed on a wide pan little water added and mixed with both hands fingers to turn it into small balls of hard dough. Then the bulk is steamed on a special steamer pan. In the heart of the steamed pile of Maftoul a handful of mixed special spices placed in cloth sheet is buried to give special taste. Once ready the steamed Maftoul is kept to cool to room temperature, it can be used in tens of recipes, or it could be dried or frozen for future use.

**Other products:**

**Sun-dried tomatoes:** ripe fruits of tomatoes are cut into halves or quarters and sun-dried and salted to preserve for a long time. This was a very common practice in the past before the use of greenhouses as tomatoes used to be not available in cold months. In the last decade, the tomatoes drying started to spread, especially through cooperatives, women groups, and rural marketing companies. Dried tomatoes are now used as spices and an ingredient in pickling mixes.

**Bottle-stored grape leaves:** grape leaves are traditionally stored for the whole year in the plastic or glass bottles usually empty beverage bottles. This is scientifically a modified atmosphere storage method. Fresh leaves are forced in bottles and bottles are just tightly closed and kept at room temperature. Another method of storage is deep freezing. A third is storing in salty water. Grape leaves is a business for grape farmers in general and women in particular.

**Pickles:** Jenin is known for planting wide areas of cucumber, turnip, and sugar beet for pickling. Women’s associations and the private sector usually process pickles.

**Za'atar mix:** Oreganum harvested May and later during summer is dried and used to prepare the very common Zaatar mix, mainly it is made from Zaatar, Sesame, and Somac, some add Oregano and wild varieties of Thyme.

**Carob molasses:** ground pods are soaked and boiled to get fresh Carob Juice, if further concentrated it becomes molasses. It is eaten with bread; it can be mixed with Tahinya. A traditional recipe is “khabeesah” made from Carob molasses and starch (like pudding)

**Vermicelli الشعيرية:** though it is available and very cheap, some women prefer to make it their own way. It is made from regular hard dough that is rolled very thin and dried for use in many recipes

## Conclusions and Recommendations

### Conclusions:

- a. Jenin is an agricultural governorate with the widest area of fertile plains in the West Bank. The agricultural and food heritage in Jenin has many commons with other areas in Palestine and also has its specificity. This is also applicable to every town or village. There are no studies about the distribution of 2500 plus native plants in Palestine to know what is specific to Jenin.
- b. Dynamics in the crop pattern is natural in all communities. In Jenin's case, it is governed by the profitability of crops. When a crop becomes not competitive it starts decreasing. The cheap imports and the dumping from Israeli markets stand behind the drastic decrease of some traditional crops.
- c. This research documented a list of names of native cultivars of many crops shown in the inventory matrix,. The research team couldn't find any reference documenting such varieties. All were systematized from farmers' and experts' testimonials.
- d. Native wheat lines are tolerant to pests and disease, there is no need to apply chemical pesticides the only economic pest in need of chemical intervention is weeds. The latter can be controlled using non-chemical strategies which means wheat is a sustainable crop, coexisted with diseases and pests, and well adapted to local conditions. And could be planted organic and utilize this comparative advantage
- e. Wheat remains the most common crop. In Jenin along the decades, and most likely will be so.
- f. Food heritage in Jenin is rich. Documenting every single recipe is highly needed to conserve the skills of old people and utilize such recipes in the food security and ensure sovereignty on food especially as most of the recipes are nutritious and can be obtained at relatively low cost from locally produced ingredients.

### Recommendations:

- g. National Agricultural Research Center of Ministry of Agriculture (NARC) is interested in scaling up native varieties of wheat, they have enough seeds of many native varieties and needed expertise, but not enough resources. They are ready to collaborate with other partners. The wheat varieties they have in their seed bank can be used by farmers interested in organic farming as all are native and coexisted with local environment. Some lines are preferred for freekeh, bulgur production, and couscous.
- h. Preserving the agricultural and food heritage requires working on different activities with different actors along the value chain in an integrated approach. An example if freekeh is selected as a sustainable product for a presidium, it requires working on the best native wheat line for freekeh, grows more in coordination with research centers and seed banks, asks cooperatives to grow, ask private specialized freekeh teams to process wheat into freekeh, women groups can work on drying, cleaning, grinding and packaging.
- i. There are endangered native crops and varieties like lentils, and tomatoes, found in Anzazah and other villages, and other areas those need to be conserved and promoted.
- j. Women cooperatives, clubs, and non-formal groups are a potential grassroots for any future activity to work on food heritage or slow food. They have a wealth of tacit knowledge to be documented, shared, and utilized.

- k. Traditional sweets and recipes if promoted on the cooperative/ women groups level will not only form an income for them but help in preserving the food heritage in Jenin and Palestine as a whole. It can lead to “Virtuous Nationalization” of food heritage and help promote the eco gastronomy and responsible food consumption. This happens at a time when Israelis try to register many Palestine native plants and products as Israeli.
- l. There are wild plants like Ja’adeh (*Eminunium*) that can be propagated and turned into a cultivated crop not only a collected wild plant.
- m. This research can be considered unique, if shared with the public with specific keywords on the websites it could help preserve the heritage and help researchers.

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## **Annexes**

Annex 1 :Inventory of crops and products/ Photos

Annex 2: Guiding Questions for Fieldwork

Annex 3: List of Key informants