



Stanford Prevention  
Research Center



# 2021 Olive Oil and the Plant-Forward Kitchen: A Sauce Discovery Project

*The Culinary Institute of America*

*with support by and in collaboration with the International Olive Council  
and in association with the Menus of Change University Research Collaborative*

## Objectives of the Project

- Flesh out possibilities around the culinary heritage of Mediterranean olive oil-based sauce-making traditions.
- Leverage various ingredients in the plant-sourced market basket of the region, including vegetables; nuts and seeds; and herbs, spices, and other aromatics.
- Research, within the campus dining operational environment, which of these healthy, Mediterranean sauce traditions hold the most promise.
- Identify the best, untapped strategies for sourcing and using olive oil in terms of quality standards, varieties, and budget constraints within campus dining.

## Introduction

“ Today, as chefs and consumers are expanding their aspirations for change around food, health, sustainability, and food system innovation—together with a wider appetite for culinary discovery—a new vision of an American, plant-forward kitchen is capturing our attention.

Relying on both global flavors and seasonal, regional, and even hyper-local ingredients, chefs and home cooks alike are embracing plant-forward ideas in the kitchen that reflect human and planetary health imperatives, and simultaneously embrace new pathways towards deliciousness.

Let's explore, then, the substantive ways that the plant-forward, olive oil kitchen—rooted in the Mediterranean but now being reimagined as well in America and beyond—can leverage flavor and expand our repertoire of culinary techniques as we craft the future of our food.”

*The Culinary Institute of America*

*Olive Oil and the Plant-Forward Kitchen -  
Inspiration from the Mediterranean Diet  
for Contemporary American Cooking*





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# Olive Oil and the Plant-Forward Kitchen

## *An Invitation to Discovery*

If chefs and foodservice industry leaders are going to be able to collectively accelerate their contribution toward advancing food choices and food systems that enhance personal and planetary health, we must up our game around discovering new pathways to deliciousness.

We know from our medical and scientific colleagues, including world climate experts, that we need to achieve a transformational shift in our cooking and dietary patterns—de-emphasizing foods from animal sources in favor of an increased emphasis on whole, minimally processed, healthy foods from plant sources. But exactly how we do that will determine whether or not we will find enthusiastic customers to support these imperatives and new menu directions.

The solutions to this challenge could be many, but we know that the olive oil-based, plant-rich Mediterranean Diet is an immensely popular, *but still-underleveraged* source of inspiration for crafting food choices that elevate the appeal of the [plant-forward kitchen](#). This inspiration extends far beyond the Mediterranean Basin to include countries throughout the world that have taken up olive tree cultivation and/or where olive oil consumption has taken hold.

At the heart of the Mediterranean Diet and global, Mediterranean-inspired cooking is olive oil with its wide flavor spectrum and the foundational, olive oil-based sauces around which so much great culinary strategy has been crafted. This report, **Olive Oil and the Plant-Forward Kitchen: A Sauce Discovery Project**, is a joint project of [The Culinary Institute of America](#) and [The Menu of Change University Research Collaborative](#) (itself a collaboration of 60 universities led by the CIA and Stanford University) with the support and active partnership of the Madrid-based [International Olive Council](#), a UN-chartered, international, intergovernmental organization. The report builds on the [24 Principles of Healthy, Sustainable Menus](#) set forth by [Menus of Change](#), a joint initiative of the CIA and Harvard T.H. Chan School of Public Health—Department of Nutrition. It caps a year-long process involving more than 30 members of the MCURC Executive Chefs' Committee representing multiple campuses across the country who set out to uncover the most-promising, lesser-known olive oil-based sauces that could easily be adopted by their campus dining operations and those of their peers. This project shines a bright light on a collection of dishes and flavor strategies that deserve wider recognition within campus dining and beyond.

Healthy, sustainable, culturally rich, intriguing, and delicious—what more could you ask for from new additions to our culinary toolkits? We invite you to join us on this sensory and culinary adventure.



# MCURC Multi-Site, University-Based Operational Research and Education Project

The Menus of Change University Research Collaborative (MCURC) is a global network of colleges and universities using campus dining halls as living laboratories for behavior change.

These are dynamic learning environments where applied research is bridged with operational innovation to advance the Menus of Change Principles of Healthy, Sustainable Menus.

**Together we serve over 800,000 meals each day, representing 15 billion meals over the course of our students' lifetimes. They will be tomorrow's leaders, parents, consumers, and citizens. The impact we have on their eating habits will not only have a tremendous impact today, but can transform the food system for the future.**

The MCURC is composed of more than 272 members from 60 colleges and universities, three ex officio organizations, and five Research Collaborator organizations. Our members include senior university administrators, dining directors, executive chefs, nutrition and sustainability managers, and academic faculty.

Our research aims to shift students' diets by developing scalable, applied solutions to promote healthy, sustainable, and delicious food choices. *Olive Oil and the Plant-Forward Kitchen: A Sauce Discovery Project* was developed for and with our chefs in mind:

- What are the possibilities around the culinary heritage of Mediterranean olive oil-based sauce-making traditions?
- How can we best leverage the various ingredients in the plant-sourced market basket of the region, including vegetables; nuts and seeds; and herbs, spices, and other aromatics?
- Within the campus dining operational environment, which of these healthy, Mediterranean sauce traditions hold the most promise?
- What are the best, untapped strategies for sourcing and using olive oil in terms of quality standards, varieties, and budget constraints within campus dining?

This report aims to answer these important questions, as we know deliciousness is, and will be, the most important driver of plant-forward menu development.



# Quality and Grades of Olive Oils

Though much has been written about olive oil quality, how to purchase good olive oil, and related topics, it's helpful to summarize the basics, including excellence in olive oil and cost considerations.

There are two main grades of olive oil relevant to American consumers: “extra-virgin olive oil” and what is termed simply “olive oil.” According to the International Olive Council:

- Extra-Virgin Olive Oil (EVOO) is obtained from the fruit of the olive tree through purely mechanical or other physical means (with no application of heat or chemicals), and which has a free acidity, expressed as oleic acid, of not more than 0.8 grams per 100 grams.
- Olive oil consists of refined olive oil with some amount of extra-virgin or virgin olive oil added back in for flavor.

