CHAPTER-5
FINDINGS AND OBSERVATIONS
CONCLUSIONS AND SUGGESTIONS

This chapter presents the findings and observations, conclusions and suggestions on the basis of the research study. Researcher deduced by studying & analyzing the secondary data that globally consumers from USA and UK are relatively more aware and conscious about the food they consume and as well as are proactive and aware of the consumer rights in comparison to consumers in India – Mumbai. It was also observed that in USA and UK a lot of material was available to consumers about GM F’s and genetic modification, as a result of which the consumers in USA and UK were very well informed and aware of G M F’s and genetic modification as such were making informed choices. It was further observed that consumers in US and UK were health conscious and concerned about the ingredients and nutrition factor of the food they consumed in contrast to Respondents /consumers in Mumbai, thus the researcher wanted to study and analyze respondents’ awareness level and knowledge about GM F’s, their buying behavior and the awareness of their rights.

5.1 FINDINGS
1. The study reveals that age of respondent had no correlation with their awareness of their consumer rights.
2. The study shows that out of the 509 respondents surveyed 371 respondent were aware of their consumer rights.
3. It was found that out of the 371 respondents surveyed who were aware of their consumer rights only 123 respondents were exercising their rights.
4. It was seen that gender of the consumer had a marginal relationship with the awareness level and knowledge of consumer rights.
5. The study further reveals that whilst male respondents are more aware of their consumer rights, female respondents are more aware/ conscious of the foods they consume.
6. The study shows that there is no relation between educational qualification and respondents’ awareness of their consumer rights.
7. The study reveals that there was no relation between profession of the respondent and their level of awareness of and knowledge and consciousness of consumer rights.

8. The findings show that although 49% of the respondents’ surveyed in Mumbai were aware of their rights, not many of them were exercising their rights.

9. The research conducted as per the secondary data reveals that 70% consumers surveyed in USA were aware of their consumer rights in comparison 75% of consumers surveyed in UK were aware of their consumer rights whilst 26.7% of consumers in Mumbai survey were aware of their consumer rights.

10. It further shows that consumers in USA and UK who were aware of their consumer rights all exercised their rights whilst only 33% of the consumers in Mumbai who were aware of their consumer rights, exercised their rights.

11. The data reveals that 47% of the consumers had subjective knowledge about G.M Foods, whilst 49% of consumers had objective knowledge about GM Foods in USA whilst 63% of consumers surveyed in UK had subjective knowledge about GM Foods while 67% of consumers had objective knowledge about GM Foods. In India (Mumbai) 24% of the consumers surveyed in Mumbai had subjective knowledge about GM Foods while 21% of the consumers had objective knowledge about GM Foods in Mumbai.

12. The research further reveals that only 40% of consumers in USA had trust and believed in GM Institutions while only 22% of the consumers in UK had trust and believed in GM Institutions whilst reveals that only 10% of the 509 consumers in Mumbai had trust and believe in GM Institutions.

13. The research reveals that only 45% of consumers in USA were aware of the contents of GMF’s whilst 70% of the consumers in UK were aware of the contents of GMF’s whilst reveals that only 9% of 509 respondents in Mumbai were aware of the contents of GM Foods.

14. The data reveals that only 66% of consumers in USA were generally aware about GM Foods whilst 71% of the consumers in UK were generally aware of GM Foods whilst reveals that 24% of the 509 consumers surveyed in Mumbai had general awareness about GM Foods.

15. The research further reveals that 60% of the consumers in USA preferred labelling of GMF’s whilst 80% of the consumers in UK preferred Labelling of GM Foods.
GMF’s whilst reveals that 10% consumers out of the 509 surveyed in Mumbai preferred labelling of GM Foods.

16. The data further reveals that 75 % of consumers in USA believed that creating GM Foods was playing God and need to comply with all the rules and regulations as well as the compliances in connection with environment whilst 85 % of consumers in UK were of the believe that normative compliance should be complied with whilst survey reveals that only 15 % of the 509 consumers surveyed in Mumbai were of the belief that normative compliance to be complied with.

17. The data depicts that 52 % of consumers in USA were willing to buy GM Foods and consume whilst only 28 % of consumers in UK were willing to buy GM Foods and consume and survey reveals that only 17 % of the 509 consumers surveyed in Mumbai were willing to buy GMFs.

18. The study reveals that only 23 % of consumers in USA were willing to pay a premium for GM F’s whilst only 13 % of consumers in UK were willing to pay a premium for GMF’s whilst survey reveals that only 15 % of the 509 respondents’ surveyed in Mumbai were willing to pay a premium for GM Foods.

