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The Concerns of Italian Consumers about GM foods

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Abstract

This paper presents an analysis between the evolution of legislation and consumers' opinion on GMO food from 2002 up to today in Italy. Consumer opinions were linked to the evolution of legislation. Questions may be broadly grouped into three categories: those aimed at verifying a knowledge of biotechnologies and GMO; those aimed at verifying people's opinion of GMO; those aimed at verifying the need for safety and guarantees, as well as the existing level of information.

Key words

GMO foods; Italy; consumers; risk; food safety; EU legislation.

Introduction

Recently the two EU Regulations No. 1829 and 1830 governing trade of GM products on the European market came into force. They discipline permits, labelling and traceability of GM in raw materials, foods and animal feedstuff.

And in Italy a few months ago, after a long debate between the government and regional authorities on who was responsible for legislation in this field, a law on the coexistence of of transgenic, conventional and organic farming was passed.

Worldwide, there is an exponential increase every year in the area given to GM crops, especially in countries where large, highly mechanised agricultural firms dominate the sector, such as the US and Argentina, as well as in countries with very low labour costs such as Brazil and China. The report “Global Status of commercialized biotech/GM crops: 2004” published by the International Service for the Acquisition of Agri-biotech Applications (ISAAA) estimates that the total surface given over to approved GM crops is now 81.0 million hectares, a 20% increase compared to 2003.

But in Europe public opinion is overall sceptical towards GM crops, especially for human consumption. The memory of the BSE crisis persists, and consumers no longer appear to trust anyone, and require increasingly strict controls and accurate analyses. A fundamental move for European regulation was to introduce compulsory labelling for GM products and lower the threshold level for accidental GM contamination to 0.9% for permitted GMOs and 0.5% for non-permitted substances. This was a first move towards citizens’ right to information, underlying the right to choose what type of food to put on the table.

Overall, the rejection of GM food is strong, and holds for the majority even at lower prices than conventional food and considering the high degree of uncertainty. In the near future, in Italy a growing demand for GM food should not be expected, as long as the uncertainty and the lack of information prevails.

Legal framework

In order to ensure that the development of modern biotechnology, particularly GM, takes place in complete safety, the European Union has established a legal framework comprising various pieces of legislation¹:

- The controlled use of genetically modified micro-organisms, e.g. in laboratory research in a confined environment, is regulated by **Directive 90/219/EC** on the contained use of genetically modified micro-organisms;

¹ EU legislation on GMO has recently been amended. See Nicolini (2005).

- The experimental release of GMOs into the environment, in other words the introduction of GMOs into the environment for experimental purposes e.g. for field testing, is regulated by **Directive 2001/18/EC** on the deliberate release into the environment of genetically modified organisms (mainly Part B);
- The placing on the market of GM products (products containing or consisting of GMOs), e.g. for cultivation, import or processing into industrial products, is subject to **Directive 2001/18/EC** on the deliberate release into the environment of GMO (mainly Part C);
- The placing on the market of GMOs intended for food or animal feed and of food or feed products containing, consisting of, or produced from, GMOs is regulated by **Regulation (EC) 1829/2003** on genetically modified food and feed. Where a food product contains or consists of GMOs, the applicant has two options. Either according to the principle "one door, one key", the application as a whole is subject solely to Regulation (EC) 1829/2003, in order to obtain authorisation for the deliberate release of GMO into the environment, in accordance with the criteria laid down by Directive 2001/18/EC, and for the use of this GMO in food products in accordance with the criteria laid down by Regulation (EC) 1829/2003. Alternatively, the application, or part of it, is subject both to Directive 2001/18/EC and to Regulation (EC) 1829/2003.
- Unintentional movements of GMOs between Member States and exports of GMOs to third countries are governed by **Regulation (EC) No 1946/2003** on transnational movement of GMOs.

This legislation establishes the conditions under which a party may develop, use or market a GMO or a GMO food product.

GMO and GMO food products on the market must also comply with labelling and traceability requirements. These requirements are found in Regulation (EC) 1829/2003 and in **Regulation (EC) 1830/2003**, amending Directive 2001/18/EC, concerning the traceability and labelling of GMOs and the traceability of food and feedstuff products produced from GMOs. So 2003 saw two new pieces of legislation affecting labelling and traceability, aspects which inform the end consumer of responsibility for the supply chain and sale of foods.

The main legislation which authorises experimental release and placing on the market of GMOs in the EU is currently Directive N° 2001/18/EC on the deliberate release of GMOs. It was adopted by the European Parliament and the Council of Ministers in February 2001 and came into force on 17 October 2002. In Italy it was implemented through D.lgs. 224/2003. There are in Italy several bodies responsible for GMO issues. Up to 2003, the Ministro della Sanità (Ministry of Health) was responsible, together with the Prime Minister. Since 2003 the Ministro dell'Ambiente e della tutela

del territorio (Ministry of the Environment Protection of the Land) has been responsible for release of GMOs, the Ministry of Health retains responsibility for food safety, and the Ministry of Agriculture and Forestry Policies is responsible for agricultural production and safety.

