

What attitudes does consumers have on purchasing genetically modified foods (gmf)...

[Food & Diet](#), [Genetically Modified Food](#)



“ Genetically modified (GM) foods are food items that have had their DNA changed through genetic engineering. ” (Mavis 2008). As the population of the world has continued to grow, the supply pressure of food has become more and more significant. With the development of Genetically Modified biotechnology, GM Foods have been come into our daily lives. Though GM foods can help to improve the quality of life, there are risks to complete trust in GM foods. What’s more important, a part of consumers still have doubts about the understanding towards GM food.

The question “ What attitudes does consumers have on purchasing genetically modified food? ” is meaningful because that the issue about GM foods is becoming increasingly controversial. The controversies towards GM foods generally focus on environmental ethics, food security, poverty alleviation and environmental conservation. As customers are divided on their relative importance, some supporters claim that the GM technology can solve the problem of food crisis and poverty. They also consider that GM foods are beneficial to environments such as they can protect soil and water.

However, opponents think that GM foods should have some potential threat to human health and they violate the rules of nature by mixing genes among different species. The purpose of this research is to gain a deep understand about the consumers’ attitudes towards purchasing GM foods and find out if most of consumers can accept GM foods. (Hutchison, 2004) Literature review
In the last few years, many articles on the consumers’ attitudes toward GM

food have appeared. There is a concise review of existing literature that evaluates consumers' attitudes as following.

Most of the information on European attitudes comes from a journal by Bredahl, Grunert, and Scholderer (2003). The article focuses on posted and answered four questions on European consumers' attitudes towards the use of GM food. These four questions are: (1) how negative are consumer attitudes to the event " GM technology applied in food production"? (2) How do these negative attitudes affect the preference of consumer for GM products? (3) How deeply does these attitudes rooted in customers' opinion? 4) Will the new information and experience change the customers' attitudes? Bredahl, Grunert, and Scholderer (2003) believe that these four questions are central for understanding the consumers' attitudes about GM food. The article use some tables to evaluate the consumers' attitudes about genetic modification in food production in seven European countries which are the UK, Denmark, Finland, Germany, Norway , Italy and Sweden. The data shows that most of the customer have negative attitude towards GM food, the average support for GM foods is quite low.

The national differences can also be showed through the table: the attitude is most positive in Italy, and is most negative in Germany and the Scandinavian countries, while Finland and the UK in a middle position. And the article also showed some other surveys to support this result, for example, the Eurobarometer surveys, which is a most well know one, have also shown that most of consumers do not like GM foods (Frewer &

Shepherd, 1995 and Durant, Bauer & Gaskell, 1998 European Commission, 1997, European Commission, 2000,)

For the question how these negative attitudes affect the preference of consumer for GM foods, Bredahl, Grunert, and Scholderer (2003) have design a research about yoghurt. In general, consumers prefer the low-Fat yoghurt, but the yoghurt will become non-attractive consistency if they produced based on skimmed milk. Though using additives can improve this problem, many consumers don't like additives. However, by using GM technology, the yoghurt can be enough consistency, fat-free and no additives. It provided a good basis for the consumer preferences.

In the research, consumers inspected the three products which are normal yoghurt, additives yoghurt and labeled GM yoghurt and rank them according to preference. And they must explain the reason for the ranking. The result showed that most of consumer rank GM yoghurt to last choice. And the common reasons are that the GM technology is not familiar and not trustworthy, they don't know if the product is healthy, and it harms nature. The conclusion is explicit: the attitude to GM food has a strong influence on the preference of consumers. The third question and the last question were researched in another study.

Respondents were asked to take part in a taste test of eight cheeses. Two weeks later, they participated in another taste test which only provides two kinds of cheese. One cheese was the same taste as the one which obtain the highest preference in the first test and it was labeled “ produced with

genetically modified technology”; the other one was the same taste as the one which obtained a medium preference in the first test. The results showed that when the most popular cheese labeled genetically modified technology, the preference was reduced.

So, the study shows the attitude on GM food is deeply rooted in consumers' opinion and is not easily to change by experience. There are also some other important researches about consumers' attitudes towards GM food. Hamstra (1995) evaluate the acceptance of consumers toward GM food through three studies of Dutch consumers. Product characteristics and consumer characteristics are included in these studies. In the first study, consumers participated in a face-to-face interview about their attitudes and willingness to buy nine different GM foods (Hamstra, 1991).

Means-end chain theory was used in the second study to further research these aspects in some focus group discussions (Hamstra, 1993). The third study used the sample of consumers to evaluate the model which developed in the second study (Hamstra, 1995). As a result, the studies showed that perceived benefits have a greater impact on consumers' attitudes than perceived risks and there is no link between attitudes and knowledge of the genetically modified technology. Kutznesof and Ritson (1996) investigated Irish and British consumers' attitudes through focus group discussions.

The results divided the consumers' attitudes towards genetically modified foods into three types: “ triers”, “ undecided consumers” and “ refusers””. A large number of consumers were classified into the second group, and the

rest of consumers were equally classified as refusing or accepting genetically modified foods. Through the research, Kutznesof and Ritson (1996) found that there are some factors can increase the acceptability of genetically modified foods such as perceived consumer-related benefits, price consciousness, increased product quality (especially the taste), and increased purity of products.