In order for olive oils to be classified as extra-virgin, they need to be free of defects. Of the various things that could go wrong with olive oil when olives are harvested from the trees, transported to the mills, and undergo pressing and processing, rancidity is most likely the defect that consumers are familiar with, having had experience with rancid nuts and other instances of rancidity with oils or oils in food.

However, assuming the olive oil is shipped defect-free, how it is handled by wholesalers, retailers, restaurants, and home cooks is still important. Remember that the great enemies of olive oil quality are heat (other than for final cooking), light, and oxygen. Hence the message to all of us: store and handle olive oil properly. EVOO, if properly stored and handled, should retain its quality attributes—including its distinctive taste and flavor profiles—for up to two years. But even after two years, the basic health-promoting chemical structure of the oils can remain for some additional time—again, if properly stored—even if the aromatics have diminished.



# Research Protocol

This operational research project first evaluated the potential for menu development of the four main categories of flavor excellence in extra-virgin olive oil highlighted by the International Olive Oil Council’s Mario Solinas Awards Program:

- Intense Green Fruitiness
- Medium Green Fruitiness
- Mild Green Fruitiness
- Ripe Fruitiness

The olive oils that were used for this first part of the research were Extra-Virgin Olive Oils (EVOO): an olive oil that have a free acidity below 0.8 grams per 100 grams, a total absence of defects, and a fruity taste.

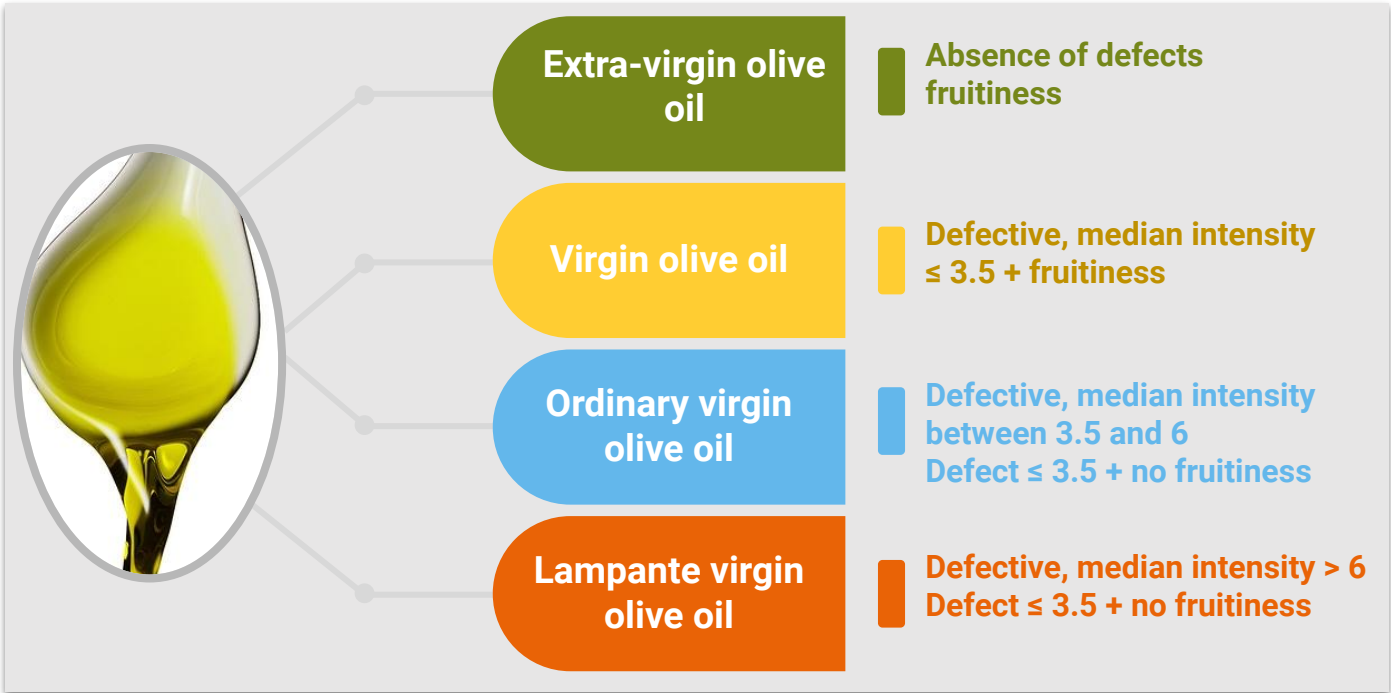


Fig. 1 -- Olive oil sensory analysis is based on the presence of defects (fusty/muddy sediment, musty-humid-earthly, winy/vinegary, acid-sour or rancid), and the intensity of fruitiness (on a 10-point scale).

In the second part of the project, The MCURC Executive Chefs Committee, research, compiled, produced, and tasted a range of olive oil-based, Mediterranean-inspired sauces.



# Participating Institutions

## *Olive Oil Training, Tasting, and Evaluation*

The first phase of the study involved 22 chefs from the foodservice program leadership of 15 universities, plus Google.

The chefs were trained on the different categories of olive oils, qualities, and organoleptic properties. They went through a guided tasting by the International Olive Oil Council experts, and answered a 12-question survey on the current use of olive oil in university settings, along with potential use of other flavor profiles.

## *Sauce Selection, Making, and Tasting*

The second phase of the study involved 34 chefs from the participating university foodservice program leadership, plus Google. Chefs from each institutions were asked to select six sauces/dips recipes from 64 recipes compiled by The Culinary Institute of America, to make and taste them, and answer a questionnaire on each of the sauces.

Columbia University	University of California, Berkeley
Cornell University	University of California, Davis
The Culinary Institute of America	University of California, Los Angeles
Google Food Team*	University of California, Riverside
Harvard University	University of California, San Diego
Oregon State University	University of Michigan
Rutgers University	University of North Texas
Stanford University	Yale University

Table 1 -- Participating universities

The chefs were asked to select the sauces based on the following criteria:

- Sauces that were less known to them
- Sauces that hold the best application promises within their campus dining operations (including dining halls, retail units, and conferences)

Following the making of the sauces, the chefs evaluated the sauces on their organoleptic properties, and their potential applications (dressing, marinade, braising or cooking vegetables in, spread for sandwiches, flatbread or pizzas, and standalone sauce or dip).



