A Qualitative Study on the Reasons for the Underdevelopment of Molecular Gastronomy in Turkey

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ABSTRACT

Turkey, known for its rich culinary culture, has been home to a society nourished by diverse and rich flavors for centuries. However, the acceptance of contemporary and innovative approaches like molecular gastronomy in Turkish cuisine seems to have been slow. Molecular gastronomy aims to go beyond taste by utilizing traditional cooking techniques and ingredients. Studies, along with examples of education abroad, have been examined. In this context, a qualitative study was conducted by posing semi-structured questions to 10 chefs and chef candidates who have received gastronomy education in well-established and upscale establishments, aiming to understand why molecular gastronomy has not developed in Turkey. Recommendations have been made to contribute to the gastronomy sector based on the analysis.

Key Words: Molecular gastronomy, Molecular gastronomy in Turkish cuisine, Reasons for the underdevelopment of molecular gastronomy.

1.INTRODUCTION

The origins of molecular gastronomy can be traced back to a new movement initiated by the joint work of physicist Nicolas Kurti (1908–1988) and chemist Hervé This in 1988 (This, 1999: 47, 48). This discipline was first introduced in 1988 and has since been developed by numerous institutions and businesses. Molecular gastronomy is a scientific discipline that investigates phenomena occurring during the transformation of food in the kitchen. The primary aim of molecular gastronomy is to identify the physical and chemical mechanisms involved in the preparation and processing of food (including cooking) and, consequently, to discover new mechanisms and applications. These phenomena, which are related to "cooking," may have been overlooked in the past and, as a result, may have been regarded more as a technique than as an art form (Burke, This, and Kelly, 2016: 1, 2).

Molecular gastronomy emerges as a new scientific field that examines the mechanisms of phenomena during the preparation and consumption of food. This approach involves the application of scientific methods to traditional culinary experiences. It is a branch of food science that investigates the physical and chemical changes, as well as sensory perception, that occur at the molecular level during food preparation and consumption. Molecular gastronomy is considered a part of food science and technology, with the aim of applying this knowledge across various domains, from home cooking to restaurants (Caporaso and Formisano, 2015: 417).

Molecular gastronomy does not only involve the use of evaporators, probes, and microbeams for cooking but also utilizes different cooking components (such as sodium, calcium, lactate, and various acids) that were previously not used in kitchens (This and Rutledge, 2009: 660).

For the past 20 years, innovations based on molecular gastronomy have been regularly presented in developed countries such as Europe, Japan, and the United States. Within a few years, as people assess the dishes, not only will the technical aspects be considered, but artistic elements will also be emphasized (This, 2004). The current state of molecular gastronomy holds great potential for innovation. Therefore, various recipes may be proposed for implementing innovation in molecular gastronomy. However, these recipes need to be thoroughly learned and tested repeatedly before being served. If these steps are not followed in a specific order, the prepared dish may yield unexpected results. Molecular cuisine, which goes beyond traditional eating habits, is a collection of new dishes produced using molecular

gastronomy techniques, incorporating various flavors and visual appeal (Vega and Ubbink, 2008: 376, 380). The practical applicability of molecular gastronomy in restaurants can be achieved by combining traditional, innovative, artistic, and scientific approaches in the food preparation process (Ivanovic et al., 2011: 140).

2. Topic, Scope, and Purpose

Considering the impact of globalization, technological, economic, and social changes on the food and beverage industry, it is important to acknowledge the increasing interest in this field. The demand for understanding the chemical and physical principles that determine the composition and interactions of our food has also grown in this context (Wolke, 2004: 23-24). Food and beverage businesses, in response to this demand, have turned to molecular gastronomy practices, which led to the emergence of molecular kitchens (Özel and Özkaya, 2016: 50). Molecular gastronomy, one of the most prominent scientific fields of the past quarter-century in Europe, has recently started to gain attention in Turkey as well. Molecular gastronomy practices, which require the use of scientific methods to understand the molecular, physicochemical, and chemical changes occurring in the processes of food preparation and consumption, have become more prevalent (Batu, 2019: 44). However, an examination of a typical cookbook reveals that culinary preparations conducted by professional chefs or home cooks encompass a much broader range than industrial food transformations. For example, chefs often heat wine, especially during sauce production, but research on the chemical changes that occur during this process has not been supported. Therefore, this crucial area of food science has long been neglected as a serious subject of scientific study, and transformations that might seem "anecdotal" from a scientific perspective, but are actually considered more of a science than an art, have also been overlooked (Burke et al., 2016: 1).