Recently, the EU Commission decided to * overturn an Italian law (the Decreto Amato), which banned four varieties of biotech maize, a decision which was taken on the * apparently favourable advice of the EFSA. There is also intervention by regional authorities against GMOs and co-existence, which will come in to force in Italy from 2006. These regional regulations are mostly without any legal effect but are very important as a lobbying and social force².

The survey

Survey data

This research was based on a survey carried out by a questionnaire and personal interview during the spring of 2005. The random sample of 410 food shoppers for Italy was collected in the Food Valley (Emilia Romagna region, Northern Italy), the most important area for food production and consumption. The aim of the questionnaire was to obtain an overview of public opinion on biotechnology as applied to foods and of consumer knowledge of current legislation. In recent years there has in fact been a two sided phenomenon; the area given to biotech crops has increased (ISAAA, 2004), but consumer attitude has remained hostile especially regarding food. Food safety has become an important aspect for consumers particularly in European countries like Italy.

Currently there is not much GM food on the Italian market, and retailers often refuse these products. The findings of the 2005 survey are compared with the results of a similar survey carried out in 2002. They show a high level of mistrust of biotech in food.

Table 1 shows the characteristics of respondents in 2002 and in 2005. Both samples consisted mainly of younger women with a high level of education, in employment, from households of 3-4 people, resident in villages with a population of less than 5000 or medium sized towns.

² A more recent piece of legislation is the Ministerial Decree of 28 December 2001 concerning the development of market monitoring aimed at measuring quantities of “traditional” maize and soya seeds, with zero tolerance towards the presence of GM substances.

The need for this monitoring arises because, in spite of Italian legislation’s intention not to allow any accidental contamination by GM maize and soya seeds, a sufficient quantity of conventional seeds may not yet be available to meet farmers’ demand. In 2005, 3,5% of the sample was found to be GM contaminated.

Table 1: Sample characteristics

	<i>Survey 1</i> n= 360, 2002 % of interviewee total	<i>Survey 2</i> n=410, 2005 % of interviewee total
Age (share)		
< 30 years old	40	45
31-40	18	15,2
41-50	20	20,7
51-60	12	15,1
> 60	10	6,6
Sex (share)		
Female	61,65	59
Male	38,35	41
Education		
Without qualifications	0	0
Primary school	5,6	6,3
Secondary school	12,0	14,4
University degree (BSc, MSc)	81,9	79
Employment		
Working	64,9	60
Unemployed	13,4	21
Household	8,3	11
Retired	13,4	8
Household size		
1	7	7
2	18,1	13
3	25,9	25
4	33,6	35
5	11,2	13
> 5	4,34	3
Town size		
< 5000 people	15,3	20
5000-20000	26,5	29
20000-50000	8,4	9
50000-200000	34,6	34
200000-500000	10,4	4
> 500000	4,9	1
Income		
Not answered	66	58
< 7000	5,3	1
7000-14000	6,1	5
14000-30000	8,4	13,4
30000-80000	12,2	17
80000-160000	1,3	3,9
>160000	0,7	1,7

Source: Our surveys, 2002 and 2005

So the questionnaire was given to a varied range of respondents.

Consumer attitudes toward GM food in Italy

Questions in the questionnaire may be broadly grouped into three categories:

- ❑ those aimed at verifying a knowledge of biotechnologies and GMOs;
- ❑ those aimed at verifying people's opinion on GMOs;
- ❑ those aimed at verifying the need for safety and guarantees, as well as the existing level of information.

What do citizens/consumers know about biotechnology and GMO foods ?

(Questions 1, 2, 3, 4, 5, 6, 7, 8 and 18)

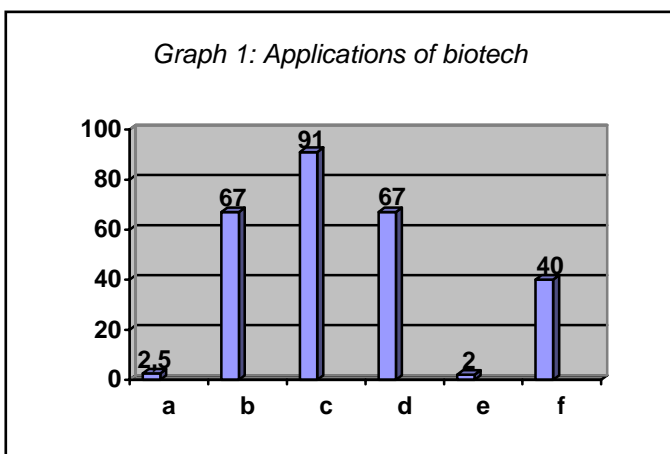
The results show that people often hear about biotechnology and GMOs, probably from the media as they are a topical issues, and therefore think they know about them. But in fact very few people are well-informed.

This is borne out by the fact that all the interviewees know the agro-foodstuff applications of biotechnology, which appear most frequently on TV and in the press, but few people know of their environmental and medical applications. This needs to be verified with further questions.

65% of respondents in 2005 answered Q. 1 correctly “Do you know what biotechnology is?” by selecting the answer “Production techniques for goods and services that use living organisms.”

Only 10% answered “No” and answered the subsequent questions unsatisfactorily or incoherently.

