UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANISATION
(UNIDO)

INTEGRATED PROGRAM FOR GHANA: THE FOOD COMPONENT

US/GHA/00/081/17- 51

REPORT OF THE BASELINE AUDIT OF THE FOOD SAFETY AND QUALITY MANAGEMENT SYSTEMS OF PRO BIO FOODS COMPANY(A SMALL-SCALE FRUIT JUICE AND CHOCOLATE DRINKS COCONUT MAKING COMPANY) ACCRA, GHANA

PNT Johnson
N. C-Food Component

UNIDO
P.O. Box C1423
Accra, Ghana
Project Location: Accra Office

NOVEMBER 2002

Audit Team

Audit Team

The following carried out this audit of the food safety and quality management systems:

Dr P-N. T. Johnson	National Consultant- Food Component of Ghana IP
Mr. K Essel	Enforcement Officer, Factory Inspectorate Division Food and Drug Board,
Mrs Faustina Atupra	Scientific Officer, (Food Standards Development Division) -Ghana Standards Board
Mr Joseph Gayin	Research Scientist, (Food Technologist) Food Research Institute.

ACRONYMS

CEO	-	Chief Executive Officer
FAO	-	Food and Agricultural Organisation
FDB	-	Food and Drug Board
FIFO	-	First In First Out
FRI	-	Food Research Institute
GHP	-	Good Hygiene Practice
GMP	-	Good Manufacturing Practice
GSB	-	Ghana Standards Board
HACCP	-	Hazards Analysis Critical Control Points
IP	-	Integrated Programme
ISO	-	International Standards Organisation
MSMEs	-	Micro-, Small- and Medium Scale Enterprises
MS	-	Micro- and Small-Scale
OIE	-	Office of Epizootics
IPPC	-	International Plant Protection Convention
QA	-	Quality Assurance
SPS	-	Sanitary and Phyto-Sanitary
WHO	-	World Health Organisation
WTO	-	World Trade Organisation.

Table of Contents

1. Introduction

The United Nations Industrial Development Organisation in Ghana is presently undertaking a program aimed at assisting the Government of Ghana to accelerate the industrialisation of Ghana. This program is called the Integrated Programme (IP) and is titled "*Capacity Building for Growth Oriented and Competitive Micro-, Small-, and Medium-scale Enterprise (MSME) Development*". One of the key components of this program is referred to as the Food Component of the IP. The overall objective of this component is to improve the competitiveness of the MSMEs food manufacturing companies in Ghana.

Previous studies have established that the non-competitiveness of the products of most of these companies can be attributed to a number of factors. The most important being inconsistent quality and perceived safety problems associated with their products (Sefa-Dede, 2000 & Ayivi-Houedu,2000). Further studies during the inception phase of this project (Johnson, 2002) revealed that most of the companies had rather laxed quality assurance systems. In most companies, basic safety control measures like good manufacturing practices (GMP) and good hygiene practices (GHP) were not strictly adhered to.

The present food component of the IP aims at helping the MSMEs to start implementing the Hazard Analysis Critical Control Point, HACCP, as a food safety and quality management system. This is partly in response to the WTO SPS (Sanitary and Phyto-Sanitary) agreement that made food safety assurance as a requirement. The aim of the IP is also in response to the fact almost all food products imports into the European Union and the Americas require many companies to use HACCP as a safety and quality management system.

The main objective of the WTO SPS agreement is to ensure that countries apply measures to protect human, animal and plant health. Therefore food safety was made as a condition to access markets. The main objective of the SPS is to protect consumers', animals' and plants' health in all the WTO members. The SPS recognises the standards established by the Codex Alimentarius of the Joint WHO and FAO. It also recognises the standards of the OIE and the IPPC as the international references.

In all these, the HACCP system has become the main food safety assurance system that can be used as a sure weapon to fight food borne diseases. For a HACCP system to be in place, it is essential that each of the food companies in Ghana have comprehensive pre-requisites programmes (i.e GMPs, GHPs etc.) fully in place. As a follow up to the inception phase of this project therefore, baseline audits to assess the HACCP pre-requisites of a few selected MSMEs food-manufacturing companies in the Accra and Tema metropolis were carried out. This report covers the baseline audit of Pro-Bio Foods Company, Accra, a small-scale fruit juice and chocolate drinks manufacturing company. The report covers the situation at the company as on the 15th of October 2002.

