



# Tomorrow Tastes Mediterranean

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TORRIBERA  
MEDITERRANEAN  
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UNIVERSITAT DE  
BARCELONA



Culinary Institute  
of America



# Tomorrow Tastes Mediterranean

International Conference  
& Digital Magazine

**October 14 - 15, 2024**

Barcelona, On-Site & Online

Translating research-based  
evidence into culinary practice  
for healthier, more sustainable,  
more delicious food for the future.

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# Introduction

*What if a centuries-old set of food cultures and dietary patterns that evolved out of the olive growing regions of the greater Mediterranean basin, the birthplace of Western civilization, were not simply delicious and engaging for contemporary appetites but also held critical, even existential lessons for nourishing personal and planetary health for a secure, global tomorrow?*

Inspired by this question, the **Torribera Mediterranean Center (TMC)**, a joint project of the University of Barcelona and The Culinary Institute of America, annually stages its **Tomorrow Tastes Mediterranean Conference** to take up a broad spectrum of critical issues with global relevance—issues around health and nutrition, sustainability including the food-climate connection and regenerative agriculture, cultural diversity and identity, culinary insight and food innovation linked to behavioral change, emerging food business strategies, and more.

In the fall of 2023, the TMC's 4th Tomorrow Tastes Mediterranean (TTM) conference was held in Barcelona at the Historic Building of the University of Barcelona as well as streamed live. What follows in the pages of this **Tomorrow Tastes Mediterranean Digital Magazine** are highlights from that program including sessions ranging from “Of Food, Health and Culture: A Sustainable Heritage of the Mediterranean Diet in North Africa and the Eastern Mediterranean,” “Fermenting Change: Chefs, Plant-Forward Restaurants and Sustainability,” and “Powering a Global Trend around Irresistible Vegetables” to “Mastering the Olive Oil Kitchen: Of Heat, Technique and Flavor Strategies” and much more. You can also watch on-demand videos of all of these 2023 TTM conference sessions [here](#).

With now overwhelming scientific evidence of the personal and planetary healthfulness of the traditional Mediterranean Diet, the largest thrust of our TTM conference programming each year is on *translation and implementation*. That is, how can we take what we have learned from observational studies, clinical trials, scholarly insight, and dietary guidance—and from the science of climate change and biodiversity—and apply that in very practical terms to new menu directions, new restaurant business models, new food environments for our schools and hospitals, innovation in agriculture and food production, new models of collaboration and inclusion, and the re-imagining of Mediterranean traditions in ways that both honor this heritage but also truly engage our families, our fellow citizens, and our business customers.

The future of the Mediterranean diet and the renewal of its food cultures is very much a work in progress. Join us as we connect innovators and thought leaders, scientists and chefs, academics and growers, business leaders and policy makers—and together work to make sure that tomorrow is, indeed, richly inspired by the Mediterranean. Welcome to the conversation.

**Greg Drescher**

The University of Barcelona is a national leader both in terms of academic offer and research, thanks to its commitment to quality. This leadership has been recognized in the main international rankings, and thanks to transfer and innovation we have delivered our results to society every day.

Our community is made up of nearly ten thousand people who share our values: freedom, democracy, justice, equality and solidarity, and the commitment to social responsibility.

Among the main priorities of the University of Barcelona is the contribution to the sustainable development of the Mediterranean, our natural geographical area of action. In fact, the Mediterranean represents the cultural, institutional, social, economic and historical nucleus that characterizes the University of Barcelona: multilingualism, balance between tradition and modernity, cosmopolitan vision, cooperation and commitment to the environment, and many others. the sustainability of life, global food systems and dietary patterns.

The firmly established collaboration with the Culinary Institute of America allows us to promote these goals internationally, specifically in the Mediterranean. Hence the importance of the Torribera Mediterranean Center (TMC) as a joint project of the University of Barcelona and The Culinary Institute of America, located at the Torribera Food and Nutrition Campus of the UB, in Santa Coloma de Gramenet. The TMC takes the Mediterranean Diet as a starting point to connect avant-garde food and nutritional research with culinary, agricultural and business innovation and an example is the holding of the Tomorrow Tastes congresses reflected in this magazine that we present.

This link with nutrition issues is also perfectly framed in the policies that the UB has developed with the creation at the time of the degree in nutrition and dietetics, together with the creation of FARO (Food Action and Research Observatory), which has as with the aim of promoting academic and research activities in the field of food from a systemic approach - from production to consumption - and interdisciplinary (experts in economics, pharmacy, biology and health among others). Also, the existence of INSA-UB, the UB's own institute that was created with the aim of meeting the demands and needs of today's society in terms of research, training and the provision of services in sectors related to agro-food industry.

For this reason, it is a pleasure to present this digital magazine that collects the most interesting papers presented in the 4th session of Tomorrow Tastes Mediterranean. The different issues published give an insight into the various aspects of the Mediterranean diet, linked to the role of olive oil and the health benefits following the different Mediterranean diets, with the influence of the different territories: Greece, Italy, Tunisia, etc.

**Mercè Segarra**



## The Mediterranean Diet—Latest Findings and Emerging Research to Support Personal and Planetary Health

This article has been written with contributions from the speakers of the panel **The Mediterranean Diet — Latest Findings and Emerging Research to Support Personal and Planetary Health** -Moderator: **Michael Sperling**, Vice President of Academic Affairs, The Culinary Institute of America; Hyde Park, USA. Presenters: **Ramón Estruch**, Senior Consultant, Internal Medicine Department, Hospital Clinic; Professor of Medicine, University of Barcelona; Chair Scientific Advisory Council, Torribera Mediterranean Center, Barcelona, Spain. **François Chartier**, President, Chartier World Lab, Barcelona, Spain. **Helena Martín**, Director of the Culinary Arts and Gastronomy Research Group, CETT-UB Tourism & Hospitality, Barcelona, Spain. **Amelia Sarroca**, Food Waste and Nutrition Technician, Polytechnic University of Catalonia, CREDA Center for Agro-food Economics and Development, Barcelona, Spain-.

And the panel **From Culinary Interactions to Nutritional Synergies: Next-Generation Research on the Mediterranean Kitchen** -Moderator: **Greg Drescher**, Senior Advisor for Strategic Initiatives, The Culinary Institute of America, Napa, USA. Presenters: **Agustí Romero**, Coordinator of the Olive Growing and Olive Oil Technology, Institute of Agri-Food Research and Technology (IRTA), Tarragona, Spain. **Jaime Lillo**, Executive Director, International Olive Council, Madrid, Spain. **Axel Bidon-Chanal Badia**, Serra-Hünter Fellow, Associate Professor Nutrition, Food Science and Gastronomy Department, Faculty of Pharmacy and Food Science, Torribera Food Campus, University of Barcelona, Barcelona, Spain-.

## THE LATEST RESEARCH ON THE CURRENT STATE OF THE MEDITERRANEAN DIET ... TO UNDERSTAND ITS FUTURE.

The model of the healthy, traditional Mediterranean diet that has been elevated by contemporary nutrition science is based on the traditional eating patterns of much of the Mediterranean region in the early 1960s. Over the past 30 years, new studies continue to confirm and expand our knowledge of the numerous health benefits of this dietary pattern. However, there is much more to learn about this global reference point for healthy eating, and it is valuable to widen inquiries about the Mediterranean diet—and its principles and various elements—in order to gain more perspectives on how it works, why it works, how to increase consumer engagement, and how it might be adapted for the future.

Distilling two key sessions about the Mediterranean Diet from our 2023 Tomorrow Tastes Mediterranean shines a light on the many avenues of discovery—representing multiple academic and professional perspectives—that are underway to further map the potential of this UNESCO World Heritage.



## THE MEDITERRANEAN DIET: OLIVE OIL ... AND WINE

Ramón Estruch's presentation highlighted the crucial role of olive oil in the Mediterranean Diet in advancing longevity and overall health. Alongside the consumption of extra virgin olive oil, wine is also a protagonist in the traditional Mediterranean Diet that needs to be understood as a contributor to prolonging life and preventing diseases.

Estruch highlighted studies suggesting that certain components of olive oil and moderate amounts of wine may help decrease cellular senescence, potentially contributing to a longer and healthier life. He emphasized that the Mediterranean diet plays a fundamental role in determining mortality rates and is often considered one of the healthiest diets due to its positive effects on cardiovascular health and brain function with its inclusion of extra virgin olive oil and wine consumption.

Estruch underscored the importance of protecting both heart and brain health and highlighted the specific benefits of extra virgin olive oil, rich in components such as oleic acids, tocopherols, polyphenols, and phytosterols, which are crucial for positive effects on cardiovascular and brain health. Additionally, he mentioned that wine, despite being alcoholic, also contains polyphenols and other components that can have beneficial effects on health, especially when consumed as part of the traditional Mediterranean dietary pattern (always with food and in the context of shared meals, not too much, and in an even frequency). However, he cautioned that while moderate wine consumption following this dietary pattern may reduce the risk of cancer, outside this context it could increase cancer mortality.

In conclusion, "the Mediterranean Diet, adapted as necessary to individual health and lifestyle concerns, is beneficial for increasing longevity and improving quality of life." Therefore, including extra virgin olive oil and wine (with these caveats about how and when it's consumed) in the diet can be significant contributors to better health and longevity outcomes.



## CREATING A MEDITERRANEAN GASTRONOMIC IDENTITY THROUGH AROMAS

François Chartier presented a project focused on biodiversity as an essential, yet often underestimated, component of the terroir concept in wine production and Mediterranean gastronomy.

Highlighting the importance of molecular harmonies in creating aromatic synergies, Chartier emphasized the influence that local biodiversity—plants and herbs—surrounding a vineyard can have on the aromas and flavors of wine. He mentioned studies showing how the scent of certain plants, like eucalyptus in Australia, can affect wine aromas and how fires in certain areas can transfer smoke aromas to vineyards.

Chartier also mentioned a study conducted in collaboration with the University of Barcelona, analyzing the dominant molecules of Vinya d'en Sabater vineyard in Alella, Barcelona, to identify its characteristic aromas and create gastronomic pairings based on shared molecules between food and wine.

He stressed the importance of incorporating healthy molecules into food and wine pairings, such as those in ginger, lychee, or rose, which can have antioxidant and anti-inflammatory properties, thus allowing for pairings based not only on aromatic or gustatory criteria but also on nutritional criteria.

In conclusion, Chartier emphasized “the need to harness local biodiversity to create a new Mediterranean gastronomic identity” based on the terroir concept and molecular harmonies between food and wine.



## SPIRULINA, ALGAE AT THE TABLE?

Helena Martín presented a project inspired by the plant-rich character of the Mediterranean diet: the gastronomic opportunities of spirulina, a nutrient-rich ingredient containing vitamins, minerals, proteins, as well as lycopene and beta-carotene.

Her project aims to study the differences between artisanal and industrial spirulina and develop gastronomic products to promote its consumption. She compared the characteristics of artisanal and industrial spirulina, highlighting that artisanal production better preserves colors, aromas, and nutritional value due to its low-temperature process.

Martín's team conducted a nutritional analysis and observed differences between fresh and industrial spirulina, particularly in probiotic activity, with fresh spirulina being richer in probiotic microorganisms.

Furthermore, Martín and her team developed products such as ice cream and koji-inoculated rice, a traditional Japanese fungus base for miso. The ice cream showed a higher protein and better fatty acid content when containing spirulina. In the case of koji, amasake (a traditional Japanese dessert) and sparkling rice wine were produced, both showing nutritionally more interesting versions when spirulina was introduced into their production.

In conclusion, the results of the studies indicate that artisanal fresh spirulina contains higher amounts of polyunsaturated fatty acids, fiber, vitamin B12, and probiotic microorganisms, opening the way for its use in a variety of cold and fermented gastronomic preparations.





## HEALTHY SNACKS WITH A MEDITERRANEAN DIET FLAVOR

Amelia Sarroca presented the progress of the “Switch to Healthy” project, aimed at improving the Mediterranean diet of families in the Mediterranean region, from Morocco to Spain, by developing interventions to increase adherence to this diet, especially in childhood, and promoting the sustainable use of natural resources. As much as we talk about the Mediterranean Diet, “in many Mediterranean countries, this same diet is not followed at all.”

To achieve better adoption of the Mediterranean diet, Sarroca and her team created pedagogical and educational tools with an emphasis on nutritional explanations and “facilitating families’ access to these strategies.” For this purpose, snacks based on local ingredients were created to reduce the carbon footprint, such as nuts (introduced for fatty acids), legume cereals (for polycarbonates), vegetables, and fruits (for their high content of micronutrients, antioxidants, minerals, and vitamins), selected based on their nutritional profile and validated in study groups with families, with the focus on the Mediterranean Diet.

Eight snack prototypes were presented, including yogurts with probiotics mixed with vegetables and seeds, and chicory and sumac snacks, the latter standing out for their high vitamin C content. The conclusion of the study is that the snacks were well received by families and that, in some cases, they can contribute up to 30% of the total caloric intake, promoting their consumption in an important part of the diet and thus promoting adherence to the Mediterranean diet in children, and thus demonstrating that they can get used to these flavors instead of flavors like those of industrial pastries.



## OIL ACADEMICS LOOK TO THE KITCHEN

One of the most debated topics in the sector is the properties of olive oil once heat is applied to it. In this session, Agustí Romero presented advances in research on the behavior of olive oils in cooking once subjected to heat, pointing out that while some studies have focused on safety and potential toxic compounds resulting from these reactions, others have focused on the final product as well as the ideal cooking temperature for olive oil.

Romero highlighted extensive research, especially in Australia, which has provided valuable information on the reactions of olive oil to heat. Research at the University of Barcelona has also been conducted on this topic, including a study on how the healthy compounds of extra virgin olive oil resist the oxidation process in frying foods.

But undoubtedly, “the new focus of all these studies is clear: cooking.” The new information on olive oil processes is directed at chefs: from the mentioned cooking point of olive oil to controversies about which type of oil is most suitable for frying, mentioning olive pomace oil and extra virgin olive oil. For example, against all odds, the Spanish National Research Council (CSIC) has announced a study stating that pomace oil is the best for frying due to its resistance to high temperatures, and in the United States, there are contradictory studies on the subject. “All these results are interesting, but it is always important to know which information to retain.” [Editor’s note: all olive oil is suitable for frying and other high heat cooking; recent studies indicate that EVOO has a perhaps unexpectedly positive role in preventing oxidation, in both the EVOO and the foods fried in this oil].

“For our part, we are very focused on two aspects of cooking. One: the chef. Why does the chef choose or decide to use extra-virgin olive oil—or a particular variety of extra-virgin olive oil? And two, the end consumer. Do they like or dislike the recipe when we cook it with extra-virgin olive oil? We are very intrepid in finding some tools to measure these kinds of things.”

From measuring the pairing of oils with different foods to finding tools to also measure the greasiness effect of some oils, in order to compare their performance in various recipes: this is currently the work of Agustí Romero and his team at the Institute of Agricultural Research and Technology (IRTA).

## OLIVE OIL, ACHIEVEMENTS AND CHALLENGES

Perhaps the general public is unaware, but there is an international organization with several decades of history dedicated to protecting olive oil. This is the International Olive Council (IOC), an international intergovernmental organization created under the auspices of the United Nations to promote the quality of this product. Jaime Lillo, its executive director, presented advances in research and nutrition related to olive oil and highlighted that olive oil consumption has doubled in recent decades, and this increase is not limited to Mediterranean countries, but is observed globally.

This has much to do with the fact that interest in olive oil is not only about its taste but, mainly, about health and the research that provides increasingly more evidence of its benefits, including the prevention of cardiovascular diseases, dementia, and cancer, as well as its potential to aid in weight loss. “These benefits must be made known to favor public health.”

