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ARRANGEMENTS FOR SPS MEASURES AND AWARENESS OF FOOD SAFETY ISSUES AMONG PRODUCERS AND CONSUMERS IN GHANA

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This paper examines arrangements for implementing the sanitary and phyto-sanitary (SPS) measures of the World Trade Organisation (WTO) as well as the degree of awareness of the emerging global issues on food safety among producers and consumers in Ghana. The standards and procedures set by the IPPC, OIE and CAC were used in the evaluation. This included an examination of the regulatory environment provided by the Food and Drugs Board (FDB) and the Ghana Standards Board (GSB) as well as the pre-requisite programmes of food companies in Ghana for producing safe foods. Though Ghana has started amending existing legislations, regulations and institutional functions to address disparities emerging between the international standards and national standards, further reforms are required to meet the SPS standards; in particular, investment is needed from government to address the deficiencies currently existing in the SPS institutions. Both the FDB and GSB are stepping up their efforts to sensitise consumers and ensure maximum compliance of food producers to new international standards. Whilst some food companies' managers appear to appreciate the need to produce safe and quality foods, lack of capital to improve pre-requisite programmes for safe food production is a major constraint. Unfortunately, poor consumer pressure has not helped to keep up the momentum of change among the producers.

1 Introduction

Ghana's agricultural activity alone employs between 60 to 70 per cent of the workforce producing about 36 per cent of Gross Domestic Product (GDP). Most of the agricultural produce both for the domestic and export market is in the raw and unprocessed forms. However, over the years, the strategies of the Government of Ghana (GOG) have been to encourage value addition to these agricultural produce and also reduce the importation of goods. In response to these strategies as well as to increasing change in food habits as a result of increasing number of working couples, there has been a tremendous growth in the number of micro-small-medium scale (MSM) food processing companies in Ghana. Most of these companies are producing a number of essential convenience food products targeted for the growing working population in the urban towns as well as for export. In spite of its potential to the industrial growth, and therefore, the economy of Ghana, these companies

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are facing a number of challenges and problems, most of which are related to the non-competitive nature of their products.

The potential for growth and their ability to take advantage of the increasingly liberalised world market opportunities, being offered through the aegis of WTO, is, therefore, very much in doubt. The situation is getting worse because of the new development in international trade with regard to food safety as a new non-tariff barrier to trade.

The Uruguay Rounds Agreement of multilateral trade negotiations led to the introduction of the Sanitary and Phyto-Sanitary (SPS) Agreement of the WTO. The main objective of the SPS agreement is to protect consumers, animals' and plants' health in all WTO member countries. The SPS agreement, therefore, obliges all developing countries to upgrade their national food safety programmes. The improved food safety programme is to assure consumers that products from food factories, either domestically or internationally produced, are safe. The SPS measures include all laws, decrees, regulations, requirements and procedures related to end product criteria, processes and production procedures, testing, inspection, certification and approval procedures quarantine treatments (associated with animal and plant transport and the materials required for their transport), statistical methods, sampling procedures, methods for risk assessment, and packaging and labelling.

Then in 1993, the European Union (EU) introduced the food hygiene directive (93/43/EEC) which specified common food hygiene rules across the continent. This directive obliges food businesses in the European Union to implement food safety management systems that are based on the principles of Hazard Analysis and Critical Control Points (HACCP). Though non-EU suppliers of food products are not legally obliged to comply directly, they are nevertheless affected by the new rule. This is because from the marketing point of view, all non-EU exporters of food products to the EU are in a way obliged to introduce food management systems based on the HACCP principles.

Clearly, as these MSM food companies scale up their production and want to enter the international trade, they will come up against these developments. The level of preparedness of these food companies to effect the necessary changes to their food safety and quality management systems will depend very much on attitudes and their appreciation of emerging issues on food safety in the international market. Using selected small-scale food companies in Ghana as a proxy, a study was carried out to investigate existing practices to ensuring safety of food products as well as quality issues and identify key drivers responsible for changing these. It was also to help evaluate management perceptions; prioritisation and decision-making related to food quality and safety. It is important to note that the implementation of food safety and quality management systems in any food company depends not only on the existing pre-requisite programmes but also on the degree of pressure exerted by consumers on the food company. Thus, consumers attitude to food safety and quality issues were also assessed. It is hoped that findings from the survey would thus provide the basis to recommend appropriate and strategic interventions that could be instituted to improve the sector.