2. The PRO BIO Foods Company

2.1 Site/Location

South Odorkor, Accra

2.2 Finished Products

Pineapple Juice

Chocolate Drink

2.3 Managing Director: Dr Boamah

2.4 Number of Employees: 15

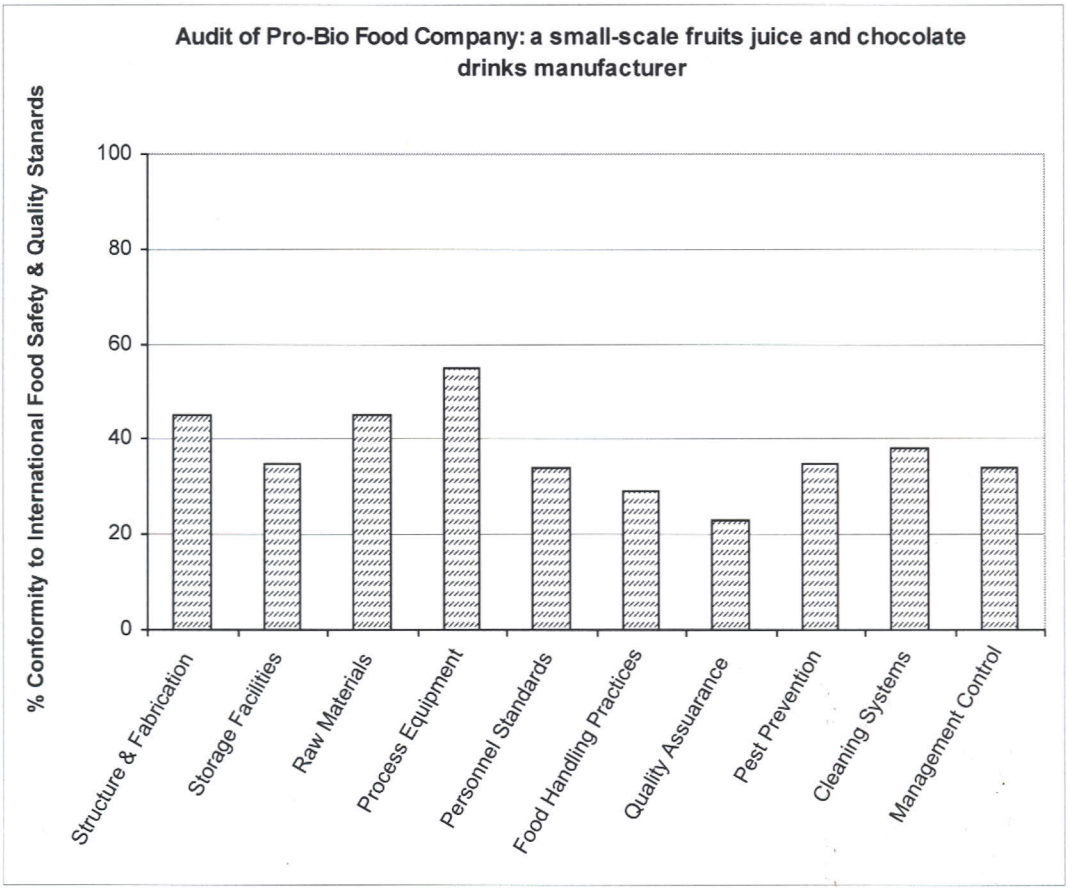
2.5 Main Clients: The supermarket and small shops in Accra.

3. Summary of Main Non-Compliances to GMPs

The main problems identified during the audit were;

- The bulbs are not protected by shatterproof plastic sleeve covers
- There are no adequate and sufficient hand-washing facilities at access to production area.
- The use of colour-coded equipment was not performed.
- Changing facilities are not adequate
- Traceability system is not adequate; batch coding needs to be improved.
- Recall procedures should be improved.