For this reason, Hervé This and Nicholas Kurti (1908–98) expanded their work, which began in 1988, to introduce a scientific discipline called 'molecular and physical gastronomy' (This and Kurti, 1994: 44), which was later abbreviated to 'molecular gastronomy' in 1998. The term itself has an analogy with 'molecular biology' because, just as molecular biology brought a rigorous scientific approach to the old biology discipline, molecular gastronomy brings a similar approach to the chef's work (Burke et al., 2016: 1).

Chefs working in the field of molecular cuisine must not only understand molecular gastronomy techniques but also scientific methods. It is crucial to know the properties of

consumable natural or chemical additives that do not harm human health, mix them in the right proportions, and use the correct methods. Molecular gastronomy, considered a new culinary trend, is acknowledged as one of the most exciting developments in the innovative culinary world. It has become popular for chefs to present innovative dishes to customers, such as faux caviar made from fruit juices or syrups and spaghetti made from vegetables. In molecular gastronomy, the key factors for chefs are flavor and presentation. Since cooking and preparation are perceived as an art form, chefs also approach them from a scientific perspective. To achieve this, chefs need to collaborate with scientists specializing in molecular gastronomy and also study subjects such as chemistry, physics, and biochemistry. Consequently, understanding the transformations in molecular cuisine products is also important. The fundamental goal of molecular gastronomy is to improve the current state, explore innovations, and enhance food preparation and cooking methods. Additionally, the science of gastronomy has emerged as a new research field to ensure the consistent flavor of prepared products (This, 2006: 1064, 1065).

Molecular gastronomy has yet to be introduced in Turkey. This movement, which has gained worldwide popularity, is met with prejudice in Turkey. Another reason for this prejudice is the dietary habits, culture, and ethnic composition of the Turkish population. Turkish people have always exhibited a conservative attitude toward the consumption of chemical products. This has hindered the development of molecular gastronomy practices in Turkey. Even in existing luxury or Michelin-starred restaurants, only a portion of molecular gastronomy practices are being implemented. However, many customers are unaware of this. If they do become aware, there is a possibility they might reject the dish. This prejudice and underdevelopment have led to Turkish cuisine's inability to modernize and have contributed to the preservation of its traditional structure. In this context, interviews with chefs have helped determine their perspectives on molecular gastronomy and list the reasons for its lack of progress. By understanding the insights of professionals in the culinary industry who have been educated in gastronomy or worked in this environment, we can better comprehend why molecular gastronomy has not developed in Turkey. This awareness study on molecular gastronomy aims to serve as an example for future articles or molecular cuisine experiments.

3. Conceptual Framework3.1 Molecular Gastronomy in Turkey

The education in gastronomy and culinary arts at the undergraduate level in Turkey started much later compared to the rest of the world. However, with the opening of undergraduate programs and culinary arts academies after 2010, some progress has been made in the field of gastronomy education in Turkey (Görkem and Sevim, 2016: 979). Therefore, the molecular gastronomy movement, which has gained a certain recognition worldwide, has not received the necessary value and education in Turkey. Like in other countries, tourism revenue is important in Turkey, and efforts are ongoing to promote the spread of molecular gastronomy (Cömert & Özkaya, 2014: 62-66). In regions with high tourism, renowned restaurants collaborate with trained and experienced chefs to operate molecular kitchens. As a result, different flavors are offered to both domestic and international tourists, and molecular gastronomy has gained a significant place in the tourism sector. Molecular kitchens, in addition to traditional kitchens, require experience and education. When providing education in this field, the following topics are emphasized:

- Toxicological effects of synthetic additives,
- Use of instrumental devices,
- Complex techniques and processes.

The development of molecular gastronomy continues with the ongoing contributions of scientists and industry professionals. Thanks to these contributions, molecular gastronomy has gained many new techniques, tools, equipment, and additives in recent years. These techniques have also been applied to local products and dishes, contributing to the enhancement of the flavors and qualities of regional products. Products such as grapes, molasses, honey, olives, and olive oil, which are important local products of our country, are being used alongside these techniques to create different and innovative flavors.