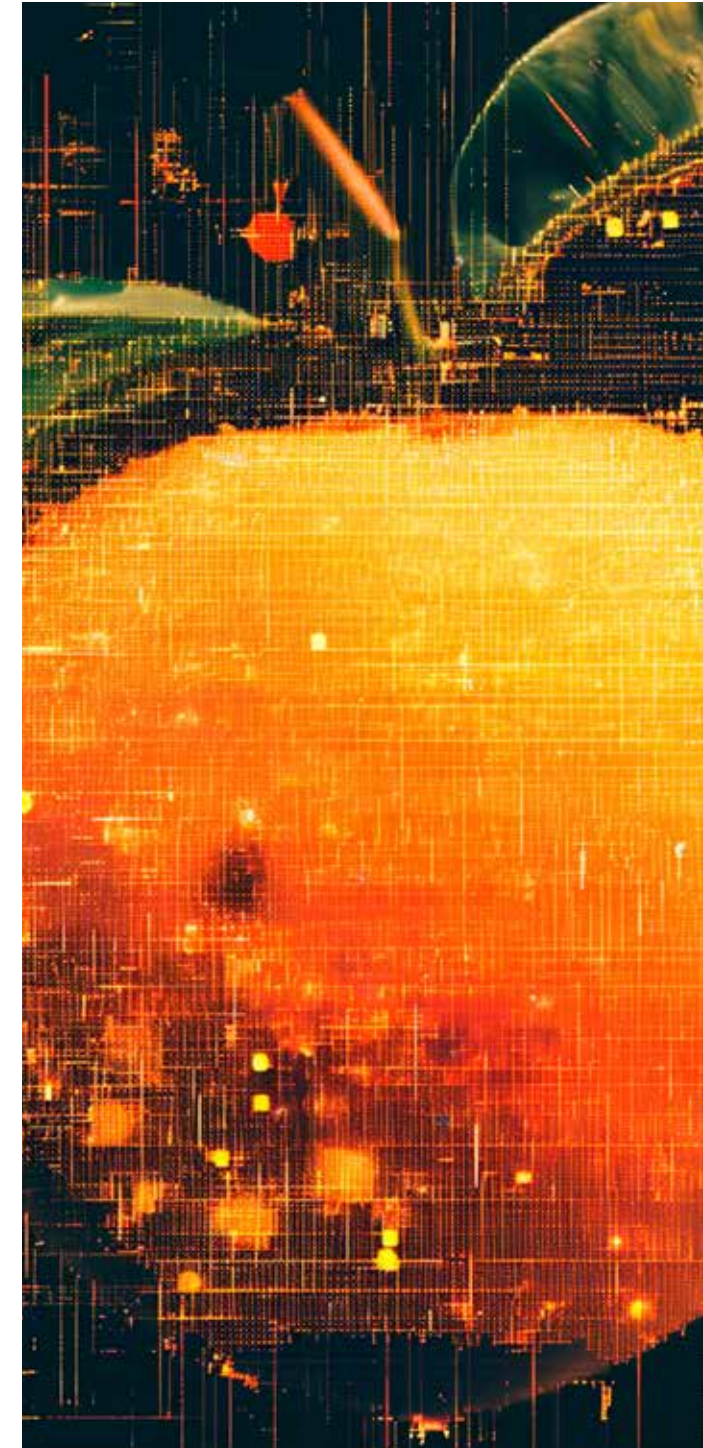
But the nutritional aspect is not the only positive one about olive oil. Its impact on sustainability is key. Lillo highlighted the role of olive trees in capturing CO<sub>2</sub> and conserving biodiversity.

“But this, unfortunately, is not enough.” There are still challenges, such as the negative perception of oil—including olive oil—in some rating systems like the Nutriscore. Therefore, it is necessary to effectively convey science-based messages to consumers and establish collaborations such as those the IOC is establishing with culinary institutions to achieve this goal. “Both our role and that of chefs are key to making healthy and sustainable food attractive and delicious.”

For this reason, Lillo emphasized the importance of continuing to work together—to collaborate across academic disciplines and professional sectors—to promote the values of the Mediterranean diet and address planetary challenges related to food in a sustainable and healthy way.



## AI AND BIG DATA IN GASTRONOMY



In a world where Artificial Intelligence or Big Data have become everyday words in our dictionary, many may still be unaware of the role these new digital giants can play in the world of gastronomy. That’s what Axel Bidon-Chanal Badia is dedicated to, presenting the emerging field of computational gastronomy and its application in promoting research in nutrition and healthy diets, including the Mediterranean diet.

Bidon-Chanal explained that computational gastronomy involves working with gastronomic data to perform computer analyses, which presents challenges due to the complexity of this data. He listed several domains covered by computational gastronomy, such as compiling recipes, creating new recipes based on food pairings, or studying culinary evolution and its impact on health and nutrition.

Bidon-Chanal Badia mentioned two important studies in this field: one that analyzes the flavor network and the principles of food pairing, using large sets of gastronomic data to study how ingredients combine in different culinary traditions, and another that examines user comments on online recipes to understand how users modify recipes to make them healthier.

Then, he discussed the application of artificial intelligence in gastronomy and nutrition, highlighting how it can optimize diets, evaluate dietary patterns, and recognize gastronomic images to provide nutritional data. An example of this is Log Meal, an application developed at the University of Barcelona that uses image recognition to identify foods on a plate and calculate their nutritional content.

In summary, “computational gastronomy and AI are revolutionizing the field of research in nutrition and dietetics,” providing innovative tools to better understand the relationship between food and health.



## QUOTES

“ The Mediterranean diet plays a fundamental role in determining mortality rates and is often considered one of the healthiest diets due to its positive effects on cardiovascular health and brain function especially in light of its inclusion of extra virgin olive oil and moderate wine consumption. ”

**Ramón Estruch**

“ It is important to harness local biodiversity to create a new Mediterranean gastronomic identity based on the terroir concept and molecular harmonies between food and wine. ”

**François Chartier**

“ As much as we talk about the Mediterranean Diet, in many Mediterranean countries, this same diet is not followed at all, and that’s why it is important to find alternative strategies to promote it. ”

**Amelia Sarroca**



“ We are very focused on two aspects of cooking. One: the chef. Why does the chef choose or decide to use extra-virgin olive oil—or a particular variety of extra-virgin olive oil? And two, the end consumer. Do they like or dislike the recipe when we cook it with extra-virgin olive oil? ”

**Agustí Romero**

“ The growth of the olive oil consumption has a lot to do with health, as the research continues to provide increasingly more evidence of its benefits, including the prevention of cardiovascular diseases, dementia, and cancer, as well as its potential to aid in weight loss. ”

**Jaime Lillo**

“ The application of artificial intelligence in gastronomy and nutrition through computational gastronomy can help in many ways: optimizing diets, evaluating dietary patterns, and recognizing gastronomic images to provide nutritional data, for example. ”

**Axel Bidon-Chana Badia**

# 03

## Scaling Change for a Sustainable Future: In our Businesses and our Communities

This article has been written with contributions from the speakers of the panel **Scaling Change for a Sustainable Future: In our Businesses and our Communities** -Moderator: **María Martínez Iglesia**, Academic Director, Barcelona Culinary Hub, Barcelona, Spain. Presenters: **Stijn Kuppens**, Food Program Manager for EMEA, Google, Dublin, Ireland. **José Miguel Herrero Velasco**, Acting General Director of Food Industry, Spanish Ministry of Agriculture, Fisheries and Food, Madrid, Spain.

## IMPORTANT TRANSFORMATIONS... FROM BIG ACTORS IN THE GLOBAL FOOD SYSTEM



Spain has 47 million inhabitants that have to eat every day. At Google, 216 million rations of food are served each year in offices spread across 57 countries and 147 cities. In Spain, the Ministry of Fisheries, Agriculture, and Food is responsible for overseeing the food system for the country's inhabitants and designing the strategies that will guide the future food supply in the short, medium, and long term. At Google, though principally a technology company, they have a food program led by a team of 50 people who oversee a set of vendor partner who, in turn, collectively manage 13,000 employees dedicated to outlining the path that the 240,000 meals served each day in their 386 cafeterias and 1500 micro-kitchens should follow.

From both the public and the private sector, one thing is clear: food is one of the keys of the governance and well-being of people. Interestingly, in this conversation in which representatives from both sectors participated, the key points they gave about the work they have been doing coincided almost point by point, as if they had agreed beforehand. This shows us that the strategies of two major actors in the global system follow similar patterns, which have in common the inspiration of the principles of the Mediterranean Diet as a guide and sustainability as an objective. This demonstrates to us that, no matter where in the world the stoves are lit, the applications of a Mediterranean approach for cooking healthy food continue to be a useful guide. Therefore, below, we review the main axes of the strategies mentioned by the speakers of these two major entities, and we break down the vision of each of them on each of these axes, reflecting well the great similarities that the food paths of these two global protagonists have.

## THE IMPORTANCE OF THE MEDITERRANEAN DIET

### GOOGLE. PRINCIPLES OF THE MEDITERRANEAN DIET AS A GUIDE

One of Google's main objectives is "to make diets and food cultures begin to move towards more sustainable yet delicious options and this, obviously, is related to the Mediterranean diet." The idea is to help users make better decisions regarding their diet, and to think of food as medicine, as therapy. And finally, we want to work towards helping to create more resilient food systems. In a company like Google, with 150,000 daily servings (that means millions per year), we are talking about a huge amount of food. Google says they feel responsible for their suppliers, meaning "that the suppliers we work with can be working with traceable sustainable foods" and "that our food systems can be more resilient through food purchasing guidelines that focus on regenerative agriculture and soil biodiversity," thus demonstrating the importance of sustainable agriculture and balance with nature.

### MAPA. FROM THE MEDITERRANEAN TO THE WORLD THROUGH THE SDGS

Firstly, from MAPA we want to highlight the importance of the Mediterranean diet, a diet that bathes all the countries of the north and south Mediterranean and is composed of a series of characteristic and typical products. Among them, olive oil is much talked about. In this sense, "I believe that we must, from governments and administrations, protect this heritage that, as UNESCO recognizes, is a heritage of everyone and is a heritage of humanity.

In this sense, it is necessary to refer to and adhere to the Sustainable Development Goals, the goals that as you know were subscribed to by the United Nations by more than 190 countries and that Spain assumed in 2015. An example: goal number 8, which speaks of the importance of decent work and inclusive economic growth, and which points out the importance of a food industry that has a great capacity for employment in all territories and obviously favors economic growth.



## NUDGING TOWARDS BETTER FOOD CHOICES

### THE GOOGLE FOOD PROGRAM. HOW TO ENCOURAGE GOOD CHOICES

At Google, we promote “food architecture” to encourage healthy choices among our employees. We aim for healthy options to be as accessible and tasty as possible, prioritizing ease and good flavor. We work with partners in research that demonstrates how small changes, such as smaller plates or prioritizing vegetables on the buffet, influence food choices. This behavior-based strategy has proven effective without being paternalistic. By offering healthy options in an attractive and accessible way, such as placing fruits and water in prominent places, we observe that they are chosen seven out of ten times. Although chocolate candies and soda are allowed, they are available in a less visible way. We recognize that well-being also includes enjoying these foods, without imposing restrictions.

### MAPA. RECOVERING THE VALUE OF FOOD AND LISTENING TO OUR CONSUMERS

The central axis of our policies is to give value to food, to recover the value that these foods once had, and for this it is very important to highlight in the labeling the origin of the same and the production systems of these foods. Just as important is the fight against food waste: a food that we do not value is a food that ends up in the garbage, which ends up being an attitude that is passed on to others.

Therefore, we must raise awareness among all citizens about the importance of food production and the need to feed a growing world or planet with limited resources.

From MAPA, we conducted a survey of Spanish consumers to find out how important the origin of food was to them when consuming it. On the one hand, we asked how important it was to consume food from sensitive territories such as depopulated territories or mountain areas far from the consumer. On a scale of 0 to 10, Spaniards attributed a 5.76 out of 10 to this attribute. When we asked them about operations located in territories with which the consumer or the citizen maintains a personal connection, that score rose to 6 out of 10. And when we asked if they valued operations that had committed to sustainability, we reached an even higher point, almost close to 7 out of 10. Therefore, we see that citizens are very sensitive to where the food they consume comes from and how it's produced, so these kinds of insights must inform our work.



## EDUCATION AND LEGISLATION, TAKING ACTION TO ADVANCE SUSTAINABILITY

### GOOGLE. EDUCATING FUTURE FOOD LEADERS

At Google, we want to talk about inspiring the food leaders of the future, and in this sense, our collaboration with the CIA has been very important because the current food system is not sustainable for humanity or for the planet. We must evolve towards a more sustainable consumption and through collaboration with the CIA, we have created an education and certification program that is part of the curriculum to learn sustainable food techniques based on the Mediterranean and similarly healthy, traditional diets, and I think we can say that it is a program of great success.

### MAPA. LEGISLATING AGAINST FOOD WASTE

From MAPA, we address food waste in three areas: measurement, awareness, and, thirdly, legislation or regulation. We have been working for the last few years on a bill that will finally be proposed in this new legislative period: the law on combating food waste. This is a law that is already in place in other countries of the European Union and that Spain will now approve. It will be the third country in the European Union to have it so far.

This law aims to reduce food waste, and for this we establish an obligation for all economic agents that are part of the value chain, which is the obligation to make a plan to prevent and reduce waste. That is, for each of the companies to diagnose their production cycle and see where leaks occur, as waste is produced, to then establish corrective measures and be able to reduce waste also at the business level. As I say, this is one of the axes of work to achieve the change in that production model, raising awareness of the reduction and fight against food waste.

## REDUCING PLASTICS VS. REDUCING PACKAGING

### GOOGLE. THE FIGHT AGAINST PLASTIC

Google is taking on the challenge of eliminating all single-use plastics in its ecosystem before 2030, a commitment they are fully dedicated to. They are considering the lifecycle of plastic, from its origin to its disposal after leaving Google. Drastic decisions have been made to eliminate single-use plastics, and Google is using its considerable resources and reach to help the public make better decisions with easier recycling options.

New Google Shopping features allow for the purchase of already recycled products, and a team within Google supports startups and NGOs with innovative ideas to reduce single-use plastics.

### MAPA. THE FIGHT AGAINST PACKAGING

The Ministry of Agriculture, Fisheries and Food (MAPA) is working on reducing non-sustainable and non-recyclable packaging in the food industry. They are observing the efforts of the food industry to change packaging to be more sustainable and recyclable. The entire supply chain, from producers to consumers, is making significant efforts to become more sustainable and transition from a linear economy to a circular economy, where resources are better utilized and waste is minimized.



## REDUCTION OF FOOD WASTE

### GOOGLE. 50% REDUCTION BY 2050

Google is committed to reducing food waste by 50% by 2025 through bold and drastic decisions. After COVID-19, cafeteria services in Madrid's office, serving 500 employees, were adjusted to match the days with fewer personnel, reducing food waste. Pilot tests in Dublin and London reduced waste at the end of service by cooking on demand during the last 30 minutes and offering only two or three dishes. These measures demonstrate Google's commitment to reducing food waste and encouraging others to adopt this approach.

### MAPA. OBJECTIVE NUMBER 12, THE FIGHT AGAINST FOOD WASTE

The fight against food waste is a current priority, and in Spain, it is being addressed in three dimensions: quantification, awareness, and changes in the production and consumption system. Quantification allows for the measurement of food waste, and in Spain, it is estimated that around 5% of food purchased ends up in the trash, which is equivalent to 26 million kilos and liters of food per week. Awareness is key to helping citizens understand the value of food and the natural resources needed to produce it.

Objective 12 includes responsible production and consumption, which implies a change in the production and consumption system. Objective 12 aims to reduce food waste in half in retail and with consumers by 2030, and also establishes reduction targets for losses in the first links of the production chain and in the food industry. At the European Union level, these sustainable development goals are concretized in the European Green Deal and the "Farm to Table" strategy, which aim to establish sustainability measures and reduce food waste by 50% per capita in all EU countries. Sustainability and efficient use of natural resources are priorities in product development and ecological production in the coming years.



## QUOTES

“ Interestingly, both the Spanish government and Google key points about the work they have been doing align in important ways point by point, as if they had somehow agreed beforehand. This shows us that the strategies of two global food giants follows very close patterns which have in common the inspiration of the Mediterranean Diet as a guide and sustainability as an objective. ”

“ One of Google’s main objectives is to make diets and food cultures begin to move towards more sustainable yet delicious options and this, obviously, is related to the Mediterranean diet. ”

“ At Google, we promote ‘food architecture’ to encourage healthy choices among our employees. We aim for healthy options to be as accessible and tasty as possible, prioritizing ease and good flavor. We work with partners in research that demonstrates how small changes, such as smaller plates or prioritizing vegetables on the buffet, influence food choices. ”

**Stijn Kuppens**



“ From MAPA we want to highlight the importance of the Mediterranean diet, a diet that bathes all the countries of the north and south Mediterranean and is composed of a series of characteristic and typical products. ”

“ This law aims to reduce food waste, and for this we establish an obligation for all economic agents that are part of the value chain, which is the obligation to make a plan to prevent and reduce waste. That is, for each of the companies to diagnose their production cycle and see where leaks occur, as waste is produced, to then establish corrective measures and be able to reduce waste also at the business level. ”

**José Miguel Herrero Velasco**



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# 04

## Green Haute Cuisine: Walnuts as Protagonist in Crafting Plant Protein Deliciousness.

Workshop 1: Green Haute Cuisine: Walnuts as Protagonist in  
Crafting Plant Protein Deliciousness

This article has been written using, among other sources,  
the information mentioned in Workshop 1 **Green Haute Cuisine:  
Walnuts as Protagonist in Crafting Plant Protein Deliciousness**  
– Moderator, **Maríel Colmán Martínez**, Research Professor,  
Barcelona Culinary Hub, Barcelona, Spain. Presenter:  
**Rodrigo de la Calle**, Chef-Owner, El Invernadero Restaurant,  
Madrid, Spain.



