



## Umami and MSG: A Brief History

Sitting in his laboratory, trying to extract the secret of umami from kombu seaweed, it would have been impossible for Dr. Kikunae Ikeda to imagine the drama that would unfold over the next hundred years. The story of umami and MSG is fascinating. It is the story of science, technology, business, culture, and the never-ending quest to make the foods we eat healthier and more delicious.

But the story didn't begin with Dr. Ikeda, and it's far from being finished. And the story continues to unfold rapidly even today—for example, with regard to the unfortunate term “Chinese Restaurant Syndrome,” the Merriam-Webster dictionary is currently “reviewing the term and revising appropriately” due to its cultural insensitivity and scientific inaccuracy.

This article presents a timeline of the seminal events—including the controversies—that make up the unique history of umami and MSG.

**5th century BC**  
*Ancient umami*



Earliest evidence of garum, a fermented fish sauce used widely throughout Rome and the ancient world. Garum is one of the first known examples of an umami-dominated condiment.

Jean Anthelme Brillat-Savarin, a French lawyer, politician, and gastronome, posits “osmasome” as the essence of the meaty taste in his treatise entitled “The Physiology of Taste.” However, he does not identify the compound responsible for this taste.



**1825**

*Investigating “the meaty taste”*

**1865**

*Instant broths*



Modern seasonings and instant broths begin to appear on the market. Products such as Liebig's Extract of Meat (1865), Maggi Dehydrated Soup (1885), Marmite (1902), and Maggi Bouillon Cubes (1908) offer busy homemakers rapid-cooking soups with satisfying, meaty flavors. At that time, it was not known that MSG was an important ingredient in these instant soups.

Working with kombu dashi, a type of broth made from kombu seaweed, Dr. Kikunae Ikeda isolates glutamic acid. Recognizing that its taste was neither sweet, salty, sour or bitter, he coins the phrase umami, which can be literally translated as “delicious taste.” This marked the discovery of the fifth basic taste, although it was not scientifically recognized until the 21st century.



**1908**

*Discovery of umami*

**1909**

*Umami seasoning born*



Ajinomoto-Hompo (as Ajinomoto Co. was called at the time), which was created to allow Dr. Ikeda to bring his findings to market, introduces “AJI-NO-MOTO®,” the first pure MSG product in the world. The product is a hit with Japanese homemakers, and is soon exported to China, Korea, and Taiwan, with a New York office opening in 1919.

US Army officers in the Pacific notice that American soldiers prefer ration packs from the Japanese army, which had included AJI-NO-MOTO® seasoning since the 1910s. This leads to increased research and appreciation of MSG’s positive impact on the taste of rations, and other canned foods, by the US military.



**circa 1945**

*MSG and army rations*

**1947**

*American umami seasoning*



Ac’cent, an MSG product, is launched in the United States by the International Minerals and Chemicals Corporation. Marketed as “pure” and “natural,” the “gourmet powder” gains in popularity in the 1950s and 1960s. Ac’cent would go on to become a common seasoning both for Asian and Western cuisine.

The first-ever MSG symposium is held in Chicago, Illinois, USA. Reflecting the broad enthusiasm for the potential of MSG at the time, sponsors include the Presidents of General Mills, Inc. (cereal products), Anheuser-Busch, Inc. (beer), H.J. Heinz Company (condiments), United Airlines (airline meals), and even the Chairman of the Board of the Hershey Chocolate Corporation. A second symposium follows in 1955. Lecture topics include the use of glutamate for military rations (greatly improving flavor), in frozen and canned foods, and in the restaurant industry, as well as techniques for MSG production and quality control.



**1948**

*MSG symposium in the US*

**circa 1950**

*Birth of supermarkets and processed foods*



Rapid modernization after World War II, especially in Western countries, leads to the birth of supermarkets and processed foods. At the same time, advances in plastic materials permit foods to be preserved in the store or the home for longer than ever before. The dramatic increase in the availability of frozen and canned foods creates a need for better seasoning, like MSG; while these foods are convenient and storable, they aren't as tasty as fresh-from-the-farm foods. The advent of processed foods and supermarkets marks the beginning of mass consumerism, eventually leading to consumer protection organizations and laws in the coming years.

Fermentation of locally available sources of sugar, such as cassava and sugar cane, begins to become the dominant method of MSG production. With the development of this manufacturing method, MSG can be produced locally around the world.