Consumers do not have a clear picture of the applications of biotech, as can be seen from Graph 1 below, of the percentage preferences to multiple choice answers.

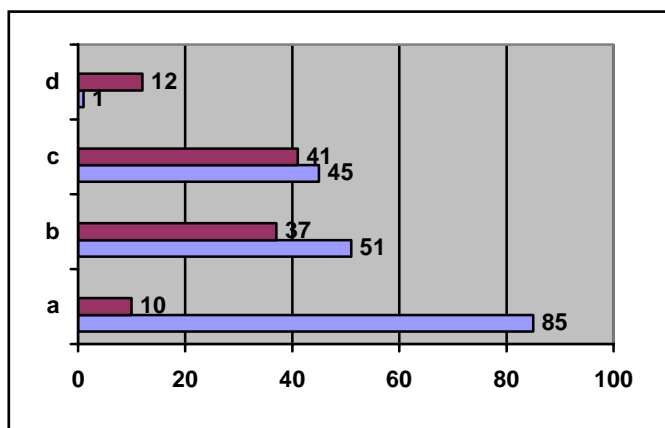


KEY

- a. Engineering
- b. Medicine
- c. Agro-food
- d. Pharmaceuticals
- e. Building and construction
- f. Chemicals

Question 2 is “Which of these products are made with biotech?” and the answers already show inconsistency. Three quarters of the interviewees are aware of the existence of parasite resistant plants such as maize and soya, as might be guessed from the answers to Q.1, but while 70% answered that biotech could be used in medicine and pharmaceuticals, only half of the respondents answered that insulin and vaccines are biotech. This is surprising given that insulin was the first biotech pharmaceutical to be put on the market after approval by the US FDA (Food and Drug Administration). Application of biotech to agro-food is clearly better known by the public, although it is the aspect on which there are the greatest doubts.

Graph 2: Which of these products are made with biotech



KEY:

- a. Parasite resistant plants (maize, soia)
- b. Insulin and vaccines
- c. Bacteria or plants for environmental purification
- d. Other

2002 Data: red; 2005 Data: blue

It is important to stress that there is no relation between the level of education and a knowledge of biotechnologies: about 20% of the interviewees who defined biotechnologies as industrial processes have a university degree, and few are acquainted with the legislation on labelling. This is further evidence of the fact that information is mostly supplied by the mass media.

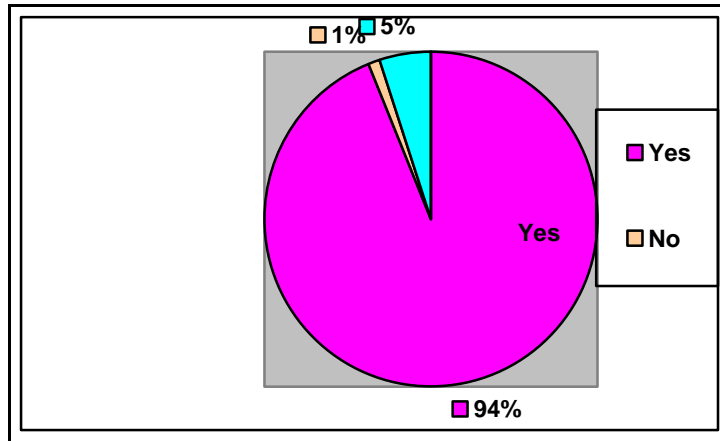
Similarly, no obvious correlation emerges from comparing answers on the basis of sex and age; here too the distribution appears to be homogeneous.

The main outcome, however, is that no one answered all the questions correctly, and this confirms that information on this topic is fragmentary and superficial.

Compared to the 2002 survey, there is increased awareness on applications to plants.

The answers reveal that there is a lack of information and that the media tend to exploit the issue for sensationalism.

94% interviewees say they have heard of GM foods, which confirms the previous answers that agro-food and parasite resistant plants were the most recognised applications. Both answers were given by all respondents.