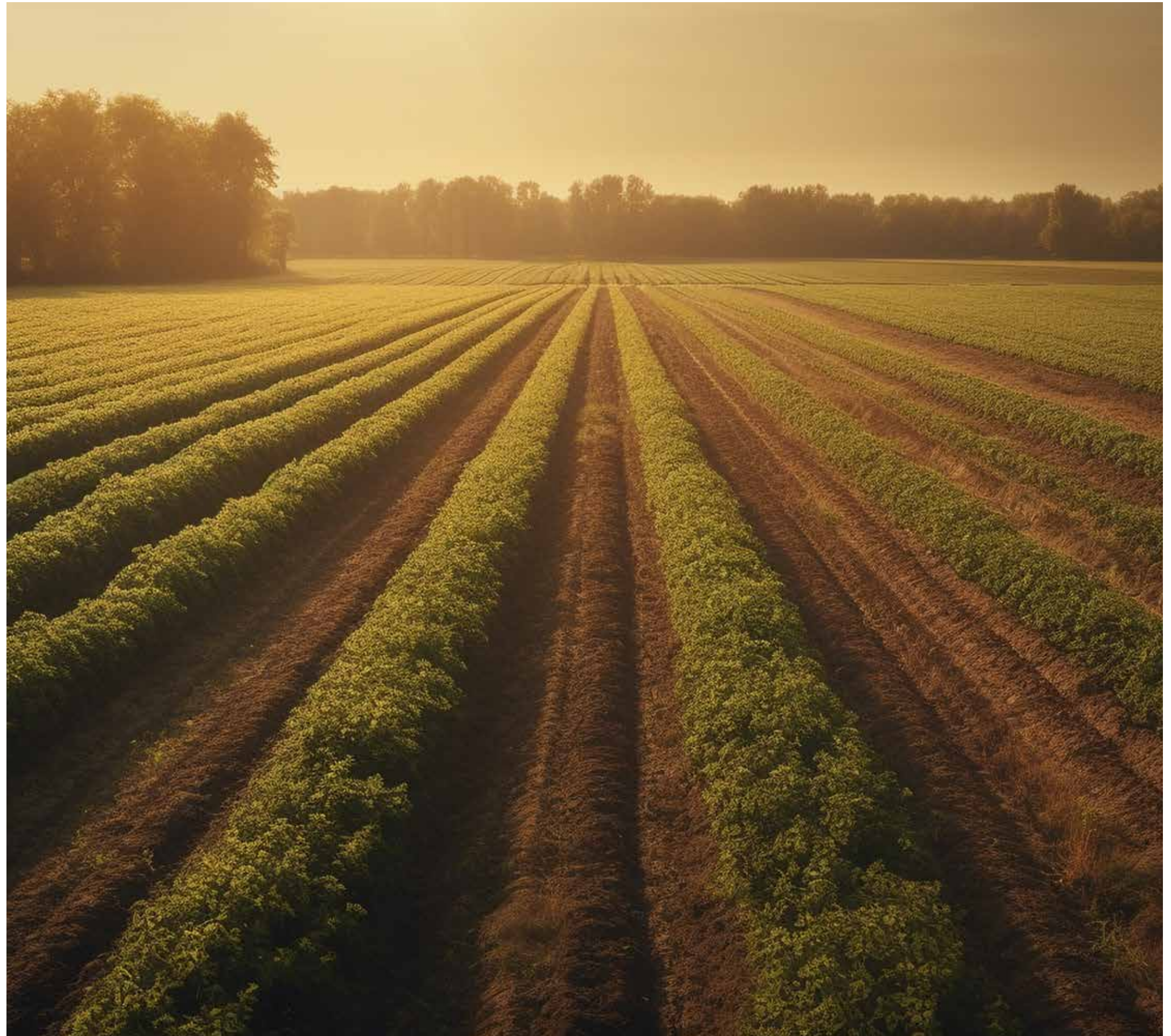
## GENERATION Z. THE PLANT-FORWARD GENERATION

It's undeniable: green cuisine is no longer on the margins. Plant-forward (flexitarian) and plant-based (vegan and vegetarian) diets, which until recently were little known or marginalized, are now rising trends that have taken center stage in the debate about the future of food. In this debate, a main actor emerges: Generation Z, that is, the youngest consumers born between the late 1990s and 2011.

With the shift in many consumers' dietary preferences, the growing interest in health and well-being drives the increasing popularity of plant-rich and entirely plant-based diets. Over the last five years, veganism has gained ground, with about two percent of the population identifying as active vegans. However, the most significant group are the "flexitarians," who make up 42% of global consumers, with Generation Z representing 54% of this group.

Flexitarians primarily follow plant-based diets but occasionally consume (variously) meat, fish, or other animal products, such as eggs, cheese, or yogurt. This shift towards a more plant-forward diet opens up great opportunities for the development of new products and menus. The pandemic has acted as a catalyst for innovation in the food industry, from bakery and dairy alternatives to popular dishes like pizza and meat substitutes.

And this change is just beginning. Analysts project a market growth for plant-based foods and menus of 11.9% by 2027, reaching a value of 66.95 billion euros. According to the 2022 Trend Detection Panel of the Specialty Food Association (SFA), one of the main predictions is that the trends of plant-based products, which we have seen rising for years, will continue to grow. With more than half of future consumers looking to eat less meat, where will tomorrow's proteins come from?



## PLANT-FORWARD MENUS AND FUNCTIONAL INGREDIENTS, THE KEY TO FUTURE FOOD

From the 2022 Trend Detection Panel of the Specialty Food Association (SFA), the growth of meat alternatives such as vegetable and other plant-based burgers filling supermarket shelves has been noted. The Panel also forecasts that this trend will grow in other food categories, as more plant-based products that do not attempt to replace meat are emerging. In 2023, for instance, many 100% plant-based “ready to serve” frozen products were launched, along with new recipes like mozzarella sticks and fried shrimp made with ingredients ranging from pea proteins to seaweed. Indeed, it is expected that the next wave of innovation will focus on non-traditional applications of plant-based products, aiming to create new culinary experiences instead of continuing to try to mimic meat-based dishes.

Furthermore, the Panel states that functional foods are expected to be highly demanded in the near future. It seems the pandemic has motivated many consumers to take their health seriously and strengthen their immune systems. Therefore, functional ingredients, which are promoted for their supposed health benefits, are being incorporated into numerous food products.

Products like nuts or olive oil, staples of the Mediterranean Diet, sit at the intersection of these two trends, as they are functional, non-animal ingredients that can star in elaborate plant-based recipes serving as alternatives to the consumption of animal meat. Their consumption aligns us with Mediterranean dietary guidelines, which promote a healthy eating pattern that emphasizes the importance of nutrient-rich plant foods and includes a variety of protein sources such as nuts, legumes, seeds, seafood, poultry, eggs and (in limited quantities) red meat.

In this list of foods, nuts hold a special importance due to their health benefits. Nut consumption reduces the risk of cardiovascular diseases by 30%, and specifically lowers the risk of stroke by 46% compared to a reference diet that recommends low fat intake. The PREDIMED study (PREvention with MEDiterranean Diet) has assessed the efficacy of the Mediterranean diet with prescribed amounts of extra virgin olive oil or a mix of nuts (50% walnuts, 25% almonds, and 25% hazelnuts), determining that it contributes to the primary prevention of cardiovascular diseases.

Thus, it becomes clear that the increased use of products like nuts will occur almost naturally given the direction current cuisine is taking. Once again, we see that the contemporary trend of reconnecting with a healthy lifestyle leads us back to the patterns of the Mediterranean Diet, which offers—in its ingredients, techniques and culinary strategies—an ancient solution to very modern debates.



## MINCED MEAT BURGER... MADE WITH WALNUTS

With this scenario, it was natural for the market to start offering “carnivorous” alternatives made from nuts, a nutrient-dense food that aligns with a series of healthy eating patterns. Their benefits (walnuts are the only type of nut with a significant amount of Omega-3) prompted the United States Food and Drug Administration (FDA) to approve one of the first qualified health claims for a food in March 2004, stating that “supportive but not conclusive research shows that eating 1.5 ounces (42.5 grams) of nuts per day, as part of a diet low in saturated fats and cholesterol, and not resulting in increased caloric intake, may reduce the risk of heart disease.”

Walnuts provide, with just a 30-gram serving, 13 grams of polyunsaturated fats and 2.7 grams of ALA, the plant-based Omega-3 fatty acids that the body needs but cannot produce, in addition to vitamin B6; all these elements are beneficial for the immune system. Moreover, various studies have revealed the benefits of consuming good, unsaturated dietary fats found in foods like nuts, flaxseed, vegetable oils (canola, soy, safflower, and extra virgin olive oil), salmon, mackerel, or avocado.

At the same time, there is also the matter of taste. In a 2019 consumer survey, taste was cited as the number one reason for consuming nuts, and in the 2021 Kerry Global Taste Chart, nuts were ranked as the top ingredient for meat alternatives.

Thus, nuts become an excellent ingredient in recipes to replace meat, offering healthy fats and a soft, meaty texture. They can be chopped or ground and mixed with spices, legumes, dried beans, and/or mushrooms to create a ground meat alternative suitable for dishes ranging from burgers or plant-based meatballs to Bolognese sauce. They can also serve as a substitute for sausages or spicy chorizo, and even as a “bacon” addition to complement salads or baked potatoes. With the right touch of spices, nuts can replace chicken or add a meaty flavor in the filling of pastas, doughs, or vegetarian pies. The culinary possibilities are as wide as those of animal-derived ground meat.



Furthermore, soups and sauces can also be enhanced by incorporating ground nuts instead of flour or other thickeners that may contain gluten. In fact, returning to the roots of the Mediterranean diet, it’s worth noting that Catalan cuisine is distinguished by “picadas,” a traditional way of thickening and enriching stews which consists, precisely, of adding these chopped nuts to the dishes, enriching them in taste and nutrition. Nut-based sauces are found in traditional food cultures all across the Mediterranean region.

With just two ingredients, nuts and water, you can create a “nut cream,” a cream that, in general, with its natural fats, can replace dairy in popular dishes like any cream sauce, becoming an easy option for those following a plant-based diet while maintaining texture but resulting in a healthier dish.

Similarly, nuts can be used to make hummus, pesto, or any type of sweet or savory spread, becoming a key product for a market, that of nut-based spreads, which according to Market Data Forecast, will experience an annual growth of 7%, reaching 10.4 billion euros by the end of 2026.

In conclusion, nut meat, or nuts made into meat, is a present reality and a likely future. Just as we are increasingly less surprised to hear about pulled pork made from jackfruit, a burger produced with chickpeas, or Bolognese sauce made from textured soy instead of meat, nuts and other nuts are joining the race to become yet another alternative to the consumption of animal protein. Thus, they respond to the needs of Generation Z, a conscientious cohort of youth seeking to change their habits; to the needs of our health, which benefits from healthy alternatives in our diet; and lastly, to the needs of the planet, which appreciates the expansion of new sustainable forms of protein for the consumption of its inhabitants.

## QUOTES

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## Green Haute Cuisine: Walnuts as Protagonist in Crafting Plant Protein Deliciousness.

Rodrigo de la Calle

### CALIFORNIA WALNUT BREAD WITH DRIED TOMATO AND HERBS (For two breads)



#### INGREDIENTS

- 400 g of water
- 50 g of sourdough
- 12,5 of yeast
- 425 of strong flour
- 100 g of California Walnut flour
- 100 g chopped California Walnuts
- 12 g of salt
- Salt scale
- 50 g of dried tomatoes
- 40 g of thyme, Rosemary, rosemary leaves

#### INSTRUCTIONS

1. Mix together the water, yeast and sourdough. On the other hand, mix the strong flour and the California walnut flour, salt, dried tomatoes, thyme and rosemary.
2. Mix the flours in the water little by little until a homogeneous dough is obtained. Add the chopped walnuts and mix very well to ensure that they are well distributed. The dough obtained is not a hard dough, because its hydration is very high.
3. Let it rest in the refrigerator for 12 hours.
4. The next day, flour a work surface and remove the dough from the tupper where it has been fermenting. Stir a little to create tension and activate the gluten.
5. In a metal tray, put oil spray and greaseproof paper. Put the dough in this tray and add EVOO on top and salt flakes.
6. With the fingertips create holes in the dough, they do not have to be totally deep.
7. Bake at 180C for 20-25 minutes.
8. After this time remove the focaccia from the tray and let it cool.
9. Serve.



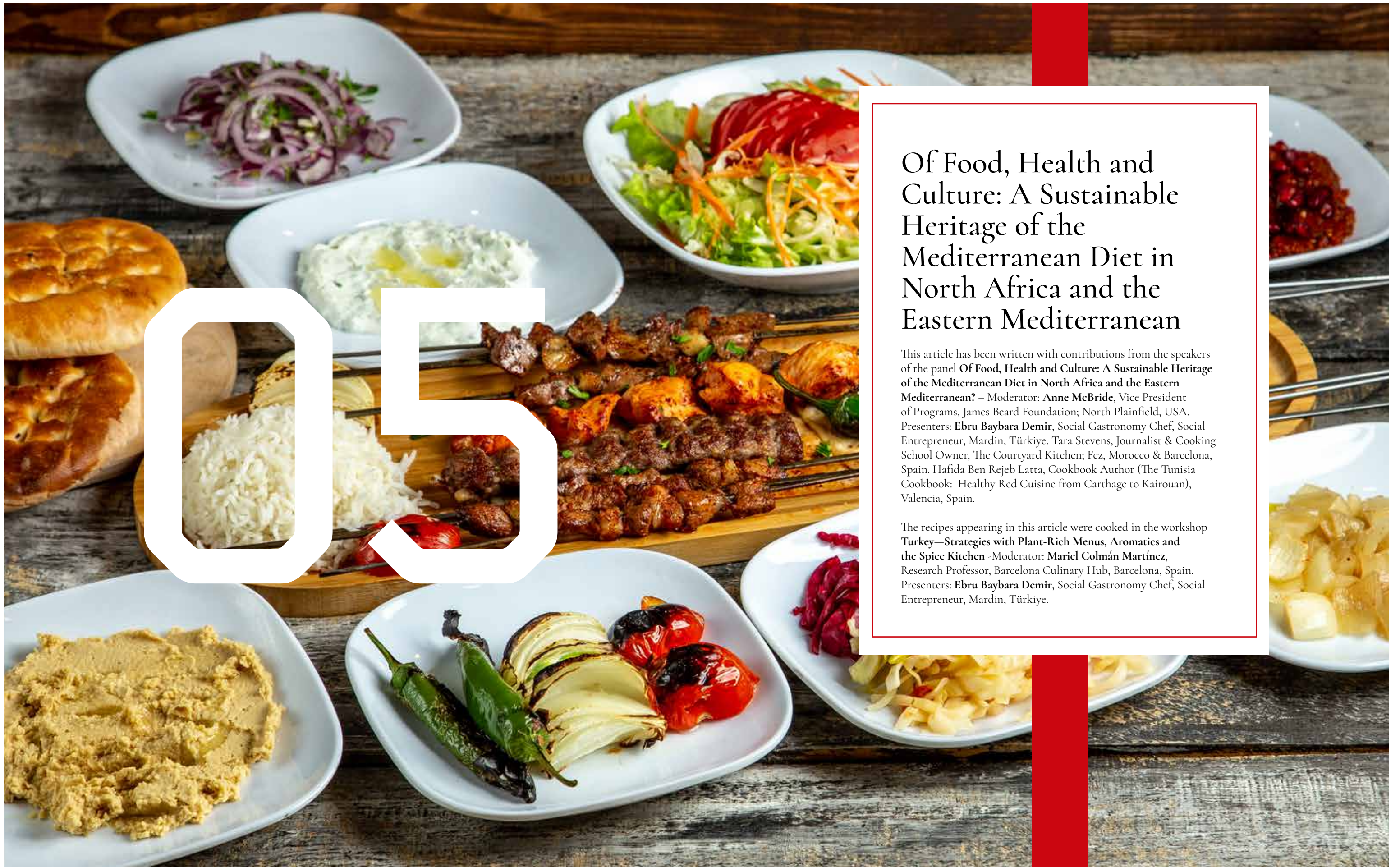
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## Of Food, Health and Culture: A Sustainable Heritage of the Mediterranean Diet in North Africa and the Eastern Mediterranean

This article has been written with contributions from the speakers of the panel **Of Food, Health and Culture: A Sustainable Heritage of the Mediterranean Diet in North Africa and the Eastern Mediterranean?** – Moderator: **Anne McBride**, Vice President of Programs, James Beard Foundation; North Plainfield, USA. Presenters: **Ebru Baybara Demir**, Social Gastronomy Chef, Social Entrepreneur, Mardin, Türkiye. Tara Stevens, Journalist & Cooking School Owner, The Courtyard Kitchen; Fez, Morocco & Barcelona, Spain. Hafida Ben Rejeb Latta, Cookbook Author (The Tunisia Cookbook: Healthy Red Cuisine from Carthage to Kairouan), Valencia, Spain.

The recipes appearing in this article were cooked in the workshop **Turkey—Strategies with Plant-Rich Menus, Aromatics and the Spice Kitchen** -Moderator: **Mariel Colmán Martínez**, Research Professor, Barcelona Culinary Hub, Barcelona, Spain. Presenters: **Ebru Baybara Demir**, Social Gastronomy Chef, Social Entrepreneur, Mardin, Türkiye.