2 Methodology

The effectiveness of the roles of the two main national regulatory bodies in Ghana, the Food and Drugs Board (FDB) and the Ghana Standards Board (GSB), was assessed from the standpoint on how food companies perceived and complied with the legal requirements of these two bodies. This was done through secondary data as well as through interviews on relevant food safety issues with officials of the two bodies and the managers of the selected food companies.

The assessment of food safety management systems of the 13 selected food companies was done through auditing of their pre-requisite programmes by using a questionnaire based on the Codex Alimentarius Basic Guidelines for implementing Good Manufacturing Practices (GMPs) and Good Hygienic Practices (GHPs). These are the main pre-requisites for implementing food safety management systems based on HACCP principles.

A total of seventy seven consumers were surveyed focusing on educational, cultural and socio-economic factors that may affect attitudes to food safety and quality. The questionnaire tried to tease out from consumers' key safety factors influencing purchase of specific food products like cassava, maize and fruit-based products. Other issues investigated through the questionnaire were consumers' recognition of indices for safe and good quality food product, willingness of consumer to pay higher price for safer, better quality products and how sensitive consumers were to safety/quality parameters for certain types of products.

There were two categories of respondents. The first consumers were under-graduate and graduate students from the Department of Nutrition and Food Science of the University of Ghana and the second consumers were income earners who usually patronise supermarkets and traditional markets in Ghana.

Both questionnaires were administered in tandem. For purposes of this study, a small-scale company was defined as one with not more than thirty employees with a dedicated premises and branded products.

3 Findings and Discussions

3.1 The Regulatory Environment

FDB was established in 1997 to advise the Ministry of Health on and enforce the Food and Drugs Laws of Ghana, Legal Instrument 305 of 1992. The FDB is also to advice on measures for the protection of consumers. The FDB, is therefore, the legal authority which approves permission for a food product to be produced and sold in Ghana. Unfortunately, this particular function has not been well appreciated by most small-scale food manufacturers. This is because until the last five years, most food companies were obliged to register with the GSB and since taking over this role, the FDB has not been very effective in educating the public about these. Recently, however, the FDB has been organising a number of activities to sensitise the food manufacturing industry and consumers on its

mandate as well as on issues about food safety and quality. Some events carried out in recent times have been recounted here.

In June 2003, the first ever National Food Safety Week in Ghana (NFSWG), with the theme "*Safe Food for Good Health, a Responsibility of All*" was organised. Activities carried out during the course of the NFSWG included an official launching of the programme by the Vice- President of Ghana, a consumers' awareness float through the principal streets in Accra, a food safety quiz competition among Senior Secondary School (SSS) students in Ghana, a cleaning competition among street-food vendors in Accra and consumers' forum. Subsequently, essay and radio competitions on Food Safety were organised among the SSS students. The radio competition was broadcast live on the national radio. Since then, the FDB has organised two more NFSWG.

In September 2003, four television documentaries on food safety which sought to promote good hygienic practices from the farm to the consumer were developed. These documentaries were targeted at consumers to help them understand the relationship between disease and consumption of unsafe foods as well as sensitise them on their role in ensuring safe food production and delivery in Ghana. The titles of the documentaries were:

"From Farm to Market to the Table, (duration 15 mins)", "Food Safety Issues in Ghana- Relationship between Diseases and Unsafe foods (duration 15 mins)", "Improving the Competitiveness of Food Manufacturing Companies in Ghana (duration 15 mins)", and "Ensuring a Safe Food Supply- What the Consumer Should Know (duration 12 mins)".

Between the months of March and May 2004, these documentaries were shown on TV3 television, one of the private television stations in Ghana. It has had a tremendous effect on consumer education in Ghana.