19. The study further reveals that only 22 % of consumers in UK trust in GM Institutes, are ready to take action for violation of their rights- pro-active people, whilst 40% consumers in USA trust in GM Institutes, FDA, reveals that only 10 % of respondents in Mumbai trust in GM Institutes and FDA.

20. The research also uncovered that out of the 509 respondents 60 % respondents are unaware have no knowledge & information about GM Foods, 30 % of respondents are aware of and have some knowledge and information about GM F’s whilst 10% of respondents’ are unaware and unconcerned.

21. The research unearths that if the GMF’s claimed to be extra nutritional or having more health benefits the respondents are likely pay a premium.

22. It further reveals that there is a very low level of knowledge about GM foods among respondents and hence there is a very low level of perception about the actual/ real perception of their risks or health benefits.

5.2 OBSERVATIONS

1. The study reveals that the more knowledgeable respondents are about GM foods the less likely they are to buy GM Foods.
2. It was seen that when foods are sold claiming health benefits/nutritional benefits, consumers purchase them even at a premium, although they are unaware if the foods are GM/GE.

3. Married respondents with children were more particular and conscious of the foods they consumed as compared to single as well as married respondents without children.

4. In India respondents have little or no knowledge about GMF’s and therefore their willingness to buy is dependent on their trust they have in Government institutions that certify them or approve them or when it is promoted that consumers/respondents would have additional health/nutritional benefits by the consumption of GM foods.

5. It was noted that frequency of food labels is independent of respondents exercising their rights.

6. It further indicates reveals that perceived risks have a more significant impact on consumer attitudes on GM foods than perceived benefits.

7. It is observed that consumer who consider GMF’s to be unethical, and those who prefer the labeling of genetically modified foods, are more likely to be uncertain about purchasing them.

8. It is further observed that older consumers are less inclined to learn about new technology, and they are more risk averse to the food safety issue than younger consumers. It is deduced that perceived benefits and risks have positive and negative effects on consumers’ attitudes, respectively and perceived risks have a more significant impact on consumer attitudes on GM foods than perceived benefits.

9. It is further inferred that the more knowledge consumers had about GM foods less likely they are to buy even with nutritional benefits.

10. The Food Safety and Standards Authority of India (FSSA) authority needs to take an initiative to formulate legal rules for GM contamination and have in effect laws to identify and penalise offenders related to GM contamination. Instantaneous steps should be taken by the authority to put a check on the growth of GM contamination as it is not only threat to the biodiversity and environment but also food security of the consumers.
5.3 **CONCLUSIONS**

On the basis of the findings, it is deduced that consumers in UK and USA formulate their own perceptions and beliefs about GM Foods, on the basis of the volume of information made available to them about G.M Foods, risk and benefits about G. M foods, stringent laws concerning disclosures of contents, quality, quantity, potency, consumer rights thereby leading to a high level of protection of consumers. In comparison there is very little information available to consumers India- in Mumbai about G.M Foods, risk / benefits, about their rights as consumers which makes the consumers very vulnerable with little, to no protection.

On the basis of the findings it is inferred that age, gender, educational qualification, profession has a very negligible effect, one can safely say, is independent of awareness of consumers of their rights, information, knowledge and awareness of G. M Foods, risk/ benefits about GMF’s. It is further inferred that awareness of consumers of their rights, knowledge and awareness of GMF’s is independent of them exercising their rights.

It is observed that marital status does affect consumers purchasing behavior towards GMF’s, and awareness of consumer rights. Married consumers with children were found to be more conscious and aware of their rights. It is observed from the research that respondents with children are more conscious about the food they consume and are not opting for GMF’s even if claimed to have additional nutrient benefits.

It is further inferred that consumers who believe GMF’s are not dangerous for human consumption, and those who perceive some benefits of biotechnology to society, are more likely to purchase genetically modified foods. It is thus assumed that ethical issues, fear about the long - term effects of releasing risky, unforeseen GMF’s into diets, concern about adverse effects on wildlife and the environment and preference for G. M labeling, are also important factors that affect a consumer’s decision not to buy genetically modified foods.
It is further inferred that consumers in a small percentage believe that GMF’s lowers production cost. It is further assumed that consumers in Mumbai- India have high level of trust in government institutions/ G.E Institutions more so as there is very little information, knowledge and awareness about GM foods, risk / benefits of G.M Foods available to the consumers.

It is further deduced that morality influences purchase intention as a direct determinant, and is negatively related to willingness to buy GMF’s.

It is further assumed that perceived benefits and risks of GMF’s are negatively correlated, and morality is the primary direct determinant of purchase intentions of GMF’s.