3.2 Molecular Gastronomy and Its Methods

Since the 1990s, in an effort to create a modern approach different from traditional practices, cultural and historical elements, as well as scientific and technological disciplines, have been included in molecular gastronomy. Using physics and chemistry, different processes have been applied, resulting in the emergence of unique and diverse products (Ruiz et al., 2013: 68).

The development of molecular gastronomy is continuously supported by both scientists and leading chefs in the industry. As a result of these contributions, new tools, equipment, and techniques have been introduced in molecular gastronomy. Techniques such as liquid nitrogen, foaming techniques, powdering techniques, gels, intense aroma enhancers, and sous-vide are widely used (Cömert & Çavuş, 2016: 122). Molecular gastronomy also contributes to the development of recipes used in food preparation. Chefs specializing in molecular cuisine attract consumers' attention by presenting unique dishes and drinks with distinctive presentations (This, 2011). This enables the emergence of different uses of ingredients in food and beverages.

3.3New Applications of Molecular Gastronomy

Recent developments in the field of molecular gastronomy have introduced the concepts of 'Molecular Cooking' and 'Note-Based Cooking' (This, 2008, 2013a, 2014).

Molecular Cooking is defined as the production of food in kitchens using 'innovative' tools, ingredients, and methods (INICON, 2003). Examples of this include the use of equipment like siphons, materials such as sodium alginate, and cooking methods like sous-vide. In 'Note-Based Cooking,' instead of materials like meat, fish, vegetables, or fruits, compounds are used in their pure form or as mixtures, designed by the chef to create the desired shapes, colors, flavors, smells, temperatures, tactile stimuli, textures, nutritional aspects, and more of the dish (This, 2013a: 2,1).

4.Molecular Gastronomy Education: The Case of the Dublin Institute of Technology School of Culinary Arts and Food Technology

The previously mentioned Molecular Gastronomy and related disciplines represent a new method for effectively examining the nature of food and its preparation. As a result, it has been internationally acknowledged that educational programs need to be developed to train the next generation of graduates who will play a role in this field. Interestingly, internationally, particularly in the United States, a related discipline known as Culinary Science or Food Science, which originates from the world of food science but is applied to kitchen situations, has emerged as a parallel discipline. In contrast, Molecular Gastronomy can be considered the same discipline, but it comes from the opposite direction. When considering the development of the Molecular Gastronomy field, it would be appropriate to examine an example of an innovative program designed to teach the principles of this new discipline.

At the Dublin Institute of Technology, both Molecular Cooking and Note-Based Cooking are used to enhance students' interest and understanding of the chemical and physical properties of food and its components, and to allow creativity to develop in the creation of innovative dishes, beverages, and food products (Burke, 2011; Burke et al., 2012). At this institution, Molecular Gastronomy is taught through team-based teaching and blended learning. A specific topic, such as emulsions, is lectured by a Culinary Science faculty member, followed by a practical session in the experimental kitchen conducted by both Culinary Arts and Culinary Science faculty members. Students come from undergraduate or graduate programs in Food Science and Culinary Arts and learn skills and techniques from each other in a practical environment. As part of the Molecular Gastronomy modules, students are required to produce drinks and/or dishes through "Molecular Cooking" (Burke et al., 2016: 5).

5.Method

The questions developed for the research are as follows:

- How do you perceive Molecular Gastronomy in Turkey?
- What are the reasons for the inability of Molecular Gastronomy to develop in Turkey?
- Can Molecular Gastronomy help promote Turkish cuisine worldwide?
- Why would you prefer or not prefer a dish created using Molecular Gastronomy?
- What actions should be taken to develop Molecular Gastronomy in Turkey?

In order to seek answers to the research questions, the qualitative research method has been preferred. Among the qualitative research methods, the interview technique conducted over the internet was used. These interviews can be categorized as structured, semi-structured, or unstructured (Yolal, 2016). The data for this research was collected using the semi-structured interview technique. In this context, the qualitative method can be considered an appropriate research method for uncovering perspectives on Molecular Gastronomy in Turkey and determining its level of development.