# Extra-Virgin Olive Oil in University Dining

## Current Usage and Opportunities

Based on the tasting, participating chefs were able to identify the type of olive oil they used in their operations.

	<b>Fruitiness</b>	<b>Ripe</b>	<b>Mild green</b>	<b>Medium green</b>	<b>Intense green</b>
<b># of universities using it</b>		<b>5</b>	<b>13</b>	<b>5</b>	<b>3</b>
<b># of universities using it exclusively</b>		<b>0</b>	<b>7</b>	<b>1</b>	<b>1</b>

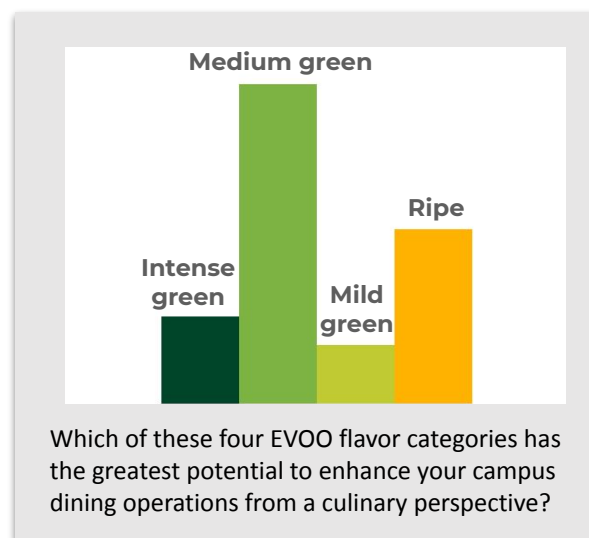
Table 2 -- Number of universities using the different EVOO flavor types in their operations

Mild green fruitiness is the most popular flavor by far, and used exclusively by seven out of fifteen universities. It is interesting to note that nine universities are using only one type of EVOO for all their applications, and two universities use the four types of fruitiness.

When asked about the level of interest in incorporating these four EVOO flavor categories into hot, cold, and finishing applications, ripe fruitiness drove the most interest in hot applications. Strong interest in both intense green fruitiness and ripe fruitiness suggests different usage strategies in cold applications. All flavors drove high interest for finishing applications, with intense green and medium green fruitiness showing the most interest.

Most schools showed interest in using EVOO in the four categories to enhance their culinary program. Intense green fruitiness was judged more interesting for cold applications, and less interesting for desserts.

Medium green fruitiness was viewed as the most promising flavor to enhance campus dining operations. Intense green fruitiness scored the lowest but had strong interest for specific applications. Since mild green fruitiness was the flavor mostly used by chefs at the time of the survey, it might not have been seen as having strong potential to further enhance dining operations.





# The Olive Oil Sauce Kitchen: The Mediterranean and Beyond

## *Selection, Making, and Tasting*



Many would argue, with good reason, that the very best Mediterranean sauce is simply a great extra-virgin olive oil, well-chosen to match the food being prepared or served. However, across the Mediterranean region, one of the strokes of genius of the traditional olive oil kitchen was the development of a whole collection of pounded or blended sauces that always include olive oil and typically garlic with ingredients ranging from nuts and seeds to spices, herbs, and other aromatics; vegetables such as chiles, tomatoes, peppers, and eggplant; citrus; pulses; and yogurt.

Over time, as olive tree cultivation spread far and wide beyond the Mediterranean region, so too did ideas for olive oil-based sauce-making, including variations on traditional Mediterranean sauces. From Africa and the Middle East to Asia, Australia, the Americas and Northern Europe, currents of tradition and innovation continue to demonstrate the exceptional potential of plant-centric, olive oil-based sauce making. From Mexico's salsa Veracruzana and Africa's peri peri, to the ubiquitous chimichurri of Argentina, extra-virgin olive oil in sauce-making is embraced and relished for its ability to add flavor and depth to the meal experience.

These sauces, old and new, are typically raw (though they could include some cooked items) and served cold or at room temperature. Occasionally they are hot, as in the case of cooked tomato sauces of Italy and elsewhere. They are sometimes used in foods (e.g., pesto added to pasta) but, more often than not, they are served with foods or separately as a dip or spread. The collection, as a whole, is a model of optimal healthfulness, blending together multiple health-promoting ingredients (e.g., extra-virgin olive oil with tree nuts such as walnuts, almonds, pistachios, or hazelnuts—all sources of healthy fats; chiles and other vegetables, herbs and spices rich in phytochemicals—and/or pulses—excellent source of plant-protein).

For chefs who are used to building flavor in sauce-making from animal-sourced ingredients—beef, veal, and chicken stocks; butter and cream; and eggs—the flavor range of this repertoire of olive oil-based, plant-centric sauce-making is a revelation. Together this collection of Mediterranean or Mediterranean-inspired sauces are a great fit with menu development in the plant-forward kitchen.



# The Olive Oil Sauce Kitchen: The Mediterranean and Beyond

## Selection, Making, and Tasting

The focus of this Menus of Change University Research Collaborative (MCURC) operational research project was a taste exploration and analysis to yield new additions to the sauce repertoire of MCURC chefs and university campus dining leaders. This discovery process specifically focused on sauces that were less familiar to the participants. Hence some of the most well-known sauces—such as Genovese pesto, aioli, most tomato-based sauces, and hummus, for example—are not included on this olive oil-based sauce list.

The list as co-developed with our culinary tasting group expands the traditional parameters of fats and oils in sauce preparation. In some cases where only olive oil was specified, we used extra-virgin olive oil. In other cases, extra-virgin olive oil displaced other vegetable oils that may have been traditionally or sometimes used (especially outside of the Mediterranean region). Within the list, many of the sauces may be prepared in or have their origin traced to multiple countries and feature many different ingredients, but the bottom line is this: they are all delicious! The sauces listed in **bold** were prepared and tasted by the participating MCURC chefs and their teams.