It is determined that due to the low level of availability of information, knowledge and awareness of Consumers about G.MF’s, risk / benefits of GMF’s the protection of consumers is very low to negligible making consumers very vulnerable to false advertisements, publicity, branding, lack of transparency and unscrupulous producers, manufacturers and retailers.

5.4 SUGGESTIONS AND SCOPE FOR FURTHER RESEARCH
This chapter presents some of the suggestions given by the researcher based on the findings of the Study. It also provides scope for further research.

Suggestions
Dissemination of information
To promote general awareness about food safety and food standards by providing access to current and reliable information to the staff, research scholars and subject specialists of the organizations and to create information network across the country so that the public, consumers, panchayat etc receive rapid, reliable and objective information about food safety and issues of concern.
Consumers Right to Know-Limited Labelling is not an Answer
GMF’s should be sold with the label, so a consumer will know and can decide accordingly, his preference to eat traditional food or GMF’s. Every consumer has a right to choose safe food and avoid GMF’s for various reasons, primarily health concerns, ethics, and environmental sustainability.

Hence, it should be the legal responsibility of food businesses to be aware of this right of the consumer, and act towards providing this choice to the consumers. There is a need for massive awareness campaign and information dissemination among the consumers about the existing legal remedies available to an aggrieved consumer.

Legal Acceptance of Safety-Assessment Framework- Substantial Equivalence
The current regulatory regime does not mandate independent tests and in fact, it is upon the applicant to conduct tests in order to prove the safety of the product. It is GEAC which is supposed to authenticate these tests. The entire system needs to be overhauled. Either in case of independent tests conducted by the applicant, independent third party supervision should be required to verify the tests or the tests should be conducted by the independent laboratories. In both the cases GEAC should be the final authority to validate the tests and therefore, needs to be equipped with the necessary resources to consider this authorization.

Legal Enforcement of Precautionary Principle
The precautionary principle should be the cornerstone of the biotechnology law and policy in India. It ensures the adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifically focusing on trans-boundary movements.

Legal Control over Research on GM Foods
Total Transparency on the research of GM foods is an immediate need of the time. Concerned legal authorities made in India should have full control on research and publications on GMF’s.
In UK, the Agriculture and Food Research Council was replaced by the Biotechnology and Biological Science Research Council (BBSRC), an organization which is fully responsible for future development and expansion of genetic engineering (Anderson, 2000).

Establishment of GE Free Zones
Another way in which law can protect the interest of consumers is to develop ‘GE Free Zones’. The governments of Austria and Luxemburg in 1997 established such zones legally by banning Novartis’ insect and herbicide resistance maize (Meister, 1999) Hence, the law in India should also establish such zones so that consumers should at least have an option to decide which kind of food they want to consume.

Encouragement to Organic and Ecological Farming
The law in India should encourage organic and ecological farming in the country by giving subsidies to the farmers. This kind of farming is an ecologically-based farming method that avoids the use of synthetic fertilizers and pesticides (Ronald, 2008). The law making authorities and other bodies regulating food stuffs in the country should take stringent steps to augment and push organic foods because they are not only better for consumers’ health but will preserve environment and is an answer to the escalating agricultural problems.

Creation of Global and National Organization
There is an urgent need to create an international organization which will monitor around the world all research made on the GMF’s. This organization will allow or disallow, certify the GMF’s. GMF’s should also go through the same strict procedure, which is used when new medicine is made or developed by medicine companies. The global organization can also have a control on the price of GMF’s and seeds. So that Monsanto and Syngeta like companies do not challenge food autonomy around the world.
Consumer Education
Target for imparting knowledge and creating awareness should be people who not only influence the primary buyers but also the farmers, school children, people from all strata’s of life educated / uneducated - A two-pronged approach of creating public awareness on basic nutrition as well as on various components of food labels on the one hand and experimenting with newer ways of information display to make food labels consumer-friendly on the other ought to be taken up. The current format of food labels is text-intensive and is inherently biased toward literate consumers. Moreover, all educated consumers need not necessarily be nutrition literate to make sense of text-intensive information display. Therefore, symbol-based information display could be of some help in increasing label use among consumer. Considering that school-based education could help build label reading skills among these young consumers, curricula can be a point of intervention for educating them. Curriculum developers in all regions across India could consider inclusion of reading food labels as part of nutrition education in future revision of the school curricula.

Observance and Diligence of Laws
Law relating to labeling of GMF’s in India is relatively new and needs a lot of due diligence and observance.