4. Graphic Representation of the Overall Assessment



5. General Comments

The company has recently made a number of major commendable improvements at the request of the Food and Drugs Board. There were however a few areas of the pre-requisite programmes that need improving in order to allow the company to begin implementing a comprehensive HACCP system. Most of the suggested additional improvements required can be found in the detailed evaluation in Appendix 1.

6. Conclusion

The company should be in the position to start implementing the HACCP system in not too distant a future.

7. References

Ayivi-Houedo, G. (2000) Food Processing/Reduction of Post-harvest losses- Component 2.3 of the IP Ghana. United Nations Industrial Development Organisation, Accra, Ghana

Johnson, P-N. T (2002) Inception Report. Integrated Programme-Food Component. United Nations Industrial Development Organisation, Accra, Ghana .

Sefa-Dede, S. (2000) A survey on small-scale food processing: The Food Cluster Group IP Ghana. United Nations Industrial Development Organisation, Accra, Ghana Report YA/GAH/99/412/11-62.

APPENDIX 1: Detailed Evaluation of the Pre-Requisite Programmes at PRO BIO FOODS, Accra, Ghana

Section 1: FACTORY STRUCTURE & FABRICATION

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
1.1	Adequate separation, including "clean" and "dirty" processes	Dirty and clean processes are done at separate places	Separate rooms, segregating the early 'dirty" part of the process from the latter "clean" stages	
1.2	Drainage-good repair, dirt and clean separation	Drainage was in good repair,	Drainage in good repair and efficient to eliminate wastes	
1.3	Personnel movement, wash hand facilities on entry	There is a hand-washing facility at the entrance or within appropriate sections of the factory.	Showers, hand-washing and toilets facilities and areas where outer garments are exchanged for work clothes are available; all these facilities are well positioned and kept clean.	
1.4	Sitting of equipment	The arrangement of processing machinery and equipment in the main production area was good.	All machinery should be positioned to give easy access to all parts for cleaning	
1.5	Condition of floor	The condition of the floor in most parts of the factory was satisfactory.	Floors designed to withstand the rigours of processes and kept in good conditions; floors kept clean and free from "accumulations"	The floors should be tiled and made smooth as far as possible to facilitate easy cleaning.
1.6	Condition of walls, doors and windows	The walls, doors and windows were all clean.	All interior walls in good condition and finished with a hygienic, easy to clean surface; all wall and ceiling joints are covered and sealed All external-opening doors must be kept closed. All windows should be kept closed	
1.7	Condition of ceiling and lights	The ceiling lights are without shatterproof covers. There were some loose fittings here and there. These could pose real danger	Ceiling must be smooth, easy cleaned and kept in good repair. It must not pose a foreign body hazard to the area. Lighting devices must be protected and glass contamination of product must be rendered impossible.	Fluorescent light tubes must have protective coverings. As a matter of immediate priority the loose electrical fittings should be repaired. They are potential sources of electric al shock and/or fires.

1.8	Ventilation	Ventilation was generally good.	Ventilation must be adequate and must remove heat and steam	-
1.9	Condition of service	The company uses water from the Ghana Water Company.	Water used in food processes must be of potable quality; periodic checks must be conducted.	
1.10	Good standards of decoration	Standards of decoration and working surfaces were very impressive.	Chipped tiles, flaking paint and damaged plasterwork should be limited and should not be evident where they present a risk.	

Section 2: STORAGE FACILITIES

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
2.1	Use of off-site facilities	No off-site facilities	Off-site facilities must be well organized, clean and capable of providing the service. Keep access around all stored items and ensure good ventilation.	
2.2	Adequate segregation and storage disciplines	Finished products were stored on wooden pallets, but were in close contact to the wall.	All materials must be stored off the floor on clean pallets, at least 20 cm away from the wall. Raw materials, work in progress and finished products must be clearly identified and stored in designated areas of the factory.	Finished products must be stored away from the wall.
2.3	Sealed/proofed loading areas	Loading area sealed and proofed against insects and birds.	Loading areas must be sealed and proofed against pests and birds. Good housekeeping and good site maintenance are required. Records of inspection and maintenance available to demonstrate housekeeping methods in control.	
2.4	Separation/separate finished goods facilities	This was well done.	Finished products should be checked by the Quality Department prior to releasing to the storage facilities. Approved batches should be stored in separate areas, under appropriate conditions of temperature. Defective batches should be quarantined and clearly marked.	
2.5	Segregation of returned or damaged goods	Recalled batches of finished products have been physically segregated and labelled.	Recalled or returned batches of finished products should be identified and physically segregated.	