<b>Ajilimojili</b>	<b>Ktipiti</b>	Pipérade
All I Pebres	Maidanosalata	<b>Piri Piri</b>
<b>Almogrote</b>	<b>Matbucha</b>	<b>Romesco</b>
<b>Anchoiade</b>	<b>Melitzanosalata</b>	<b>Salsa Brava</b>
Babaganoush	Mercimek ezmesi – Turkish Lentil Dip	<b>Salsa Verde</b>
Bagna Cauda	<b>Mitten Shouro / Shiro Wat</b>	Samfaina
<b>Bessara/Bysarra</b>	<b>Mojo</b>	<b>Sauce Kerkanaise</b>
<b>Buticha</b>	<b>Mojo de Ajo</b>	<b>Sauce Veracruzana</b>
<b>Cacik/Tzatziki</b>	<b>Mojo de Menthe</b>	Skordalia
<b>Caponata</b>	<b>Mojo Picón – red</b>	Sofrito
Cevizli Biber	Mojo Picón – green	<b>Spiced Tomato Saltsa</b>
<b>Chermoula</b>	Molho Apimentado	<b>Taramasalata</b>
<b>Escabeche</b>	Molho Campanha	<b>Tarator (Turkish version)</b>
<b>Fava</b>	Molho de Cebolla	<b>Tonnato</b>
<b>EVOO with spice mixtures</b>	Molho Lambão	<b>Toum</b>
Ful Medames / Foule	<b>Muhammara</b>	<b>Vegetable Coulis</b>
Guasacaca	Patlican Ezmesi	Vizcaina
<b>Harissa</b>	<b>Pebre</b>	Wasakaka
Harra	<b>Pesto Trapanese</b>	Xató
Ispanakhis Pkhali	Picada	<b>Zaalouk</b>
Kani	Pil Pil	<b>Zhoug (s’chug, Zhug)</b>
Kaparokoumba		

Table 3 -- Mediterranean and Mediterranean-inspired sauce list - in bold, sauces that were selected as part of the tasting.



# The Olive Oil Sauce Kitchen: The Mediterranean and Beyond

## Selection, Making, and Tasting

### *Flavor, Versatility, and Curiosity*

When asked why they selected the sauces, chefs answered overwhelmingly with flavor. In fact, every single response in the sauce selection process mentioned flavor as a decision driver. A vast majority of the selected sauces also met all the other criteria: cross utilization amongst multiple dishes, interest in cuisine of origin, ease of preparation, convenience of procurement of ingredients, and appearance.

Flavor profile	35
Possibility of cross utilization amongst multiple dishes	29
Interest in cuisine of origin	28
Ease of preparation	26
Convenience of procurement of ingredients	25
Appearance	25

Table 4 -- # of sauces selected per criteria

### *Organoleptic Feedback and Potential Applications*

Of the 35 sauces selected and tasted by the institutions, none was rated below 4 out of 5, emphasizing the deliciousness, richness, and appeal of the selected sauces. Sixteen sauces were rated 5 out of 5, and six were rated 4 out of 5, with the rest being rated between 4 and 5. Chefs also identified an important variety of potential applications, as shown in Table 5.

Standalone sauce or dip	32
Spread for sandwiches, flatbreads, or pizzas	25
Dressing or vinaigrette	22
Sauce for braising or cooking vegetables in	17
Marinade (for vegetables, animal-based or plant-based proteins)	14

Table 5 -- # of sauces per potential applications



# A Selection of Participating Chefs' Perspectives



## Matthew Ward

Executive Chef of Residential Dining  
University of North Texas

### **What have you learned from participating in this project?**

*The seminar on the different qualities and types of olive oil gave our team a better perspective on how the complexity of olive oil can change as the flavor profile changes. It has been great exploring how olive oil is involved in so many different culinary applications and global recipes.*

*The development of the sauces tapped into our culinary team's skills and sauce literacy, as well as raised our curiosity of the Mediterranean sauce repertoire: the Romesco we created for the project was so delicious that we decided to use it in many different applications, and this is true for many of the other sauces.*

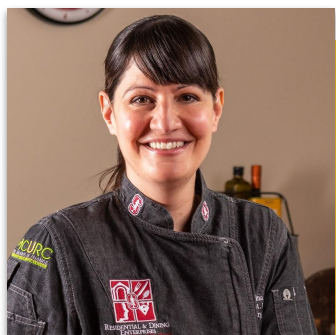
### **How has this project influenced your use of extra-virgin olive oil in your operations?**

*We have now expanded the use of some sauces to finishing vegetables dishes by adding some at the end, as it brings another level of flavor to the dish. This project developed our team's creativity, as we now incorporate leftover vegetables with plant-based sauces for use on panini, or into our plant-based patty of the day.*

*Overall, participating in this project not only allowed us to identify great unknown sauces from Mediterranean cuisine, but also to transform the way we work on plant-forward dishes in general.*



# A Selection of Participating Chefs' Perspectives



## Christina Betondo

Associate Director of Culinary Excellence, R&DE Stanford Dining  
Stanford University

### **How did participating in the Olive Oil and the Plant-Forward Kitchen: A Sauce Discovery Project impact your programs?**

*Participating in this project was a great opportunity for the Stanford Dining chef team to collaborate and obtain feedback from the many different dining operations across the Stanford University campus. I was particularly excited by this project, as I grew up eating a Mediterranean diet and EVOO was always on the dinner table near salt and pepper.*

*This project inspired us to rethink the use of healthy fats in our kitchens, and the overall impact of how olive oil as an ingredient is integrated into our Core Menu dining programs. In addition to the many documented health benefits, EVOO is unique as the oil itself may be utilized as a standalone condiment, and EVOO also provides a very flexible base for creating finishing sauces across many different cuisines around the globe.*

### **What surprised you and your team regarding the process of selecting, preparing, and tasting the sauces?**

*One of the main learning points for us was to match the flavor profile of the sauce to the unique flavor qualities of a particular olive oil. From a research process perspective, we learned to build identical olive oil sauce kits and develop a procedure for tasting dishes remotely around the campus. We learned that we do not need to be in the same place or do the tasting at the same time, and this allows flexibility to try new ingredients or new products while keeping a standardized feedback process.*

*For the selection of the sauces, we focused on versatility, the ability to consistently source and purchase the ingredients needed, the absence of the top 9 allergens, and the diversity of cultures represented.*