Between January and July 2004, the FDB undertook a number of activities aimed at supporting 16 selected food processing companies in Ghana to improve upon their operations in order to make their products competitive for the export market. The selected food companies were either already exporting their finished products or had the potential to export their products. A needs assessment exercise was undertaken for each company. The state of pre-requisite programmes for implementing food safety management systems based on the HACCP principles was assessed. In addition, the strengths, weaknesses, opportunities and threats in entering the exporting market of each product were examined. Action plans to improve upon their processing operations and safety of their products were drawn up. Overall, the main non-compliances identified were mostly in the areas of poor documentation, inadequate training, absence of pest control and proper assurance systems. Others were the rather poor state of personal hygiene of factory operatives, poor state and conditions of processing equipment and machinery, poor layout, arrangement of equipment, fabrication and structure, all pre-disposing processing operations to cross-contamination.

The Ghana Standards Board (GSB) was established in 1967 to produce standards for all industrial products including food products. Its mandate includes helping the Ghanaian

food manufacturer produce high quality food not only for export but also for internal market. This is to promote standardisation in industry and commerce, ensure efficiency and development of food industry and promote standards in public and industrial welfare, health and safety.

Food products which have been produced according the GSB standards are given a product Certification Mark Scheme, which is represented by the GSB standard logo on food products sold in Ghana. This certificate compels all manufactured products to be assessed and registered with the Board before being offered for sale. The Board's examination and approval processes include factory inspection as well as compositional and safety checks on relevant products. However, in applying for a certificate to sell a food product, the first requirement is that the company must be registered with the Registrar General Office of Ghana. Certification is done according to the standards available for the products. For new Ghanaian food products whose standards have not yet been developed, the GSB carries a number of mandatory tests referred to as the critical quality parameters like the microbiological status and critical biochemical parameters that affect nutrition and shelf life stability.

To sell any food product in Ghana, one is required to register with the FDB. The FDB demands certificate of analysis from the entrepreneur before certifying the product. This is renewed every after three years. The FDB staff advises on the required analysis. Standards are adapted from ISO standards. In cases where no standard exists for a product, it is developed by GSB. There are other contending issues. One of these relates to the overlapping roles of FDB and GSB in the area of food product certification and inspection. It is one big area of concern to most entrepreneurs. The Legislative instrument, LI 305B 1992, setting out the Ghana Food and Drug Law, which sets out the mandates of the Food and Drugs Board envisages that the FDB plays its role as the lead organisation to coordinate all food safety programmes in the Ghana. In executing this role, the FDB is expected to work with other Ministries' Departments and Agencies (MDAs) such as the Ghana Standards Board (GSB), the Food Research Institute (FRI), the Ministry of Food and Agriculture (MoFA), Ministry of Environment and Science (MES), Ministry of Local Government and Rural Development (MLGRG) and the Ghana Export Promotion Council (GEPC) and the Ministry of Trade and Industries. Unfortunately, the coordinating role of the FDB has not been well streamlined. The FDB carries out occasional factory inspection/surveillance exercises, just as the GSB.

This is because food products produced according to the GSB standards are given a Product Certification Mark Scheme (PCMS), which is represented by the GSB Standard Logo on food products sold in Ghana. Continuous use of this PCMS requires that a food company must periodically allow GSB officials to carry out follow-up inspection of production site to ascertain that the company is producing according to the required standards. Unfortunately, officials of the FDB, according to the Food and Drug Law of Ghana, are also obliged to undertake periodic visits to same production sites to inspect to assure themselves that food produced will be safe. This confusion has resulted in a number of companies flouting the regulations, by unauthorised use of the GSB's PCMS. Added to

this is the problem that the two national bodies are too centralised; at best, with only a few zonal offices in some regions in Ghana

Another major problem relates to the enforcement of the Ghana Food and Drug Law. The law obliges the FDB to close down any food manufacturing company whose operations and/or products, in the view of the FDB, are inimical to public health. In pursuing this responsibility, the FDB has, in recent time, been dragged to the courts by a number of food companies. Usually, judgments and/or sentences handed down to erring companies do not appear to be a sufficient deterrent. There is a need for legal officers with some background in the food laws to assist the judges in their work. There is an urgent need to tighten the Ghana Food and Drug Law, as well as strengthen the arm of the FDB in the pursuit of its tasks.

The level of technical manpower or technical expertise at both the FDB and GSB is rather low. Most of the staff members at FDB are young graduates without much experience. The rate of staff turnover is also quite high in both organisations.