## A REVEALING JOURNEY THROUGH NORTH AFRICAN AND EASTERN MEDITERRANEAN GASTRONOMY

A journey along the southern Mediterranean coast and in the Eastern Mediterranean is a voyage of aromas and traditions that connect us with cultures that have maintained their essence with a steadfastness that, unfortunately, has often been diluted more quickly in other territories. The winding streets of the medina in Fez, the bay of Tunis, or the infinite palette of colors at a spice market stop in Istanbul are images that come to mind when we think of traveling through the African and Eastern Mediterranean. But if there is an arc of geography in this part of the world where the food images are accompanied so distinctly by scent and flavor as they appear in our memory, it is this one, where an imaginary walk might smell of *ras el hanout*, turmeric, spiced meats, or a fish tajine with vegetables.

If food is one of the greatest expressions of a culture, the cuisine of the eastern and southern Mediterranean, which has preserved its most traditional essences, is a wonderful example to understand how the Mediterranean Diet is expressed in countries in which, curiously, we sometimes mistakenly think of less when we consider the term “Mediterranean Diet.” From the eternal knowledge of Moroccan women, who act as guardians of traditional gastronomic culture, to the know-how of Tunisian desert agriculture or the hundreds of varieties of wheat that once existed in Turkey and are now being recovered—there is so much to discover in these regions. Not to mention: the olive tree—its fruit and its oils—are fundamental to all these cuisines.

The countries of the southern and eastern Mediterranean have much to teach the world about how to look to the past to ensure a sustainable future in the Mediterranean. Therefore, today we embark on a journey through three countries, Morocco, Tunisia, and Turkey, seeking answers, solutions, history, and traditions, but above all, delicious food.



## MOROCCO, HOME OF KITCHEN GUARDIANS



Sometimes, no one can explain a beloved object like a lover can. Tara Stevens is an English journalist who fell in love with Morocco to the point that she now has two homes in the world: one in Spain and another in Fez, where she runs a guesthouse that also serves as a center for spreading gastronomy. Here, guests can take authentic Moroccan cooking classes from someone who explains it well because, ultimately, she only wants others to experience what she has experienced.

From her experience, Tara Stevens invites us to explore the history of modern Moroccan cuisine, distinguished by its diversity of spices and ingredients, an intangible heritage that is now undergoing a reevaluation with the return of the diaspora and growing tourism.

The culinary traditions of Morocco are intertwined with the nature of communal meals, where dates are offered with tea and tables are crowded buffets enriched with mint tea and sweets. These practices are preserved by women, considered guardians of Moroccan gastronomic culture. An ancient proverb reflects their importance: “If you educate a man, you educate an individual; if you educate a woman, you educate a nation.”

Women lead the tradition and its transmission, as well as the slow food movement and social initiatives to preserve and disseminate culinary and agricultural culture, even managing cooperatives for argan oil. In addition, organizations such as the Amal Association and Um Mami have emerged to train women in hospitality, and others like Sahbi Sahbi promote knowledge transmission from their all-women-run restaurant in Marrakech.

All of this coincides with the rise of tourism. Morocco will be one of the most popular touristic destinations in 2024 according to CNN Travel and Lonely Planet, and this is reflected in an increase in gastronomic festivals, influences, and foreign interest in gastronomy.

Finally, the diaspora returns to the country with ideas from their migration countries. Fatima Hal (Les Cours, Lyon), Meryem Cherkaoui, Driss Alaoui, Maria Madari from Masterchef, or Driss Mellal from Nomad Paris are female chefs who reimagine and reinvent traditional dishes in a contemporary way, giving a new dimension to Moroccan cuisine. There is also an influence of foreign chefs cooking there, integrating new techniques into Moroccan dishes.

“That’s why,” explains Stevens, “I believe that in the future, we can glimpse a bright landscape with a focus on local ingredients and a deep respect for local culture,” where Moroccan cuisine will become increasingly relevant worldwide and where, ultimately, more and more people will fall in love with this cuisine as she did once.

## THE NOBEL PRIZE OF GASTRONOMY: A TURKISH CHEF

The increasing importance of gastronomy is evident in areas such as science and literature, where Nobel prizes have been awarded for decades. In 2016, Basque Culinary Center, Spain's first culinary university, established the Basque Culinary World Prize, which aspires to be an equivalent to the historical Swedish prize for gastronomy, recognizing transformative initiatives in this field and already known as the Nobel of the sector. Seven years after its creation, in 2023, Ebru Baybara Demir, a Turkish chef, won the prize after two decades of cultural integration work in Mardin, near the border with Syria, using food as a vehicle for integration for women and refugees.

In a country like Turkey, a bridge between Europe and Asia, gastronomy is necessarily complex, as Ebru explains, "Turkish gastronomy has a unique richness, stretching from the Black Sea to the Mediterranean throughout history, rooted in the legacy of this sea and its rich ethnic diversity, a product of its geographical location and the country's colonial history."

Additionally, the nomadic tradition has also left its mark on Turkish gastronomy. In Anatolia, nomads not only fought against nature but cooperated with it, adapting to climatic conditions and sustainably utilizing the area's resources. This connection to the land is reflected in the diversity of seeds cultivated in Anatolia, which includes up to 12,500 varieties.



Despite its rich agricultural history, Turkey faces current challenges due to climate change and the overexploitation of natural resources. Water scarcity and loss of biodiversity threaten the country's food security. To address these issues, it is crucial to promote local production and use traditional agricultural methods that promote resilience and sustainability. The reintroduction of ancestral methods in agriculture not only preserves culinary culture but also drives social and economic development in rural communities.

Traditional culinary techniques play a vital role in conserving and sustainably producing food. Fermentation, for example, is a basic technique that extends the shelf life of vegetables and fruits. The combination of geography and tradition offers the opportunity to create traditional and sustainable culinary products based on Anatolia's rich culture, with products such as bulgur, used to make both sweet and savory dishes.

Furthermore, the promotion of sustainable agriculture contributes to the conservation of seasonal surpluses and the use of long-term products. Ultimately, as Ebru explains, "by integrating these traditional culinary techniques, Turkey will take significant steps towards sustainable development, allowing us to enjoy delicious food while preserving our culture and environment."

## THE FOUR PILLARS OF TUNISIAN GASTRONOMY

Hafida Ben Rejeb Latta was born in Tunisia in 1944, and after being one of the early beneficiaries of secondary and higher education in independent Tunisia during her childhood, she has now become one of the main ambassadors of Tunisian gastronomy in her adulthood. Having lived in eight different countries, she communicates with the clarity of someone who knows what to explain to outsiders to help them understand the essence of her own culture.

From her desire to transmit and write about her country, *The Tunisian Cookbook* was born, a gastronomic treatise that is not only a recipe book but also a history of the country and its migrations from ancient times to today's tourism-focused gastronomy.

In the book, Hafida defines the four most important aspects to define Tunisian cuisine, the four "A's": antiquity, arborescence, aromas, and assimilation.

Antiquity is explained through the olive tree, the basis of the country's cuisine, which arrived in Tunisia with the Phoenicians in 814 B.C., in the city of Tala, following the exiled princess, Lisa. With it comes a beautiful story of evolution: the olive tree grows protected by the shade of palm trees. Under the olive tree, pomegranates grow, and at their feet, seeds of vegetables and herbs flourish, all in the same year, under the shadow of the next, creating a precious circle of nourishment rooted in the history of the land. Arborescence is explained by the importance of trees in the



Tunisian diet, from olive and fruit trees to nut cultivation. In a country like Tunisia, where 95% of agricultural land is in dry areas, "trees save more water and energy than crops planted annually," ensuring the natural sustainability of the territory. The country's 82 million olive trees directly sustain the soil, as well as the workforce: all meals of Tunisian workers include olives to regain strength during lunch. Moreover, this same olive tree is a source of wealth: 60% of Tunisian farmers earn half or more of their income from olives, making them the main source of income in rural areas.

Thirdly, aromas, present in this cuisine for centuries: the Arab conquest brought sugar, coffee, and spices from the East, creating a cuisine that enters through the nose first, awakening the appetite, generating well-being, adding variety to the dishes, and ultimately applying a gastronomic "aromatherapy."

Lastly, Tunisia's history is the story of assimilation. In a strategically located country in the Mediterranean, hospitality is unique, as for centuries, the desert's hospitality tradition has merged with the arrival of Roman sailors, Visigoths, Arabs, Ottomans, Moors, French, or Italians, who, like trees born in the shade of the previous ones, have received shelter from Tunisians, who, in turn, have assimilated the gastronomic knowledge they brought.

Tomatoes, potatoes, peppers, pumpkins: Hafida explains that many foods of the Americas settled in Tunisia as soon as or even before they did in Europe, due to the country's sharing culture.

In Tunisia, shared food is happiness. Or, in other words, happiness is eaten. In the country, the custom of eating together, conversing, is maintained, and it's no wonder that a significant portion of Tunisian income goes towards food, a priority topic.

In conclusion, the four "A's" of *The Tunisian Cookbook* summarize the past, present, and future of Tunisian gastronomy. They all lead us to create a sense of protection for a naturally sustainable and healthy gastronomy, which must be recovered and cared for, one in which eating food according to ancient patterns marked by the seasonality of trees is as important as communal eating. "Tunisia has always lived in harsh conditions in the desert, and it has much to demonstrate," explains Hafida, "and North African eating habits are examples of how to face future challenges," since "I am convinced," she states, "that Tunisian cuisine is part of the flavor of the future."

## QUOTES

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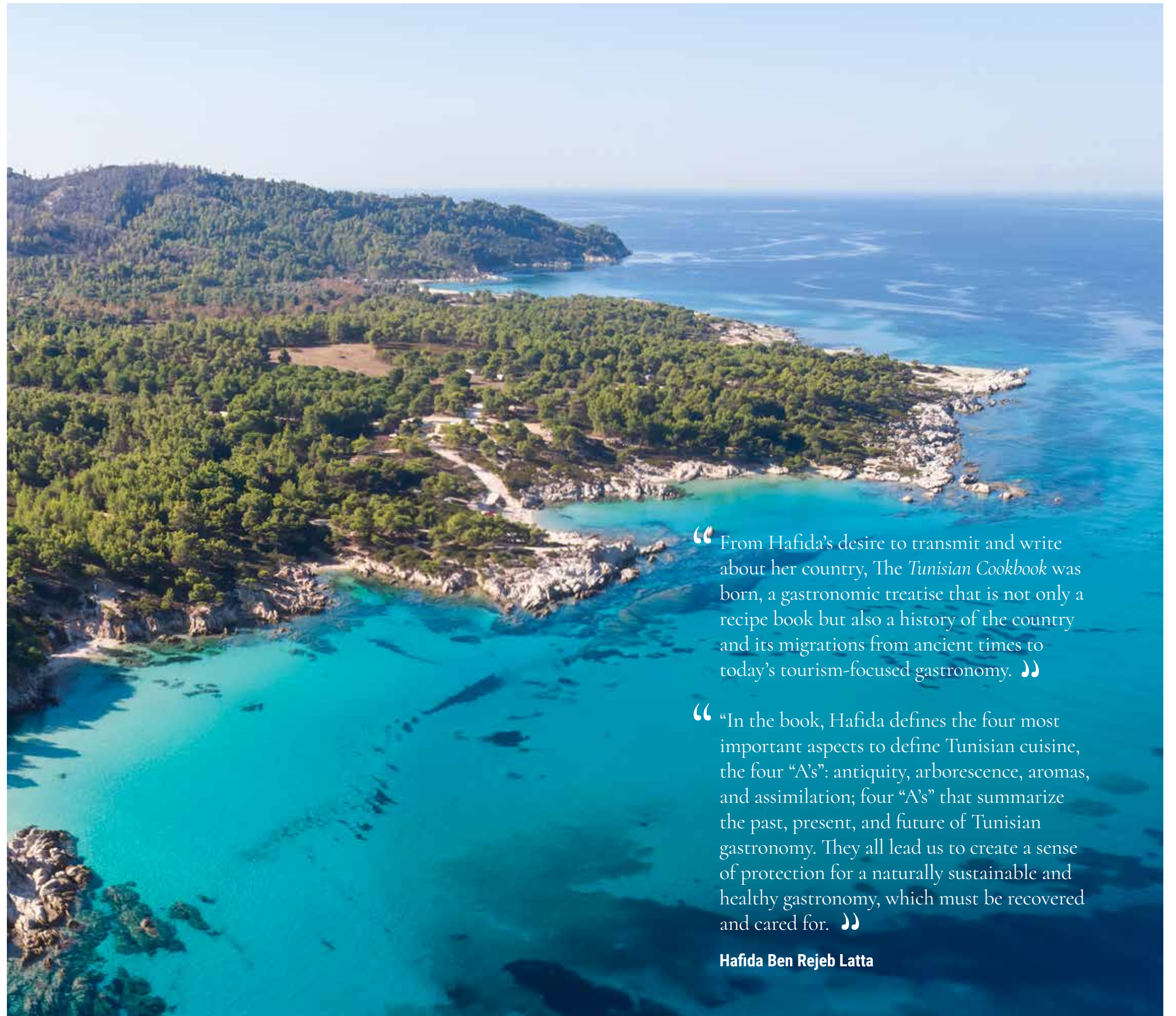
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**Hafida Ben Rejeb Latta**



## Strategies with Plant-Rich Menus, Aromatics and the Spice Kitchen

Ebru Baybara Demi

### ARTICHOKE WITH CHERRY SAUCE



#### INGREDIENTS

- 10 Artichoke (prepared)
- 15 g flour
- 500 g Onion

#### For the Fig Stuffing

- 300 g dried figs
- 200 g walnut kernels
- 500 g Onion
- 40 g granulated sugar
- 5 g Cinnamon Powder
- 300 ml Extra Virgin Olive Oil

#### For the Fava

- 300 gr dried Fava beans
- 500 gr Onion
- 300 ml Tahini
- 4 Lemon
- 2 bunches of dill
- 300 ml Extra Virgin Olive Oil
- Salt

#### For the Sauce

- 300 ml Pomegranate Sour
- 400 g frozen sour cherries

#### INSTRUCTIONS

1. Dehydrate the flour in a pan placed on the fire. Then roast the flour and olive oil, add the fine brunoise chopped onions and roast them.
2. After roasting, add water and place the artichokes carefully. Cook until the artichokes soften by constantly checking. Remove from the water after cooking. Let it cool down.
3. Chop all the ingredients for the stuffing with figs. Roast the onions in olive oil. Add figs, walnuts and cinnamon powder alternately. Roast until all the ingredients are mixed together. After roasting, remove from the fire and let the artichoke mixture cool down.
4. For the fava beans, boil the dried fava beans in very little water with salt on it until the fava beans soften. Roast the onions in another pan. Put the boiled fava beans into a rondo, add roasted onion, olive oil, lemon juice and tahini and grind. After it becomes smooth, remove it from the rondo and add finely chopped dill into it. The consistency should be thick enough to take shape.
5. Boil the pitted cherries for the cherry sauce. Add pomegranate syrup and blenderize.
6. After all the steps are ready, proceed to layering.  
  
Fill the bowl of the boiled artichoke with the fig mixture, squeeze the fava beans over the mixture with a piping bag and serve by adding cherry sauce.