*As Stanford Dining expands the Mediterranean cuisine concept in the main dining hall--Arrillaga Family Dining Commons also known as AFDC to the Stanford community--I am looking forward to seeing how students welcome these new dishes.*



# A Selection of Participating Chefs' Perspectives



## James Benson

Director of Culinary Excellence  
Yale University

### **Has participating in this project changed the way you use EVOO in your operations?**

*Participating in this project allowed us to expand our use of EVOO, as our program as a whole already embraced olive oil. We now have finishing oils available in the dining halls in little bottles, for students to experiment with EVOO as a raw product. We prepare a lot of Mediterranean dishes in our menus, and use EVOO to enhance the flavor profile of simple recipes. For example, we filled avocado with EVOO, with piment d'espelette and salt, or we put EVOO in the labneh.*

*We have embraced Greek and Sicilian oils for very focused dishes--more for VIP events and catering, to accentuate and highlight the EVOO. Pairing the right oil really refines the recipe and brightens the dish. Finishing oils bring another dimension.*

### **Will you be using any of the sauces discovered through this project on your core menus?**

*We now use Toum in our rotisserie station. We display four different sauces made with EVOO: Toum, harissa aioli, Piperade, Tuscan-style salsa verde. We rediscovered and re-envisioned our Toum and Harissa sauces. Toum really flourished through this project.*

*In our plant-based dishes, the way we prepare vegetables is important, but what we put on top of veggies matters a lot. We can make great roasted carrots, and add spices, salt, and pepper. But if I add a Toum on top of it, it becomes multi-dimensional and starts to bring out a lot of different flavor profiles. The olive oil brings different elements of flavor and rounds things out.*



# A Selection of Participating Chefs' Perspectives



## Kue Her

Senior Executive Chef  
University of California, Davis

### **What surprised you and your team regarding the process of selecting, preparing, and tasting the sauces?**

*When you look at how we use cultural cuisine in university dining operations, we all have the same ingredients but use them differently. For example, the Caponata has celery in it, but it is cooked, and it gives a very different taste and texture and flavor to the sauce. It gave me a different perspective on how we can use various ingredients, and on the sauces we experimented on. The Caponata sauce was one of my favorites because of this realization. By doing this experience, I realized I could use cooked celery in a sauce and it opened so many more perspectives.*

### **What new applications will you use for the Mediterranean sauces?**

*Our use of Mediterranean sauces will continue to grow. As we get exposed to new sauces, we expand our use. What is great about this project is the resource I now have to discover new sauces--I took a chance with the Caponata and Pebre, and use them now, so I want to try and use more of the other sauces, too.*

*The CIA resource really opens the door to many other cuisines and dishes. As we explore more, we want more. Some sauces have specific applications: they can be consumed as they are, and some others can be used in many different ways, as a marinade, or added as a finishing touch. You can use Harissa as a marinade with any kind of protein, but also as a sauce as it sustains itself as a spread, over cheese. Pesto Trapanese, on the other hand, is too strong to be eaten alone. It needs another layer of application.*

*The Pebre sauce was interesting because of the balance between bitterness and fruitiness. We had tomatoes and cilantro, so it provided a good texture with the crunchiness of the pepper. It is also very versatile--as a spread, as a finishing touch for chicken or fish. Even with a vegetarian or vegan option, it matches well. It is not going to overpower the other dishes. We added Pebre in our allergen friendly menu, too, as a vegetarian option (we removed the flour as it works well without it).*



# Discovery of Selected Olive Oil-Based Sauces

## *From the Mediterranean and Beyond*

The following sauces were the favorites of the participating MCURC universities. They are a great fit for the plant-forward kitchen—being versatile, flavorful, and reflecting trending flavor profiles.

#1

### **Bessara/Bissara | North Africa | Dip/Spread/Sauce | Legume-Based**



Bessara, a delicious soul-satisfying dip prepared from dried split fava beans, is a staple of the Moroccan table. Something magical occurs when dried split fava beans are cooked with garlic, lemon, and extra-virgin olive oil, seasoned with spices such as cumin, paprika, and cayenne, and finished with cilantro and parsley. Bessara can be served in a variety of consistencies: serve as a thick puree or hearty dip, or with a thinner soup-like consistency as a street food soup. Enjoy it with some crusty bread and a cup of mint tea. It can be served alone or as a rich side dish. Harissa and olive oil may be served with it or on the side as condiments. Traditionally served at breakfast or as part of a communal table, Bessara can also be enjoyed at any meal period. Serve Bessara as an alternative to hummus. Use as a spread on tartines, or underneath sauteed vegetables, or plant-based protein.

#2

### **Caponata | Italy | Dip/Sauce | Vegetable-Based**



Caponata, a Sicilian antipasto relish, is prepared from eggplant, extra-virgin olive oil, tomatoes, celery, garlic, capers, dried fruit, and vinegar. Variations are found throughout Sicily and may include, but are not limited to pine nuts, anchovies, and olives. Caponata's distinctive balance of sweet and sour (agrodolce) is driven by the inclusion of vinegar, capers, and dried fruit. Thought to have roots in Spain, some sources suggest it was first mentioned in 1709. The wealthy paired it with seafood or fish, and the poor used eggplants and capers. Serve it as an antipasti or dip with vegetables, cheese, or bread—or as a delicious sauce for seafood or lamb. You can use it as a topping for a crostini with fresh mozzarella. This versatile sauce is delicious cold, room temperature or slightly warm, and even better after 24 hours.





# Discovery of Selected Olive Oil-Based Sauces

From the Mediterranean and Beyond

#3

## Chermoula/Charmoula | North Africa | Sauce/Marinade/Vinaigrette | Herb-Based



Chermoula is a versatile sauce/marinade that originated in North Africa. This delicious sauce is used throughout Morocco, Tunisia, Algeria, and Libya to season vegetables, seafood, or other animal proteins. It adds a vibrant, rich, herbaceous flavor to any dish. Typical ingredients include lemon, garlic, extra-virgin olive oil, spices such as cumin, coriander, paprika, saffron, chiles, and lots of herbs such as cilantro and parsley. However, ingredients vary from region to region. The sauce is classically served in a seafood tagine: rubbed on fish and drizzled over vegetables where the ingredients' juices meld with the chermoula to form a flavorful sauce. Vegetables may be dressed with chermoula as a salad. Try roasting vegetables tossed with chermoula or add more acid and extra-virgin olive oil to make a delicious vinaigrette. Stir chermoula into couscous, grains, and/or legumes with preserved lemons and vegetables to make a healthy, flavorful salad.