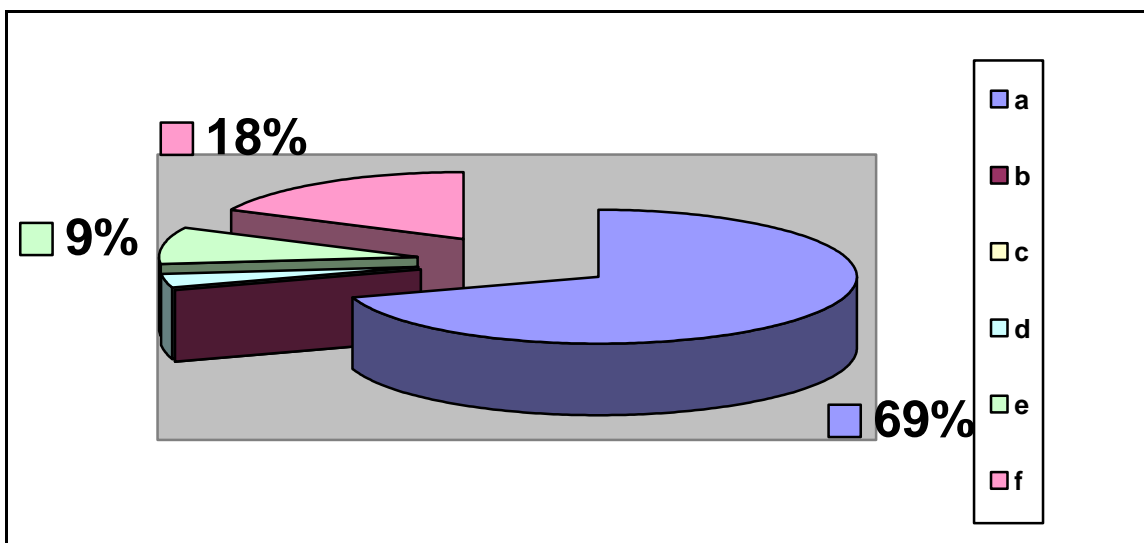


Graph 3: Percentage of interviewees aware of existence of GM foods

Only 5% answered “Not sure” to the question “Have you ever heard of GM foods?”, although 82% gave the correct answer “Products containing genes from other organisms” when asked to define GM foods in the next question. 10% answered that GM foods contain artificial substances. So although the majority (65%) supplied a correct definition of GM foods, only 64% claim to know what a gene is (Q.18)

Do Italian consumers know GM food labelling ?

Q. 4 asks “Do you know how to identify a GM product?”. Answers are shown in Graph 4 and were mainly spread over three alternatives. The majority answered “Yes, from the label,” (a) almost a fifth answered “Don’t know” (f) and nearly ten per cent answered “No, they are identical” (d).

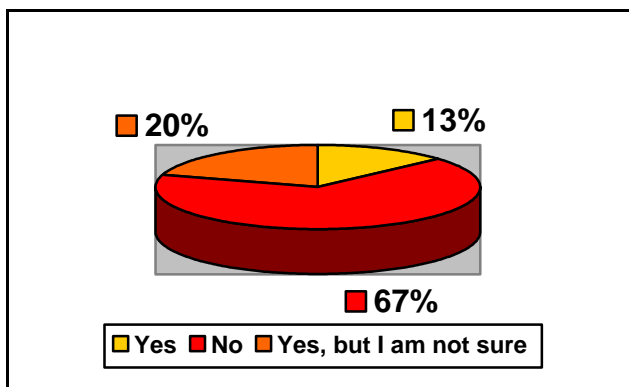


Graph 4: Interviewee ability to recognise GM products

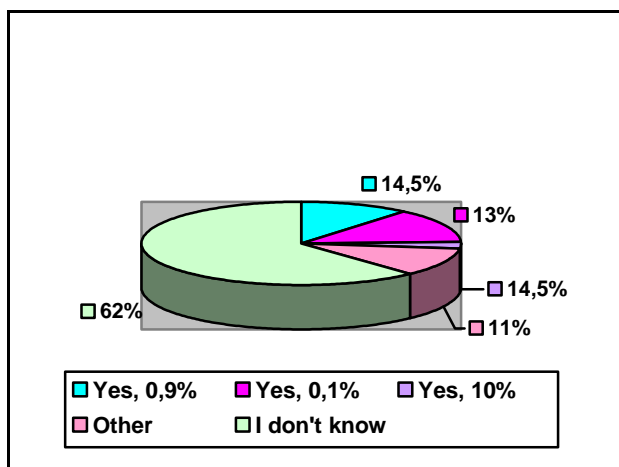
Q. 7 on labelling regulations also yielded answers spread over all alternatives. The majority (66%) say they are not aware of a legal requirement for end food products containing GMO to be labelled as such. 13.2% say they are aware of this and 20.2% are not sure.

Among interviewees who answered yes to * the previous question, * Q. 6 only 13.2% * 65% are not aware of the threshold level of GMO that can be considered accidental and thus not subject to compulsory labelling. 25% say they know this level but only 10% supply the correct answer.

These figures show that 90% of interviewees are not aware of EC Regulation 1829/2003 which established the threshold level for accidental or technically inevitable level of GMO at 0.9% for permitted GMOs and 0.5% for unauthorised substances on condition that they have favourable opinion from European Scientific Committees. Lower residual levels do not require specific labelling or traceability as long as actors in the supply chain can prove that they took all appropriate measures to avoid the presence of GMOs.



Graph 5: Interviewee opinion on labelling regulations



Graph 6: Minimum percentage of GMO subject to labelling according to interviewees³

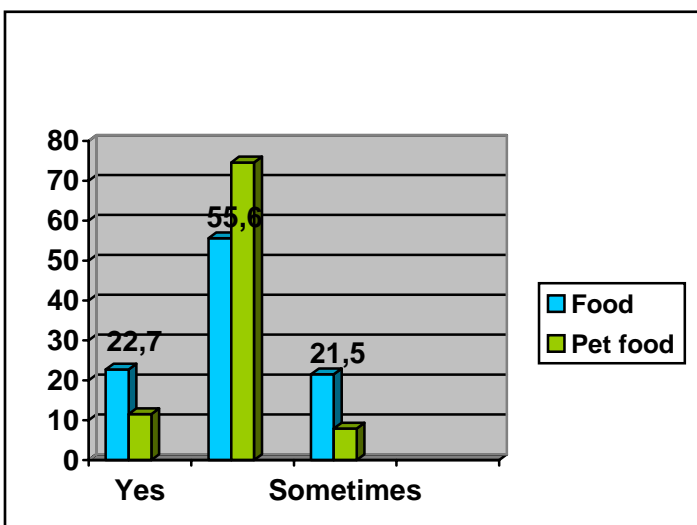
³ The graph shows the number of replies “Yes” or “Yes, but I’m not sure” to the previous question. So the percentages in Graph 6 were obtained by considering as 100% the 30% shown in Graph 5.