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# OO



## Mastering the Olive Oil Kitchen: Of Heat, Technique and Flavor Development Strategies

This article has been written with contributions from the speakers of the panel **Mastering the Olive Oil Kitchen: Of Heat, Technique and Flavor Development Strategies** -Moderator /Presenter: **Joseph R. Profaci**, Executive Director, North American Olive Oil Association, New York, USA. Presenters: **Maria Pérez Bosch**, Associate Professor, Department of Nutrition, Food Science and Gastronomy, Faculty of Pharmacy and Food Science, INSA- UB, University of Barcelona, Barcelona, Spain. **Rosa Vaño**, Co-Owner and Commercial and Marketing Director, Castillo de Canena, Madrid, Spain. **Sergio Andreu**, Co-Owner and Chef, La Pepita Restaurant, Barcelona, Spain

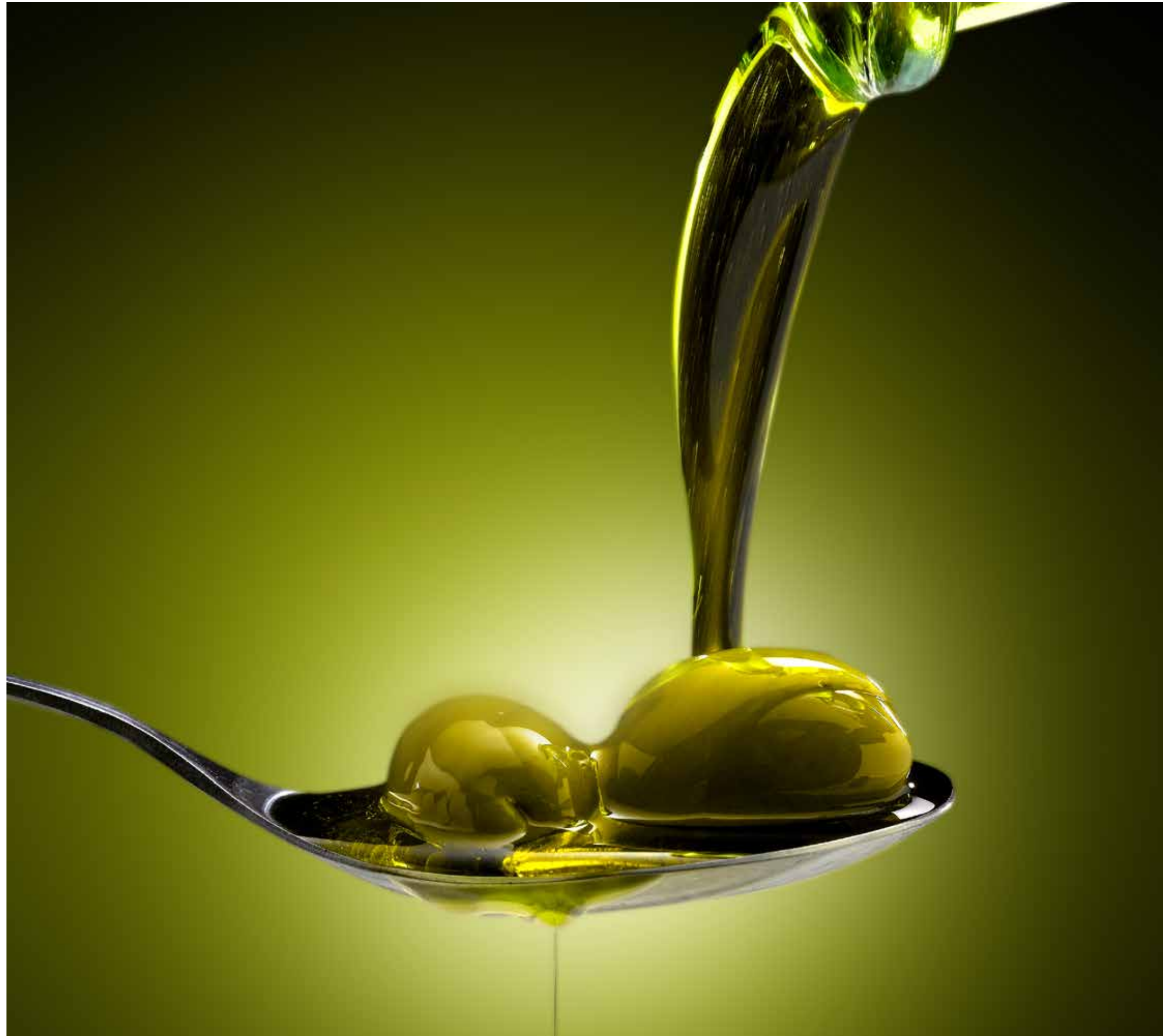
The recipes appearing in this article were cooked in the workshop **Frontiers of the Olive Oil Kitchen—The Art and Chemistry of Heat and Flavor** -Moderator: Mariel Colmán Martínez, Research Professor, Barcelona Culinary Hub, Barcelona, Spain. Presenters: **Georgia Koutsoukou**, Writer, Cook and an Authority on the Food and Culinary Traditions of Messinia, Kalamata, Greece. **Agustí Romero**, Coordinator of the Olive Growing and Forestry Team and Fruit Growing, Institute of Agri-Food Research and Technology (IRTA), Tarragona, Spain

## ALL ASPECTS OF OLIVE OIL

You can't talk about the Mediterranean Diet without talking about olive oil. And while the benefits of this oil are something that few dispute, it is true that, on some occasions, the discourse about olive oil can be incomplete, because it is not approached from all its perspectives.

While olive oil organizations further elaborate their presentations, producing companies create their own narratives, scientists generate ever more detailed knowledge around the product that often does not come to light, and chefs use this oil in their kitchens without necessarily having much contact with the former.

It is not always like this, but in the fast-paced world, everyone is running, and there is not always time to listen to each other. But if congresses like Tomorrow Tastes Mediterranean exist, it is to sit down to listen and learn from each other. That's why today we approach oil from many perspectives and in all its stages. From perspectives on the cultivation of olives to the production of oil to its use in the kitchen, passing through the platforms that exist to disseminate it and the laboratories where its beneficial qualities are studied, so that, with a single glance, we can have a global view and understand, from the grove to the table, why oil is truly as beneficial and functional as we suspect—and what challenges and opportunities lie ahead.



## JOSEPH R. PROFACI. THE PRODUCTION OF OLIVE OIL FACES THE CHALLENGE OF CLIMATE CHANGE

No matter how large an olive oil company may be, today it faces challenges ranging from communication to sustainability or the crisis in the olive oil sector, and it's those who feel the impact of these challenges firsthand. They also hold hope and work for better times ahead.

Beyond climate or natural issues, which cannot be controlled, companies can anticipate certain aspects to ensure a future of better harvests, such as selecting more climate-resistant olive varieties or promoting regenerative agriculture.

Indeed, this latter concept plays a significant role in favor of the industry in the current context. Regenerative agriculture isn't just about labeling a product as "organic," but about regenerating ecosystems and promoting biodiversity with the aim of leaving a better world for future generations.

Therefore, companies are now focused on increasing the capacity of their water reserves, understanding that water is the most important resource. Regenerative agriculture allows for this by reducing carbon footprint and better utilizing natural resources.

In summary, regenerative agriculture seeks to understand the needs of olive trees and promote sustainable practices that benefit both the environment and the quality of the final product. The more allies companies have in this mission, the stronger they and the olive trees will be.



## MARIA PÉREZ BOSCH. WHY IS IT BETTER TO COOK WITH OLIVE OIL? A SCIENTIST ANSWERS

To understand any agricultural product in depth, one must turn to the laboratory, where the ingredients cease to be mere products and become a breakdown of elements whose properties explain, with little margin for error, the virtues we attribute to them.

And if we subject extra virgin olive oil (EVOO) to laboratory analysis, the first thing we learn is that it is obtained solely through mechanical and physical processes without refinement. This ensures that the minor components responsible for its organoleptic and health properties are transferred to the oil, resulting in an oil with a high content of antioxidant components compared to other vegetable oils.

The second thing we learn is that the composition of EVOO can be divided into two main fractions. The main fraction consists of triglycerides, mainly monounsaturated fatty acids. The other fraction consists of minor components, with polyphenols being the most representative group, along with tocopherols and pigments.

There are two health claims associated with the consumption of olive oil. One, supported by the United States Food and Drug Administration, relates to the content of monounsaturated fatty acids. The other, backed by the European Union, concerns the content of polyphenols in these oils. For the latter, it is established that the oil must contain at least five milligrams of polyphenol derivatives per 20 grams.

And although EVOO meets these requirements when cold, what happens when we cook with it and apply heat? During cooking, both fractions of the oil change due to temperature and oxygen. The main transformations in the triglyceride fraction include isomerization, hydrolysis, and, most importantly, the oxidation of fatty acids. However, EVOO, rich in monounsaturated fatty acids and antioxidants, is less susceptible to oxidation and exerts a protective effect against degradation.

During cooking, the content of polyphenols decreases, but levels considered healthy according to European Union standards are still maintained. Sauces prepared with extra virgin olive oil have a higher content of lycopene and polyphenols compared to those using other oils, such as sunflower oil. Therefore, cooking with EVOO is as beneficial as using it in its natural state.

Additionally, adding EVOO to sauces and the preparation of cooked foods promotes stability and the migration of bioactive compounds from the food matrix to the oil, contributing to its stability and healthy effects.

In summary, EVOO is ideal for higher temperature cooking including frying due to its composition and antioxidant compounds. And although those mentioned polyphenols degrade during cooking, the oil retains its healthy properties, especially when cooked at low temperatures, further enhancing the stability and bioavailability of bioactive compounds in foods.



## ROSA VAÑO. HOW IS OLIVE OIL COMMUNICATED TO THE WORLD?

From the Mediterranean or other regions where olive oil is abundant, we talk about it from the abundance and the assurance that it is a nearby and available element. But perhaps, to communicate about it, the first thing to do is to understand that not everyone has it so readily available.

A good example of this is the communication strategy of the North American Olive Oil Association, an entity promoting olive oil consumption in a territory, the United States, where olive oil is not as abundant. Therefore, the association insists, first and foremost, on considering this nuance when thinking about communicating the product.

And above all, communicate positively and appeal to universal values. If “we are what we eat,” and what we eat affects our emotions and our overall health, how can we not want to consume a product that, as science already shows, makes us feel better physically and mentally? Once this is understood, perhaps we will be willing to pay more for a bottle of olive oil.

It is essential to consider all potential consumers, as we all have different values that influence our food choices. Some of us may be more concerned about gourmet foods, while others prioritize organic and unprocessed foods. Some may choose to be vegetarian, opting only for plant-based foods. There is even a new value emerging related to climate consciousness, the “climatarian,” where consumers decide what to eat based on its sustainability for the environment.

For them, it is good news to know about the sustainability of olive tree cultivation, a perennial crop, a tree that stays in place and is not a plant that needs to be planted and harvested every year. This makes it more sustainable, contributing to carbon capture, soil conservation, biodiversity, and requiring less water.

Therefore, we have a diverse consumer base but many tools and information to convey the benefits of olive oil both at a personal and mental level and at the level of planetary sustainability. There is a great product that is very useful in the kitchen, but before sharing tips to master it in the kitchen, it is essential to ensure that there is olive oil available in the kitchen and to convey why it is worth spending more on it.

In conclusion, it is important to educate both consumers and the media about the benefits and versatility of olive oil, debunking myths and promoting its use in the kitchen so that, through science and persuasive communication, a better understanding of olive oil and its role in a healthy and sustainable diet can be promoted.

## SERGIO ANDREU. THE CHEF FACING OLIVE OIL

If we've already understood the field of olive oil production, the benefits that science finds in it, and the challenges of communicating it, we have one last link: the chef, the one responsible for ultimately conveying the benefits of that product in the form of a recipe.

And although the ways to do it are as varied as the kitchens that exist, a good example of the versatility of oil in the kitchen is the aromatization processes, as they are a two-way street, where infused products benefit from the oil to transmit their flavors, and the oil benefits from the properties of those products to increase its complexity, giving rise to a beautiful gastronomic circle. Additionally, these aromatizations can be done cold or hot, allowing us to explore various ways to treat the oil.

Traditionally, when we think of the elements that provide aroma to a preparation, we think of essential oils. Oil, that kitchen product, is also a cosmetic product. To start, it's important to select as neutral an olive oil as possible. We can opt for a very mild extra virgin oil or even a refined oil for a more neutral result. Then, we need the ingredient or food from which we want to extract the aroma to incorporate it into the oil.

The possibilities are endless: from aromatic herbs like basil, mint, and rosemary, to vegetables like ginger or truffle. We can even experiment with citrus fruits and seafood to create unique and surprising infusions.

Regarding the technique, there are several options. The fastest and most direct is to blend the ingredient with the oil, which gives us quick results but can cloud the oil and compromise its conservation due to the organic matter that is incorporated.

Another option is hot infusion, which involves heating the oil and mixing it with the desired ingredient. This can speed up the aroma extraction process, especially in ingredients like truffles or mushrooms.

A variation of this technique is to confit the ingredient at low temperature in hot oil (we have already seen the benefits of cooking with hot oil), allowing for a slower but intense extraction of aromas, ideal for seafood and other delicate ingredients.

Finally, cold infusion is the safest option from a sanitary point of view, as it is done at room temperature or in the refrigerator for several weeks, and although it is slower, it allows for a gentle and gradual extraction of aromas, preserving the freshness of the ingredient.

In summary, aromatizing olive oil is a versatile and creative technique that allows us to add a special touch to our culinary preparations. Whether to enhance the flavor of a salad, give a unique touch to a main course, or simply surprise our guests, this technique offers endless possibilities for experimentation and gastronomic enjoyment.



## QUOTES

“ Companies are now focused on increasing the capacity of their water reserves, understanding that water is the most important resource. Regenerative agriculture allows for this by reducing carbon footprint and better utilizing natural resources.

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**Joseph R. Profaci**

“ If “we are what we eat,” and what we eat affects our emotions and our overall health, how can we not want to consume a product like olive oil that, as science already shows, makes us feel better physically and mentally? ”

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**Rosa Vaño**

“ Extra virgin olive oil is ideal for frying due to its composition and antioxidant compounds. And although those mentioned polyphenols degrade during cooking, the oil retains its healthy properties, especially when cooked at low temperatures, further enhancing the stability and bioavailability of bioactive compounds in foods. ”

“ Adding olive oil to sauces promotes stability and the migration of bioactive compounds from the food matrix to the oil, contributing to its stability and healthy effects. ”

**Maria Pérez Bosch**

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**Sergio Andreu**

## Frontiers of the Olive Oil Kitchen— The Art and Chemistry of Heat and Flavor

Georgia Koutsoukou

### GREEK MEZZE



#### INGREDIENTS

- 20 slices of sourdough bread
- 500 g sausages Oikonomakos
- 500 g finely chopped and marinated mushrooms in a bit of wine
- 3 green apples
- 1 kg onions, cleaned and cut into julienne strips
- Several cherry tomatoes, halved
- White wine for deglazing
- 200 g olive oil

#### INSTRUCTIONS

1. Heat the olive oil in a large pan.
2. Add the onions to sauté until well caramelized, also the apples cotted in cubes, followed by the mushrooms with the wine from the marinade.
3. Then add the sausages and cherry tomatoes.
4. Mix well until everything is thoroughly combined.
5. Let all the liquids evaporate, as we aim for a less moist consistency.

If you were adding pasta, this would be the right time, but today we'll serve the spetsofai on delicious sourdough bread to highlight the wonderful sauce, bound together by the unique natural stabilizer of nature— Koronis olive oil.

Frontiers of the Olive Oil Kitchen—  
The Art and Chemistry of Heat and Flavor

Georgia Koutsoukou

BRUSCHETTA WITH MESSINIAN FAVA



**INGREDIENTS**

- 20 slices of pre-fermented bread, diagonally cut
- 500 g Messinian Fava
- 2 large carrots, cleaned and cut into large pieces
- 3-4 stalks of celery, cleaned and cut into large pieces
- 1 large onion, cleaned and cut into large pieces
- 1 glass of white wine (Rhodes or Moschofilero)
- 150 g olive oil for cooking
- Drops of olive oil for finishing
- 2 onions, diced macedoine, for garnish
- Juice of 1 lemon
- Zest of 2 oranges

**INSTRUCTIONS**

1. In a large pot, heat the olive oil.
2. Add the vegetables and stir for a beautiful color.
3. Pour in the fava and extinguish with wine.
4. Add vegetable broth or water and let it simmer.
5. When the fava softens, add salt and pepper.
6. Pour in a little water and stir.
7. Melt all ingredients with a hand blender, or let it cool and blend in a blender.
8. Add olive oil and, at the end, the lemon juice.
9. Cover and let it cool.
10. Taste and adjust with salt, pepper, lemon, and olive oil if needed.

Serve with garnish of diced onions and lemon. Enjoy!



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## Renewing Food Culture — Securing the Future of the Mediterranean Diet as an Intangible Cultural Heritage Recognized by UNESCO

This article has been written with contributions from the speakers of the panel **Renewing Food Culture — Securing the Future of the Mediterranean Diet as an Intangible Cultural Heritage Recognized by UNESCO** -Moderator: **Xenophon Kappas**, General Manager, Captain Vassilis & Carmen Constantakopoulos Foundation, Athens, Greece. Presenters: **Sara Roversi**, President, Future Food Institute, Bologna, Italy. **Stefano Pisani**, Mayor of Pollica, a UNESCO Emblematic Community of the Mediterranean Diet, and head of the Permanent Secretariat of the Network of UNESCO Mediterranean Diet Communities, Pollica, Italy. **Georgia Koutsoukou**, Writer, Cook and an Authority on the Food and Culinary Traditions of Messinia, Kalamata, Greece. **Enric Tello**, Professor of the Department of Economic History, Institutions, Politics and World Economy, University of Barcelona, Barcelona, Spain.

## THE MEDITERRANEAN DIET (A CONCEPT BORN THANKS TO AN AMERICAN)

The Mediterranean diet was born less than 50 years ago in the United States. This headline may seem exaggerated, but let's develop it. If one thinks of the term "Mediterranean diet," one's imagination surely leads to Greek togas and ancestral Italian vineyards, as if the definition of this diet were as ancient as its sea. However, while the foundations of this diet are, indeed, thousands of years old, the name is not more than half a century old.

The term "Mediterranean diet" was used, specifically, for the first time in a publication in 1975, coined by Ancel Keys, an American nutritionist whose pioneering work laid the foundations for understanding the importance of this diet for health and well-being.

His story is curious. Keys had a varied life: he was a miner, sailor, and lumberjack before obtaining his degree from the University of Berkeley, California, with studies that led him to explore the connection between cardiovascular diseases and diet, as well as to investigate the lifestyle of different populations.

Keys began his research in Greece, where he collaborated with other scientists on the now famous "Seven Countries Study," still considered one of the most ambitious studies in nutrition science. This comparative study covered 14 samples of individuals aged 40 to 59 in multiple countries on three continents: Japan, Greece, the Netherlands, Italy, Finland, Yugoslavia, and the United States. The data collected was significant: in the Mediterranean basin, where fruits, vegetables, olive oil, nuts and legumes, and pasta are consumed, the mortality rate from cardiovascular diseases was lower than in Finland, where the diet included foods rich in saturated fats such as milk, butter, and red meat.