Section 3: RAW MATERIALS

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
3.1	Traceability of all stock	According to the CEO, the company obtains its raw materials through a specialised agent with whom it has a formal contract. So they have in place a good system for tracing all stocks.	All incoming raw materials should have: a. records of delivery b. date coding & indication of shelf life. c. a batch identification system.	
3.2	Storage area well managed	Yes.	Storage under correct conditions of temperature, lighting and ventilation.	Ventilation is the storage room must be improved.
3.3	Stacking disciplines	Stacking discipline satisfactory.	Storage off the floor, on clean pallets or containers; both should be spaced and not be stored directly on top of each other.	
3.4	Temperature control	No applicable	Stored under the correct conditions of temperature control. Temperature-controlled unit with indicator outside the unit. Daily recordings are to be taken and monitored.	
3.5	Containers-type, conditions	The company uses hired transport.	Stored in containers that provide adequate protection from cross contamination, damage or adverse weather conditions during transit.	

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
3.6	Supplier audits	Yes, performed to some extent.	Visit schedule for supplier audits to be organized and performed.	The conditions at the raw materials base as well as the supply arrangements need to well recorded for due diligence.
3.7	Stock rotation-named, coded, labelled, dated	A FIFO system was in place	Stock rotation must be strictly controlled, with all raw materials named, coded, labelled and dated. Each product is used within its storage life and the shortest shelf-life is used first. FIFO system is in place.	
3.8	Bacteriological Monitoring	Not performed. This is because the company has no microbiological laboratory	The microbiological standards of raw materials should be detailed in the purchasing specification. All raw materials should be subjected to a degree of microbiological control.	In the absence of a facility for undertaking bacteriological monitoring, it will be advisable to use the services of the FRI or the GSB.
3.9	Inspection and control procedure for dry products e.g. salt	The audit was assured that this was done satisfactorily	Dry products must be examined in order to prevent contamination. Pest infestation must be examined. Sieving or dissolving after manual inspection; sieve kept clean and in good condition. All lots should be passed through a metal detector at least once.	
3.10	Certificate of Conformance - CoC	This is not performed.	All materials should be accompanied by a certificate	Certificates of co-conformance help to assure the quality and safety of the raw materials and other input ingredients are extremely important for QA as well as for due diligence.

Section 4: PROCESS EQUIPMENT /MACHINERY

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
4.1	Adequate equipment layout avoiding congestion	The layout for equipment was satisfactory.	Equipment positioned at least 50 cm away from the wall and off the floor.	
4.2	Glass handling procedures, register and inspection	This requirement may not be applicable since glass is not a primary packaging medium.	Glass is strictly prohibited in food production area unless it is the primary packaging medium. A glass breakage procedure should be place for handling, registering, controlling and inspecting glass containers, sample bottles etc. to be brought into the production area.	
4.3	Engineers trained in hygiene procedures	The company has no resident engineer.	Engineers are adequately trained in hygiene procedures and follow the same wash-handling procedures and adopt the same protective clothing as the operators	
4.4	Pre-cleaning of product containers.	This appears to be adequately carried out.	An effective pre-cleaning of product containers presenting a risk to products by foreign body contamination should be in place.	
4.5	Condition of equipment, no corrosion, loose paint or frayed belts	The equipment and machinery are quite new and therefore of good condition.	Process equipment and machinery maintained in good condition; temporary repairs or modification are not recommended. Metal surfaces-if not stainless steel- maintained in good condition, free from rust, flaking paint or other loose surface covering. All equipment in contact with food must be inert to the food being handled under the conditions of use; the use of stainless steel is preferred for food equipment.	