Repeat Offenders- Criminal Proceedings
Penalty for non compliance / breach of law should be made more stringent and punishable including suspension of license.
In general, criminal prosecutions should be made mandatory for repeat offenders of food adulteration/ GMF’s non disclosure, who cannot be deterred by other instruments, as well as for those whose conduct is regarded as so repugnant morally as to justify such proceedings being taken, irrespective of deterrence considerations. Available penalties should range from
1. Fines/financial penalties.
2. Enforceable undertaking for future compliance or “cease offence” order or prohibition order or injunction.
3. Confiscation of goods or disgorgement of profits.
4. Imprisonment.
5. Reparation of harm/loss caused.
6. Cease trading order or removal/suspension of trading license.
7. Publicity ("name and shame").

**Stop at Port Of Entry**

Government Officials at Port of Imports should pay more attention to the goods being imported and restrictions should be made applicable at the port of entry rather than trying to deal with the issue after the entry into the Country which is near to impossible. There should be a Food Safety Protocol which covers the import, export, production, processing, marketing and consumption of GM crops.

**Disclosure of the Contents**

Legal measures for consumer safety and consumer awareness must be uniform and transparent and disclosure of the contents should be mandatory as stated below:

1. Foods and food ingredients containing or consisting of GM organisms
2. Foods and food ingredients produced from, but not containing, GM organisms
3. Foods and food ingredients with a new or intentionally modified primary molecular structure
4. Foods and food ingredients consisting of or isolated from micro-organisms, fungi or algae
5. Foods and food ingredients consisting of or isolated from plants and food ingredients isolated from animals, except for foods and food ingredients obtained by traditional propagating or breeding practices and having a history of safe food use;
6. Foods and food ingredients to which has been applied a production process not currently used, where that process gives rise to significant changes in the composition or structure of the foods or food ingredients which affect their nutritional value, metabolism or level of undesirable substances.

**Advertisers should be made accountable for false advertisements**

As advertising has the potential to persuade people into commercial transactions/purchasing foods etc that they might otherwise avoid many governments around the
world use regulations to control false, deceptive or misleading advertising. "Truth" refers to essentially the same concept, that customers have the right to know what they are buying, and that all necessary information should be on the label.

**Curriculum subject**

Consumer education and awareness should be made a subject in the curriculum in schools and colleges- Schools need to educate children on the purpose of advertising. They must train them to differentiate between justified right, and appropriate advertising. There is an immediate need to include consumer education as a subject from primary standards till college students. Children should be taught to distinguish between need and wants, wise buying and frivolous buying.

**Three Rs**

People in particular children should be taught to understand the alternatives of conserving and saving rather than buying and consuming.- The concept of reduce, reuse and recycle should be taught in schools.

**Internet**

Web-sites should be created and made operational, in this time of electronic boom, providing information on statutes, subsidiary legislation and decided cases pertaining to consumer protection of the countries Critical analyses of laws and highlights of innovative approaches and updates on developments in consumer law including amendments and case law and updates on alternative redress mechanisms. Material on GMF’s, field test, results etc should be made available on the public domain.

**Regulatory Body**

Legal measures for consumer safety and consumer awareness must be uniform, transparent, costs effective and speedy and easy. Multiple regulatory body/s should be made all over the country for spreading awareness about GMF’s, Crops, and biotechnology amongst customers / consumers. The regulatory body should be oriented towards the well being, health of the consumer/customer.
Appropriate policy Framework
The political and institutional context of biotechnology will therefore inevitably play a significant role in what and how much the technology can achieve in practice. Policies should be framed for the protection of naturally grown crops and the assessment of the risk of contamination of the naturally grown crop with G.M. Crops

Ministry of Agriculture- Extended Role
The Government needs to devise a policy on segregation, traceability and labeling of products, which would arise on commercial release of genetically modified crops. The Ministry of Agriculture should oversee the commercial release of genetically modified crops (as opposed to the GEAC under the Ministry of Environment and Forests). The field trials for assessing ‘Value for Cultivation and Use’ (VCU) conducted by the Indian Council for Agricultural Research (ICAR)’s are deemed critical for any commercial release. Post-release monitoring and vigilance of genetically modified crops would also be the responsibility of the Ministry of Agriculture.

Scope for further research
1. A separate study can be taken which is focused entirely on the risk / benefits of GMF’s in India.
2. A study on co-existence of Genetically Modified Crops with Natural / Organic Crops
3. A study of the risk management of GMF’s in India
4. Future research can also be done which is focused on study of effects of Bio-Technology on Consumers
5. Future research on whether Genetic Engineering is the need of the hour
6. On ways and means of increasing the productivity of Natural farming
7. Study to find innovative means for sustainable farming.