3.2 Attitudes of Food Companies to Food Safety and Quality Issues

The non-compliances identified were mostly in the areas of poor documentation, inadequate training of personnel, absence of pest control systems, absence of proper quality assurance systems and, in a few cases, the poor state and conditions of processing equipment, layout and arrangements. The poor structures and fabrication of the factories pre-disposes the processing operations in most of the companies to cross-contamination; thereby compromising the safety of their products. In many places, facilities for ensuring high personal standards of factory operatives and processing staff were woefully lacking.

On the balance, some of the Chief Executive Officers (CEOs) of the companies surveyed appear to appreciate the need to implement reasonably good pre-requisite programmes for producing safe and quality food products. These are mainly CEOs who have had some exposure to the current developments in the international trade arena regarding the increased demand for safer foods as a result of their participation in a number of seminars and workshops organised by FDB, GSB and FRI of the Council for Scientific and Industrial Research of Ghana.

In spite of this, there are still a number of food companies who have problems appreciating the role of safety. A number of factors can be attributed to this unfortunate development. Key among these is the limited technical background of the personnel in the food manufacturing industry. Of the thirteen companies visited, only five had CEOs with at least a university degree in biological sciences (food science, agriculture etc). In addition, most of the companies tend to employ low level staff for positions like the production manager. A number of them also do not have quality assurance officers. In most cases, the CEO performs double role of production manager as well as quality control assurance officer. Factory operatives are also not properly trained. When questioned about the low education level of processing staff, some CEOs indicated that they had tried training some

of the staff only to lose them to rival companies. In other cases, after the training, staff member resigned only to go and set up his/her own factory. There is, however, strong feelings that such companies find it difficult to either attract or retain well-qualified staff because of low pay. As a result of this, personal standards in relation to hygiene for most factory operatives are usually poor.

The second major problem from the survey is related to the lack of appreciation that the quality of raw materials greatly affects the quality and safety of final products. The survey did establish that raw materials for processing are obtained mainly from open market; the use of accredited suppliers is rather limited. One of the key pillars for implementing food safety management based on HACCP, according to the Codex Alimentarius Commission, is the issue about traceability. This is the ability of food companies to trace back the sources of raw materials to the actual farms where they were produced. The essence of this is that, in the event of any hazards occurring in the final products which cannot be found in/or attributed to the processing stage, it could be traced back to the source of raw materials. This can help control and/or prevent the recurrence of the hazards. Traceability helps in proper documentation and thus helps the companies to be accorded the privilege of due diligence in the event of any legal tussle over the safety of their food products.

3.3 Food Alerts of Ghanaian Food Products by the EU

Over the last few months, especially since October 2004, the EU has had the occasion to send a number of food safety alerts on some Ghanaian food products to all its members. These food alerts are mainly adulterants and/or high levels of aflatoxins found in palm oil, spices, sea food and groundnut pastes. Table 1 gives an extract of the recent reports sent to the FBD. In response to this, the FDB set up a committee to investigate the source of the adulteration and ensure the subsequent withdrawal of all such products from the local market as well as the export line. The Board acknowledged that the food alerts has had serious implications for traditional exports and the food security as well as the health and image of the country. Presently, any company that wants to export any of these items must seek approval from the FDB.

Table 1 indicates that the main adulterants have been sudan dyes. These have been added to help maintain the red colour usually associated the red palm oil and pepper. Sudan dyes can cause cancer, though there is no immediate threat of illness. People would not be at risk unless they have eaten the products regularly and over a long period of time. The colourings are not allowed to be added to food in the UK and the rest of the EU, Ghana's major trading partner.

These alerts clearly point to that fact quite a number of food companies in Ghana are still not fully aware that the use of adulterants is banned and have serious safety concerns in international trade. This unfortunate behaviour has resulted in the blacklisting of the red palm oil from Ghana and is seriously affecting the businesses of a number of companies.

3.4 Perception of Food Safety and Quality Issues among Ghanaian Consumers

This study revealed that most Ghanaian consumers were not fully aware of key safety and quality indicators. Unfortunately, because of the relatively small sample size of respondents, the effect of cultural and socio-economic factors on consumers' perception and appreciation of food safety issues could not be significantly assessed. Most consumers were, however, more sensitive to safety/quality of fish and fruit/vegetable products as compared to cassava/ maize products.