What is consumer's attitude towards GMOs?

(Questions 9, 10, 11, 12, 13, 14, 15 and 17)

32,7% of the interviewees answered that GMOs may be damaging for human beings or the environment * (22,5). Most people consider GMOs as a useful instrument to solve the problem of famine in the poorer areas of the world (41,2%), but they are also a source of profit for multinationals (Q. 9).

In spite of this scepticism and unfavourable attitude towards GM foods, few interviewees check GM content when they buy food. Only 22.7% say that they check whether food contains GMO, mainly parents of young children, and 11% say they check for GM in pet food.



Graph 7: Checking GM at purchase

These figures, along with the answers on labelling, again show that there is a lack of consumer information, and this is confirmed by Q. 17 which asks for consumer opinion on media information.

Most people (70%) find the information insufficient, 50% find it difficult to absorb, 24% find it incorrect, 25% partial and only 10% of interviewees consider it adequate.

Although the majority do not check for GMOs at the moment of purchase, they are thought to be damaging for men and environment, but are useful for poor people!

Table 2: : Question 9 and Question 11

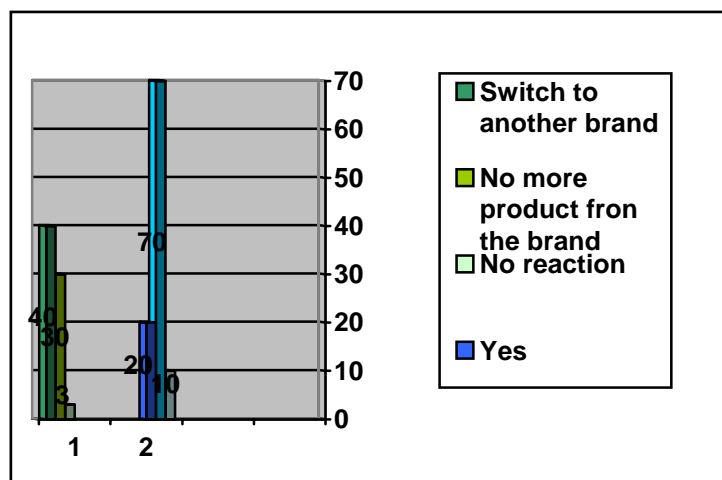
Do you think it is risky to eat GMO foods?		Do you check for the presence/absence of GMO when buying food?			Total
		Sometimes	No	Yes	
NO		15	78	11	104
Don't know		18	58	21	97
	Yes, cancer	0	12	7	19
	Yes, colitis	0	1	0	1
	Yes, allergies	5	15	15	35
	Yes, but I don't know what	50	63	39	153
Total		88	228	93	410

Source: our survey

Putting together the answers to Q. 9 and Q. 11, we see that the consumer who does not expect GM foods to be risky behaves rationally in that s/he does not check for their presence or absence. Vice versa, the consumer who is concerned about food safety is irrational in that more than 50% of the concerned interviewees does not check. Compared to the 2002 results, there has been a big fall in the number of people indifferent to GMOs and also in the number of people who would switch brand or retailer if legally permitted GMO products were found.

There appears to be a growth in resignation towards GM, perceived as ineluctable. Rather than total condemnation the results show diffidence. This is probably linked to the fact that people do not have any clear ideas, but expect to find GMO in their foods.

Most interviewees say they would switch to another brand (20%) or stop buying product of the GM firm change shop (40%) if GMO were found in their purchases. But is important to note that 40% of consumers would have no reaction.



Graph 8: 1- What would you do if you discovered that a food company you trust produced GM foods?

2- If the product were not a brand you knew, would you switch retailer?

Attitudes towards GM food

In general interviewees' personal opinion appears to be somewhat negative on GM foods, and there is widespread scepticism on their use. This reflects the EU position in the Principle of Precaution and Substantial Equivalence.

Q. 9 “*Do you think you are running any risk eating GM foods?*” received undecided answers. Graph 7 shows that there are two main groups: those in favour or uncertain (25.4% replying “*No*” and 23.7% saying “*Don't know*” and those against (40%) who say there is a risk even if it is not quantifiable.

One serious difficulty is to obtain food-borne risks or “general” risks for eating GM foods. Generally, in the case of GM foods, the risks are connected to the insurgence of allergies to “uncalcolable” risks. Although the subject is extremely important, there is an important lackness of scientific arguments in our country and there is no concern on risks assessment.