Today, Greece, along with Spain, Portugal, Morocco, Croatia, Cyprus, and Italy, are part of the emblematic communities that UNESCO has defined as guarantors of the Mediterranean Diet.

Precisely in Pollica, Italy, very close to the Greek coast where Keys began to sketch the Mediterranean Diet, stands the Center for the Study of the Mediterranean Diet, which reminds us every day why UNESCO considers this gastronomic pattern to be the guide to follow for a healthy diet.

So many Greeks and Italians have followed the Mediterranean Diet intuitively for millennia. Ancel Keys defined it half a century ago to lay the foundations for its preservation. And today, Pollica stands as a representative of this diet and as an example to follow to have a healthy diet for thousands of years to come.



## STEFANO PISANI. POLLICA, THE MEDITERRANEAN CITY

What is the Mediterranean Diet? And above all, where was it born? The Mediterranean diet is much more than a simple way of eating, it is a lifestyle rooted in the history, culture, and traditions of the Mediterranean region. Although its origin dates back much earlier than commonly believed, it was the scientist Ancel Keys who, after World War II, conducted pioneering studies that laid the foundations for understanding the importance of this diet for health and well-being. Interestingly, it was an American scientist who came to highlight the heritage of the sea where Europe was born.

Keys discovered that in the Mediterranean basin, in cities like Pollica, the Mediterranean diet has been better preserved than in other places. In places like Pollica, where a diet based on fruits, vegetables, olive oil, and pasta is consumed, the mortality rate from cardiovascular diseases was significantly lower than in other regions with diets richer in saturated fats. This is because the Mediterranean diet goes beyond mere nutrition, reflecting a way of life that emphasizes conviviality, the consumption of seasonal products, and the use of herbs instead of salt.

In the community of Pollica, Italy, a living museum of the Mediterranean diet has been built, recognized by UNESCO as a World Heritage Site. Here, they work to promote and preserve this valuable legacy, developing educational and research initiatives, such as the Center for the Study of the Mediterranean Diet or the CIAO Study project, which analyzes the relationship between diet and longevity.

The Mediterranean diet pyramid, with its three levels of consumption, reflects the essence of this lifestyle. The foods at the base, such as fruits, vegetables, and grains, should be consumed frequently, while those in the center, such as meats and dairy products, should be consumed in moderation. The foods at the top, such as sugars and saturated fats, should be consumed only occasionally.

In addition to the health benefits, the Mediterranean diet is also an ally of the environment. If the pyramid is inverted, the foods that should be consumed more are those with the least environmental impact, making it a model of sustainable development for rural communities.

In summary, the Mediterranean diet is much more than a simple way of eating, it is a living heritage that reflects the history, culture, and traditions of the region. Its preservation is crucial for our health and the environment, and in Pollica, they work tirelessly to promote this valuable legacy, inspiring others to adopt a healthier and more sustainable lifestyle.



## GEORGIA KOUTSOUKOU. GREECE, THE OTHER CRADLE OF THE MEDITERRANEAN

The gastronomic experience of Koroni, Greece, has been fundamental for the protection, preservation and promotion of the Mediterranean diet. This emblematic community, in the Greek region of Messinia, has managed to highlight the nutritional value of local products and the lifestyle that characterizes this region, and for this reason it is part of the network of emblematic communities of the Mediterranean diet, representing an emotional connection that goes beyond a simple collection of gastronomic societies. It is a bridge that connects Koroni with all the other communities, embracing a shared culture. This emotional connection is key, as the Mediterranean diet is not just a list of foods, but a living legacy that is passed down from generation to generation.

In Koroni, everyday practices and the art of home cooking are fundamental. Cooking is not just about survival, but about the hospitality and emotional exchange that is generated around the Sunday table. This culinary tradition connects generations to their daily life and historical legacy, becoming a bond that unites the community.

Beyond sophisticated restaurants, in these emblematic communities, good food is found in an authentic flavor on the plate. It is an experience that goes beyond mere nourishment, bringing people together around the table and opening up stories full of flavors and emotions. Each dinner becomes a celebration of local culture and traditions.

Sustainability and the focus of what we now understand as the Slow Food movement are fundamental to this gastronomic experience. The production of local products supports the balance between nature and community, creating a meaningful experience. The young people of Koroni, as guardians of these traditions, join the olive harvesters, contributing to the preservation of their identity and its transmission to new generations. This connection with the land and traditional processes is key to keeping the Mediterranean diet alive.

The Mediterranean diet, or “Messenian diet,” has a solid scientific basis that guarantees health and emotional well-being. It is more than just a way of eating, it is a journey to the heart of the community, where each dish tells an emotional story. Cooking becomes a means of expression and connection with one’s roots, reflecting the complexity of life.



In conclusion, the Mediterranean diet is the basis of life, combining science, art and love in a culinary celebration. Beyond its nutritional benefits, it highlights the crucial role of olive oil, enhancing flavor, health and cultural heritage. It is a gastronomic symphony that unites generations and communities, reflecting the tenderness and care that residents have invested in the art of nutrition.

In other words: The Messinian diet is the basis of life. It focuses on science and love, the reflection of the complexity of life. And its scientific basis guarantees health and emotional connection, care and an erotic dimension that highlights the love for people and food. You experience science, art and love in a culinary celebration. And furthermore, it is part of the spark of life, the flavor creating an emotional repair beyond food. It is something that starts with taste, leaving a mark on our hearts, a harmonious coexistence of science, emotion and love in our communities.

## SARA ROVERSI. WHAT WILL WE EAT TOMORROW?

The Future Food Institute, the institute dedicated to the food of the future, has found the Mediterranean diet to be a valuable tool for addressing the challenges we face today. Although many young people may think this diet is only for the elderly, the Future Food Institute has discovered in Pollica, Italy, a magnificent opportunity to work together and take advantage of the benefits of this cultural heritage.

From the Future Food Institute itself, they seek alliances with entities such as the Google Food Lab or institutions like the CIA to explore solutions to the problems we face, such as mental illness, wars, loss of fertility and biodiversity. And they seek to do this through food. From the offices of the Future Food Institute in Bologna, Italy, they seek to find ways to solve the future of health, as there are increasingly more diseases related to poor diet and lack of access to food, exacerbated by climate change.

And when analyzing the data for 2050, where it is predicted that a greater part of the population will live in cities like Tokyo (Japan) or Lagos (Nigeria) that will exceed 30 million inhabitants, it is necessary to question where we will be able to find the Mediterranean diet, since it has been better preserved in rural areas. This has led the Future Food Institute to work with UNESCO agencies around the world, seeking ways to connect knowledge and find solutions.



Through the “Integral Ecology” methodology, which, through KPIs and tangible objectives, has determined that the Mediterranean Diet is the way forward, this Italian center has developed more than 90 projects that are reshaping the territory and the development of all life in Pollica. It has been understood that the Mediterranean diet is a shared heritage that needs to be disseminated and valued by all generations. To this end, they work with schools, farmers, ministries and the United Nations to establish a World Mediterranean Diet Day and with a main objective: to be more regenerative than extractive.

The idea is to be able to disseminate this message and share this heritage, turning it into a model and a reference to regenerate many areas of the planet, even the most marginal ones, where biodiversity is better protected.

And there is nothing like the Cilento region of Italy, with Pollica at the forefront, to demonstrate this. There, just four hours from Rome, farmers cultivate the land regeneratively just as they have done for three thousand years. And this is the example to follow. In this way, following the principles of Parmenides and other Greek philosophers, who considered the balance between humans and nature to be fundamental, the Mediterranean diet can be the key to a more sustainable future.

## ENRIC TELLO. FOR AN AGROECOLOGICAL TRANSITION TODAY (TO SAVE THE TOMORROW)



Why an agroecological transition? The answer is clear: the current agri-food systems are part of the environmental problem of our generation, but they also hold a large part of the solution.

Agri-food systems account for 34% of greenhouse gas emissions worldwide, being the main emitters in our economic system. Therefore, if this transition to another food system is not carried out, it will be impossible to achieve peace on our planet and adapt to climate change and the rest of the environmental effects.

This is the reason why the UN Committee on World Food Security, the high-level panel of experts from the FAO, and now the European Union are seeking to promote the agroecological transition to meet the objectives of the Paris Agreement and achieve the Sustainable Development Goals worldwide.

Some people think that if we move towards organic agriculture and other types of sustainable agriculture, this will force us to find more land at the expense of natural reserves, forests, etc. and biodiversity, sacrificing it. But this would only be true if we do not change our diets.

Only 44% of the food produced in the world reaches our plates. And it is not only a matter of food waste, but we are now using almost half of the grain grown in the world and devoting more than half of it to feeding animals to obtain meat and products. This implies many losses, not only of waste, but also of food that we could consume as human beings.

Therefore, the answer to the question of whether an agroecological transition is possible without increasing the amount of land that grows at the expense of forests and natural places is yes. As long as we move towards a healthier planetary diet like the Mediterranean diet.

For centuries we have raised animals to recycle our pastures or they have been used for grazing on lands that we cannot digest ourselves. And we are feeding them with cereals that we humans need to eat. According to a study carried out in Paris, it is possible to move away from this unsustainable situation in 2010, in which a large amount of meat is cultivated and consumed and soy is imported from Latin America. But this requires that the total amount of food be 30% less. It is not a problem if we change our diet to a Mediterranean diet, reducing meat consumption by 50%.

Another example shows that if we combine organic agriculture with a Mediterranean diet and move towards agroecology and a circular food system, agroecosystems could capture carbon from the atmosphere and put it in the soil, decarbonizing our economy.

We are at a crossroads, and if we continue with the current situation, we will reach a “hot house” from which it will be impossible to get out. But we still have time to move towards land control and planet stabilization. The Mediterranean diet, together with an agroecological transition, play a vital role in this process.

Changing food and changing society is necessary to take this step towards a more sustainable future. Thanks to all the chefs, restaurants and women (and increasingly more men) who cook good food for the future.

## QUOTES

“ In the community of Pollica, Italy, a living museum of the Mediterranean diet has been built, recognized by UNESCO as a World Heritage Site. Here, they work to promote and preserve this valuable legacy, developing educational and research initiatives that analyze the relationship between diet and longevity. ”

**Stefano Pisani**

“ There is nothing like the Cilento region of Italy, with Pollica at the forefront, to demonstrate the benefits of the Mediterranean Diet. There, just four hours from Rome, farmers cultivate the land regeneratively just as they have done for three thousand years. And this is the example to follow. In this way, following the principles of Parmenides and other Greek philosophers, who considered the balance between humans and nature to be fundamental, the Mediterranean diet can be the key to a more sustainable future. ”

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**Enric Tello**



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08

## Pulses of Change: “Beans Is How” We Can Fix the Future

This article has been written with contributions from the speakers of the panel ‘Beans Is How’ We Can Fix the Future -Moderator: **Greg Drescher**, Senior Advisor of Strategic Initiatives, The Culinary Institute of America, Napa, USA. Presenters: **Conor Spacey**, Chef, Disruptor, and Author, Co-founder of FoodSpace, Dublin, Ireland. **Ali Honour**, Executive Chef, Food Consultant, Cork, Ireland. **Maria Izquierdo**, Director of the Department of Nutrition, Food Sciences and Gastronomy, Faculty of Pharmacy and Food Sciences, University of Barcelona, Barcelona, Spain.

The recipes appearing in this article were cooked in the workshop **Flavor Dynamics of Plant Protein Deliciousness—Beans is How** -Moderator: **María Martínez Iglesia**, Academic Director, Barcelona Culinary Hub, Barcelona, Spain. Presenters: **Conor Spacey**, Chef, Disruptor & Author, Co-founder FoodSpace, Dublin, Ireland; **Ali Honour**, Executive Chef, Food Consultant, Cork, Ireland.

## MORE LEGUMES, LESS MEAT

From Greece to Egypt, legumes appear in legends and archaeological texts as pillars of the diets of the ancient inhabitants of the Mediterranean. The reason, as with so many other products included in this dietary culture, has nutritional explanations, but also environmental ones. Studies show that legumes, a plant protein that is a source of health for humans, are also a sustainable crop where they are grown, since they consume less water, fix nitrogen, sequester carbon, and generally improve soil quality.

And the Mediterranean is not the only territory where this has been commonly understood. In India, a good part of the population consumes legumes regularly and dal (lentils) is one of the national dishes. In the same way, in Latin America the bean is a crop that dates back thousands of years and is an essential part—to this day—of the dietary patterns of many of the countries of South and Central America.

But this is not everywhere always the case. Precisely because they are an affordable source of protein, legumes are often considered a humble and low-value product, a cheap substitute for animal proteins. However, nutrition and environmental studies continue to demonstrate the need to increase consumption, and the FAO itself has pointed out on several occasions the value of reducing meat consumption in favor of increased legume consumption—thus moving us towards better diets and more sustainable agriculture.

It is time to take back legumes and elevate their importance and appeal. And, as with so many modern food trends, part of the secret—and part of the opportunity—is to recover insights from traditional food cultures such as the Mediterranean Diet, where since thousands of years ago people have understood the importance of this humble and powerful food.



## REVIVING MEDITERRANEAN LEGUMES: A FIGHT THAT CAME FROM THE LAND WHERE LEGUMES ARE UNDERVALUED



Conor Spacey is omnipresent in the UK gastronomy, a cook, entrepreneur, and gastronomic agitator, with a hospitality empire that reaches 20 restaurants in Ireland and the UK, all pursuing sustainability criteria. That is why he is one of the flag bearers of the “Beans is How” movement, a program that seeks to change the world through legumes.

The idea of the program is to double legume consumption by 2028, which may seem like a rather complex goal in this diverse world. In India, over 80% of the population consumes legumes regularly, while in Ireland, it is not the case, and this food is perceived as one for low-income people and is not a major part of the usual diet. “As a chef,” explains Spacey, “my interest lies in exploring how legumes are used in areas that apply the Mediterranean diet, and taking examples that help me increase their consumption in my country.”

Why is this campaign important? There are three main reasons why legumes can be a global solution. Firstly, they are very beneficial for soil health, require little water, and capture carbon, which is crucial for improving agriculture. Additionally, their versatility is remarkable since they can be found in different types of packaging (cups, cans, glass jars, dried, etc.) and are considered an affordable and durable food.

For Conor Spacey, chefs are key in this process because they are at the center between consumers and farmers. When customers visit a restaurant, chefs have the responsibility to show them what good food is by going beyond a recipe or a plated dish and talking about the origin of the ingredients and how they are part of the chef’s daily work.

Conor Spacey, who comes from Ireland, a small island at one end of Europe where the Mediterranean diet is not common, has sought to promote here the local use of legumes. Seventy percent of the dishes in his 24 restaurants include legumes, demonstrating that ingredients considered humble can also be used on restaurant tables and, by extension, on household tables.

“Legumes will be a key food in the world in the next 50 years” concludes Spacey, “because they allow for better health for both us and the planet and because they are a solution to a failed food system, [so Beans is How] allows us to show the future of food of the future.”

## "CREATIVITY IN THE SERVICE OF LEGUMES"

Ali Honour is an English chef who has been aware of gastronomic sustainability since her youth, who has promoted local food in various radio and television programs and who, as a sign of this commitment, has signed the Chefs' Manifesto (UN SDG2 Advocacy Hub) and currently promotes cooking with legumes as an ambassador for Beans is How.

Part of this dissemination work arises from her awareness that legumes play a prominent role in kitchens around the world and are present in classic dishes such as beans in Mexico, feijoada in Brazil, lentils in the Mediterranean, hummus in the Middle East, or dishes like Italian pasta e fagioli, in a journey that, when studied, shows us that cultures that traditionally consume legumes tend to have better health.

In her work as a consultant, Honour works with many chefs, with whom a recurrent question arises: How can we make legumes more attractive and pleasant? A good example is their innovative use in desserts. Honour herself worked on the development of a chocolate bar with Ecuadorian cocoa and legumes, a sustainable protein bar whose principles she has also applied to muffins, cookies, and

other products that are usually attractive to the palate but without processed ingredients and with a much healthier result. "We must offer quick alternatives that generate immediate attraction and have taste as a letter of introduction: Why reveal that a dessert contains legumes when you can seduce the customer by taste and then surprise them with the components of the recipe?"

The use of legumes explains itself. From a nutritional point of view, they are very healthy, and from an environmental point of view as well, as they enrich the soil and help the environment.

In summary, she explains, legumes are a sustainable and healthy solution for both individuals and the planet, and "it is crucial that chefs are responsible with the foods we use, that we promote their use in our kitchens as a substitute for animal protein, and that we be creative in presenting them."

## "NUTRITIONAL REASONS TO FALL IN LOVE WITH LEGUMES"

María Izquierdo, Director of the Department of Nutrition, Food Sciences and Gastronomy, Faculty of Pharmacy and Food Sciences at the University of Barcelona, considers that cooking, that activity where one labors for hours to prepare a dish that ends in ten minutes, is one of the most important acts of love that someone can do.

It is not a minor statement for someone who is dedicated to studying food in its essence, even breaking down a simple chickpea into nutritional compounds so that we know exactly what we put into our bodies when we eat.

That is why María Izquierdo, who is fascinated by legumes, is fascinated from the knowledge that they are an essential part of the Mediterranean diet, with very ancient documents that show that chickpeas, peas, lentils, and beans were much of the basis of our diet.