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
4.6	Use of food-grade materials.	This is adequately done. Bowls and drying trays are all made from food-grade materials. The tops of tables in the production area were made of formica.	All food equipment surfaces must be smooth, impervious, easily cleaned and drained. The use of wood in open food production areas must be avoided. Food grade lubricants must be used.	
4.7	Control of foreign object risks e.g. documentation machine parts	The equipment and surrounding area clean.	All storage, blending and process vessels must be fitted with close fitting covers, which must be kept in place at all times. Where practical, all conveyors carrying open food, raw materials or open containers should be protected from overhead contamination by suitable covers suspended above. An inventory of all machine change parts should be kept and maintenance staff must observe all precautions while working on equipment and services.	Clean equipment and surroundings will reduce the risks of microbiological contamination.
4.8	Maintenance programme including gaskets / no temporary repairs	There were records on maintenance programmes.	All equipment should have a written maintenance and overhaul programme which is adequate for the process and the usage of the machine.	It is important to keep records of all maintenance carried out on the machines.
4.9	Temperature control commensurate with Fish QA Rules	Not applicable	At all critical storage areas, automatic temperature recording and control equipment must be used, product must be adequately iced prior to filleting.	
4.10	Safety guards do not restrict cleaning	The operatives had gloves and boots that could be cleaned	Safety guards used during production must be thoroughly cleaned.	

Section 5: PERSONNEL STANDARDS

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
5.1	Staff training programme including records	Factory hands are trained on the job, whilst specialised positions are given to those with the requisite qualification and experience.	All employees should be informed in writing of their legal obligations and the company's policy on personal hygiene prior to commencing work, with periodic updates as necessary. Additionally, 'on-the-job' training should be given to staff in order that they fully understand their responsibilities and the need to follow written instructions and procedures. All Production and Quality Assurance personnel must be fully trained in the principles of Good Manufacturing Practice.	It is important to organise regular training for the staff. There is also the need to keep records of those trained.
5.2	Head coverings, earring, jewellery and watches	Overalls were clean.	All personnel in open food areas, including production staff, engineers, management and other casual site visitors, must wear suitable hair retaining wear. Personnel working in or entering food processing of packing areas must not wear any jewellery other than plain gold wedding rings. Wrist watches, ear-rings, necklaces and bangles are not permissible	
5.3	State of overalls, design and frequency of cleaning		All food handling operatives and persons who enter production areas for any reason, must be provided with clean protective clothing which must be worn at all times. This includes engineers, management and other casual visitors.	
5.4	Hand-washing disciplines, 'hands free sink', hand swabs	There were hand-washing facilities.	Provision must be made to ensure that hands are kept clean and washed at frequent intervals, in hot water, using a non-perfumed bactericidal soap. Hands should be thoroughly dried, nails kept short and well manicured and cleaned by using a nailbrush.	

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
5.5	Dressings /First Aid-blue metal detectable	Dressing/First aid facility was available	No person having untreated sores, cuts or grazes should be allowed to work in contact with foods. All such injuries must be reported and suitably treated.	
5.6	Pre-employment health checks	Newly employed were made to undergo medical exam. Health records were not available for inspection.	All company employees must be required to complete an appropriate examination and medical questionnaire, prior to commencing work.	Health records of all staff and other operatives must be kept for display to food inspectors. Periodically staff health should be reviewed to make sure that anyone with any potential illness or communicable disease does not pass this on to the rest.
5.7	Screening /questionnaire for visitors	There is no comprehensive system for screening visitors.	There must be adequate screening of all visitors to the factory. On arrival, they must report to reception, sign the visitor's book and complete a detailed questionnaire.	Visitors entering the production area must be provided with clean overalls and hair protective covers.
5.8	Adequate medical facilities	The company does not have its own clinic. It uses the public clinic close by it.	The company must provide the services of fully trained nurse or first aider and the medical room with adequate equipment for the first aid treatment of illness or injury. First-aid equipment must be kept securely and issued only by trained staff	
5.9	Control of smoking, food and drink	A poster had been mounted in the production area banning operatives from eating, drinking and smoking.	Smoking and the use of tobacco must only be allowed in properly designated areas e.g. canteen, rest rooms and offices. It is not permitted in production areas or toilets. Smoking utensils must not be carried in pockets in production areas.	
5.10	Staff facilities-lockers, canteen, toilets, change areas	Lockers and toilet facilities were adequate.	Adequate lockers must be provided for all personnel for the safe storage of personal effects such as outdoor clothing bags etc. This will eliminate the risk of them being brought into the production areas (which is forbidden).	