Figures 1 and 2 show that students appeared more informed about key safety and quality indices of both cassava and maize-based as well as fruit-based food products than the income earners. This observation is quite understandable given the fact this particular of students, through their training, have been sufficiently made aware of what factors contribute to safe foods. Over 83 per cent of students looked out for the presence of insects, expiry date and moldiness when buying cassava and maize based products, compared to about 73 per cent by income earners. Although most of the income earners also rated these indicators as the most looked out for indicators, their relative percentage was much lower compared to those of the students. More income earners were, however, critical of the "naturalness" and colour of a product. Other key indicators, which were considered, included nutritional value, attractiveness and integrity of the packaging. By "naturalness" most consumers meant food products without additives and preservatives.

For the fruit-based products, 86 per cent of students looked out for the presence of insects and/or absence of extraneous material and the expiry date. Almost all income earners (93 per cent) were careful about the expiry date. However, less than half (33 per cent) examined the contents for the presence of insects or other material. Again, more students were conscious of the naturalness/absence of preservatives and the colour as compared to income earners. Nearly, 84 per cent of students versus 68 per cent of income earners were conscious of bloating around the seams of canned fruit products while 78 per cent of students and 83 per cent of income earners examine the seals of bottled products to see if they are tampered with.

Again, majority of respondents, nearly 87 per cent, were prepared to pay higher premiums for safety. And the reasons given by the remaining 13 per cent for not being willing to pay higher premiums were stated as inability to pay more, due to low income levels and the perception that the MSM manufacturing companies could still deliver better quality products at the same price if they desired.

The study also established that students were more willing to pay either 10 or 20 per cent more for better safety/quality products than income earners. On the whole, almost equal percentages of students (42.9 per cent) and income earners (44.1 per cent) are willing to pay more for better products.

Although well over 80 per cent of respondents were in favour of premium pricing, only a small fraction was willing to pay a 40 per cent or more increase in premium. A greater

percentage of respondents found 10 per cent and 20 per cent increases in the prices acceptable with more students than income earners accepting these low percentage increases in premium. The high percentage increases in premium (40 per cent and above) was accepted by less than 10 per cent of both income earners and students. This could be attributed to the fact that although respondents expressed the desire for premium goods, they were probably not in a position to pay more for safe quality products as a result of their relatively low income levels.

Fish products and fruits/vegetables were rated highly by both students and income earners as foods that they are most safety/quality conscious of. Only a few respondents stated that they were conscious of the safety/quality of cassava and maize products. Most people are, therefore, sensitive to the quality/safety of fish and fruit/vegetable products as against cassava/maize products.

3.5 Unsafe Foods, Health and Cultural Issues

There are no direct official databases relating to the consumption of unsafe food with sickness in Ghana. However, some data on food-borne diseases related to the consumption of food either bought off the streets and/or from shops have been reported by Arde-Acquah (2000) as indicated by Table 2.

In Ghana, there are a number of cultural underpinnings to the concept and appreciation of food safety. In some parts of Ghana or among some tribes in Ghana, food preparations are such that safety appears to be compromised for nutritional value of the food. Regrettably, this study could not investigate this very much. However, it is widely known that majority of consumers in Ghana will not immediately relate food borne diseases to unsafe foods. This is one of the biggest challenges to the drive towards wiping up consumer awareness to poor practices which result in unsafe foods in Ghana. The situation is particularly in the street/informal food sub-sector.

Table 3 shows the results of a related study on 520 consumers of three popular informal (street) foods sold in Africa.

4 Conclusion and Recommendations

Based on the findings from the literature and surveys conducted, it can be concluded that the existing attitudes and practices of small-scale manufacturers to food safety issues leave much to be desired. This situation can be attributed to all or either of the following factors. These include poor enforcement of standards and legislation regarding food safety and quality issues by the key regulators, limited technical expertise of key staff in the MSM companies, lack of adequate quality and safety systems in the MSM companies and poor networking among the MSM companies. Other possible factors that one can adduced from the this study are inadequate awareness by consumers on key quality and safety indicators, food and poor farming systems, making it difficult for manufacturers to purchase their raw materials directly from known farming and/or marketing systems.