**1960s**

*Fermentation becomes MSG production method*

Dr. Robert Ho Man Kwok, a Senior Research Investigator at the National Biomedical Research Foundation in the United States, writes a letter to the editor of the New England Journal of Medicine (NEJM) describing numbness in the back of the neck, general weakness, and palpitations after eating in a restaurant of Northern Chinese food. Although the purpose of the letter is to recommend further research, and Dr. Kwok speculates that the cause might be soy sauce, high sodium content, Chinese wine, or MSG, the editor of the journal entitled the letter "Chinese Restaurant Syndrome," and the concept was born.

**1968**

*Chinese Restaurant Syndrome*



Dr. John W. Olney publishes research in the journal Science linking extremely high doses of intravenous MSG administration to brain lesions and obesity in mice.

The paper ignores that mice are born with an immature blood-brain barrier (meaning that the results were not relevant to humans), and it uses doses of MSG that are substantially beyond feasible human consumption.

However, its publication soon after Dr. Kwok's "Chinese Restaurant Syndrome" letter creates a negative perception of the health impact of MSG that takes decades to correct.



**1969**

*MSG safety concerns*

Environmental pollution caused by pesticides such as DDT in agriculture, exposed in books such as Silent Spring (Rachel Carson, 1962), and unsafe use of medical products such as thalidomide fuel the perception of rampant abuse of public trust. MSG is swept up in this wave, with consumer protection organizations urging government authorities to confirm its safety. The safety of MSG had already been confirmed by the USFDA in the 1960s, but safety tests are repeated. The safety of MSG is eventually reconfirmed by JECFA in 1987 and by FASEB in 1995. No seasoning has ever been the subject of more safety testing than MSG.

**circa 1970s**

*From No MSG to Yes MSG*



A paper published by Dr. R. S. Geha (Harvard University) finally discredits the association between MSG and Chinese Food Syndrome, 32 years after Dr. Kwok's letter to the editor of the New England Journal of Medicine.

An article authored by researchers from the University of Miami School of Medicine identifies a receptor on the tongue of rodents for the taste of glutamate—the first time that an umami receptor is identified.

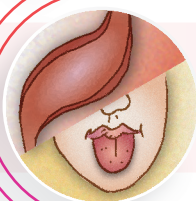


**2000**

*Proof that MSG and CRS are not related*

**2002**

*Umami, the fifth basic taste*



The glutamate taste receptor T1R1/T1R3 is discovered on the human tongue, followed in 2006 by its discovery in the stomach. These findings are key to umami being scientifically recognized as “the fifth basic taste.”

“Umami” is listed in the Oxford English Dictionary. It is defined as “a category of taste in food (besides sweet, sour, salt and bitter), corresponding to the flavor of glutamates, especially monosodium glutamate. Origin Japanese, literally ‘deliciousness.’”



**2003**

*Umami listed in the dictionary*

**2018**

*A new era for MSG*



The World Umami Forum is held in New York city, with participation by many academics, chefs, dietitians, and members of the media. Lectures include the history of umami and MSG, its safety, and its usefulness. The Forum sparks renewed interest among US dietitians and chefs about the benefits of MSG.

## Towards an Even Brighter Future

As you can see, the history of MSG and umami has been surprisingly dramatic. But to us, it represents the success of the simple and pure desire of our founder, Dr. Kikunae Ikeda, to learn about the umami taste and bring it to the world. With the same spirit, more than 100 years later, we still strive to help everyone around the world to “Eat Well, Live Well.”

MSG makes foods more delicious for everybody. An increasing body of literature is deepening our understanding of MSG's health benefits; for example, to help the elderly maintain proper nutrition, to help people reduce salt intake, and to help regulate appetite. And MSG is produced using sustainable methods, utilizing locally available source materials and a natural fermentation process, with a strong commitment to harmonizing with the bio-cycle and responsible resource management.

From all of us at the Ajinomoto Group, we very much look forward to learning with you what the future will bring, and to working closely with society to make the world a better, healthier, and an even more delicious place to live.



## About Ajinomoto Co.

The Ajinomoto Group is a global company with specialties in the business of food and amino acids, guided by our leading-edge bioscience and fine chemical technologies.

Based on the corporate message “Eat Well, Live Well.”, we have been scientifically pursuing the possibilities of amino acids in supporting the healthy lives of people all around the world. We aim for future growth and continuous contribution to greater wellness by creating value through sustainable and innovative solutions for communities and society.

The Ajinomoto Group has offices in 35 countries and regions, and sells products in more than 130 countries and regions. In fiscal 2018, sales were 1.1274 trillion yen (10.1 billion U.S. dollars). To learn more, visit <http://www.ajinomoto.com>.