Instead of requesting risk information from different Agencies and Institutions we decide to ask consumers a risk estimates for GM food consumption, preparing a risk ladder⁴ indicates alternatives consequences.

To verify if the consumer's response was dependent on the level of communicated risk and, in particular, the presence of a relationship between WtP or WtA value, two types of questions were distributed. Loomis and Duvair (1993) found the risk ladder to be an effective tool for helping respondents answer CV questions involving risk changes.

Instead of to start with a CV market simulation approach, it was decided to ask only to agree or to disagree with a fixed Wt or WtA that indicated the percentage with respect the standard price that they would pay above the purchase price of one standard food or the discount they ask.

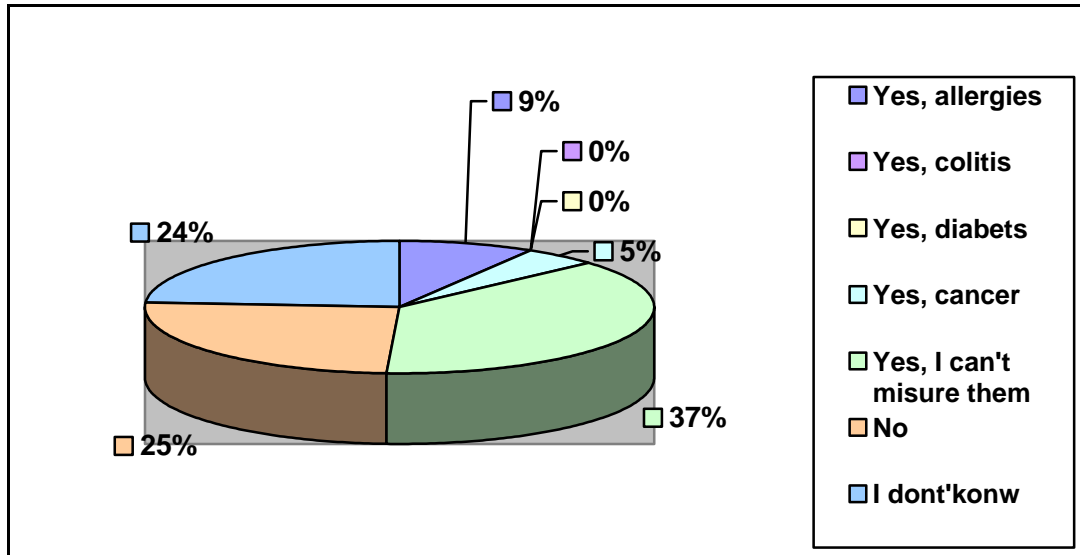
GM food risks

The 2005 survey attempted to quantify the risk by asking consumers themselves to say which “level” or “type” of risk they thought they were running in consuming GM foods. This question preceded questions on readiness to buy GM products and willingness to pay higher prices to avoid them. It was not included in the 2002 survey.

It is particularly interesting in estimating the value of food safety where there is imperfect information or information asymmetry. The risk analysis incrociata with the WtP or the WtA supplies useful information on consumer rationality.

⁴ The «risk ladder» indicates the relative chance of dying from different causes (heart disease, all cancers, car accident, diabetes, homicide, stomach cancer, ... , fire, ...) to comparing risks of death.

Replies show that 8.5% of consumers interviewed associate GM foods with allergies, and 4.6% with cancer. So almost 15% perceive a high level of risk, even though the fact that GM food is permitted should mean it is safe.



Graph 9: Opinion on risks of GM food

Willingness to pay for Non GM foods

Only 12% of interviewees would be willing to pay a price 5% higher than normal product prices in order to be sure of avoiding GM food. Only 4% would be willing to pay 5% more to have GM products on condition that its nutritional characteristics were superior to a normal product.

A clear majority of interviewees (62%) is however not willing to pay 5% for a soy or maize oil with new or modified characteristics, because they say the products in any case must be safe for consumption. The respondent profile shows that consumers who want safe products without a price increase are those with a lower level of education and graduates. People with an intermediate level of education are willing to pay more for GM free food and to an even greater extent for low pesticide residues.

Considering the incrocio between this question (WtP of 5% higher than normal price for GM free oil) and risk perception, we deduce that 95% of interviewees who say they would pay 5% for GM free products are the same interviewees who say they perceive an often unquantifiable risk in consuming GM food ⁵. Consumers interested in lower pesticide levels include people who do not believe that consuming GM food entails risk. (Q. 15)

⁵ In this survey we used la contingent valuation to elicit consumer willingness to pay for food safety (Buzby et al., 1995), dichotomous choice questions, and at the same time we tried to assess the risk for a GM consumer and compare it with his WtP.

The Italian consumers' willingness to accept a discount to buy GM food

Q.16 was formulated to assess consumer willingness to accept a GM product substantially equivalent in nutritional terms to 'normal' product at a price 10% lower.

45% of the interviewees refuse GM food even at lower prices (10%) and another 11% answer "It depends".⁶

Table 3: Would you buy a GM food product with the same nutritional characteristics as a 'normal' product at a price 10% lower?

