

MSG



One afternoon in 1908, Kikunae Ikeda, a Japanese chemistry professor from the Tokyo Imperial University, was in a good mood as he had just completed a challenging experiment for his research. His wife served him a bowl of cucumber and sea kelp (dashi) broth for lunch. As he slowly tasted the broth, he suddenly realised that the broth was exceptionally tasty. Initially, he thought it was because he was in a good mood. He kept stirring and tasting the broth a few more times, and he finally decided that the broth was indeed tasty.

“Sea kelp and cucumber are common food. However, how does the broth taste so good?” he thought. The chemist in him began to wonder on the compounds contained in kelp and cucumber that made the broth tasty. Then, he left the dining table and took some sea kelp to study the chemical composition in them.



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Six months later, he obtained some results and found a compound which is known as glutamate. If glutamate was added to the broth, it could enhance the overall flavour of the broth. At the same time, Suzuki Saburousuke, a Japanese scientist, was experimenting on extracting iodine from sea kelp. Kikunae and Suzuki then decided to collaborate on extracting the glutamate from kelp. Soon, they came to realise that their method was not a good one. This was because in order to extract 0.2 grams of glutamate, 10 kilogrammes of kelp was needed. Therefore, they decided to change the raw material from sea kelp to low fat soybean and wheat, to increase the yield of glutamate.



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The glutamate which was the result of this experiment was named as "Aji-no-moto". It was sold in grocery shops around Tokyo. Not too long after that, it was marketed in China. This special white powder attracted the attention of a chemical engineer. He took a small bottle home to test and confirmed the chemical compound in glutamate. A few years later, he discovered a different method to extract glutamate which was by using a water based solution. He was the first person to use this method, and he named the product MSG.



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This method was later found to be uneconomical because too much grain was used in the production of MSG. At least 40 tonnes of wheat were needed in order to produce one tonne of MSG. Furthermore, this method was found to produce a lot of toxic gases and hydrochloric acids. These acids corroded the machinery used. Consequently, a Japanese monosodium glutamate company conducted further research on this. Finally, in the 1960s, a new technique was developed and a biocatalyst was used to produce concentrated MSG with sodium glucoside as the main ingredient. Man's pursuit for flavour enhancers never ends. It seems that food enhancement is a never-ending endeavour.





Food for Thought:

Innovation is the result of solving problems caused by demand.



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