The research population consisted of chefs and chef candidates who have received culinary education in Turkey and are actively working in 5-star hotels or luxury restaurants. The group of individuals under the age of 20 who are currently receiving culinary education were excluded from the study due to their lack of sufficient experience. Individuals over the age of 50 were excluded from the study as well, as they are more likely to have entered the sector informally rather than through formal culinary education and may have developed a closed perspective toward Molecular Gastronomy. Therefore, the research population included individuals aged 21 to 50. The interviews were conducted on a voluntary basis, taking into account the individual preferences of the participants. During the analysis process, the participants were coded as K1,..., K10. The distribution of participants is shown in Table 1. Of the participants, 4 are women, 6 are men. Four participants have received education in Molecular Gastronomy, and six participants have international experience.

Code	Gender	Age	Molecular Gastronomy Education	International Experience
K1	М	23	Yes	Yes
K2	М	29	No	Evet
К3	М	31	No	No
K4	М	35	No	Yes
К5	М	37	Yes	No
K6	М	40	Yes	Yes
K7	F	23	No	No
K8	F	25	No	No
К9	F	27	Yes	Yes
K10	F	30	No	Yes

Table 1: Information of Participants in the Research

6. Findings of the Research

During the interviews conducted in the research, individuals formed a positive impression of molecular gastronomy due to the education they received and their overseas experiences. It was determined that those who had not received education in molecular gastronomy and had not worked abroad adopted a more closed attitude toward molecular gastronomy. A common point expressed by the participants was that the reasons for the lack of development of molecular gastronomy in Turkey, or the inability to taste a dish created with molecular gastronomy, were linked to economic and educational factors.

Code	Culture	Religion	Education	Experience	Economy	Insufficient	Prejudice
						Equipment	
K1	+		+	+	+	+	+
K2				+	+	+	
К3	+	+			+		+
K4			+	+	+	+	
K5	+		+	+		+	
K6			+	+	+	+	+
K7	+	+					+
K8	+	+					
К9			+	+	+	+	+
K10	+	+		+		+	+
Total	6	4	5	7	6	7	6

Table-2: Participants' Statements on Molecular Gastronomy

In Table-2, participants expressed that the biggest factors preventing the development of molecular gastronomy are lack of experience and inadequate equipment.

K1: "I don't see molecular gastronomy as being at a good level in Turkey at the moment, but overall, we can see it is developing. There are a few obstacles for its widespread adoption. First, cultural factors are important; the attachment to traditional Turkish cuisine affects the acceptance of new styles over time. Education and experience are also critical; molecular gastronomy requires specialized education and practice, but these educational opportunities are not yet widespread in Turkey. While I was abroad, we had easy and cheap access to this equipment. There are also economic challenges; the cost of equipment and materials necessary for this style can be high. Additionally, some may have a prejudice regarding the taste or naturalness of this style. For molecular gastronomy to develop in Turkey, more educational opportunities should be provided, economic barriers should be reduced, and prejudices should be addressed. Moreover, local restaurants and chefs should be encouraged to adopt this style, and promotional activities should be carried out to reach a wider audience."

K2: "I currently see molecular gastronomy at a certain level in Turkey. Economic factors and lack of equipment are some of the main factors limiting the development of this style. Economically, the cost of the necessary equipment and materials can be quite high, which makes it difficult for smaller businesses to implement this style. Additionally, the limited

number of experienced chefs in this field is hindering the spread of molecular gastronomy. However, molecular gastronomy can certainly help in promoting Turkish cuisine worldwide. Creative and innovative recipes can make Turkish cuisine more attractive internationally. When I worked in Dubai, we made different shows with molecular gastronomy, attracting guests' attention and making the dish more popular."

K3: "I don't see progress in molecular gastronomy in Turkey. Cultural, religious, and economic factors make the development in this field difficult. In our country, there is a deep attachment to traditional Turkish cuisine, and this prevents the spread of molecular gastronomy. Furthermore, religious beliefs may also limit the adoption of this style. Economically, the high cost of the necessary equipment and materials makes it difficult for businesses to implement this style. I don't believe molecular gastronomy would help promote Turkish cuisine. This style is very different from traditional Turkish dishes and may seem foreign to some. Therefore, it is unlikely that this style would represent Turkish cuisine. Molecular gastronomy wouldn't significantly influence my choice of a dish. For me, the taste, nutritional value, and presentation of the food are more important, and I don't believe molecular gastronomy enhances these aspects."