But beyond history, from a nutritional point of view, legumes have several aspects that must be remembered: fiber, carbohydrates, proteins, vitamins, and minerals, as well as interesting phytonutrients. They do not contain saturated fats and are low in salt. In short, she explains, "they have everything."

In addition, Izquierdo strives to debunk myths. Legumes do not make you gain weight (a serving of cooked legumes has 200 kilocalories, half of a single croissant) and they can indeed substitute, at least in part, for animal proteins.

In this regard, Izquierdo recalls the recommendation of the Public Health Agency of Catalonia: to reduce the consumption of red meats and increase that of legumes. "It is not necessary for all of us to become vegetarians, but incorporating legumes into our diet about four times a week would be very beneficial," she asserts.

Finally, María Izquierdo also recalls that legumes are also an excellent source of fiber, one of the richest foods in fiber, which helps keep us satiated and favors intestinal health. "Fiber has many important functions in our body, including fermentation by intestinal microbiota, which produces short-chain fatty acids beneficial to health".

In short, an ingredient to fall in love with because, as she said, "it has everything".





## QUOTES

“ Chefs must identify that we are facing a failed food system for various reasons, so we must not only be innovative with foods but also reflect on how we can influence the way we work with them. And that’s what Beans is How does: seek global solutions for our food system. ”

**Conor Spacey**

“ Legumes are a sustainable and healthy solution for both individuals and the planet. It is crucial that chefs be responsible with the food we use, that we promote their use in our kitchens as a substitute for animal protein and that we be creative when presenting it. ”

**Ali Honour**

“ I think it is important to remember that legumes are excellent and that we should not underestimate their value. They are full of goodness and should be a regular element on our tables. It is essential that those who know how to cook teach different ways to prepare and integrate them into our diet. I don’t know why we should complicate our lives when we already have this treasure of nature within our reach. ”

**María Izquierdo**



Flavor Dynamics of Plant Protein Deliciousness  
—Beans is How

Conor Spacey, Ali Honour

LENTIL, WALNUT AND MUSHROOM RISSOLES



**INGREDIENTS**

- 20 g dried mixed mushrooms
- 3 tsp olive oil
- 1 onion, finely chopped
- 300 g mixed fresh mushrooms, chopped
- 2 garlic cloves, finely chopped
- 2 tsp fresh thyme, leaves removed and chopped
- 2 tbsp chopped fresh flat-leaf parsley
- 200 g drained cooked green lentils
- 75g grated Parmesan
- 1 tsp Dijon mustard
- 30 g walnuts, finely chopped
- 3 tbsp plain flour

**For the tomato and Butter bean sauce**

- 250 g fresh tomato (roasted with the garlic and chopped up, skins and seeds included)
- 500 ml passata/can tomato
- 200 g butterbeans (1 can rinsed and drained)
- Olive oil
- Garlic (roasted and chopped)
- Sea salt
- Pepper
- Fresh basil

**INSTRUCTIONS**

1. Put the dried mushrooms in a small bowl, cover with boiling water and soak for 10-15 minutes. Drain and chop, reserving the liquid to freeze for soups or stocks.
  2. Meanwhile, heat 1 tsp of the oil in a large pan and cook the onion for 5 minutes. Add the fresh mushrooms and cook for 5-10 minutes, until the mushrooms are golden and any water has evaporated. Add the garlic and herbs and cook for 3 minutes. Tip into a mixing bowl.
  3. Add the rehydrated mushrooms, lentils, cheese, mustard and walnuts to the bowl and season. Stir to combine. In a food processor, whizz half the mixture to a purée, then combine with the rest of the mixture and the flour. Shape into balls and chill in the fridge for 30 minutes.
  4. Start sauce, in sauce pan on medium heat add good splash of olive oil, then the chopped garlic. Stir for minute then add the roasted tomato and passata. Reduce heat to simmer and add seasoning to taste. This is quick sauce so now finish the balls while that simmers.
  5. Heat a griddle or frying pan to medium, with the remaining oil cook balls for 3-4 minutes each side. Transfer to a baking sheet and cook in the oven at 200°C for 5 minutes.
  6. Take sauce off heat and tear in basil. Remove balls and stir into the sauce.
- Serve with pasta, rice, bread and parmesan always good.

# 09

## Powering a Global Trend around Irresistible Vegetables

This article has been written with contributions from the speakers of the panel **Powering a Global Trend around Irresistible Vegetables** -Moderator: **Santi Mas de Xaxàs Faus**, Founder, Gastronomic+34, Co-Executive Director (for The Culinary Institute of America), Torribera Mediterranean Center, Barcelona, Spain. Presenters: **Georgia Koutsoukou**, Writer, Cook and an Authority on the Food and Culinary Traditions of Messinia, Kalamata, Greece. **Mounir El Arem**, Executive Chef-Owner, Le Baroque Restaurant, Tunis, Tunisia.

The recipes appearing in this article were cooked in the workshop **North Africa—The Vegetable Kitchen Revealed** -Moderator: **Imene Trabelsi Trigui**. Head of the Promotion Department, International Olive Council; Madrid, Spain. Presenters: : **Tara Stevens**, Journalist & Cooking School Owner, The Courtyard Kitchen; Fez, Morocco & Barcelona, Spain, **Hafida Ben Rejeb Latta**, Cookbook Author (The Tunisia Cookbook: Healthy Red Cuisine from Carthage to Kairouan); Valencia, Spain, **Mounir El Arem**, Executive Chef-Owner, Le Baroque Restaurant; Tunis, Tunisia.

## TUNISIA AND GREECE: TWO VANTAGE POINT IN THE MEDITERRANEAN, UNITED BY VEGETABLE CUISINE



Tunisia and Greece look at each other, each on one side of the Mediterranean, like distant relatives who recognize their kinship because they find similarities in their facial features. Both countries share important characteristics. In the north, the history of Ancient Greece, one of the foundational pillars of Western culture, faces—in the south—the heritage of Carthage, one of the most powerful empires of antiquity. The Greek territory has historically been a passageway for all the flows of people and cultures that have moved between Europe and Asia. On the other hand, the tip of Tunisia penetrates into the Mediterranean and closes the narrow passage between Europe and Africa, marked by Tunisia on one side and Sicily on the other, making this country an essential port of the Mare Nostrum and a necessary passage for anyone who has crossed North Africa.

On one side, Greece has European influences and Orthodox Christianity. On the other side, Tunisia has Phoenician heritage and Muslim influence. In both cases, ultimately, a wonderful mix of cultures exists with the Mediterranean as a common point of reference that defines their cultures and therefore their cuisines.

Because if two countries share so many traits, gastronomy was not going to be left behind. The Mediterranean climate defines two culinary cultures that have the colors and flavors of olive oil, where simple recipes are based on the excellence of the products. This is where vegetables play an essential role, since in Mediterranean cuisine they are a central element whose variety (in tastes, colors, preparations) defines this cuisine. Just ask Greeks and Tunisians what a typical table in their homes would look like: many dishes, many colors, and vegetables prepared in hundreds of ways (raw, roasted, fried, in salad, in sauce) to create real feasts around vegetables. Therefore, these two countries offer unparalleled voices to explain how to make vegetables delicious and thus contribute to their increased consumption, with all the benefits this implies for our health and the health of the planet.

Hence this conversation, where Georgia Koutsoukou, and Mounir El Arem, moderated by Santi Mas de Xaxàs Faus, talk about how to make vegetables essential (and delicious) in daily diets.



**Santi Mas de Xaxàs Faus:** How do we start talking about vegetables? Where do we begin?

**Mounir El Arem:** In my case, I have to start by talking a bit about the history of my country. Carthage, founded by Tyrian Elisa in 814 BC on the shores of the Gulf of Tunisia, became an important trading center between the east and west of the Mediterranean. Its agricultural prosperity stemmed from crops like pomegranates and olives; its vast grain production earned Tunisia the reputation as the breadbasket of the Roman Empire. Subsequently, more important milestones marked Tunisia's history such as the arrival of the Arabs, who converted Carthage into one of the capitals of the Muslim world. Later, the fall of Granada in 1492 brought changes to the region, with many newly arrived immigrants settling around Tunisia and founding new cities. The influence of Al-Andalus had introduced new ingredients like peppers and tomatoes, while later, French colonization in the 19th century brought more culinary influences.

Ultimately, Tunisia is at the heart of the Mediterranean Sea, and we have many things on our plate because, as our history shows, we have been adding products from all civilizations that have passed through our land. And to start talking about vegetables, we must first understand the country's history to understand why they abound on our table.

**Georgia Koutsoukou:** In my case, from a very practical point of view, I believe that to start talking about vegetables, we must have menus based mainly on vegetables, and I'm not talking about vegan or vegetarian menus, but about having the possibility to eat more vegetables daily. And this is a matter of education and training. We must start from an early age, even from kindergarten; we have to teach children to start eating vegetables and legumes. One day it will be a legume cream, another day a salad, another grilled vegetables, for example, and it will be a way to present vegetables with a narrative, with a story, and they will always be waiting for something new in their daily diet.

**Santi Mas de Xaxàs Faus:** How can vegetables be made irresistible on a restaurant menu? How do we make them delicious?

**Georgia Koutsoukou:** You need to have a good foundation or some good fundamentals. Why? Because when you don't know the seasons of vegetables, you don't know that neither eggplants nor tomatoes are consumed in winter or that some vegetables are specific to spring, others to winter, and others to summer. It's a matter of education. It's only through this education and training that vegetables can become irresistible in our lives. That's what I believe.

**Mounir El Arem:** I have a quote from the president of the National Cooking Academy in France, Jacques Charette, who says that there is no good cuisine without good products, and Tunisia is a true example of this, as it has made the use of vegetables a national emblem, and that

can be a path. For example, there is an ancient olive tree 2500 years old that still produces olives today, which can be visited. Harissa, our national dish (a paste of peppers with coriander and garlic), has been included in UNESCO's intangible heritage list for 2022. Couscous, an omnipresent golden dish, has also earned a place in UNESCO's intangible cultural heritage in the case of North Africa. Tunisia is at the heart of the Mediterranean Sea, with a climate suitable for four different seasons, making agriculture rich and abundant including fruits, vegetables, and herbs. Spices, legumes, and cereals, which have turned the consumption of vegetables and legumes into a matter of national pride, and this is a good way to expand their consumption and make cooking with these products enticing.

**Santi Mas de Xaxàs Faus:** We have a lot of vegetarian cuisine, many vegetarian dishes in this conversation. If you had to explain it to a chef unfamiliar with your cuisine, what is the way flavors develop around vegetables?

**Mounir El Arem:** In Tunisia, we have restaurants that present Tunisian dishes, and we use a lot of vegetables. We start with olive oil and onion. The onion then gives a certain flavor to the oil. We use a lot of tomato since the tomato arrived in Tunisia. Most of our dishes are red because of the tomato or tomato paste and paprika, which is what gives us the characteristic color. And we also use many chilies, we like spicy things. And we also like potatoes, we find them in many dishes. In fact, all these vegetables are part of the most typical Tunisian dishes, such as the typical Tunisian dish with potatoes, chili, and paprika. All these vegetables are present there, so Tunisian chefs like to use vegetables. And it's not just a matter of cost. On the other hand, the other key is that Tunisian cuisine is very seasoned—we use many spices.

**Georgia Koutsoukou:** Yes, colors are also very important because something happens with vegetables, we are not only talking about taste. We are also talking about what the eyes see. The tomato, the green or red of one pepper or another, the red of the ingredients. You're always thinking about color and flavor. In Greece, we also have a dish with many colors seasoned with olive oil. Obviously, and the spices as my colleague said before. And the walnuts, nuts, feta cheese. In fact, I have to mention here also the most famous street food in Greece, the souvlaki, which is colorful. We have the red of the tomato, the white, the green, the beautiful colors that the meat acquires when it's well grilled. It's something with a very beautiful color and that's because of the vegetables.

**Santi Mas de Xaxàs Faus:** One of the reasons we talk about color is to make food visually appealing, that's very important. Now that we are here with Instagram, everything has to be beautiful and attractive and ready for us to take a photograph. Thinking now about the new generations. How do you think we can make these vegetables attractive for new generations? And so that they can also understand this? Because if we look at traditional dishes—with

legumes, etc.—they are also usually very traditional looking recipe preparations. How can we modernize these recipes? To make them more attractive for the new generations as well.

**Georgia Koutsoukou:** I suppose vegetables and food are not viral. I'm talking more about the new generations. They're not viral for them since we're talking about real food. Real food doesn't need Instagram to be better. It needs a good cook. A good recipe. Correct and good ingredients. And they need to start making a good dish. Good for health. Good for sight. Something beautiful. Like a photo that is not virtual. For me, it's very important to understand this.

**Mounir El Arem:** People have to understand that a good chef is the one who goes to the farm to try to get the best product, to detect it. That is, they go to get the best tomatoes, the best potatoes, the best hot peppers, the best prawns. They smell them, they weigh them, and they try to do everything possible to use all their skills and abilities to give them a good shape and good taste for the client and this is what allows us to understand what you have said. Food through Instagram or TikTok often doesn't have a real flavor. We have to feel the food with our hands and then taste it, and at the end of this process understand what we have on the plate.

**Santi Mas de Xaxàs Faus:** What place does olive oil have here in making vegetables irresistible?

**Mounir El Arem:** It's a divine product. We can do anything with olive oil. Carthage, in fact, led the Mediterranean thanks to olive oil.

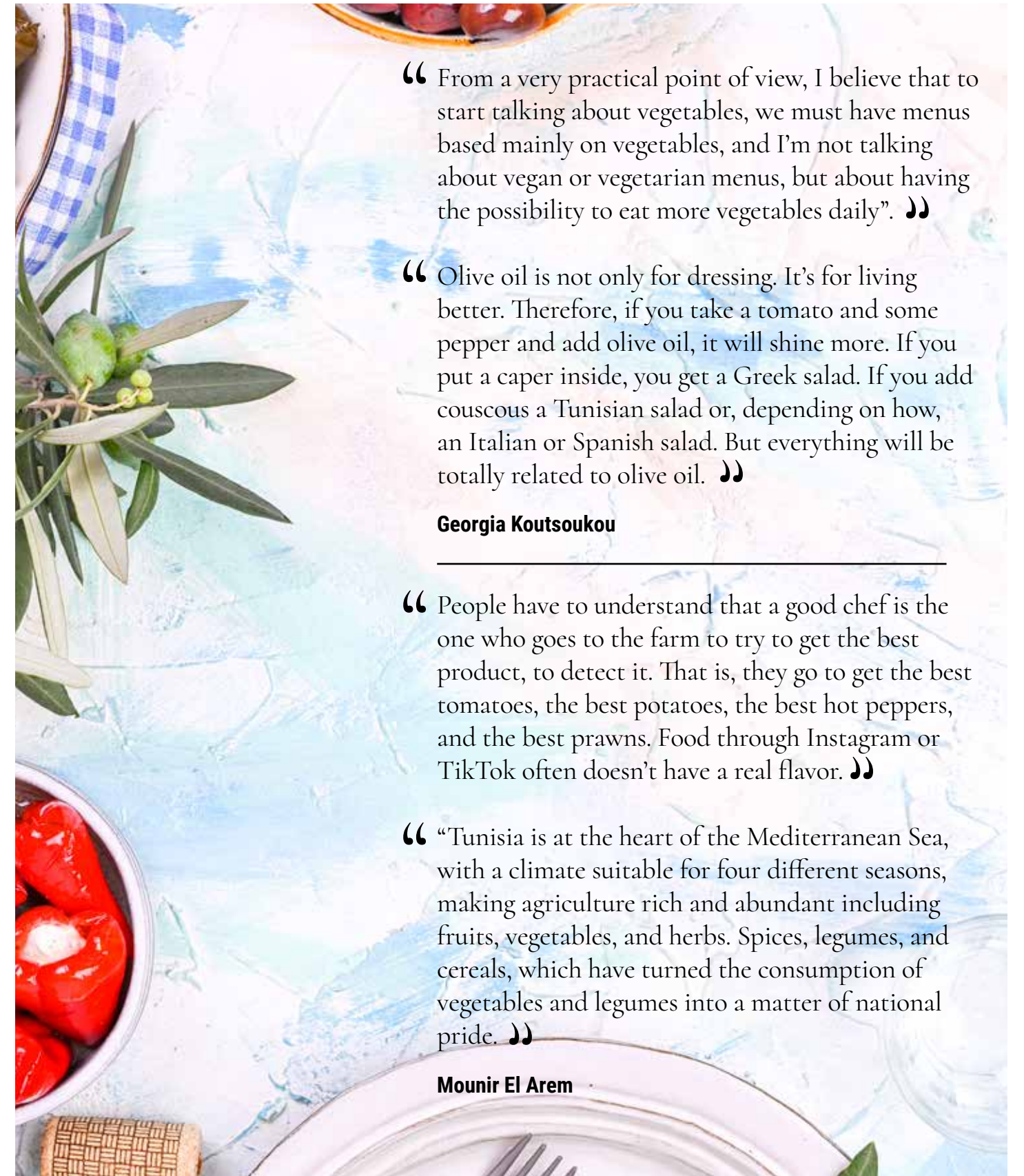
**Georgia Koutsoukou:** Olive oil is not only for dressing. It's for living better. Therefore, if you take a tomato and some pepper and add olive oil, it will shine more. But if you put a caper inside, you get a Greek salad. If you add couscous a Tunisian salad or, depending on how, an Italian or Spanish salad. But everything will be totally related to olive oil.