#4

## Fava | Greece | Dip/Spread | Legume-Based



Move over hummus! Fava has arrived. Prepared from split yellow peas, versions of this creamy, wonderfully satiating dip are found throughout the Mediterranean and Africa. Served in tavernas throughout Greece, fava is a star of the Greek table. The name fava originates from favus, Latin for broad bean. Originally prepared from broad beans, yellow lentils are now predominantly used, with those from Santorini being the most highly prized. Melted soft onions, extra-virgin olive oil, and yellow split peas are the base for this dip. Cooked long and slowly until tender, the peas are pureed, and extra-virgin olive oil is added for flavor and texture. Fava can be topped with a variety of condiments, from caramelized onions and capers, to braised tomatoes and capers—yielding a delicious addition to the mezze table. Traditionally served with pita or vegetables, or used as a sauce for grilled vegetables, meats, or seafood. Try it as the base of a plant-forward entrée: fava spread on the base of the plate, top with grilled or roasted vegetables such as eggplant, peppers and squashes, sprinkle with feta cheese and herbs, and drizzle with ladolemono. You'll never miss the animal protein.



# Discovery of Selected Olive Oil-Based Sauces

## From the Mediterranean and Beyond

#5

### Harissa | Tunisia | Spicy Condiment/Marinade | Chile-Based



Harissa means “to pound or grind.” This rich chile paste has a well-rounded chile flavor and a range of heat from spicy to mild (heat may vary depending on chiles used). It is used not only to add heat/spice, but also depth and dimension due to its rich chile flavor. Originating in Tunisia, variations can be found throughout North Africa and the Levant. Ingredients commonly found in Harissa are caraway, cumin, coriander, garlic, lemon or vinegar, and olive oil. Classic dishes prepared with harissa are tagines, salads such as Tunisian chickpea salad or carrot salad, and Tunisian market sandwiches. This versatile sauce that can be used in numerous ways; as a condiment, added to marinades, vinaigrettes, and aioli. It can add a heat and intensity to a braise, tajine, or couscous. Entice your guests with pulses and vegetables tossed with a harissa vinaigrette. A spicy, rich, delicious combination.

#6

### Matbucha | Israel/ North Africa (Maghreb) | Sauce/Dip/Spread | Vegetable-Based



The Arabic word matbucha literally translates as “cooked salad.” Comprised of stewed tomatoes, roasted peppers, onions, garlic, and chiles stewed slowly in extra-virgin olive oil, this delicious and rich “cooked salad” is often used as the base for shakshuka. Matbucha originated in North Africa but gained popularity in Israel where many North African Jewish immigrants settled. Traditionally served as a room temperature salad or dip, enjoy this delicious and multifaceted dish as a sauce, salad, spread, or vegetable. It is commonly served at the start of a North African or Middle Eastern meal. Opportunities for this sauce are endless: serve it as a crostini with olives and fresh cheese, use it as the base of a braised dish, or add it as a topping for a flatbread or pizza with a fried egg and preserved lemons.



# Discovery of Selected Olive Oil-Based Sauces

## From the Mediterranean and Beyond

#7

### Muhammara/Mhammara | Syria/Turkey | Spread/Dip | Nut-Based



A rich, nutty pounded dip of roasted peppers and walnuts seasoned with pomegranate molasses, cumin, and Aleppo pepper. Originating in Aleppo, Syria, it is also found in Southeastern Turkey and the Levant. A balance of sweet from pomegranate molasses, richness and bitterness derived from walnut, and depth from cumin, Aleppo peppers, and olive oil, this sauce is a delicious accompaniment to vegetables such as eggplants and squashes. Muhammara benefits from advance preparation. This allows the flavors to meld and bloom. Classically served as a mezze dish with vegetables or pita, you can also use it as an accompaniment for kebabs, or just dip it in Arabic bread. Other possible uses: as a spread on a grilled eggplant sandwich with feta cheese and arugula or try it with a kebab of squash and lamb. Think of it as Spanish Romesco's Syrian or Turkish cousin.

#8

### Pesto alla Trapanese | Italy | Sauce | Vegetable-Based



Pesto means “to pound.” Multitudes of pesto exist—from the classic pesto alla Genovese, pesto agli agrumi based on citrus, to pesto alla Trapanese. Pesto alla Trapanese is a great example of how simple preparations can make local, seasonal ingredients shine. This bright and refreshing pesto is based on tomatoes pounded with basil, almonds, pecorino, and chiles. Sicilian tomatoes from Pachino or “di Pachino” are highly prized for their sweet and intense tomato flavor. Considered to be the gold standard for tomatoes, they are an IGP /PGI (Protected Geographic Origin) protected product. These tomatoes add incredible flavor to this version of pesto. This pesto is much lighter, brighter, and more delicate than pesto alla Genovese. Pesto alla Trapanese is traditionally served with busiate, a homemade Sicilian pasta variety. Unlike other Italian tomato sauces that are heated in a pan first, this sauce is kept raw, tossing it with the hot pasta to keep its bright fresh flavor. Serve on pasta or try it on grains and legumes for a delicious alternative.



# Discovery of Selected Olive Oil-Based Sauces

## From the Mediterranean and Beyond

#9

### Picón Mojo | Spain, Canary Islands, Brazil | Sauce/Dip/Marinade | Vegetable-Based



Mojos are a variety of sauces typically prepared from chiles, garlic, extra-virgin olive oil, and spices. The name Mojo is derived from the Portuguese word “molho”, meaning sauce. Mojos originated in the Canary Islands, as many of its original settlers were Portuguese. However, variations of mojo are found throughout the Americas and Caribbean, illustrating the immigration from the Canary Islands to the Caribbean. In Brazil, there are multiple variations of “molho,” an example of the Portuguese influence. Two main varieties from the Canary Islands are: mojo rojo and mojo verde. Mojo picón is a spicy version of mojo rojo, whereas mojo verde is bright green and herbaceous. Typical ingredients for mojo picón are red picón chiles, garlic, spices such as cumin and pimenton, sherry vinegar, and extra-virgin olive oil. The ingredients are pounded in a mortar and extra-virgin olive oil is slowly added to form a chunky emulsion. The sauce is traditionally served on papas arrugadas or “wrinkled potatoes” or with seafood. Use it as a spicy condiment, a sauce drizzled over grilled vegetables, tossed with legumes or grains for a grain bowl base, or as a sauce for seafood, poultry, or plant-based proteins.