K4: "In some cities, especially in large restaurants and special experiments by chefs, we can see the use of these techniques, but it has not yet reached a widespread application level. I would evaluate a dish created with molecular gastronomy based on taste and experience, as well as presentation. If molecular techniques improve the taste and texture of the dish, I would prefer it, but I wouldn't choose applications made solely for aesthetics. For the development of molecular gastronomy in Turkey, more educational and experience opportunities should be provided, chefs should be encouraged to learn and apply these techniques. Additionally, it is important to provide enough equipment through economic support and to introduce these innovative culinary techniques to a wider audience."

K5: "I still see molecular gastronomy in its early stages in Turkey. While it is used in some restaurants and by chefs in special experiments, it has not yet reached a widespread application level. The reasons for the inability of molecular gastronomy to develop in Turkey include the lack of cultural infrastructure, insufficient educational opportunities, limited experience, and the unavailability of the necessary equipment."

K6: "Molecular gastronomy still seems like an undiscovered gem in Turkey. Apart from certain chefs' experiments and some applications in exclusive restaurants, it has not reached the masses. The reasons for the lack of development of molecular gastronomy in Turkey include not only the lack of education but also the limited experience in the sector, difficulty in accessing the necessary equipment, and economic challenges. I received my education at the Culinary Institute of America (CIA) in the U.S. They provided us with very informative hands-on training about molecular gastronomy and presentations. Unfortunately, the culinary and gastronomy departments in Turkey cannot offer sufficient education in this area. Self-taught chefs in the industry have also set up an icy barrier to this trend."

K7: "I see molecular gastronomy as an unnecessary innovation in Turkey. I believe that stepping outside of traditional flavors and adopting these experimental approaches will not contribute to our culinary culture. Molecular gastronomy could contribute to promoting Turkish cuisine globally, but personally, I think these modern approaches do not sufficiently reflect the unique flavors and cultural richness of Turkish cuisine. I don't think there should be efforts to develop molecular gastronomy in Turkey. The investments and efforts should be directed towards preserving and supporting traditional Turkish cuisine. I believe these experimental approaches will not integrate well with our culinary culture."

K8: "One of the main reasons molecular gastronomy has not developed in Turkey is the lack of knowledge and interest in these innovations. However, I believe that interest in this field will gradually increase, and the necessary infrastructure will be established. Although molecular gastronomy may develop more slowly in Turkey due to religious factors, I find its potential very exciting. By blending our traditional flavors with a modern approach, we could introduce our cultural heritage to a broader audience and highlight our richness, potentially paving the way for a dynamic and evolving culinary culture."

K9: "One of the reasons molecular gastronomy has not developed in Turkey is the lack of education and experience in this field. Additionally, investing in molecular gastronomy is costly, and the conflict between these innovative techniques and traditional culinary culture also hinders development. Molecular gastronomy could be a great opportunity to promote Turkish cuisine worldwide. By rediscovering traditional Turkish flavors with creative and modern presentations, we can highlight the diversity and creativity of Turkish cuisine internationally."

K10: "Although a few pioneering restaurants and chefs are trying to promote this field nationwide, overall, the level of molecular gastronomy in Turkey is not yet at the desired level. Factors like culture, religious beliefs, lack of experience, equipment shortages, and prejudices are the main reasons why molecular gastronomy has not fully developed in Turkey. Some groups may oppose stepping out of traditional Turkish cuisine and experimenting with molecular gastronomy. Additionally, reducing prejudices in the industry and creating platforms that support this field could help foster its development."

Code	Positive	Negative
K1	+	
K2	+	
K3		+
K4	+	
K5		+
K6	+	
K7		+
K8	+	
К9	+	
K10	+	
Total	7	3

Table_3. Particinant	s' Parsnactivas an M	alacular Castronan	w in Turkich Cuicina.
1 abi0-3. 1 ai ucipant	s i cispectives un m	olecular Gastronon	iy ili i ulkisii Cuisilie.