To address the existing situation, a number of recommendations are being made. These include reviewing the mandates of the FDB and GSB. This will help to clearly define their roles and avoid the present confusing over duplications that seem to be occurring. It will then help the two bodies to streamline food regulatory activities in Ghana in such a way that food companies will find it difficult to flout the regulations as is presently the case. This will help to ensure adequate regulation and monitoring of the MSM companies. There must be clear standards regarding food production and this should be communicated to all MSM and enforced by the regulatory bodies.

It is commendable that the FDB has, for some time now, been stepping up their campaign on food safety through various activities. It will be very important that this momentum is sustained. This would certainly be the surest way to ensuring of sensitising consumers to become effective lobbyist and pressure points on the activities of the MSM companies. Again, there will be the need to increase the number of workshops organised for food companies under the collaborating role of the FDB. These training workshops should be on cost-sharing basis, where food companies would be obliged to pay part of the training course and the rest perhaps the technical aspects borne by the Government of Ghana with or without some other donor agencies.

Finally, there is the need to create an effective network of MSM companies where they see themselves as partners in ensuring the production of safe and quality products. It will be worthwhile for the different food manufacturing sectors to come together and develop codes of practices for each sector. This would ensure that food products from each sector are produced according to agreed standards.

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Table 1 : Food Alerts on Food Products from Ghana Reported by the EU During the Last Few Months

Type of Food Product (Commodity)	Number of Times Reported	Type of Contaminant /Adulterant
Palm Oil	40	Sudan IV (range found from 1.3 to 110 mg/kg)
Groundnut Paste/Peanut Paste	7	Aflatoxin above permitted level of 290 mg/kg
Sea Food	2	Presence mercury, range 125- 2454 mg/kg
Spices (especially chilly powder)	5	Sudan I and IV. No analytical certificate

Source : Food and Drugs Board of Ghana, 2004.

Table 2 : Records of Food-borne Diseases at the Adabraka Hospital in Accra during 1995 – 2000

Disease	1995	1996	1997	1998	1999	2000 up to Half Year
Diarrhoea	2575	8217	10191	16189	17046	8883
Cholera	1028	276	249	225	2937	1007
Enteric Fever	744	981	1585	1128	1624	705
Infective Hepatitis	311	351	298	251	235	108
Intestinal Worms	7390	7565	5951	7447	6558	3086

Source: Arde-Acquah, 2000.

Table 3 : Improvements Indicated by Consumers to Some Local Popular Foods Sold by the Street Informal Food Vending Sector in Ghana

Improvement Required by Consumers	Kenkey	Fufu	Waakye	Total
Clean Surrounding	39.8	35.5	46.9	40.1
Cover Food	27.3	9.2	22.3	20.7
Improved Hygiene	10.9	13.1	13.8	12.3
Clean Clothes and Plates	10.5	7.8	9.2	9.4
Quality and Quantity of Food	7.1	7.8	3.8	6.5
Control Flies and Talk less when Pounding	5.4	4.6	4.6	5.0
Customer Service	0.0	6.5	3.8	3.0
Improved Safety	0.0	1.0	1.0	0.0

Source : Kwadzo et al (2004)