	2005 Survey	2002 Survey
It depends on the product	24%	24%
No	45%	44%
Don't know	11%	19%
Yes	20%	13%

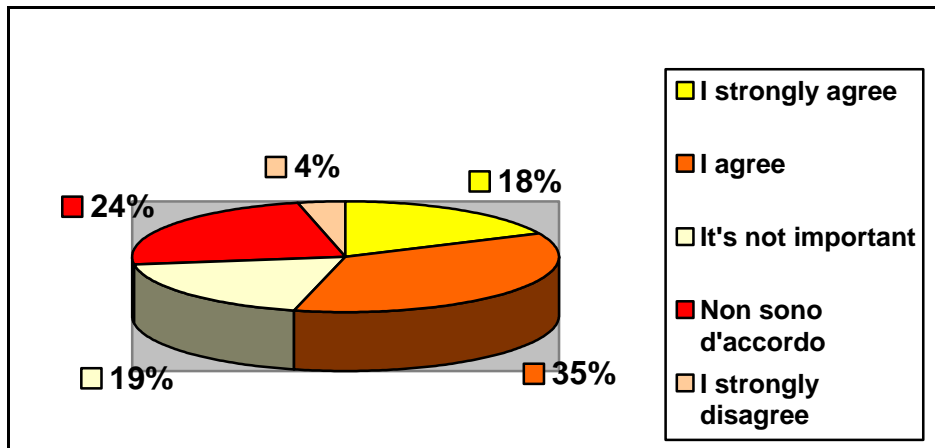
Source: our surveys

20% say they would certainly buy a GM product but only if it cost less than a normal product. It is important to note that 25% respondents say that it depends on the product. Compared to the 2002 survey, the share of people willing to buy a GM product has increased from 13% to 20% and the share of uncertain answers has decreased. The share of people who say "no" has remained stable.

And among those who would buy GM products at a lower price there are unemployed people, who are most price sensitive. Old Age Pensioners, who probably also have budget constraints, remain however against.

Q. 19 was "Do you agree with this statement? 'For safety it is better to buy Italian products'" and yielded different points of view as shown in the graph.

⁶ Similar research in Germany in 2004 showed that the share of 500 interviewees not willing to buy GM food was 60%, higher than that in Italy. (Wirthgen, 2005).



Graph 10: Opinion on safety of Italian products

Opinions are divided; Italian provenance means greater safety for some, probably because it is illegal to cultivate GMOs and organic farming is widespread. But for other interviewees it is not a sufficient guarantee.

Compared to the 2002 survey, the share of those who base their trust on a product being made in Italy has fallen by ten per cent. One interpretation of the figures is that consumers now have greater awareness of the safety of overseas products; another interpretation is that they have lower trust in Italian products.

Supply chain responsibility and public control

(Questions 17, 19, 20 and 21)

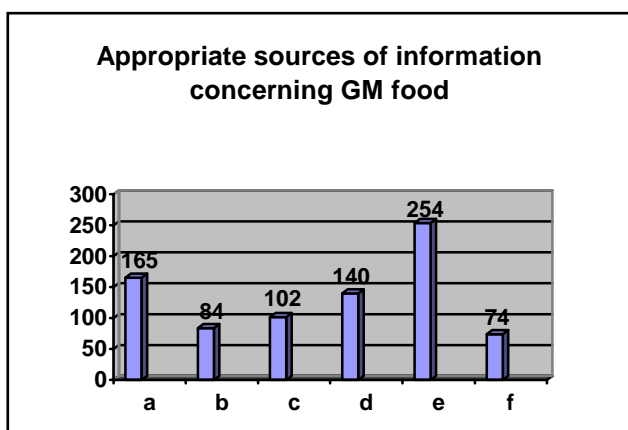
The answers to the questions on information confirm what has already been shown: information on GMOs is inadequate.

Graphs 11 and 12 show the institutions or bodies which in public opinion give correct information on GM food and which should ensure that legal requirements are satisfied.

Graph 11 shows that the consumers place their trust mainly in public authorities, a generic reply, and in farmers, who are perceived as being impartial. Large scale retail, the last link in the supply chain, is in third place. This position is a result of efforts made by supermarket chains to pose as guarantors of food safety in order to retain customer loyalty.

But consumers themselves see it as mainly the responsibility of the Ministries of Agriculture and Health to ensure respect of laws and regulations on GM foods through local health units. Consumers trust public bodies first, although many people opted for the Consumers' Association as the most important guarantor.

EC Regulation No. 1830/2003 governing labelling also lays down compulsory obligations for stages in the supply chain for traceability. It is applied to foods and animal feedstuffs; each operator has to pass on specific information to the links downstream, whether the product be GM or GM free. There is a legal obligation to retain documentation of buying and selling for at least five years. The European Commission lays down that these procedures must be inspected without specifying by whom.