#10

### Piperade/Piperada | France/Spain (Basque) | Sauce/Dip/Spread | Vegetable-Based



Piperade is a French Basque dish whose name is derived from the local word for pepper. Its roots can be traced back to the early 1800's. Prepared by stewing onions, garlic, green peppers, tomatoes, espelette peppers, and herbs in extra-virgin olive oil, it highlights the use of seasonal ingredients and the depth that olive oil can add. It is traditionally prepared from local ingredients such as green peppers called piments d'Anglet, and piment d'Espelette, a ground sun-dried red pepper. This versatile sauce can be used as the base for a stew or braise, a tangy garnish, sauce or condiment. It is often paired with eggs (think shakshuka), seafood, and jambon de Bayonne. Try it as a vegetable base to serve with fish and vegetables. Poach an egg in it for brunch, or as the base for a braised dish.



# Discovery of Selected Olive Oil-Based Sauces

## From the Mediterranean and Beyond

#11

**Piri Piri (Peri Peri) | Africa / Portugal/Brazil | Spicy Condiment/Marinade | Chile-Based**



Spicy, tangy, and flavorful, this sauce achieves its complexity from fermented African bird's eye chiles. Piri Piri means “pepper pepper” in Swahili. Although chiles were not native to Africa, they arrived on the continent in a circuitous manner; originating in the Americas, traveling to Spain and Portugal, then Brazil, and eventually brought to Africa and Asia by Portuguese traders. Variations of this sauce have been in Africa since the 15th century, but its exact origins are debated over. The ingredients used to prepare Piri Piri are African bird's eye chiles, garlic, vinegar or lemon, olive oil, salt, and bay leaves. Traditionally served as a marinade and basting sauce on charcoal grilled, spatchcock chicken known as Piri Piri chicken, this spicy dish is found throughout Africa, Portugal, and now around the world. Use as a hot sauce, to spice up marinades, vinaigrettes, and basting liquid on vegetables and animal proteins. Entice your guest with Piri Piri chicken and vegetable skewers.

#12

**Romesco | Spain | Dip/Spread/Sauce | Nut-Based**



This classic pounded Spanish sauce originates from Tarragona, Spain, on the northeastern coast, just south of Barcelona. Traditional ingredients include nuts (almonds or hazelnuts), tomatoes, dried ñora or choricero peppers, garlic, bread, extra-virgin olive oil, and vinegar. Extra depth is added through the preparation of the ingredients: tomatoes and garlic may be roasted first to deepen their flavor, the nuts toasted to bring out their flavor, and the bread can be fried in extra-virgin olive oil for extra richness. Everything is pounded in a mortar to pulverize the ingredients and release all their flavor. Traditionally served with calçots, a seasonal spring onion, it is delicious with vegetables, seafood, and other proteins. Consider adding a spoonful to a soup or stew to add depth. Stir into legumes or grains to add extra flavor, use as a spread on a roasted vegetable sandwich, or serve with crudités or extra-virgin olive oil–fried vegetables such as Padron peppers. Thin with sherry vinegar and extra-virgin olive oil to turn the sauce into a vinaigrette.



# Discovery of Selected Olive Oil-Based Sauces

## From the Mediterranean and Beyond

#13

### Salmorejo | Spain, Córdoba | Sauce/Soup | Vegetable-Based



Delicious and refreshing on a hot summer day, Salmorejo is a creamy, rich, cold tomato and olive oil soup from Southern Spain. Similar to Gazpacho, which is prepared from a blend of multiple vegetables, the primary ingredients in Salmorejo are simple – just tomatoes, extra-virgin olive oil, bread, and garlic, with a little vinegar for balance. Original versions of Salmorejo, known as “salmorejo blanco”, were white, as tomatoes did not appear in Spain until after the 15<sup>th</sup> century. By the 20<sup>th</sup> century, tomatoes were a welcome addition to Spanish cuisine and were flourishing. Salmorejo is lighter in color than Gazpacho due to the amount of bread it contains, and its creamy texture is derived from the emulsification of extra-virgin olive oil into the soup. It is often served in a bowl and has a thicker consistency than Gazpacho, making it an excellent candidate for double duty as a sauce. Traditionally served as a chilled soup in a bowl, it is usually garnished with chopped boiled eggs and serrano ham. It may also be used as a sauce on montaditos. Try serving Salmorejo as a sauce for chilled cooked vegetables or seafood, as a coulis or spread for a sandwich.

#14

### Sauce Kerkannaise | Tunisia | Sauce/Dip | Vegetable-Based



Kerkannah Islands off the coast of Tunisia are known for their exemplary capers. These capers are the star of Kerkannaise sauce. Capers combined with tomatoes, green onions, chiles, coriander, caraway, parsley, garlic, vinegar, and lots of extra-virgin olive oil create a refreshing relish. Paired with grilled shrimp or seafood, the bracing tangy flavor of the capers shines through. Traditional pairings are shrimp, seafood, or vegetables. Try it as a replacement for salsa on a Tunisian-inspired taco, or serve as a fresh, bright relish over grilled vegetable or plant-based proteins.



# Discovery of Selected Olive Oil-Based Sauces

## From the Mediterranean and Beyond

#15

**Shiro/Shouro/Mitten Shiro | Africa |  
Sauce/Dip/Spread/Stew | Legume-Based**



Shiro, a rich, unctuous chickpea stew from Africa, is an excellent example of the African spice kitchen. This dish can be prepared using mitten shiro, a mixture of berbere spices, and chickpea flour. Typical ingredients are onions, ginger, garlic, tomato, chickpea flour, and berbere spice mix (possible spices: cinnamon, coriander, fenugreek, black pepper, green cardamom, allspice, chiles, paprika, ginger, nutmeg, ajwain, nigella). A staple of the Eritrean and Ethiopian kitchen, this dish has a delicious nutty flavor and is an excellent source of protein. Traditionally served as a soup or stew with injera, this can also be used as a spread or dip with vegetables, seafood, or other proteins. Try shiro as a spread on a tartine or sandwich with slow-roasted vegetables or a fried egg.