Section 6: FOOD HANDLING PRACTICES

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
6.1	Use of colour-coded equipment	This was being implemented.	Equipment used in different areas of a factory should be colour coded or clearly identified in such a manner as to designate that department and to prevent the risk of cross-contamination e.g. chopping boards, knives and product trays used in the raw material area must not be used in the work in progress or finished product sections.	
6.2	Adequate control of product containers	There is good control over product containers.	All product containers, whether for raw materials, work in progress or finished product, must be clean and in good condition to prevent the risk of foreign body contamination.	
6.3	Accountability for ingredients in production-full traceability.	Yes, well done.	It is recommended that all ingredients used in production should have a raw material batch code, to identify them in storage and processing and accompanying documentation.	
6.4	Temperature control disciplines	The processing machines had automated temperature monitors.	Where hand-held digital thermometers are used to check temperatures they must be cleaned and sterilised in between use, to prevent cross contamination.	

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
6.5	Risk assessment and HACCP documentation	Not performed	A system Hazard Analysis and Critical Control Points should be established and all appropriate process flow charts and documentation to go with it should be available.	
6.6	Control over refuse, cleaned, covered, emptying frequency	Satisfactory controls over refuse.	The external facility for the disposal of waste should be located well away from the production areas. Internal waste collection systems must be clearly identified as such and be used specifically for that purpose. Containers similar to those used for food, ingredients or packaging are not acceptable for waste collection.	
6.7	Control of foreign objects/metal detection	Not preformed.	All employees on site must be fully conversant with the company's policy on product protection, particularly foreign object risks and adhere to it at all times.	
6.8	Between batch cleaning procedures	Satisfactory	Special provision must be made to interrupt the production high-risk products for cleaning and disinfecting at least every three hours.	
6.9	Proper sterilisation of surfaces and equipment	Apart from normal cleaning complete sterilisation was not carried out	Complete sterilisation of the surfaces and equipment by steam sterilisation or chemical sterilisation or fogging the environment with an appropriate solution of terminal sanitizer.	To minimise the chances of cross-contamination, all the trays and bowls must be sterilised with boiled water.
6.10	Full training of food handlers	Most of the operatives received training on the job	All food handlers have been trained, instructed and supervised in food hygiene, according to the work they do in compliance with the National Regulations. The method and degree of training is entirely at his/her discretion, but must take into consideration the responsibility of the role undertaken. Records of training should be kept up to date as an integral part of due diligence system.	All operatives must be formally trained. Training records must be kept as part of the documentation required for the pre-requisites programs of HACCP.

Section 7: QUALITY ASSURANCE

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
7.1	Comprehensive QA system	The company does not have its own analytical laboratory to monitor the safety and quality of its products. It depends the services of FRI and GSB.	The company must have a comprehensive system of quality assurance and monitoring to ensure the consistent production of safe, legal product in compliance with the agreed specification. The company must have sufficient properly trained personnel to maintain agreed quality standards, with clearly defined responsibilities covering all aspects of the operation.	
7.2	Authority of QA department to stop production	Not applicable.	The QA department must have the authority to accept or reject raw materials, packaging materials, work in progress and finished product against an agreed specification.	
7.3	Finished product specifications accurate and up to date	The specifications of the company's products have not been documented. So it is difficult for one to judge whether all products actually match up to any known specification.	All products manufactured on site must conform to a written specification, which has been agreed between the manufacturer and the customer, signed and dated.	
7.4	Microbiological Testing as appropriate	Not performed	The microbiological testing regime and resources required will ultimately depend on the nature of the product to be tested (e.g. degree of risk, shelf-life and composition).	
7.5	Vehicle temperature checks and condition	Not applicable.	Vehicles must be clean, well maintained and free of foreign bodies, pests and odours.	