Graph 11: a. Farmers, b. Industrial processors, c. Small retailers, d. Large scale retail, e. Public authorities, f. All,

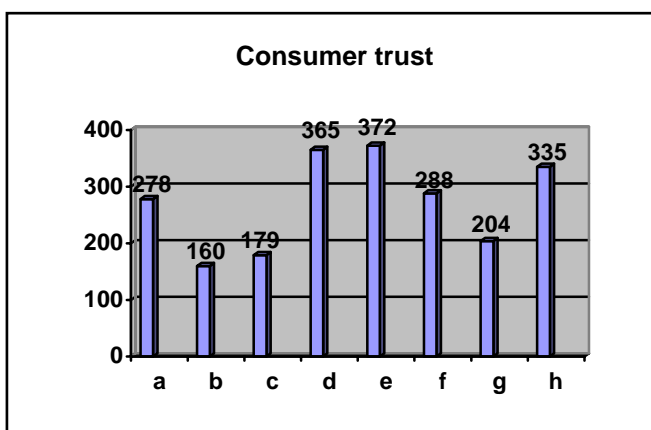


Grafico 12: a. USL (Health units), b. Province authorities, c. Region authorities, d. Ministry of Agriculture, e. Ministry of Health, f. Producers' Association, g. Firms, h. Consumers' Association,

These results do not appear to depend on a particular type of family, e.g. with children, or on the level of education, age or size of town or village. Interviewees opted not to supply information on their income, so this is not shown.

They show that public opinion is uncertain towards biotechnology, on the whole against, particularly GM food. There are people who are well disposed even though they have some reservations, while others are completely against. This is based on a lack of information, or a lack of easy to understand and impartial information, in most cases. Consumers are influenced without having a clear picture of the current situation. Few for example of developments in GM pharmaceuticals or vaccines.

Consumer attitude is thus similar to that in other EU countries although it has a different basis. It is significantly different from consumer attitude in countries such as the US, Canada and Japan, where GM crops are widespread and used in food production even though a large proportion of the population is against it.

In my opinion GMO for food constitute an important tool for overcoming socio-economic and environmental problems. But before they can be used, time has to be allowed for experimentation and assessment of even the smallest risk factor.

Conclusion

Interviewees show that opinions on GM are slowly changing. Comparison of 2005 with 2002 findings shows that the market is starting to segment between consumers indifferent and willing to buy GM foods, while a niche of consumers decidedly against GM also survives.

The right of these consumers to find completely GM free food today is not protected except by organically produced goods subject to EEC Regulation 2092/91

The supply chains' use of voluntary labelling such as GMO-free (FEDERALIMENTARE, 2004), is justified by market demand. But the legal requirement exists for only two types of product, GM foods and normal foods, which may also contain GM. And as much more crop growing area is now going over to GM in producer countries, voluntary labelling will shortly involve a price premium. Who will really pay this price premium, and how many food companies and distribution chains will continue to claim that their range of products is GM free?

So an important avenue for research is to assess GM free product positioning, checking the price of these products against normal products and comparing them against the supply chain costs and the benefits of labelling, in line with suggestions made by Caswell and Teisl (2002).

Today the Italian supply chain appears to be in a stance 'waiting' for scientific opinion. But if GM foods are permitted, what are producers waiting for except consumer opening to GM? Potential GM food purchasers, more open to innovation and less worried than others, are a segment of the potential market which if duly reassured and encouraged could become GM food purchasers. And it is in order not to disappoint this segment of the market that non-multinational biotech companies, free from the monopoly of information and output of the multinationals, are currently studying GMO, the coexistence of transgenic and conventional crops, environmental contamination etc.,

From the scientific point of view, developments need to go in two directions: research and dissemination. It is indispensable for research to continue in universities, firms and public institutions. At the same time consumers need to be educated on scientific issues by public institutions, from the government downwards, and by universities. And it is fundamental for inspection bodies to be further developed so that analysis methods and protocols can become reference points for the sector.

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NON TECHNICAL ABSTRACT

Recently the two EU Regulations No. 1829 and 1830 governing trade of GM products on the European market came into force. They discipline permits, labelling and traceability of GM in raw materials, foods and animal feedstuff.

And in Italy a few months ago, after a long debate between the government and regional authorities on who was responsible for legislation in this field, a law on the coexistence of of transgenic, conventional and organic farming was passed.

Worldwide, there is an exponential increase every year in the area given to GM crops, especially in countries where large, highly mechanised agricultural firms dominate the sector, such as the US and Argentina, as well as in countries with very low labour costs such as Brazil and China. The report “Global Status of commercialized biotech/GM crops: 2004” published by the International Service for the Acquisition of Agri-biotech Applications (ISAAA) estimates that the total surface given over to approved GM crops is now 81.0 million hectares, a 20% increase compared to 2003.

But in Europe public opinion is overall sceptical towards GM crops, especially for human consumption. The memory of the BSE crisis persists, and consumers no longer appear to trust anyone, and require increasingly strict controls and accurate analyses. A fundamental move for European regulation was to introduce compulsory labelling for GM products and lower the threshold level for accidental GM contamination to 0.9% for permitted GMOs and 0.5% for non-permitted substances. This was a first move towards citizens’ right to information, underlying the right to choose what type of food to put on the table.

Overall, the rejection of GM food is strong, and holds for the majority even at lower prices than conventional food and considering the high degree of uncertainty. In the near future, in Italy a growing demand for GM food should not be expected, as long as the uncertainty and the lack of information prevails.