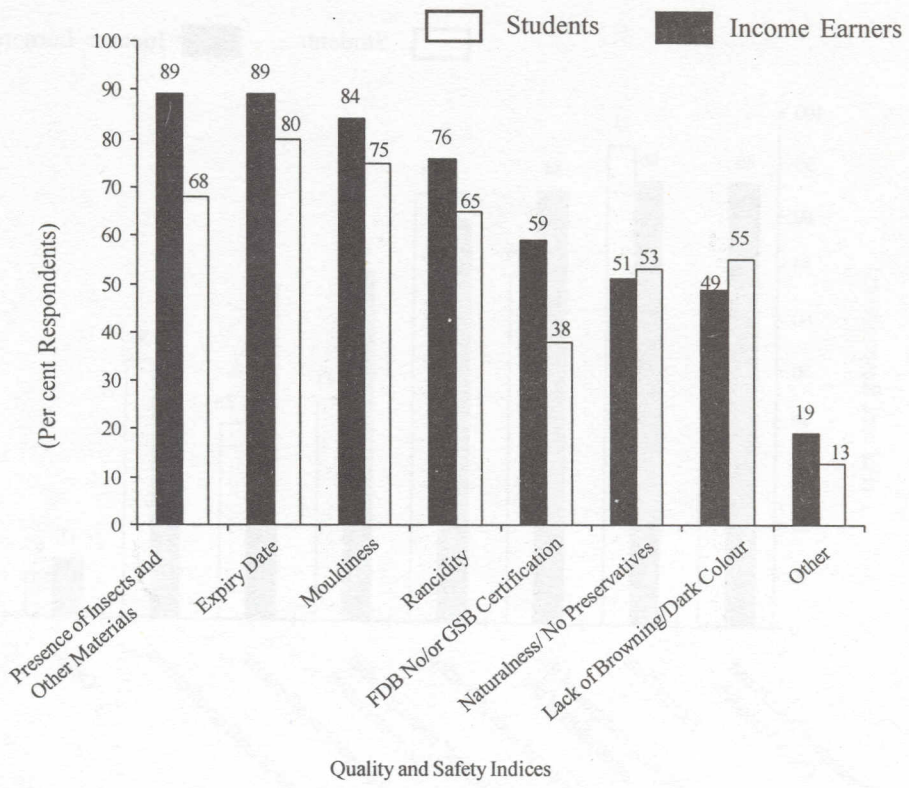

Fig. 1 : Quality and Safety Indicators Assessed by Consumers in Cassava and Maize-based Products

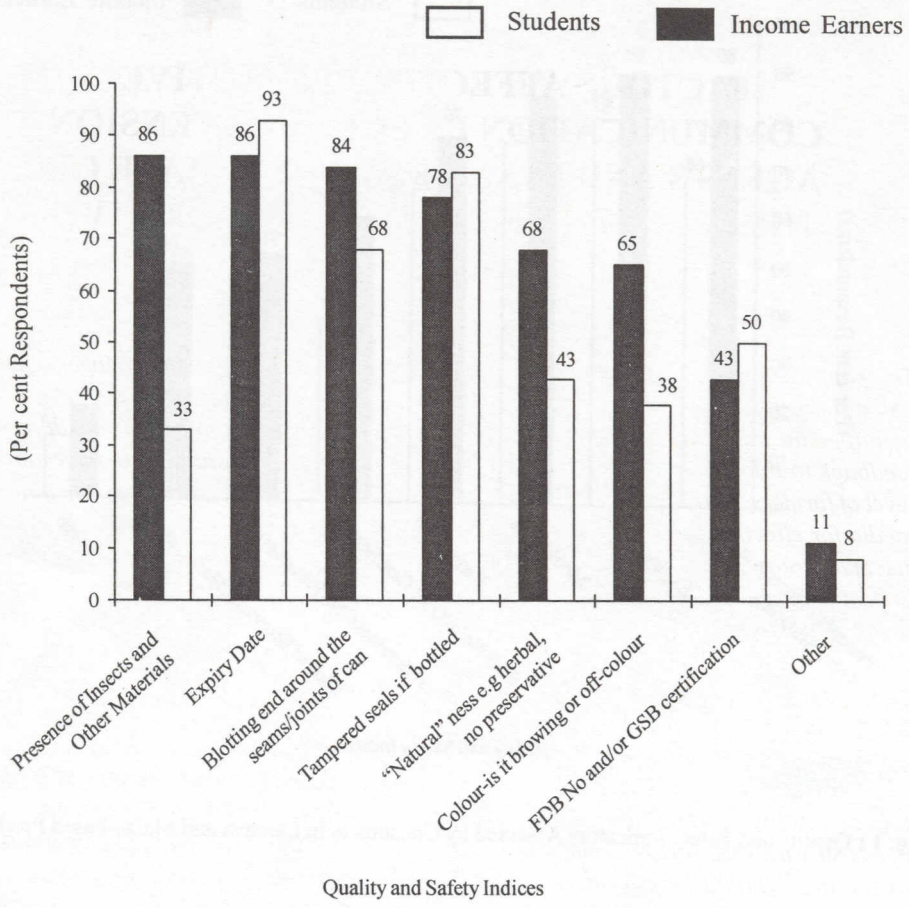

Fig. 2 : Quality and Safety Indicators Assessed by Consumers in Fruit-based Products