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
7.6	Products returned to chill store at breaks	Performed satisfactorily.	Depending on the product being manufactured and the ingredients involved, there my be a definite need to return all pre-weighed raw materials, work in progress materials and finished products to the appropriate chill store at break times.	
7.7	Manual temperature checks carried out and recorded.	Not applicable	Where temperature control is a critical factor in the process, from a safety or manufacturing point of view, it should be manually checked at an agreed frequency e.g. every 2 h and records maintained. Temperature control charts or written records must be evident.	
7.8	Adverse temperature reaction procedure	Not applicable	Whenever temperature is checked and it is found to be totally out of the tolerance range, swift action must be taken, which will result in minimum risk to the product and its safety. The action taken must be recorded.	
7.9	Proper calibration of all measuring equipment	The equipment had not been calibrated for a very long time.	All measuring equipment that has direct effect on the production process, safety and quality of the product being manufactured should be regularly calibrated against a given standard.	GSB gives this service. The company must make a policy of calibrating all its measuring equipment at least once a year
7.10	Proper product recall procedures	The recall procedures of the company were satisfactory.	The company must have a formalised, written complaints procedure, detailing the person responsible through whom all product complaints must be channelled.	

Section 8: PEST PREVENTION

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
8.1	Special Reporting Type Service	The company did not have any organisation monitoring its pest infestation.	The company must either contract the services of an approved pest organisation or must have trained on-site personnel for regular inspection and treatment of premises to deter and destroy infestation by insects, birds or animals. A member of staff must always accompany an outside contractor on his visit.	
8.2	Pest control records including bait plans, labels and dating	No records	Detailed records of the pest control inspections must be kept in correct date order in the On-site Report Book.	
8.3	Baiting and proofing standards including monitoring systems	According to the CEO, the factory operative in charge of the stores undertakes periodic monitoring for rodents, insects etc.	Baits should be based on fatty or waxy substrates or back break traps. Those based on grains are not acceptable due to the increased contamination risk to any foodstuffs being manufactured or stored in the vicinity. The internal rodent bait should be safe e.g. held in a tamper resistant box.	This sort of monitoring must be contracted out to a responsible and experienced organisation.
8.4	Fly killer's position and condition	Not performed	All production and ambient storage areas should be protected by electrical insect "knock down" devices. For maximum effect, these should be sited in areas of minimum light intensity, but must not be sited directly above the open food handling areas.	It would be advisable for the company to install a fly killer somewhere in the production area but away from the packaging area where the flour is exposed.
8.5	Good perimeter control	There is good perimeter.	A clear perimeter zone, free from accumulation of rubbish, packaging materials, raw materials, pallets and redundant equipment, which could provide harbourage of pests needed. All gutters and exterior drains must be kept clean and functional. Pallets, plastic trays or other materials must be stored against the factory walls, to prevent harbourage of pest.	

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
8.6	Storage and housekeeping standards (including stock rotation)	Housekeeping was satisfactory.	The most effective, common sense approach towards infestation control is in maintaining good housekeeping standards i.e. controlling accumulation of food and packaging debris, keeping passages clear and unlittered, removing redundant equipment and materials from the manufacturing area and ensuring stock rotation.	
8.7	Access incoming check system for ingredients	The CEO assured the audit team that all incoming ingredients are checked.	All incoming raw materials whether they are food ingredients, packaging or equipment, must be thoroughly checked on arrival at the site for pest infestation.	
8.8	Segregation of damaged or returned goods	This was done.	There must be complete physical segregation of infested, damaged or returned goods to guarantee that they will not be used in production.	
8.9	Safety and technical documentation, approved baits and pesticides	No records.	Pest control documentation must be clear, concise and legible. It must be kept up to date and regularly reviewed by the technical department.	
8.10	Freedom from pests	No records.	If a logical Code of Practice for pest control is adhered to, then freedom from pests should be evident on site. This should be further clarified in the Pest Prevention Record Book.	

Section 9: CLEANING SYSTEMS

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
9.1	Cleaning schedules documented	The company had a cleaning schedule.	Written, formalised cleaning procedures and schedules must be available for every department within the factory. They must be clear, legible and easy to follow.	
9.2	Approved food grade detergents in use e.g. taint risks/phenols	This is a difficult requirement for the company to strictly adhere to. This is because of the non-availability of purposely-made food-grade detergents.	All cleaning and disinfection agents used on site must be approved food grade materials, supplied by a reputable company.	
9.3	Cleaning materials controlled including data sheets.	This was being implemented.	All cleaning and disinfection agents must be stored safely in a designated, secure area off the production area.	
9.4	Availability and condition of cleaning equipment and methods.	This was being implemented.	All brooms and hand brushes must be maintained in good condition, free from deterioration and soiling.	
9.5	Separate areas for tray and equipment	This was being implemented.	Separate facilities must be provided for washing utensils and for general purpose cleaning.	