#16

**Tarator | Turkey | Dip/Spread | Nut-Based**



The origins of Tarator dates to the medieval Ottoman Empire. Prepared by pounding walnuts or hazelnuts with vinegar, garlic, spices, and extra-virgin olive oil, this delicious, rich Turkish sauce can be used as a dip or spread. Variations of Tarator may contain tomato and pepper pastes, vegetables, herbs, and lemon juice. Not to be confused with the yogurt or tahini-based Tarator sauce found in Syria, Lebanon, and the Middle East, Turkish tarator is nut-based and can be served as a sauce, spread, snack, or with vegetables as a side dish. Classically served with fried mussels and calamari or other seafood, it is also served as a dip with vegetables or kebabs. Try it as a spread on a tartine or sandwich, such as a roasted cauliflower tartine with Tarator and pickled vegetables.



# Discovery of Selected Olive Oil-Based Sauces

From the Mediterranean and Beyond

#17

Zhoug/Schug/Zhug | Yemen/Syria/Israel | Spicy Condiment | Herb/Chile-Based

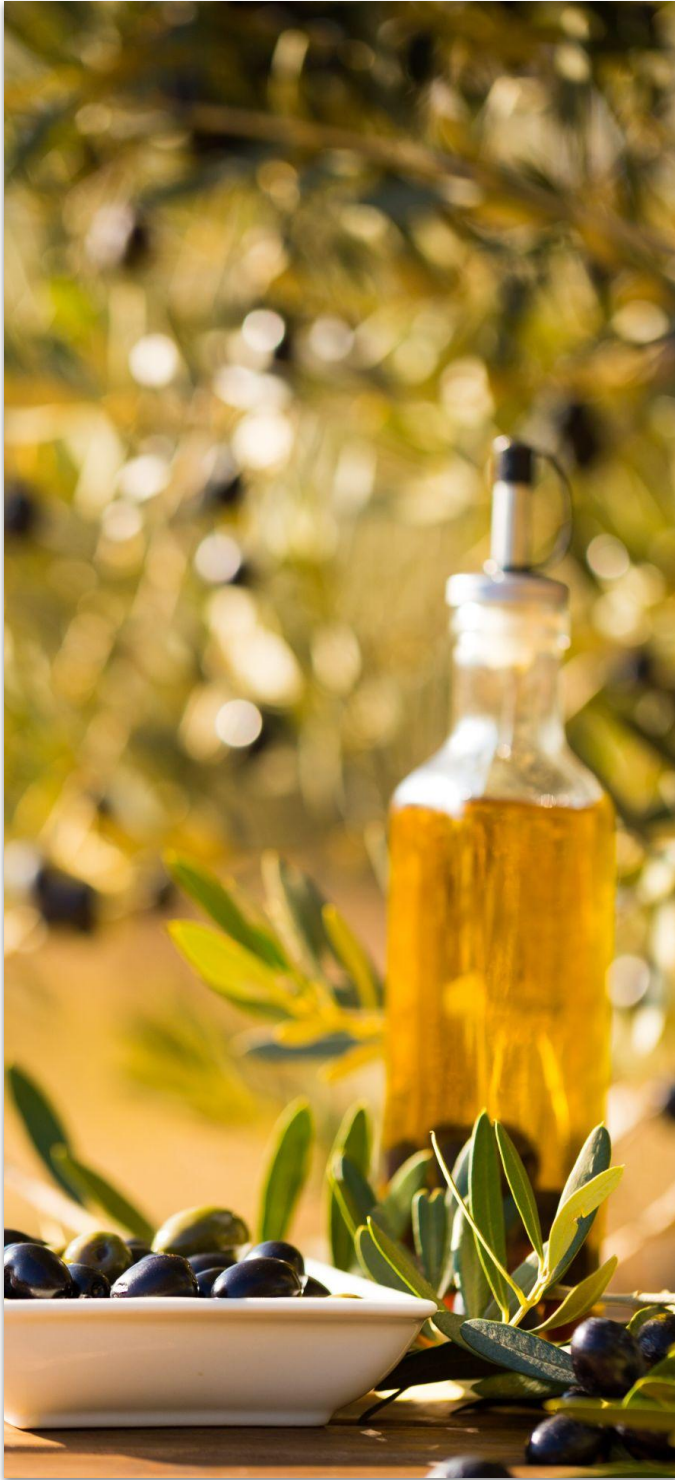


Zhoug is a spicy herbaceous sauce found on tables throughout Yemen, Syria, and Israel. Yemenite in origins, this popular garlicky chile and herb-based condiment contains green or red chiles, cilantro, parsley, and spices such as pepper, cardamom, cumin, and coriander. Variations of this sauce may be green or red, and the types of spices will vary from region to region, person to person. Serve with falafels or in shawarmas, or try stirring it into shakshuka or scrambled eggs. The opportunities are endless. Spread it on a sabich or burger, use it as a topping for hummus, or stir into yogurt or vinaigrettes to add a kick.





# Key Takeaways



This initiative demonstrates the considerable potential of the world culinary heritage of olive oil-based sauce-making to enhance American menus. It connects with the growing consumer interest in plant-forward menu choices that advance both health and sustainability imperatives.

Olive oil-based sauces are clearly a part of the Mediterranean diet that is less familiar and underleveraged in American foodservice.

**The diversity in high-quality olive oils, and the variety of Mediterranean-inspired olive oil-based sauces in foodservice applications, underscores that Mediterranean sauces are not a “one size fits all” opportunity: rather, participating chefs demonstrated wide-ranging interests in all of the oils and many of the sauces tied to the specifics of the type of campus foodservice operation, what the oil or sauce was paired with, whether the pairing was hot or cold, etc.**

Despite general familiarity with olive oil, participating university chefs indicated far greater interest in the world of olive oil flavors and applications as a result of this program.

This report suggests the opportunity for broader technical training in the foodservice industry (with a culinary focus)--and better access to professional education resources highlighting advanced olive oil-based culinary concepts--would yield positive results.





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