Code	Development of Molecular Gastronomy	Contribution to Promotion of Turkish Cuisine	Likelihood of Preference for Molecular Gastronomy	Steps for Development in Turkey
K1	Potential for Development	Can Contribute	Can be Preferred with Creative and Innovative Recipes	Reduce Educational and Economic Barriers
K2	At a Certain Level	Can Contribute	Can Attract Attention with Shows	Need for Education and Equipment Investment
К3	No Progress Seen	Would Not Help	Would Not be Preferred	Educational, Equipment, and Economic Barriers
K4	Limited Level	Can Contribute	Can be Preferred with a Combination of Presentation and Taste	Education, Equipment, and Experience Should Be Enhanced
K5	Early Stage	Can Contribute	Would Not Be Preferred Due to High Costs and Lack of Experience	Education, Infrastructure, and Investments Needed
K6	Undiscovered Gem	Can Contribute	Can be Preferred with Presentations	Need for Education and Experience
K7	Unnecessary Innovation	Would Not Contribute	Would Not be Preferred	Preservation and Support of Traditional Cuisine
K8	Developing Slowly	Can Contribute	Can be Preferred	Need for Increased Education and Interest
К9	Barriers to Development	Can Contribute	Can be Preferred with Creative Presentations	Education and Investments Needed
K10	Not Fully Developed	Can Contribute	Would Not be Preferred	Education, Experience, and Equipment Shortages Need to Be Addressed

A common point highlighted by all participants is that this trend has not yet fully developed in Turkey. It is in the process of development. There will always be supporters and opponents of the trend, but those who have received education in this field or have worked in a place related to molecular gastronomy during their international experiences approach this trend with a more open perspective. Participants who are interested in this field are continuing their efforts to integrate Turkish cuisine into molecular gastronomy.

6. Conclusion

Molecular gastronomy, like in other countries, has not shown a rapid development in Turkey. With the richness of Turkish cuisine and its unique cooking methods, we can confidently say that it is richer than many other cuisines around the world. However, one of our biggest shortcomings is promotion and advertising. Promoting our country's dishes and adapting to different trends could make Turkish cuisine recognized as a well-known cuisine among world cuisines. Unfortunately, people abroad generally limit Turkish cuisine to products like kebabs. By modernizing countless and forgotten Turkish dishes through a new trend like molecular gastronomy, we can introduce them to the world.

New chef candidates for molecular gastronomy need to be trained and have sufficient trial-and-error opportunities. Universities or culinary academies should focus on this field and open a new door for the chefs of the future. The new generation of chefs should not only learn from universities and culinary academies but also constantly research and generate new ideas. Similarly, we should consider that new trends like molecular gastronomy do not emerge suddenly, and new Turkish chef candidates can also initiate these trends. Universities' ability to provide sufficient education in this area will play a vital role in their careers.

Turkey's economic difficulties pose a significant obstacle to molecular gastronomy. The products and equipment for this trend mostly come from abroad and are sold in dollars or euros. This creates a considerable financial burden for businesses and educational institutions. However, it should not be forgotten that, alongside this situation, there are even greater deficiencies in education and workplaces in terms of molecular gastronomy equipment. Therefore, the distance in approaching this field is not only based on economic factors but also on risks and uncertainties.

Furthermore, the belief that a dish created with molecular gastronomy is haram (forbidden) is also widespread. However, with experienced waiters and chefs, it can be explained that these foods do not pose a religious threat, and any doubts in people's minds can be clarified.

Molecular gastronomy has great potential to promote Turkish cuisine and take it one step further. With the necessary training and limited products, more contemporary dishes can be served. The important thing is not to modernize an existing dish with molecular gastronomy but to bring back forgotten or nearly forgotten dishes through this trend and make them an important part of Turkish cuisine.

Molecular gastronomy not only rediscovered the flavors of Turkish cuisine but also forms part of our cultural heritage. Therefore, we should not forget that investments in this field are significant not only gastronomically but also culturally. When the richness and diversity of Turkish cuisine meet the creative and innovative approach of molecular gastronomy, the results produced are not only flavors but also cultural interaction and uniqueness. Therefore, support for molecular gastronomy and the work done in this field will contribute to Turkish cuisine advancing further and gaining more recognition worldwide.

Furthermore, the global gastronomic community is increasingly embracing fusion and innovation, making the integration of molecular gastronomy into Turkish cuisine even more relevant. The fusion of new culinary techniques with traditional flavors opens the door to creativity and experimental dishes that can elevate Turkish cuisine to a whole new level. Turkish cuisine has always been known for its depth and variety, and molecular gastronomy can bring a fresh perspective by highlighting these elements in unique ways.

In conclusion, the evolution of molecular gastronomy in Turkey is not merely a trend but an opportunity to redefine how we understand and experience food. As both a form of artistic expression and a scientific exploration, it can be a tool for future generations of chefs to build on the cultural wealth of Turkish cuisine, turning it into a global symbol of innovation, tradition, and creativity

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