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
9.6	Adequate space for equipment to dry	This was being implemented.	Cleaned utensils must be stored in a clean and well-maintained storage area, which allows for good drainage and drying. The utensils must be stacked in such a manner as to prevent recontamination.	
9.7	Training of cleaners	There is no formal training for cleaners. All cleaners are given on-the job-training	Cleaning operatives must be adequately trained so that they fully understand cleaning schedules, chemicals listed and safety precautions, the need for protective clothing, personal hygiene etc.	
9.8	Supervision and monitoring	Supervision was satisfactory.	Whether cleaning is carried out by a separate team on a different shift or by the operators themselves at the end of the shift, it must be supervised.	
9.9	Physical checks and bacteriological swabs taken	No bacteriological swabs taken.	If cleaning regime (either manual or CIP) is sufficient to tackle the soilage evident, there should be no visible food debris on the equipment surface at the end of the wash cycle.	
9.10	'Clean-as-you-go' and good housekeeping	This was being implemented.	Bacteriological swabs can only be used to monitor "trends", but if the results indicate less effective cleaning than usual, the cleaning operatives should be informed	

Section 10: MANAGEMENT CONTROL

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
10.1	Interest from Board Level	Yes. The company had placed posters on notice boards at suitable positions in the production area reminding factory operatives on basic GHPs.	The company should have a food safety and hygiene policy statement, which may be positioned at strategic points throughout the factory.	
10.2	Communication to production level, daily/weekly meetings		Regular meetings to review and update all levels of management should be held on either a daily or weekly basis dependent on the size and nature of the company.	
10.3	Internal audits carried out	Internal audits have never been carried out.	Whether conducted as an integral part of quality system accreditation, or in response to a specific requirement by a major retailer, internal auditing should be carried out to identify strengths and weaknesses in the operating system and to clarify appropriate corrective actions.	The FDB runs a short course on how to conduct internal auditing. It would be helpful for the company to have one or two people trained so that they can be responsible for internal auditing.
10.4	Hygiene management-responsible to qualifications	The company did not have a well organised hygiene management team.	It is recommended that the hygiene management should be responsible to Quality Management Team, who in turn must be fully accountable for the hygiene standards of the equipment and factory premises.	
10.5	Hygiene team adequate and trained	Not yet in place.	Compatible with the size and type of company, a hygiene team should be available to cover all departments whether on a split shift or single shift system.	A hygiene team ought to be formed to be responsible for ensuring that the hygiene standards and policies of the company are adhered to.

Section No	ELEMENTS TO BE EVALUATED	ACTUAL SITUATION	REQUIREMENTS	RECOMMENDATIONS
10.6	Other managers interest and involvement in hygiene and quality	Other managers showed interest in the work of the audit team	Management at all levels must demonstrate a commitment to producing safe, legal products of the specified quality. Specialist expertise must be available in all departments to achieve this.	
10.7	Reporting and corrective procedures	No records of reporting and corrective actions taken	All reports issued as a result of, for example, an internal audit, hygiene surveys, line stoppage or customer complaint must include a programme of corrective action within an agreed timeframe.	
10.8	Hygiene qualifications of production management	No	It is recommended that all production supervisor /junior managers should be trained to a least a basic food hygiene qualification (1 day). Senior and middle production management should have gained advanced food hygiene qualification (5 days)	
10.9	Clear definition of responsibility	This was being implemented.	A major responsibility of mangers is to ensure compliance with all appropriate legislation whether the product is intended for consumption in Ghana or for export. It is recommended that Personnel at all levels throughout the organisation should have a job description that explains their duties and responsibilities. Management level requires a more detailed job description that includes specific tasks, reporting procedures and any specific safety requirements.	
10.10	Attitude and response to audit	The attitude to audit was positive.	The attitude and response to this and other audits should be enthusiastic, committed and pro-active. Corrective actions sought in the form of agreed changes or improvements must be completed in the agreed time scales.	