They also found that the acceptability of consumers depends on the types of genetically modified foods: the genetically modified technology used on vegetables, fruits and dairy products can be more acceptable than eggs and meat. Some studies have analyzed consumers' attitudes towards GM foods at a more broadly level. The attitudes of consumers have been proved to be more positive towards applying genetically modified technology to plants than to human genetic material or animals. Frewer, Hedderley, Howard & Shepherd, 1997) The study which completed by Cook and Moore (2002) indentifies the relative importance, nature and strength of influences on New Zealand consumers' intentions towards purchasing genetically modified foods. The study used four methods to evaluate the consumers' attitudes which are focus groups, the questionnaire, statistical methods and distribution. Results delivered questionnaires to 289 consumers and received 266. The respondents contain 171 females and 95 males.

In the received questionnaires, 159 respondents had an intention or strong intention not to purchase GM foods, 27 respondents had an purchasing or a strong purchasing intention and 80 respondents had no intention to purchase GM foods. Through the analysis with " Ordered logit analysis" and "

Marginal effects for the extended model” which related to self-identity, attitude, SN and PBC, Cook and Moore (2002) found that self-identity, attitude, SN and PBC can provide a positively influence on consumers’ attitude towards purchasing GM food.

Males may more easily to feel in control over purchasing the food than females, on the contrary, females may easily to feel in control over not purchasing the genetically modified food. In addition, other related research shown that the New Zealand public may be slightly less against with purchasing GM food. A national survey about farmers’ attitudes found that 49% farmers not willing to purchase GM food and 12% farmers had positive attitudes to purchase (Cook et al. , 2000).

Sallie and Michael, B (2004) choice modeling methods to analyze in what conditions the Australian consumers are willing to purchase GM food, and they also discuss these preferences in the report. The results of the report suggest that if there has a discount on the consumers’ favorite food, they will have an intention to purchase the genetically modified foods. The report also showed that genetically modified technology which used on animals seems to be more unacceptable to respondents than that use on plants, especially among female respondents.

In addition, another condition which can influence the consumers’ attitudes for a certain type of food is age of the consumer; the results found that older people generally more accept of genetically modified technology than younger people. In conclusion, the above literature shows that most

consumers have the negative attitudes towards purchasing genetically modified foods, and these negative attitudes are not easy to change that can affect the preference of consumers.

Furthermore, some conditions such as age and sex of consumers, the species that be applied with GM technology and the discount of genetically modified foods can also effect the consumers' attitudes. Methodology: The main method of this research is questionnaire which contains online questionnaire and a paper-based survey questionnaire. And the responds assumed to be truthfully. The online questionnaire will be designed on the official websites of large-scale supermarkets.

And the links of questionnaire should also be sent to the email of the consumers who are the VIP or the regular consumer of these supermarkets. In addition, the questionnaire will not exceed 8 minutes. The questionnaire should contain open-ended questions and close-ended questions. The sample open-ended questions should be " Do you have a positive attitude or negative attitude towards purchasing genetically modified foods? Why? " and " How you access the knowledge about genetically modified technology".

On the other hand, the close-ended question must contain the sex and the age level of the respondents, the questions should be designed like " I have a intention to purchase foods produced using genetically modified technology (very strongly disagree, disagree, agree or very strongly agree)" " what do you think yourfamilymembers' or friends' opinion would be when

you purchasing genetically modified foods? (Extremely unfavorable, unfavorable, favorable or extremely favorable)” “ Do you think your family members’ or friends’ opinion will change your attitudes towards purchasing genetically modified foods? Very strongly disagree, disagree, agree, or very strongly agree)”. These three questions are very important to understand the consumers’ attitudes towards purchasing genetically modified foods. The advantage of online questionnaire is that it is a less expensive way to investigate more people, and it can also investigate the people who are at a far distance. Furthermore, the questionnaire can be quickly done and anonymity ensures more valuable responses. But there are also some drawbacks about online questionnaire that must be foreseen.

For example, in general, the responds to online questionnaire are from younger people and the response rate should be limited because that not everyone can access to the website. All these conditions should be considered on the result of research. The paper-based survey questionnaire will be sent to the consumers in supermarkets. In order to attract the consumers, the people who accept investigate can get a small gift as an incentive that can increase the participate rate. The age of participate range should between twenties and sixties.

And the details of paper questionnaire may be same as the online questionnaire. The drawback of paper-based survey is that poor handwriting may be appeared on the space of open-ended question and some of them cannot be identified accurately. Secondary research is also needed in order to assist the evaluation about results of questionnaire survey. The secondary

sources can be found in three areas: sales report of a well-known company which produces genetically modified foods, customer database of this company and primary data.

Newspapers, previous research reports, journal content, and government statistics could provide the primary data to secondary. The limitations of secondary research should also be considered during the process of research. For example, some secondary data may not be helpful to the research evaluation because that some data can be vague and general. On the other hand, the source of data must be checked in order to ensure the data is accurate. Moreover, the data maybe out of date.

At last, the results of questionnaire and secondary research should be collect together to evaluate the respondents' attitudes toward purchasing genetically modified foods and calculate if most of consumers can accept GM food. Conclusion: There should be two results of this research; one result is that most of consumers can accept genetically modified foods. It means as genetically modified technology becoming increasingly more oriented lifestyle, the consumers are increasingly familiar with the technology about genetically modified foods, more and more people can trust in GM food.

The other result is that most of consumers cannot accept genetically modified foods, and the questionnaire can affect the reasons. It means people still have doubts about the safety and technology of genetically modified food. Genetically modified food is new technology products, though it still exist some problems, but with the development of science and

technology, it will be more and more perfect. As long as follow the certain rules, life will be more superior with the healthy and orderly development of GM technology.