**Santi Mas de Xaxàs Faus:** With what message would you like to end this discussion?

**Mounir El Arem:** We have to go back to basics. In Tunisia, it's as simple as mixing a little grape juice with lemon and orange, for example, stirring it with olive oil and adding a little bread. And with that, you can have a delicious meal in Tunisia. Cooking with vegetables is that simple, and that's what we have to understand.

**Georgia Koutsoukou:** I would like to say something else. Most of us are from the Mediterranean area, that is, we have common ground. Everything we plant in the ground will give us the same plant. We don't need many things. Plant a tomato, cook it, and eat it. Start doing this and then everything else will be irresistible without the need to use meat or fish.

## QUOTES



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“ Olive oil is not only for dressing. It's for living better. Therefore, if you take a tomato and some pepper and add olive oil, it will shine more. If you put a caper inside, you get a Greek salad. If you add couscous a Tunisian salad or, depending on how, an Italian or Spanish salad. But everything will be totally related to olive oil.”

**Georgia Koutsoukou**

“ People have to understand that a good chef is the one who goes to the farm to try to get the best product, to detect it. That is, they go to get the best tomatoes, the best potatoes, the best hot peppers, and the best prawns. Food through Instagram or TikTok often doesn't have a real flavor.”

“ Tunisia is at the heart of the Mediterranean Sea, with a climate suitable for four different seasons, making agriculture rich and abundant including fruits, vegetables, and herbs. Spices, legumes, and cereals, which have turned the consumption of vegetables and legumes into a matter of national pride.”

**Mounir El Arem**

## North Africa—The Vegetable Kitchen Revealed

Mounir El Arem

### VEGETABLE COUS COUS (Serves 8, 55 minutes)



#### INGREDIENTS

- 4 tomatoes
- 2 zucchini
- 1 bell pepper
- 1 red onion
- 4 cloves garlic
- 2 Tbsp olive oil
- 2 pinches salt and pepper
- 2 cups couscous
- 3 cups vegetable broth
- 1/4 bunch parsley

#### INSTRUCTIONS

1. Preheat the oven to 400°F. Wash and chop the tomatoes, zucchini, bell pepper, and red onion into 1 to 1.5-inch pieces. Peel four cloves of garlic but leave them whole.
2. Toss the chopped vegetables and garlic with 2 Tbsp of olive oil. Spread them out on a baking sheet so they are in a single layer. Sprinkle a couple pinches of salt and pepper over the vegetables.
3. Place the vegetables in the oven and roast at 400°F for about 45 minutes, stirring twice throughout, until the vegetables are wilted and browned on the edges.
4. While the vegetables are roasting, cook the couscous. Add the vegetable broth to a sauce pot, place a lid on top, and bring to a boil over high heat. Once boiling, add the couscous, turn off the heat, and cover the pot with the lid once again. Let the couscous sit, undisturbed, for ten minutes. Then, fluff with a fork.
5. After the vegetables are finished roasting, collect the four garlic cloves, and chop them well. They will be quite soft. Also roughly chop the fresh parsley.
6. Combine the couscous, roasted vegetables (including garlic), and parsley in a bowl, and stir to combine. Season with more salt and pepper if desired. Serve warm or cold!

## North Africa—The Vegetable Kitchen Revealed

Mounir El Arem

### STANDARD CHAKCHOUKA



#### INGREDIENTS

- 400g tomatoes seeded and diced = 0.88 lbs = 14 oz
- 2 green peppers (250g) (seeded and cut into rings) = 0.55 lbs
- 2 onions (200g), finely chopped = 7 Oz
- 2 cloves garlic crushed
- 2 eggs
- 2/3 tbsp paprika
- 2/3 tbsp coriander
- 1/3 cup olive oil (80ml)
- 1/2 tsp dried mint Salt to taste

#### INSTRUCTIONS

1. Fry the onions in the oil for 12-16mins on medium heat. Do not brown them.
  2. Add the tomatoes, paprika, garlic, salt and coriander. Cook covered on low heat for 20mn. Add peppers. Cook for a further 10mn.
  3. Break the eggs and add them to the pot. Cook for 5mn longer. Sprinkle the dried mint.
- Other variations: you can use potatoes instead of eggs, or aubergines or courgettes or shelled green beans. Another variation of chakchouka is ojja. The difference is instead of coriander use caraway seeds and instead of breaking the eggs whole they have to be mixed at the last couple of minutes.

## North Africa—The Vegetable Kitchen Revealed

Hafida Ben Rejeb Latta

### OMOK HOURIA (CARROT SALAD WITH A TWIST)



#### INGREDIENTS

- 500g carrots
- 100g white cheese (feta)
- 4 tbsp extra virgin olive oil
- 2 tbsp apple cider vinegar
- 2 cloves garlic
- half tbsp harissa
- 10 g green olives for decoration
- 10 g black olives for decoration
- 10 g of hard cheese
- 10 g capers
- half TSP caraway seeds
- Salt and pepper to taste
- Pitta bread to eat it with

#### INSTRUCTIONS

1. Peel the carrots and cut them to 1cm thick rounds. Boil water in a large pot and throw them in to boil. Do not put salt in at this stage.
2. Wait until the carrots are really tender, then drain, season and blend the carrots into a smooth purée. Now add salt and pepper.
3. Dilute the harissa in a tablespoon of water. Peel and crush the garlic. Mix these and the caraway seeds, the vinegar and extra virgin olive oil with the mashed carrots.

Put in a serving dish and decorate with olives and the cheese (cut in long thin strips). Cover and put in the fridge to cool. Serve chilled with pitta bread.



# 10

## Fermenting Change: Chefs, Plant-Forward Restaurants and Sustainability

This article has been written with contributions from the panelists of the panel: **Fermenting Change: Chefs, Plant-Forward Restaurants and Sustainability** -Moderator: **Anne McBride**, Vice President of Programs, James Beard Foundation; North Plainfield, USA. Presenters: **Eduard Xatruch**, Chef-Owner, Disfrutar Restaurant; Barcelona, Spain. **Daniele Rossi**, Chef Owner, Rasoterra Restaurant; Barcelona, Spain. **Clara Abarca Rivas**, Food and Nutrition PhD Candidate at Faculty of Pharmacy and Food Sciences, University of Barcelona, Barcelona, Spain.



## FERMENTATION: WHEN “ROTTING” FOODS IS THE PATH TO A BETTER WORLD

What do chocolate discovered in South America, pickled anchovies in Spain, miso soup in Japan, or a recipe found on a tablet from the Roman Empire have in common? The answer is found in the following text but can be summarized in one word: fermentation.

This word, more commonly associated with the spoilage of our food in the pantry, has recently gained new value in contemporary gastronomy, where we have learned to appreciate the properties of fermented foods. These have become common products in supermarkets, and we have lost our fear of them.

Words like kimchi, kombucha, tepache, miso, and soy sauce are now familiar, and their acidic flavors or the bubbles from their fermentation processes are no longer seen as unpleasant but as good news for our health.

Ferments from distant countries have made their way into our kitchens in the 21st century, but this should not make us forget that ferments have been part of the Mediterranean Diet for thousands of years. From vinegar (fermented grape juice), yogurt (fermented milk), or the base of Mediterranean cuisine, olives, which is also a ferment, to wine. For years, we have looked at fermentation with suspicion without knowing that it was part of our DNA.

Adopting these distant ferments is an opportunity to revalue those close to us and take advantage of the trend towards more sustainable and conscious food that allows us to produce products with excellent bacteria for our digestion, find production methods for foods that create new flavor profiles, and have an additional tool to make better use of products that were perhaps discarded until now.

In today's text, the chef of the second-best rated restaurant in the world, a cook from a small vegetarian bistro in Barcelona, and a nutrition researcher explain different ways of fermenting, from the use of distant ferments to the closest ones and the mixtures between them. From eating with kimchi to creating it with local products. From fermenting cava to re-fermenting the waste it leaves to create bread.

In short, this is a small magical world of cooking where trends such as plant-forward and healthy eating coexist with the need for food waste reduction and gastronomic sustainability. It's a small culinary show that opens up a world of possibilities for us to continue eating better in the future.



## DISFRUTAR: FERMENTING TRADITION



Eduard Xatruch, chef of the second-best rated restaurant in the world, Disfrutar, immersed us in his talk about the fascinating world of fermentation, a millenary culinary technique that has resurfaced with force in contemporary high cuisine. Despite its recent popularity, Xatruch reminded us that fermentation is a practice rooted in Mediterranean tradition, present in everyday foods such as wine, bread, and olives.

Xatruch explained that fermentation not only enriches the flavor and texture of foods but also presents an opportunity to find new textures and flavors and a challenge for chefs, as it is a living and changing process. In Disfrutar, fermentation is explored as a way to achieve new culinary creations, from non-dairy yogurts to reinterpretations of traditional dishes like miso de romesco.

The chef emphasized that, beyond trends, fermentation is an essential part of our culinary heritage, used since time immemorial to preserve food and enrich our diet. One of the best examples of the encounter between a contemporary fermented product and a traditional one is found in Disfrutar, where fermentation is used creatively, such as in the case of *pichón amazake*, where Japanese rice koji ferment is used to tenderize the meat before cooking. This technique may seem distant, but if we remember a traditional dish like quail in escabeche, where a small bird similar to *pichón* is cooked with a fermented product like vinegar, we see that the difference between a traditional dish and an innovative one can simply be a matter of cultural perspective.

The same goes for the *miso de romesco* mentioned. Xatruch explained that “we have innovated with the *miso de romesco*, applying traditional fermentation techniques to this emblematic Catalan sauce.” Traditionally, romesco is made with nuts, especially almonds and hazelnuts, to which roasted tomato, roasted garlic, extra virgin olive oil, and vinegar are added. By introducing koji and fermenting the mixture in the style of traditional miso, the flavors settle and mature, resulting in a more refined and prolonged taste in the mouth.

“This technique not only enriches the texture but also intensifies the flavor, maintaining the essence of the romesco but adding a distinctive and very interesting aftertaste.” In Disfrutar, this approach has allowed for the evolution and offering of new culinary experiences through known techniques and opening paths for discovering others yet to be discovered.

“Fermentation is not just a passing trend,” explained the chef, but a technique that has accompanied humanity throughout history, from our earliest days as a species. In Disfrutar, the aim is to honor this millenary tradition while exploring new culinary possibilities, always with deep respect for our Mediterranean heritage.

In summary, Eduard Xatruch invites us to rediscover fermentation not as a passing trend but as a culinary technique with deep roots in our culture, offering infinite possibilities for innovation in the kitchen. At the same time, he encourages us to adopt a more conscious and respectful view of food, valuing the richness of natural ingredients and culinary tradition.

## RASOTERRA: FERMENTING TO VALUE THE PRODUCT

At their small bistro in Barcelona's Gothic Quarter Daniele Rossi, owner and chef of Rasoterra, focuses on working with vegetables in their purest form, avoiding imitations such as vegan burgers or sausages. "Our approach is to offer vegetables, preferably recognizable ones, like eggplants or, for example, a pointed cabbage from Garraf, without trying to imitate flavors that are not proper to vegetables, but rather enhance them, for example, through techniques like fermentation." Instead of pursuing familiar flavors from the carnivorous world with vegetables, the goal is to create new imaginaries in virgin vegetable palates.

This approach is crucial, especially for educating young people about the origin and seasonality of food, "like the fact that eggplants come from the field and not from the supermarket's freezer or that tomatoes should be consumed in the summer and not in winter." At Rasoterra, they aspire to be a showcase of the biodiversity that surrounds them, valuing local products enormously.

And in this work, fermentation is a key technique in their kitchen, allowing them to take on comprehensive responsibility towards the planet and people. "This technique facilitates using all parts of the vegetables: from a cabbage, we use the meat, but also the stem and, for example, the leaves, which are usually discarded, serve to make a kimchi that is then incorporated into various dishes— which do not necessarily have to be the original dish where the cabbage was going to end up." Inspired by Noma's book, they use coffee grounds to make kombucha, adding local fruits like oranges from the Ebro Delta to enrich this fermented drink.

Rossi states that Rasoterra is located "at the intersection of three gastronomic trends: plant-based cuisine, alcohol-free pairing, and fermented foods. However, our motivation goes beyond trends, focusing on showing the wide range of gastronomic possibilities and the importance of the product." Thus, fermentation not only allows them to use all parts of a vegetable but is also part of their culture, as demonstrated by the traditional garum sauce. Coinciding with Xatruch, Rossi reaches one of the keys to contemporary fermentation: recovering fermented foods through foreign ferments such as kombucha or miso is a way to revalue fermented foods as Mediterranean as that garum, which was an essential element of the diet of the Roman Empire.



## CAN YOU MAKE BREAD WITH WHAT'S LEFT IN THE BOTTOM OF A CAVA BOTTLE?

Following the line of fermentations and sustainability, Clara Abarca, researcher at the University of Barcelona, presented a project that highlights the revalorization of cava lees and becomes an example of sustainability by converting waste into a raw material that generates new foods.

To contextualize, cava is the name of a Spanish sparkling wine made using the champenoise method, which involves one or two fermentations. In the second fermentation, carried out in the winery, the lees, that is, the yeasts, are used and left to age with the wine, but, at the end of this process, they are discarded as waste.

These lees represent 25% of the waste generated by the wine industry, approximately 200 tons per year of "garbage" that is currently not used. However, these lees have great potential.

The lees are yeast cells that, after the second fermentation in the bottle, which must last at least 9 months, are no longer viable, mainly leaving the yeast cell wall. Why are cava lees so relevant? "Because we have discovered," explained Clara Abarca, "that they have multiple health benefits due to their soluble and insoluble fiber content, polyphenols, organic acids, and favorable volatile compounds."

From a technological point of view, lees can enhance the growth of beneficial microorganisms, inhibit pathogens, and show certain antioxidant activity. Knowing this, from the research project, they looked for ways to work with lees and found them by following a process to reuse them. First, they are centrifuged and separated to then be lyophilized, leaving a raw material ready to be used.

How is this integrated into the fermentation of, for example, bread? Through sourdough, a culture of lactic acid bacteria and yeasts. With the lees, a traditional sourdough is created to which 25% of lees is added in relation to the flour.

And what was observed when comparing traditional sourdough with the one made with lees? The sourdough with lees presented a more acidic pH and greater acidity. It improved the growth of yeasts throughout the process. It also generated volatile compounds that were added to the characteristics of the bread. Clara Abarca explained that, in physicochemical terms, the height of growth was greater in bread with lees than in the other bread samples without this type of sourdough, and its alveolus was notably better. Regarding moisture, both the sourdough and the bread with lees retained moisture similarly. As for the characteristics measured with the texturometer, the chewability of the bread with lees showed a significant improvement. As for hardness, no significant differences were observed.

Finally, regarding aroma, consumer tests were carried out, where the bread with sourdough and lees was better valued in terms of acceptance and flavor compared to traditional sourdough. The only aspect less valued was the color, as some associated the color of the bread with whole meal breads.

In short, the bread that refermented waste became a better bread, giving a complete sense to the virtuous circle of sustainability and demonstrating that scientific exploration of the fermentation path can help discover not only new flavors but also discoveries that are real game changers and allow, literally, to create products from what was once waste, filling the concept of sustainability with meaning.



## QUOTES

“ Fermentation not only enriches the flavor and texture of foods but also presents an opportunity to find new textures and flavors and a challenge for chefs, as it is a living and changing process. ”

“ Disfrutar’s “*miso de romesco*” has meant applying traditional fermentation techniques to this emblematic Catalan sauce. Romesco has his own traditional recipe, and by introducing koji and fermenting the mixture in the style of traditional miso, the flavors settle and mature, resulting in a more refined and prolonged taste in the mouth. ”

**Eduard Xatruch**

“ Our approach is to offer vegetables, preferably recognizable ones, like eggplants or, for example, a pointed cabbage from Garraf, without trying to imitate flavors that are not proper to vegetables, but rather enhance them, for example, through techniques like fermentation. ”

“ This technique facilitates using all parts of the vegetables: from a cabbage, we use the meat, but also the stem and, for example, the leaves, which are usually discarded, serve to make a kimchi that is then incorporated into various dishes - which do not necessarily have to be the original dish where the cabbage was going to end up. ”

**Daniele Rossi**



“ These lees represent 25% of the waste generated by the wine industry, approximately 200 tons per year of “garbage” that is currently not used. However, these lees have great potential, as we have discovered that they have multiple health benefits due to their soluble and insoluble fiber content, polyphenols, organic acids, and favorable volatile compounds. ”

“ How is this integrated into the fermentation of, for example, bread? Through sourdough, which gave as a result a bread with a more acidic pH and greater acidity, an improved growth of yeasts throughout the process and, in general, a better bread than others made with the same sourdough but without the addition of lees. ”

**Clara Abarca**

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